



DEPARTMENT OF HEALTH
Republic of South Africa

SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY 1998

Full Report



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PREFACE

The 1998 South Africa Demographic and Health Survey (SADHS) is the first study of its kind to be conducted in South Africa and heralds a new era of reliable and relevant information in South Africa. The SADHS, a nation-wide survey has collected information on key maternal and child health indicators, and in a first for international demographic and health surveys, the South African survey contains data on the health and disease patterns in adults.

Plans to conduct the South Africa Demographic and Health Survey go as far back as 1995, when the Department of Health National Health Information Systems of South Africa (NHIS/SA) committee, recognised serious gaps in information required for health service planning and monitoring.

Fieldwork was conducted between late January and September 1998, during which time 12,247 households were visited, 17,500 people throughout nine provinces were interviewed and 175 interviewers were trained to interview in 11 languages.

The information from this benchmark survey will be used to evaluate health programmes of the department, describe health status and will be instrumental in identifying new directions for the national and provincial health programmes in South Africa. The survey findings serve as an important tool for programmes to assess progress and highlight some of the challenges facing the health sector in continuing to improve the health status of all South Africa, now and into the new millennium.

I would like to extend my sincere gratitude to all who have made the completion of the 1998 South Africa Demographic and Health Survey possible. I am deeply indebted to the staff of the National and Provincial Departments of Health for their hard work. Thanks also go to the Medical Research Council, Macro-International and USAID for their technical advice and support, and the Centre for Health Systems Research and Development, University of the Orange Free State for conducting the field work. Very special thanks go to the families and individuals who participated for sharing information about themselves and giving their invaluable time without which this study would not have been possible.

Finally, I would like to invite all to make use of the data in search of strategies and plans for the improvement of the health of all South Africans

Dr M E Tshabalala-Msimang
Minister of Health

ACKNOWLEDGMENTS

Many people have participated in the completion of the 1998 South Africa Demographic and Health Survey (SADHS) with great dedication and commitment. The Department of Health primarily funded the 1998 SADHS with contributions from Macro-International and USAID. Contributions in human resources, technical expertise and commitment to excellence have come from a great many organisations and individuals in the completion of the SADHS final report.

First and foremost I would like to extend thanks to the National Department of Health, Health Systems Research, Research Co-ordination and Epidemiology Directorate for co-ordinating this enormous and complex project under the leadership of Dr Lindiwe Makubalo. A special vote of thanks goes to the Medical Research Council for their major role in almost all aspects of the Survey. In particular, we are deeply indebted and grateful to Dr Debbie Bradshaw for her technical support and to Ms Nolwazi Mbananga for co-ordinating the fieldwork. Thanks also go to the Provincial Health Departments for their logistical and technical support throughout the survey. I would also like to thank colleagues in the National Information Systems Committee (NHIS/SA) for their commitment to and work on the survey.

I would like to express my sincere appreciation to the Centre for Health Systems Research and Development at the University of Free State in partnership with King Finance for implementing the fieldwork. Thanks also go to the Human Sciences Research Council for their assistance in the planning phase of this initiative. For the drawing of the sample, I would like to thank Statistics South Africa.

Technical assistance during the survey was also provided by Measure DHS⁺ (formerly Macro-International Inc.). We extend thanks for the support provided by the Measure DHS⁺ team in the completion of the survey.

Many thanks to all the dedicated researchers and policy and programme managers who participated in the writing of this report. Thanks also to Ms Lusanda Mahlasela for co-ordinating and working on the finalisation and editing of this report and to Ms Elize de Kock for her tremendous work in consolidating comments and editing.

To all who have contributed to the 1998 SADHS – thank you. This is a substantial achievement. South Africa, for the first time has an understanding of the nation's health status. We have a clearer idea of the challenges which face us and the directions we need to take in order to improve the health of South Africans.

Dr Ayanda Ntsaluba
Director General
Department of Health

KEY FINDINGS OF THE SURVEY

Mortality rates

Infant mortality rate: 45 per 1,000 live births
 Under-5 mortality rate: 59 per 1,000 live births
 Child mortality rate: 15 per 1,000 live births
 Maternal mortality ratio: 150 per 100,000 births

*Immunisation coverage in children aged 12-23 months (%)

Total: 63
 Urban: 67
 Non-urban: 60
 Male: 65
 Female: 62

Percent of children 12-23 months with Road-to-Health card: 75

Exclusive breastfeeding (% of infants)

0-3 months: 10
 4-6 months: 1

Awareness of HIV/AIDS (% of women 15-49): 97

Perceptions about AIDS (% of women 15-49)

People can protect themselves from HIV/AIDS by using condoms
 True: 87
 False: 7
 People can protect themselves from HIV/AIDS by avoiding public toilets
 True: 24
 False: 65

Condom use (% of sexually active women 15-49)

Ever used condom: 22
 Used condom at last sex: 8

Prevalence of STD symptoms (% of men 15+)

Total: 12
 Urban: 9
 Non-urban: 17

Fertility rate

Total: 2.9 children per woman
 Urban: 2.29 children per woman
 Non-urban: 3.92 children per woman

** Modern contraceptive prevalence (%): 61

Urban: 66
 Rural: 53

Treatment of women (%)

Ever abused by partner: 13
 Abused when pregnant: 4
 Ever raped: 4

Antenatal care from doctor/nurse (% of births): 94 Assistance during delivery (% of births in last 5 years)

Doctor: 30
 Nurse/midwife: 54

Smoking rate (% of adults age 15+)

Men: 42
 Women: 11
 Adolescents age 15-19: 10

Alcohol rates (% of men and women age 15+)

Ever drank alcohol: Men:58; Women: 26
 Drink alcohol now: Men:45; Women:17
 Dependent on alcohol: Men:28; Women:10

Prevalence of hypertension (% of adults age 15+)

Men: 13; Women: 16

Percentage of hypertensives who were controlled

Men:26; Women: 38

Prevalence of airways limitation (Asthma) (% of adults age 15+)

Men: 7; Women: 9

Prevalence of chronic bronchitis (% of adults age 15+)

Men: 2; Women: 3

Abnormal peak flow (% of adults age 15+)

Men: 4; Women: 4

Overweight (% of adults age 15+)

Men: 29; Women: 55

Obesity (% of adults age 15+)

Men: 9; Women: 29

Injury rates (per 100,000)

Intentional: Men:381
 Women: 175
 Unintentional: Men: 1,373
 Women: 631

Access to medical aid (% of adults age 15+)

Urban: 24
 Non-Urban: 16
 Total: 17

Health service utilisation (% of adults age 15+)

Public sector: 19
 Private sector: 13
 Chemist: 7
 Traditional Healer:3
 Faith Healer: 2
 Dentist: 3

Tooth loss and dentures (% of adults age 15+)

Lost any teeth: Men :59; Women: 64
 Lost all teeth: Men: 7; Women: 9
 Wear dentures: Men: 10; Women: 9

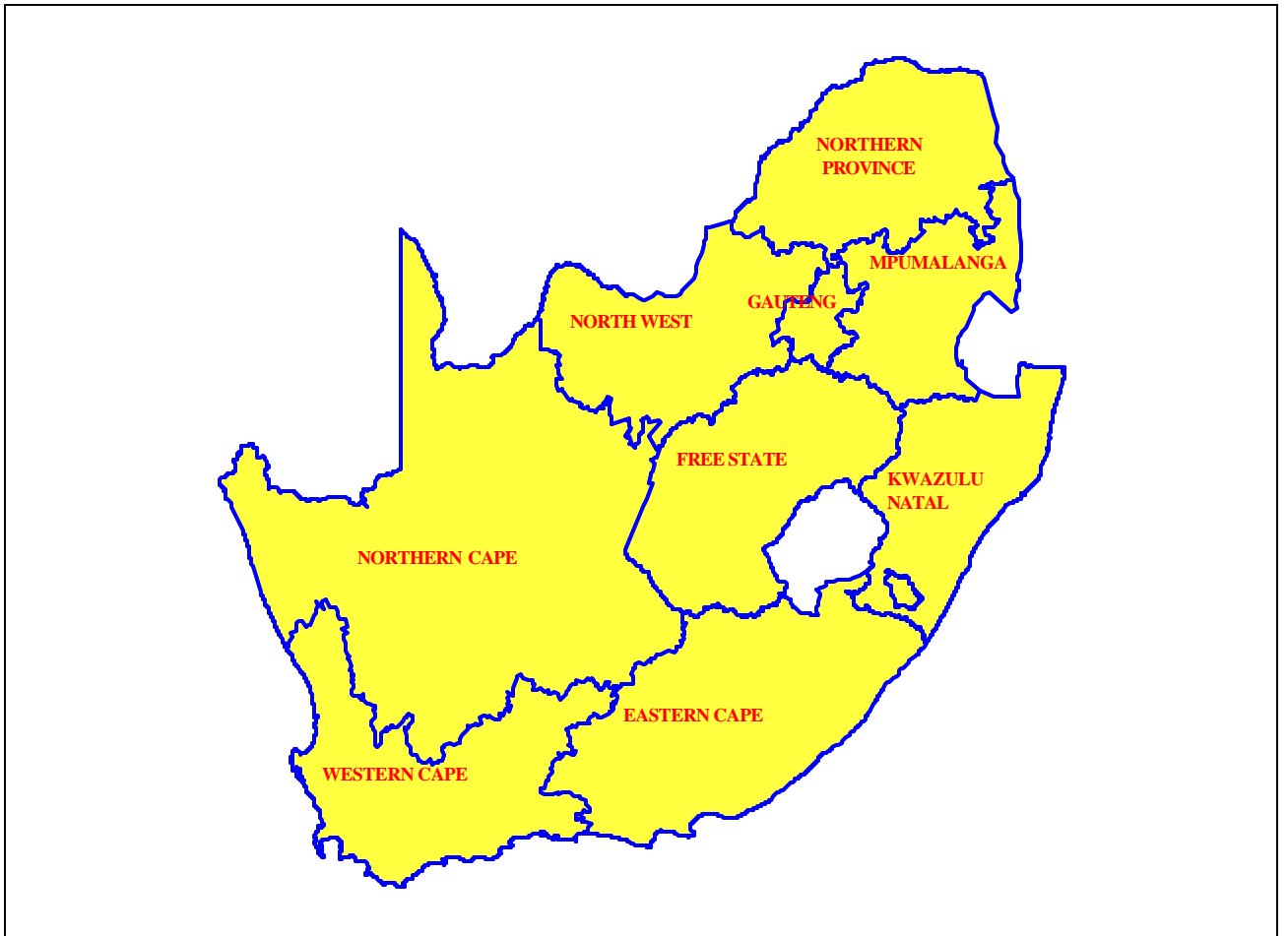
Perception about the benefits of fluoridation: (% of adults age 15+)

Fluoride is beneficial: Men 52; Women: 51

* Childhood immunisation coverage is the percentage of children aged 12-23 months who have received BCG, three doses of DPT and polio, and measles vaccines.

** Contraceptive prevalence refers to the percentage of all sexually active women aged 15-49 who are using a modern contraceptive method.

REPUBLIC OF SOUTH AFRICA



CHAPTER 1

INTRODUCTION

1.1 History, Society, and the Economy

The People of South Africa

The people of South Africa have diverse origins. Ancestors of the Khoisan flourished in Southern Africa for thousands of years as hunter-gatherers. Around 300-500 AD, Bantu-speaking people moved southwards from West Africa bringing Iron Age settlements to Southern Africa. Nguni-speaking people lived in the eastern part and the Sotho-speaking people lived in the northern part. During the 15th century, European explorers came to South Africa. The Dutch East India Trading Company later established an outpost in the Cape to make provisions for the passing sea trade. The British also settled in the Cape. As the settlers moved inland, a series of wars followed leading to the conquest of the Xhosa and later the Zulu peoples and a dispossession of the land. In 1713, the great smallpox epidemic, imported by the settlers, decimated the Khoikhoi who had little resistance to this foreign disease.

The discovery of diamonds in 1867 and gold in 1871 changed the socio-political and economic path of South Africa forever. The mining interests fostered the development of the rail system, electricity, urban concentrations, commercial farming and manufacturing interests in the interior. Control of the riches led to the South African War in 1899. A bitter guerrilla war between the British and the Boers ensued until 1902 when a treaty was signed with the Boers agreeing to come under the sovereignty of Britain. Sugar plantations in Natal recruited labourers from India when local people were not attracted to the difficult and unrewarding conditions. Indentured labourers were brought from Calcutta and given the option of a passage to India or a small grant of land at the end of the contract. 'Passenger' Indians also came to South Africa as merchants.

Apartheid and political changes

The Act of Union brought the four colonies under British rule in 1910 but Africans were generally excluded from this process. It was only in the former Cape Colony that the vote was based on wealth and not on race. However, only men were allowed to vote. In 1913, the Natives' Land Act divided South Africa into 'white' and 'black' areas, forming the cornerstone of Apartheid. The rights of African people were systematically stripped while the political power of the Afrikaners grew. In 1948, a majority of whites voted for Afrikaner nationalism and a series of restrictive laws were introduced to benefit the white minority and ensure inferior amenities for Africans, Asians and Coloureds. In 1950 the Population Registration Act classified people according to race and the Group Areas Act defined where people could or could not live. In a final consolidation of Apartheid, the non-urban 'black' areas were patched together into 'homelands' to create separate 'nation states' for the different ethnic groups. Negotiations between the government and anti-Apartheid groups started in 1990. These culminated in the first national election which ushered in a full democracy in South Africa on the 27 April 1994. Today South Africa is a republic with 9 provinces under a semi-federal system. The administrative capital is Pretoria, the legislative capital is Cape Town and the judicial capital is Bloemfontein.

Population groups

The groups identified by the Population Registration Act were White, Indian, Black and Coloured. While Coloured was often explained as being mixed descent, it included people of Khoisan, Malaysian, Griqua, Indian and Chinese origin. Classification of the population into racial groups under Apartheid had profound economic and social impacts.¹

Culture and religion

The rich heritage of South Africa has resulted in enormous cultural diversity. The new constitution underscores the rights of all to foster their own religion and culture. There are 11 official languages although English is widely used in business and public official activities. The largest organised religion is Christianity. Others include Hinduism, Islam and Judaism. In addition, many people have a 'traditionalist' belief system.

Gender

The position of women in South Africa is intertwined with class and race. The most disadvantaged group in South Africa are the non-urban African women. The social status previously accorded to African women has been undermined as men became migrant labourers. The system of 'customary law', entrenched by the colonialists, ensured that African women held minor status. Since 1994, a strong government policy of gender equality has emerged. The international Convention for the Elimination of All Forms of Discrimination Against Women (CEDAW) was signed without reservation in 1995. A wide range of initiatives include mechanisms to promote women's rights and monitor the impact of government spending on women's lives. The Gender Commission has been set up in terms of the Constitution, as an independent body to promote gender equity in society. The President's Office has established an Office of the Status of Women to ensure that gender issues are incorporated in policy and programmes.

Economy

South Africa is a middle-income country with modern infrastructure and relatively well developed financial, legal, communication, energy and transport systems. It has the largest economy in Africa. However, South Africa has one of the most skewed distributions of income in the world. In 1994 the Government of National Unity entered office with the blueprint for Reconstruction and Development Programme (RDP) which has been supplemented by Growth, Employment and Redistribution (GEAR). Economic growth has been at a level of about 2 percent per annum since 1994, but has been unable to address the high levels of poverty and unemployment.

1.2 Geography

South Africa is situated at the southern tip of the continent of Africa. Covering 1.2 million sq. km, most of the country lies in the sub-tropical region. A large part of the country is on a plateau that rises 1000 m above sea level. Mostly semi-arid, water is scarce except along the east coast. With the exception of the South Cape, which experiences a Mediterranean climate, rainfall generally occurs in summer but is unreliable. Long periods of drought are often experienced and encroaching desert is an

¹Although people are no longer registered according to a Population Registration Act, it is necessary to collect some statistical data according to self-reported categorisation into these population groups in order to monitor the progress in reducing these social and economic inequalities. In this report, the terms African and Asian are used instead of Black and Indian, however it is recognised that Asian is a broader category, not only including people of Indian descent.

issue in the western part of the country. Irrigation schemes have been set up to support agriculture and industry. One tenth of the land is arable. The main seaports are Durban and Cape Town. These and 5 others serve the mining and industrial hinterland together with a well-developed rail and road transport system. Airports are found in all the provinces and there is an extensive highway system.

South Africa encompasses Swaziland and Lesotho, two land-locked countries that are economically dependent on South Africa. Mozambique, Zimbabwe, Botswana and Namibia neighbour South Africa and have a long and varied history of violations and dependence. A new era of co-operation has begun with the new government of South Africa.

1.3 Demographic Data and Population Policies

During the Apartheid era, demographic data were fragmented and incomplete. While statistics for whites, coloureds and Asians were of reasonable quality, the data for Africans were not adequate. The 1996 census collected information for the whole population and introduced questions for direct and indirect estimation of birth and death rates. Regarding vital statistics, much attention has been given to improving registration of births and deaths. However, it remains a challenge to produce accurate and timely mortality rates.

In response to a growing concern about the rate of growth of the African population, a national family planning programme was set up in 1974 to provide clinic-based contraceptive services. During the 1980s the government established a Population Development Programme (PDP) which undertook an advocacy role with an aim to reduce fertility. In addition to supporting the provision of contraception, the PDP paid attention to selected aspects of socio-economic and community development within the Apartheid framework. South Africa endorsed the United Nations Programme of Action that was adopted at the International Conference on Population Development (ICPD) held in Cairo, 1994. In 1998 a new national population policy was developed within a framework of multi-sectoral and sustainable development (Department of Welfare, 1998).

1.4 Health Policy Goals, Priorities and Programmes

When the Government of National Unity took office in 1994, there was huge fragmentation and gross inequalities in health status, health infrastructure and health services. Since then, there has been an intensive programme of legislative and policy development to reform the health service. Priority programmes have been outlined in the *White Paper for the Transformation of the Health System in South Africa* (Department of Health, 1997). Amongst the priorities are HIV/AIDS, tuberculosis, maternal health, child health and nutrition. Other priorities include the improvement of access to public health facilities and health care, increasing access to medicines, provision of free primary health care for pregnant women and children under the age of six, improvement of childhood nutrition, management of communicable diseases, provision of services in previously neglected areas such as mental health and maintenance of public health infrastructure. Regarding reproductive health, the current health policy focuses on providing adequate information and facilities to empower people to make informed choices about sexual relations, pregnancy and childbearing. The Choice on Termination of Pregnancy Act (Act 92 of 1996) and the Sterilisation Act (Act 44 of 1998) were thus introduced in 1996 and 1998 respectively.

Other areas of extensive legislative changes include the Medical Schemes Act (Act 131 of 1998) for better management of medical schemes and the Medical Dental and the Supplementary Health Services Professions Amendment Act (Act 1 of 1998). The Department of Health continues to support legislation that limits the use of tobacco (Tobacco Control Amendments Act, 1999).

1.5 Objectives and Organisation of the 1998 South Africa Demographic and Health Survey

The aim of the 1998 South Africa Demographic and Health Survey (SADHS) was to collect data as part of the National Health Information System of South Africa (NHIS/SA). The survey results are intended to assist policymakers and programme managers in evaluating and designing programmes and strategies for improving health services in the country. A variety of demographic and health indicators were collected in order to achieve the following general objectives:

- (i) To contribute to the information base for health and population development programme management through accurate and timely data on a range of demographic and health indicators.
- (ii) To provide baseline data for monitoring programmes and future planning.
- (iii) To build research and research management capacity in large-scale national demographic and health surveys.

The primary objective of the SADHS is to provide up-to-date information on:

- basic demographic rates, particularly fertility and childhood mortality levels,
- awareness and use of contraceptive methods,
- breastfeeding practices,
- maternal and child health,
- awareness of HIV/AIDS,
- chronic health conditions among adults,
- lifestyles that affect the health status of adults, and
- anthropometric indicators.

Organisation

The SADHS was a joint effort between various organisations. The Department of Health provided the funds and played an active role in the management of the survey. The Medical Research Council (MRC) co-ordinated the survey, provided technical input and undertook the processing and analysis of the data. MACRO International, funded by USAID, provided technical support in questionnaire design, sample design, field staff training, data processing and analysis. USAID provided additional funds for the sample in the Eastern Cape to be increased from the size in the original survey design. The University of Orange Free State's Centre for Health Systems Research and Development in partnership with King Finance Corporation implemented the fieldwork. The Human Sciences Research Council (HSRC) made technical input on the design and quality control of the survey. Statistics South Africa (SSA) provided sampling details in each of the nine provinces.

Sample design and implementation

The sample for the SADHS was designed to be a nationally representative probability sample of approximately 12,000 completed interviews with women between the ages of 15 and 49. The country was stratified into the nine provinces and each province was further stratified into urban and non-urban areas. In addition the Eastern Cape was stratified into five health regions, with each health region stratified into urban and non-urban areas (See Appendix A for full details). The sampling frame for the SADHS was the list of approximately 86,000 enumeration areas (EAs) created by the Central Statistical Services, now Statistics South Africa (SSA), for the 1996 census. Within each stratum a two-stage sample was selected. The Primary Sampling Units (PSUs) corresponded to the EAs and were selected with probability proportional to size (pps), the size being the number of census visiting

points in the EA. This led to a total of 972 PSUs being selected for the SADHS (690 in urban areas and 282 in non-urban areas). In urban enumeration areas ten households were selected, while in non-urban EAs 20 households were selected. This resulted in a total of 12,860 households being selected throughout the country². Every second household was selected for the adult health survey. In this second household, in addition to interviewing all women aged 15-49, interviewers also interviewed all adults aged 15 and over. It was expected that the sample would yield interviews with approximately 12,000 women aged 15-49 and 13,500 adults. The final sample results are shown in Table 1.1.

Questionnaires

The survey utilised three questionnaires: a Household Questionnaire, a Woman's Questionnaire and an Adult Health Questionnaire. The contents of the first two were adapted from the DHS Model Questionnaires to meet the needs of the national and provincial Departments of Health. The Adult Health Questionnaire was developed to obtain information regarding the health of adults. Indicators listed in the preliminary Year 2000 Goals, Objectives and Indicators document were included where a household survey was the appropriate mechanism for collecting the information.

The Household Questionnaire was used to list all the usual members and visitors in the selected households. Basic information was collected on the characteristics of each person listed, including his/her age, sex, education and relationship to the head of the household. Information was collected about social grants, work status and injuries experienced in the last month. An important purpose of the Household Questionnaire was to identify women and adults who were eligible for interview. In addition, information was collected about the dwelling itself, such as the source of water, type of toilet facilities, material used to construct the house and ownership of various consumer goods.

The Woman's Questionnaire was used to collect information from all women age 15-49. These women were asked questions on the following topics:

- Background characteristics (age, education, race, etc.)
- Pregnancy history
- Knowledge and use of contraceptive methods
- Antenatal and delivery care
- Breastfeeding and weaning practices
- Child health and immunisation
- Marriage and recent sexual activity
- Fertility preferences
- Violence against women
- Knowledge of HIV/AIDS
- Maternal mortality
- Husband's background and respondent's work

In every second household, all men and women aged 15 and above were eligible to be interviewed with the Adult Health Questionnaire. The respondents were asked questions on:

- Recent utilisation of health services,
- Family medical history,
- Clinical conditions,
- Dental health,
- Occupational health,
- Medications taken,

²Interviewers were instructed to include any second household residing on a selected plot, this rule resulted in more than the expected number of 12,540 households selected.

Habits and lifestyles,
Anthropometric measurements, and,
Blood pressure and lung function test.

Pilot Study

Pilot studies were carried out in November 1996 in non-urban and urban areas. The questionnaires were adapted and finalised on the basis of the results of the pilot study. The instructions and questions in the questionnaires were translated and produced in all official languages in South Africa (English, Afrikaans, isiXhosa, isiZulu, Sesotho, Setswana, Sepedi, SiSwati, TshiVenda, Xitsonga and isiNdebele).

Training and Fieldwork

The training of field workers was conducted by personnel from the MRC, HSRC, Free State University (Centre for Health Systems Research and Development) and Macro International. Training consisted of plenary sessions on more general issues like contraceptive methods conducted for the whole group in one venue and more specific discussions by section for each of the nine provinces in separate venues. There was also intensive training in adult anthropometric measurements, taking blood pressure and measuring lung capacity.

Some 175 candidates were recruited for field work. Each province had 1 or 2 managers who were responsible, under the supervision of 2 part-time regional managers, for the fieldwork operation in that province. Each province had 3 teams of female interviewers who were selected on the basis of education, maturity, field experience and language spoken. The Eastern Cape had 7 teams and KwaZulu-Natal had 5 teams as they had larger sample sizes. Team leaders supervised the teams and ensured the work flow. Each province had 2 centrally based editors who screened all the questionnaires before they were submitted to the office for processing.

Fieldwork commenced in late January 1998 and was completed in September 1998. Immediately before the fieldwork, information about the survey was released through the national media including TV, radio and newspapers. A community liaison strategy was developed in each province using local media to precede work in the different areas.

Quality control

In the course of the fieldwork, quality control measures were instituted at three levels. First, field team leaders and editors were trained to identify the enumerator areas included in the sample and guide interviewers in the selection of dwellings for interviews. Secondly, approximately 10 percent of the sample were re-visited in the months of the interview to ensure that the appropriate dwellings were selected and interviewed. Thirdly, a team consisting of staff from the HSRC carried out independent quality control visits to check questionnaires for errors, quality of identification and interviews at the enumerator area and dwelling levels.

Data processing

The questionnaires were processed at the Medical Research Council offices in Cape Town. Office editors checked the clusters for completeness and open-ended questions were coded. The completeness and consistency of the information was checked before the data were entered onto the computer using ISSA (Integrated System for Survey Analysis). A small proportion of the questionnaires were returned to the field to complete missing information.

Response rate

Of the total 972 PSUs that were selected, fieldwork was not implemented in three PSUs due to concerns about the safety of the interviewers and the questionnaires for another three PSUs were lost in transit. The data file contains information for a total of 966 PSUs. A total of 12,860 households was selected for the sample and 12,247 were successfully interviewed. The shortfall is primarily due to refusals and to dwellings that were vacant or in which the inhabitants had left for an extended period at the time they were visited by interviewing teams. Of the 12,638 households occupied 97 percent were successfully interviewed. In these households, 12,327 women were identified as eligible for the individual women's interview

(15-49) and interviews were completed with 11,735 or 95 percent of them. In the one half of the households that were selected for inclusion in the adult health survey 14,928 eligible adults age 15 and over were identified of which 13,827 or 93 percent were interviewed. The principal reason for non-response among eligible women and men was the failure to find them at home despite repeated visits to the household. The refusal rate was about 2 percent.

Table 1.1 Sample results

Number of households, number of interviews and response rates, South Africa 1998

Result	Number	Percent
Households selected	12,860	100.0
Households occupied	12,638	98.3
Households absent for extended period	76	0.6
Dwelling vacant/destroyed	146	1.1
Households occupied	12,638	100.0
Households interviewed	12,247	96.9
Households not interviewed	391	3.1
Eligible women	12,327	100.0
Women interviewed	11,735	95.2
Women not interviewed	592	4.8
Eligible adults	14,928	100.0
Adults interviewed	13,827	92.6
Adults not interviewed	1,101	7.4

CHAPTER 2

CHARACTERISTICS OF HOUSEHOLDS AND RESPONDENTS

2.1 Distribution of Household Population by Age and Sex

The 1998 SADHS collected information on the demographic and social characteristics of all usual residents and visitors who spent the night preceding the interviews at the selected residence.¹

The distribution of the SADHS household population is shown in Table 2.1 by five-year age groups, according to sex and urban/non-urban residence. Fifty-three percent of the household population are females, while males constitute nearly 47 percent of the population. Thirty-eight percent of the population are 15 years while nearly 6 percent are over 65 years. The median age of the SADHS population is 21.2 years (also see Table 2.2). The non-urban population is younger than the urban population. Besides relatively higher fertility in the past, this could be due to parents in urban areas sending young children to non-urban areas for care.

<u>Table 2.1 Household population by age, residence and sex</u>									
Percent distribution of the <i>de-facto</i> household population by five-year age group, according to sex and residence, South Africa 1998									
Age group	Urban			Non-urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	9.6	8.9	9.2	13.6	11.6	12.6	11.4	10.2	10.8
5-9	11.5	10.0	10.7	16.8	14.6	15.7	13.9	12.1	13.0
10-14	12.1	11.5	11.8	18.4	15.8	17.0	14.9	13.5	14.2
15-19	10.6	8.6	9.5	12.4	8.8	10.4	11.4	8.7	10.0
20-24	9.3	8.7	9.0	7.6	7.4	7.5	8.5	8.1	8.3
25-29	8.1	8.1	8.1	4.9	6.0	5.5	6.7	7.1	6.9
30-34	7.2	7.8	7.5	3.7	5.0	4.4	5.6	6.5	6.1
35-39	7.0	7.4	7.2	4.0	5.0	4.5	5.6	6.3	6.0
40-44	5.6	5.9	5.8	3.9	3.9	3.9	4.8	5.0	4.9
45-49	5.0	4.4	4.7	2.5	2.9	2.7	3.8	3.8	3.8
50-54	4.1	5.6	4.9	2.4	4.3	3.4	3.4	5.0	4.2
55-59	3.2	3.7	3.5	2.2	3.4	2.9	2.8	3.6	3.2
60-64	2.3	3.2	2.8	2.3	3.6	3.0	2.3	3.4	2.9
65-69	2.0	2.3	2.2	2.2	2.8	2.5	2.1	2.6	2.3
70-74	1.0	1.6	1.3	1.4	2.0	1.7	1.1	1.8	1.5
75-79	0.8	1.1	1.0	1.0	1.3	1.2	0.9	1.2	1.0
80 +	0.5	1.0	0.8	0.7	1.2	1.0	0.6	1.1	0.9
Missing/Don't know	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	13,314	14,930	28,254	10,901	12,712	23,640	24,215	27,643	51,894

¹ Total includes 36 persons for whom sex is missing

¹The household was defined as a person or a group of related or unrelated persons who live together in the same dwelling and share meals.

The age-sex distribution of the SADHS household population is shown graphically in Figure 2.1. The population pyramid has a relatively broad base that is typical of a “young” population. The inward tapering of the younger categories is visible and indicates a reduction in fertility (see Chapter 3). To examine the age structure further, the age structure of the SADHS population was compared to the 1996 census population (excluding the institutional population (see Table 2.2). Differences that exist between these structures, suggest the general difficulties of enumerating hard-to-reach individuals, such as mobile young adults.

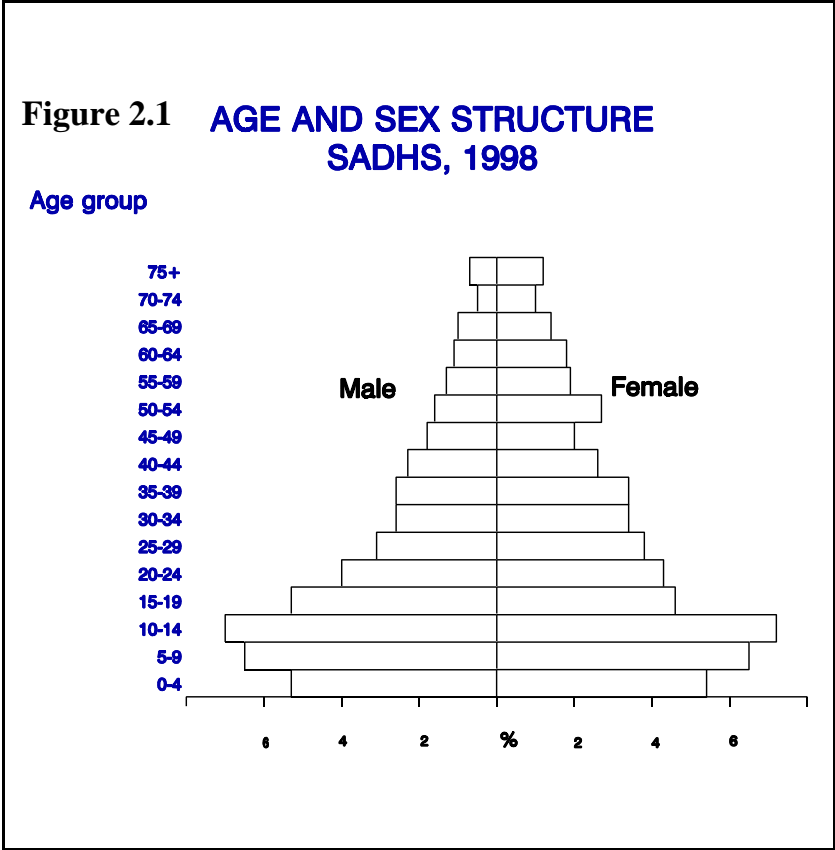


Table 2.2 Comparison of broad age structures

Age structure of the SADHS compared with the 1996 age structure.

Broad age groups	Comparative surveys (%)	
	SADHS, 1998	Population census, 1996a
Less than 15	37.9	33.9
15-64	56.3	60.2
65+	5.7	4.7
Missing/Don't know	0.2	1.2
Total	100.0	100.0
Median age	21.2	

Sources: (a) Stats SA, 1998

2.2 Household Composition

Table 2.3 shows that a large proportion (42 percent) of South African households are headed by women. In non-urban areas, half of all households have females as *de facto* heads. This phenomenon is partly explained by the absence of males due to their involvement in migrant labour. In urban areas the proportion of households headed by females is somewhat lower at 36 percent.

The average household size is 4.2; non-urban households on average are larger (4.7) than urban households (3.9). Twenty-four percent of households have foster children (individuals under 15 years of age who have no natural parents in the household). In urban areas the proportion of households with foster children is 17 percent, while it is double that in non-urban areas (34 percent).

Table 2.3 Household composition			
Percent distribution of households by sex of head of household, household size, and presence of foster children, according to residence, South Africa 1998			
Characteristic	Urban	Non-urban	Total
Household headship			
Male	63.8	50.0	58.1
Female	36.2	50.0	41.9
Number of usual members			
1	12.9	10.7	12.0
2	17.4	12.1	15.2
3	17.9	13.8	16.2
4	18.4	14.9	16.9
5	13.4	13.9	13.6
6	7.9	12.2	9.7
7	5.0	8.3	6.4
8	2.9	5.2	3.9
9+	4.2	8.8	6.1
Total	100.0	100.0	100.0
Mean size	3.9	4.7	4.2
Percent with foster children ¹	16.6	34.3	23.9

Note: Table is based on *de jure* members; i.e., usual residents.
¹ *Foster children* are children under age 15 living in households with neither their mother nor their father present.

Detailed information on fosterhood and orphanhood of children under 15 years of age is presented in Table 2.4. Only about one-third of children live with both parents. Even amongst children under age two years, two-thirds live in households with either only one or no parent present. Nearly 35 percent of all children under 15 live with only their mother present, while 3 percent live with their fathers only. Twenty-five percent of children live in households with neither parent present. Possible explanations for this high rate of fosterhood include the cultural norms of young unmarried mothers sending children back to their mothers (grandmothers) for care and also general marital instability and the widespread system of labour migration.

Table 2.4 Fosterhood and orphanhood

Percentage distribution of *de jure* children under age 15 by survival of parents and child's living arrangements, according to child's age, sex, residence, and province, South Africa 1998

Background characteristic	Living with both parents	Living with mother but not father		Living with father but not mother		Not living with either parent			Missing information on father/mother	Total	Number of children	
		Father alive	Father dead	Mother alive	Mother dead	Both alive	Father only alive	Mother only alive				Both dead
Age												
<2	33.3	45.4	2.4	1.7	0.1	12.1	0.4	0.5	0.2	3.8	100.0	3,269
3-5	34.1	33.7	3.8	1.9	0.2	19.5	0.8	2.0	0.4	3.6	100.0	3,529
6-9	32.9	27.4	5.0	2.6	0.3	23.1	1.0	2.7	0.6	4.4	100.0	5,539
10-14	32.0	21.9	6.6	3.1	0.7	23.0	1.4	3.9	1.3	6.1	100.0	7,366
Sex												
Male	33.0	29.3	4.9	2.8	0.4	20.1	1.0	2.9	0.8	4.8	100.0	9,748
Female	32.6	29.7	5.0	2.3	0.4	21.0	1.0	2.4	0.7	4.8	100.0	9,923
Residence												
Urban	42.0	25.1	4.9	2.6	0.6	15.1	1.1	2.3	0.8	5.5	100.0	8,993
Non-urban	25.1	33.1	5.0	2.4	0.2	25.2	1.0	2.9	0.8	4.2	100.0	10,710
Province												
Western Cape	51.8	22.8	4.8	2.0	1.3	9.0	0.7	1.3	0.8	5.4	100.0	1,518
Eastern Cape	22.0	28.7	5.6	2.5	0.4	31.5	1.1	3.9	1.1	3.3	100.0	3,534
Northern Cape	39.3	29.3	4.1	2.0	0.4	17.0	1.3	2.6	0.5	3.4	100.0	374
Free State	39.0	23.6	5.2	1.9	0.7	22.1	1.3	2.1	0.7	3.3	100.0	1,146
KwaZulu-Natal	30.6	28.6	5.5	4.0	0.3	20.6	1.4	3.0	1.0	5.1	100.0	4,457
North West	35.4	28.1	4.5	1.9	0.2	21.0	0.6	1.6	1.0	5.8	100.0	1,540
Gauteng	45.6	24.7	4.4	2.2	0.3	12.3	0.9	2.1	0.3	7.2	100.0	2,899
Mpumalanga	30.5	31.9	2.6	2.3	0.6	24.8	1.4	2.0	0.8	3.3	100.0	1,388
Northern	23.0	42.2	5.3	1.6	0.0	19.4	0.6	2.9	0.5	4.4	100.0	2,849
Total	32.8	29.5	5.0	2.5	0.4	20.6	1.0	2.7	0.8	4.8	100.0	19,703

Note: By convention, *foster children* are those who are not living with either biological parent. This includes *orphans*, i.e., children with both parents dead.

2.3 Educational Level of Household Members

The educational level of the household population six years and older is shown in Table 2.5. The information contained in the table reflects the highest level of education completed, according to age, urban/non-urban residence and province. In addition, the table provides the median years of education completed according to these background characteristics. Educational levels are slightly higher for males than females. Only 11 percent of men have never been to school, compared to 14 percent of women. Only a small percentage of the younger generation (ages 10-19) have no schooling at all. Urban residents are generally better educated than non-urban residents. Gauteng and the Western Cape – the two most developed provinces in the country - have conspicuously lower proportions of respondents with no educational qualifications (only 5 percent). A relatively large proportion of the household members have only attained some form of primary school education: 41 percent of females and 44 percent of males. Nearly 45 percent of males have attained a secondary education qualification, a level only marginally higher than that of females (44 percent). Only about 5 percent of both females and males have completed some form of tertiary education.

The drop-out rates in primary and secondary schools are relatively high. The median years of schooling is only six years. Of note is the steady increase in the median years of schooling from older to younger age cohorts. For example, compared to those aged 55-59, the median years of schooling of the age cohort 20-24 years had approximately doubled to 10 years.

Table 2.5 Educational level of the female and male household population

Percentage distribution of the *de facto* female and male household population age six and over by highest level of education completed, and median number of years of schooling, according to selected background characteristics, South Africa 1998

Background characteristics	Level of education								Number of women/ men	Median number of years of schooling
	No education	Sub A-Std 3	Std 4-Std 5	Std 6-Std 9	Std 10	Higher	Don't know/missing	Total		
FEMALE										
Age										
6-9	23.1	75.5	0.1	0.0	0.0	0.0	1.3	100.0	2,764	0.9
10-14	1.2	51.1	32.6	14.9	0.0	0.0	0.2	100.0	3,724	4.9
15-19	1.3	5.1	14.9	67.4	7.8	3.3	0.2	100.0	2,397	8.7
20-24	2.0	5.6	9.0	45.1	28.9	9.1	0.3	100.0	2,243	10.3
25-29	4.1	10.4	10.6	38.0	25.3	11.2	0.4	100.0	1,966	9.8
30-34	7.5	13.2	15.4	36.1	17.7	9.0	1.1	100.0	1,790	8.6
35-39	11.3	13.2	15.1	35.9	15.0	8.4	1.1	100.0	1,747	7.9
40-44	13.7	18.6	17.0	32.5	10.7	6.8	0.7	100.0	1,374	7.0
45-49	18.3	18.8	15.5	31.3	7.0	7.8	1.2	100.0	1,039	6.6
50-54	22.2	18.4	18.0	28.2	6.6	4.9	1.7	100.0	1,392	6.0
55-59	28.6	19.5	13.8	25.4	6.7	4.6	1.4	100.0	988	5.2
60-64	36.3	20.1	13.1	21.8	3.9	2.2	2.5	100.0	932	3.7
65+	44.7	19.3	10.3	17.7	3.3	3.0	1.6	100.0	1,853	2.0
Residence										
Urban	7.5	21.0	14.4	34.6	14.0	7.4	1.1	100.0	13,334	7.6
Non-urban	21.3	32.5	15.5	23.4	4.8	1.7	0.8	100.0	10,913	4.4
Province										
Western Cape	5.6	20.4	16.4	36.0	12.2	6.4	3.0	100.0	2,288	7.5
Eastern Cape	15.0	30.3	17.6	27.2	5.9	3.8	0.2	100.0	3,846	5.6
Northern Cape	15.4	26.0	18.6	27.3	9.1	3.3	0.3	100.0	506	6.1
Free State	13.4	27.4	16.6	29.8	8.3	4.2	0.3	100.0	1,538	6.1
KwaZulu-Natal	16.5	29.7	14.3	25.6	9.2	3.8	0.8	100.0	5,127	5.5
North West	16.2	26.4	15.1	28.6	8.2	4.6	0.9	100.0	1,955	6.0
Gauteng	4.8	19.2	12.7	36.8	17.5	7.9	1.0	100.0	4,499	8.3
Mpumalanga	18.2	27.6	14.6	26.4	8.6	3.8	0.8	100.0	1,587	5.5
Northern	22.7	28.6	13.2	25.7	5.0	3.5	1.2	100.0	2,900	4.7
Total	13.7	26.2	14.9	29.5	9.8	4.8	1.0	100.0	24,247	6.4
MALE										
Age										
6-9	27.4	71.6	0.1	0.0	0.0	0.0	0.9	100.0	2,747	0.7
10-14	2.1	61.0	26.2	10.2	0.0	0.0	0.5	100.0	3,618	4.3
15-19	1.2	10.6	19.0	61.0	6.5	1.3	0.4	100.0	2,765	8.1
20-24	2.4	7.8	10.0	43.7	26.8	8.8	0.6	100.0	2,062	10.0
25-29	3.7	10.4	11.1	37.8	25.2	11.1	0.7	100.0	1,613	9.8
30-34	4.7	11.9	11.8	36.9	22.8	10.7	1.2	100.0	1,364	9.3
35-39	5.8	13.7	16.0	34.3	17.8	10.3	2.1	100.0	1,361	8.7
40-44	9.6	18.4	15.3	34.2	12.2	10.1	0.3	100.0	1,170	7.5
45-49	10.3	19.5	13.5	32.3	13.4	9.0	1.9	100.0	928	7.4
50-54	15.6	16.2	13.4	31.5	10.8	9.1	3.4	100.0	812	7.2
55-59	21.5	21.3	13.3	25.2	8.5	8.2	2.0	100.0	667	6.2
60-64	32.1	17.5	11.2	24.1	7.3	5.7	2.1	100.0	556	4.8
65+	38.5	20.3	9.0	17.6	5.9	5.6	3.1	100.0	1,127	3.1
Residence										
Urban	6.0	23.0	13.2	33.2	15.0	8.1	1.5	100.0	11,761	7.7
Non-urban	16.5	37.8	15.0	23.1	4.9	1.8	0.9	100.0	9,080	4.4
Province										
Western Cape	5.2	23.7	15.2	33.7	11.7	6.9	3.6	100.0	2,204	7.4
Eastern Cape	13.8	36.3	16.3	23.8	6.0	3.6	0.2	100.0	3,170	5.0
Northern Cape	14.0	27.5	16.4	28.4	9.5	4.0	0.2	100.0	436	6.1
Free State	10.0	30.4	13.8	29.8	9.1	6.4	0.5	100.0	1,396	6.5
KwaZulu-Natal	12.5	30.9	13.3	26.6	11.3	4.3	1.2	100.0	4,351	6.0
North West	13.7	29.6	14.4	29.5	8.1	3.6	1.0	100.0	1,755	5.9
Gauteng	4.8	22.0	11.5	33.5	17.9	9.1	1.3	100.0	3,945	8.3
Mpumalanga	14.5	31.0	13.8	27.1	9.8	2.6	1.2	100.0	1,370	5.6
Northern	12.8	34.7	14.9	27.0	5.4	4.0	1.2	100.0	2,214	5.3
Total	10.6	29.5	14.0	28.8	10.6	5.3	1.2	100.0	20,841	6.4

Note: Total includes 38 women and 51 men for whom age is missing

2.4 School Attendance

School attendance ratios by age group, sex and residence for the population aged 6-24 are presented in Table 2.6. The school attendance ratio is the number of persons in a specific age group who are in school per hundred persons in that particular age group.

Age	Male			Female			Total		
	Urban	Non-urban	Total	Urban	Non-urban	Total	Urban	Non-urban	Total
6-10	91.0	84.9	87.6	91.5	87.9	89.5	91.3	86.4	88.6
11-15	94.9	93.4	94.1	95.6	94.0	94.8	95.2	93.7	94.4
6-15	93.0	89.1	90.9	93.6	91.0	92.2	93.3	90.0	91.5
16-20	71.2	77.0	74.0	67.1	70.2	68.5	69.3	73.9	71.4
21-24	23.9	34.2	27.8	26.2	27.8	26.9	25.1	30.6	27.3

Nearly 92 percent of children aged 6-15 are in school, with urban attendance higher than non-urban (93 versus 90 percent). In this age group, slightly more girls than boys are in school (92 versus 91 percent). Attendance rates among age group 11-15 are higher than for the 6-10 age group.

2.5 Grants and Pensions Received by the Households

Table 2.7 shows the prevalence of grants made to members of the household. Grants are defined as alimony, compensation for injuries, and state pensions. Less than 2 percent of the population below 25 years receive grants. The proportion receiving some kind of grant increases rapidly after age 50. In the case of women, 66 percent of those 60-64 receive a grant, while the proportion rises to 81 percent of those age 65 and older. For the males, the percentages are 28 and 66, respectively.

Table 2.7 Grants and pensions, employment status, recent injuries

Percent distribution of the *de-facto* male and female household population, by whether receiving a government grant or pension, whether currently working, and whether injured in the 30 days preceding the survey, South Africa 1998

Background characteristic	Receiving grant/pension			Working			Injured in last month			Total	Number
	Yes	No	Don't know/ missing	Yes	No	Don't know/ missing	Yes	No	Don't know/ missing		
FEMALE											
Age											
6-9	1.6	97.4	1.0	0.0	0.0	0.0	0.3	97.3	2.4	100.0	2,764
10-14	1.8	97.4	0.8	1.0	92.5	6.4	0.5	98.1	1.4	100.0	3,724
15-19	1.5	98.2	0.3	4.9	92.3	2.8	0.7	98.4	1.0	100.0	2,397
20-24	1.2	98.7	0.1	16.9	80.9	2.2	0.5	99.1	0.4	100.0	2,243
25-29	1.4	98.2	0.3	31.1	67.0	1.8	0.6	98.3	1.1	100.0	1,966
30-34	3.2	96.4	0.4	37.8	60.2	2.1	0.6	98.8	0.6	100.0	1,790
35-39	2.9	96.4	0.8	41.8	56.1	2.0	1.1	98.0	0.9	100.0	1,747
40-44	4.5	95.1	0.5	42.6	55.7	1.7	1.2	98.2	0.6	100.0	1,374
45-49	5.9	93.5	0.6	40.0	57.4	2.6	0.9	98.1	1.0	100.0	1,039
50-54	8.9	90.6	0.4	35.7	62.0	2.4	1.1	97.7	1.2	100.0	1,392
55-59	18.4	81.1	0.5	26.0	72.9	1.2	1.2	98.1	0.7	100.0	988
60-64	65.9	34.0	0.1	8.8	87.4	3.9	1.1	97.8	1.2	100.0	932
65+	80.9	18.6	0.5	3.2	93.2	3.6	1.4	97.8	0.9	100.0	1,853
Residence											
Urban	10.9	88.5	0.6	25.2	63.2	2.4	0.9	97.8	1.3	100.0	13,334
Non-urban	12.9	86.6	0.6	10.1	72.6	3.2	0.5	98.5	1.0	100.0	10,913
Province											
Western Cape	11.8	87.8	0.4	33.3	55.1	3.0	0.9	98.7	0.4	100.0	2,288
Eastern Cape	15.4	84.4	0.2	10.7	74.7	1.1	0.6	99.1	0.4	100.0	3,846
Northern Cape	20.0	79.7	0.3	20.6	67.9	1.0	0.6	98.8	0.6	100.0	506
Free State	12.8	87.1	0.1	24.1	65.7	0.1	0.4	99.6	0.1	100.0	1,538
KwaZulu-Natal	12.5	86.9	0.6	15.3	68.9	3.6	0.5	96.9	2.7	100.0	5,127
North West	11.6	88.0	0.4	16.0	68.1	3.4	0.7	98.5	0.8	100.0	1,955
Gauteng	7.7	91.5	0.8	26.8	62.1	2.7	1.6	97.0	1.4	100.0	4,499
Mpumalanga	9.6	90.1	0.3	15.4	68.8	3.3	0.4	98.8	0.7	100.0	1,587
Northern	11.6	87.2	1.3	9.1	72.6	4.3	0.6	98.7	0.7	100.0	2,900
Total	11.8	87.6	0.6	18.4	67.4	2.8	0.8	98.1	1.1	100.0	24,247
MALE											
Age											
6-9	1.2	97.8	1.0	0.0	0.0	0.0	0.7	97.4	1.9	100.0	2,747
10-14	1.9	97.2	0.9	0.7	92.0	7.3	0.8	98.0	1.3	100.0	3,618
15-19	1.8	97.5	0.7	6.1	90.1	3.8	1.1	97.9	1.0	100.0	2,765
20-24	1.2	98.4	0.3	29.1	68.7	2.2	1.2	98.1	0.7	100.0	2,062
25-29	2.7	96.9	0.4	54.4	44.3	1.3	1.6	97.6	0.8	100.0	1,613
30-34	2.8	97.0	0.2	64.6	34.0	1.4	1.8	97.7	0.5	100.0	1,364
35-39	3.0	96.6	0.4	67.2	30.3	2.5	2.5	97.1	0.4	100.0	1,361
40-44	4.8	94.7	0.5	63.6	33.8	2.6	2.5	97.4	0.1	100.0	1,170
45-49	5.9	93.9	0.2	63.7	35.0	1.2	2.6	97.0	0.5	100.0	928
50-54	9.4	90.3	0.3	61.1	37.7	1.2	3.6	95.8	0.5	100.0	812
55-59	10.2	89.6	0.2	49.5	48.8	1.7	1.8	97.7	0.5	100.0	667
60-64	28.0	71.9	0.1	33.7	64.7	1.6	1.1	98.5	0.4	100.0	556
65+	66.1	33.5	0.4	10.8	85.0	4.3	1.7	97.7	0.6	100.0	1,127
Residence											
Urban	6.8	92.7	0.5	36.3	50.4	2.6	1.9	97.2	1.0	100.0	11,761
Non-urban	7.3	92.1	0.6	18.5	61.4	3.5	1.0	98.2	0.8	100.0	9,080
Province											
Western Cape	8.3	91.3	0.3	45.7	41.8	3.7	2.8	96.7	0.5	100.0	2,204
Eastern Cape	9.2	90.6	0.2	15.9	67.1	1.1	1.2	98.5	0.3	100.0	3,170
Northern Cape	15.9	83.8	0.3	36.4	51.2	0.8	1.4	98.1	0.5	100.0	436
Free State	7.3	92.6	0.1	30.5	56.0	0.2	0.7	99.2	0.1	100.0	1,396
KwaZulu-Natal	7.0	92.3	0.7	26.3	56.1	4.3	1.2	96.9	1.9	100.0	4,351
North West	6.0	93.3	0.7	28.2	56.1	3.3	0.8	98.0	1.2	100.0	1,755
Gauteng	4.1	95.1	0.8	38.8	47.7	2.5	2.2	96.8	1.0	100.0	3,945
Mpumalanga	6.9	92.8	0.4	27.5	54.0	3.6	1.6	97.6	0.7	100.0	1,370
Northern	6.5	92.3	1.2	13.7	63.8	4.7	0.8	98.8	0.4	100.0	2,214
Total	7.0	92.4	0.6	28.5	55.2	3.0	1.5	97.6	0.9	100.0	20,841

Note: Total includes 38 women and 51 men for whom age is missing

2.6 Housing Characteristics

Type of housing

The housing characteristics of the households included in the SADHS sample are shown in Table 2.8. These environmental characteristics have important implications for exposure to disease and also reflect at the same time household economic status. Fifty-one percent of all homes have plaster as the main wall finish. In urban areas where many shack settlements are located, 16 percent of the homes have plastic, cardboard or corrugated iron as the main wall material. In non-urban areas, mud and plaster are the most commonly used wall materials.

The SADHS collected information on the number of rooms used for sleeping as a measure of overcrowding. The mean number of persons per room used for sleeping is 2.1. This average is slightly higher for non-urban areas (2.3 persons per room) than urban areas (2.0).

Respondents in just over half (52 percent) of all households say they never go hungry, while almost one-third say they sometimes go hungry and 11 percent report that their households often experience hunger. Hunger is more of a problem in non-urban than urban households. Fifty-six percent of non-urban households experience hunger sometimes or often compared to only 33 percent of urban households.

Table 2.8 Housing characteristics

Percent distribution of households by housing characteristics, according to residence, South Africa 1998

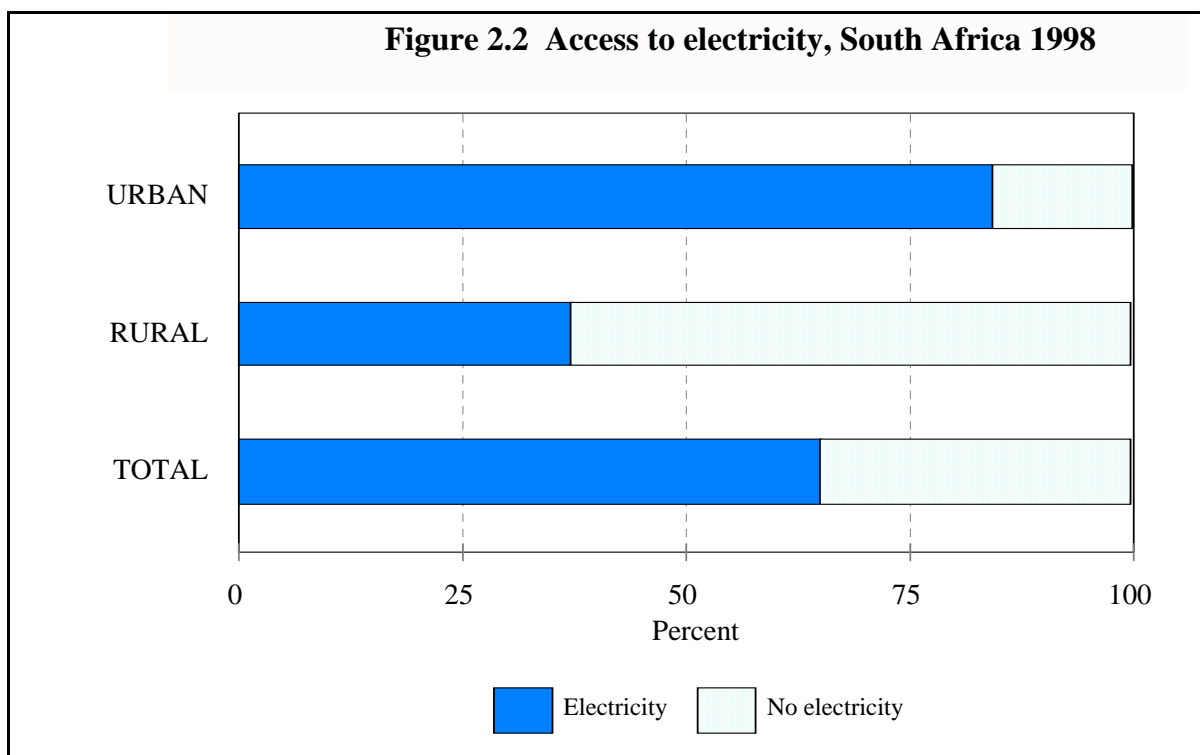
Characteristic	Residence		Total
	Urban	Non-urban	
Electricity			
Yes	84.2	37.1	64.9
No	15.4	62.3	34.6
Missing/Don't know	0.4	0.7	0.5
Total	100.0	100.0	100.0
Fuel used for cooking¹			
Electricity	73.1	22.6	52.4
Gas	8.4	6.0	7.4
Paraffin	29.0	39.5	33.3
Wood	4.9	55.6	25.7
Coal	8.9	8.5	8.7
Animal dung	0.1	2.1	0.9
Other	0.8	0.1	0.5
Source of drinking water			
Piped into residence	59.0	10.0	38.9
Piped water in site/yard	27.6	16.5	23.0
Public tap	11.3	31.3	19.5
Borehole/well	0.2	7.0	3.0
Dam/river/stream/spring	0.2	28.5	11.8
Rain-water tank	0.0	1.6	0.7
Water carrier/tanker	0.3	1.8	1.0
Bottled water	0.1	0.2	0.1
Other	0.6	2.5	1.4
Missing	1.0	1.0	1.0
Total	100.0	100.0	100.0
Time to water source			
<15 minutes	95.4	55.2	79.0
Sanitation facility			
Own flush toilet	73.1	6.9	46.0
Shared flush toilet	6.5	0.7	4.1
Traditional pit toilet	8.0	3.1	6.0
Vent. improved pit latrine	9.5	62.5	31.2
No facility	2.0	25.6	11.6
Other	0.4	0.4	0.4
Missing/Don't know	0.6	0.7	0.7
Total	100.0	100.0	100.0

Table 2.8 Housing characteristics...continued

Characteristic	Residence		Total
	Urban	Non-urban	
Main floor material			
Mud, sand, dung	4.8	32.1	16.0
Wood planks	1.7	0.7	1.3
Cement	24.0	46.1	33.1
Vinyl	24.1	10.6	18.5
Carpet	29.4	8.1	20.7
Ceramic tile	11.5	0.9	7.2
Parquet/polish wood	3.2	0.6	2.1
Other	0.6	0.1	0.4
Missing/Don't know	0.8	0.7	0.8
Total	100.0	100.0	100.0
Main wall material			
Plastic/Cardboard	4.6	0.6	3.0
Mud	2.3	31.5	14.3
Mud and cement	4.1	15.8	8.9
Corrugated iron/zinc	11.4	3.2	8.0
Prefab	0.5	0.2	0.4
Bare brick/Cement block	10.3	14.3	12.0
Plaster/Finished	64.1	31.6	50.8
Other	1.3	0.8	1.1
Missing	1.3	2.0	1.6
Total	100.0	100.0	100.0
Frequency of household hunger			
Often	8.2	14.7	10.8
Sometimes	24.4	41.7	31.5
Seldom	4.6	4.2	4.5
Never	61.2	37.9	51.6
Missing	1.6	1.5	1.6
Total	100.0	100.0	100.0
Persons per sleeping room			
1-2	78.5	70.9	75.4
3-4	16.2	20.5	18.0
5-6	3.3	5.4	4.2
7+	1.0	1.8	1.3
Missing /Don't Know	0.9	1.5	1.1
Total	100.0	100.0	100.0
Mean	7,227	5,020	12,247
Total			

¹ May add to more than 100. since multiple answers were allowed.

Almost two in three South African households have access to electricity. There is a significant difference in access to electricity between urban and non-urban areas in the country. Only 37 percent of non-urban households have electricity, compared to 84 percent of urban households (see Figure 2.2).



Just over half (52 percent) of all South African households use electricity as the main source of energy for cooking, while one-third use paraffin and one-quarter use wood (see Table 2.9). Nearly three-quarters (73 percent) of urban households use electricity as source of energy for cooking and 29 percent use paraffin. Fifty-six percent of non-urban households use wood as their main source of energy for cooking.

2.7 Water and Sanitation

Thirty-nine percent of all households have piped water in the residence and 23 percent have piped water in the yard or on the site. For urban households, piped water in the residence is the main source of drinking water (59 percent). Only 10 percent of non-urban residents get their drinking water from piped water in their residences. Public taps are the main source of drinking water for 31 percent of non-urban households. The overwhelming majority of urban households are within 15 minutes of a source of drinking water, compared to 55 percent of non-urban households.

A large proportion of households in non-urban areas do not have access to potable water in their dwellings or on their stands. Hence it has to be fetched, sometimes from a distant source, a task usually undertaken by women or younger children. Table 2.9 shows the percentage of households that fetch their drinking water and, of these, a breakdown by the person(s) who fetched water the day before the survey and the average time it takes to fetch the water and return. From the table it is clear that many households have no choice but to fetch water. Three provinces have markedly high proportions of households that have to fetch water, namely the Northern Province (62 percent), the Eastern Cape (59 percent) and KwaZulu-Natal (54 percent).

The findings indicate that it is mainly women who are burdened with the task of fetching water. For example, in the Eastern Cape, among the households that fetch their drinking water, 76 percent said water was fetched by

women, compared to only 14 percent who said water was fetched by men. This burden is exacerbated by the amount of time it takes to fetch water. The Eastern Cape and KwaZulu-Natal have the largest proportion (40 percent or more) of households that spend 30 minutes or longer to fetch water.

Eighty-seven percent of South African households have toilet facilities. The majority of urban households (80 percent) have flush toilets. Most non-urban households (66 percent) have pit latrines. About one-quarter of non-urban households do not have toilet facilities (see Table 2.10).

Table 2.9 Fetching water									
Percentage of households that fetch drinking water, persons who fetched water the day before the interview and percent distribution of households by time taken to collect water, according to background characteristics, South Africa 1998									
Characteristic	% households that fetched water	Among those households, percentage who said water was fetched yesterday by:				Time taken to collect water			Number
		Woman	Man	Girl	Boy	<15 min	15-29 min	30+ min	
Residence									
Urban	12.4	65.8	27.1	12.8	8.0	70.6	17.0	12.4	892
Non-urban	69.3	68.0	17.3	20.2	10.2	39.0	23.5	37.5	3,476
Province									
Western Cape	3.8	(39.9)	(52.3)	(2.7)	(5.1)	(64.7)	(22.6)	(12.7)	47
Eastern Cape	59.3	75.7	13.9	23.5	7.7	35.9	23.7	40.4	1,096
Northern Cape	10.1	46.5	42.6	8.2	11.8	72.9	8.6	18.5	27
Free State	11.3	62.3	27.4	13.4	6.5	71.6	22.7	5.6	183
KwaZulu-Natal	54.3	65.7	17.0	24.0	12.8	33.4	24.5	42.1	1,314
North West	41.0	55.8	43.4	11.0	11.9	61.6	22.4	15.9	405
Gauteng	11.5	72.3	21.3	7.6	5.3	84.5	9.6	5.9	294
Mpumalanga	32.8	62.7	29.8	21.8	11.2	58.6	17.1	24.3	242
Northern	62.1	68.9	14.1	12.5	8.4	43.8	22.7	33.5	760
Total	35.8	67.6	19.3	18.7	9.8	45.5	22.1	32.4	4,368

Note: Parenthesis indicate that a figure is based on 25-49 respondents.

2.8 Household Durable Goods

The presence of durable consumer goods is a measure of household socio-economic status. Table 2.10 shows the percent distribution of households by durable consumer goods owned, such as radios, television sets, telephones, and automobiles. A radio is available in 80 percent of households, a telephone in 28 percent, and an automobile in 25 percent. About 12 percent of the households do not have any of the durable consumer goods asked about in the survey. Ownership of durable goods differs by place of residence. Seventy-three percent of urban households have a television set, compared to 35 percent of non-urban households. Similarly, 69 percent of urban households have a refrigerator and 43 percent have a telephone, compared to 24 and 6 percent respectively of non-urban households. Overall, 8 percent of urban and 17 percent of non-urban households have none of the listed durable goods.

Durable goods	Urban	Non-urban	Total
Radio	84.5	73.5	80.0
Television	73.2	35.0	57.6
Telephone	43.3	6.1	28.0
Refrigerator	68.5	24.4	50.4
Bicycle	19.3	13.4	16.9
Personal computer	9.7	1.5	6.3
Washing machine	32.4	5.2	21.3
Motorcycle	2.2	1.3	1.8
Private car	34.3	11.8	25.1
Donkey/horse	0.3	5.3	2.4
Sheep/cattle	0.9	23.1	10.0
None of the above	8.0	16.7	11.6
Number of households	7,227	5,020	12,247

2.9 Characteristics of Women Aged 15-49 Years

Age distribution

A total of 11,735 women aged 15 to 49 were interviewed in the SADHS. They completed both a Woman's and Adult Health Questionnaire. In Table 2.11 below, their age distribution is compared with the age distribution of the women in reproductive ages in the 1996 Census. The two age schedules are fairly comparable. Also, no significant differences are apparent between the household population and individual respondents as a group in terms of age, residence, province and population group. The distributions of respondents to the women's questionnaire according to selected characteristics are presented in Table 2.11.

Age group	1996 Census*	1998 SADHS
15-19	19.5	19.2
20-24	18.9	17.7
25-29	16.9	15.8
30-34	14.7	14.1
35-39	12.5	13.9
40-44	10.1	11.0
45-49	7.1	8.3
Total	100	100

* Source: Statistics South Africa, 1998.

Table 2.12 Background characteristics of respondents

Percent distribution of women aged 15-49 by selected background characteristics, South Africa 1998

Background characteristic	Weighted percent	Number of women	
		Weighted	Un-weighted
Age			
15-19	19.2	2,249	2,373
20-24	17.7	2,075	2,086
25-29	15.8	1,857	1,811
30-34	14.1	1,654	1,616
35-39	13.9	1,636	1,628
40-44	11.0	1,294	1,255
45-49	8.3	970	966
50-54			
Residence			
Urban	60.5	7,095	6,518
Non-urban	39.5	4,640	5,217
Province			
Western Cape	10.2	1,193	919
Eastern Cape	13.3	1,566	2,756
Northern Cape	2.2	253	1,041
Free State	6.5	763	936
KwaZulu-Natal	20.1	2,364	1,826
North West	7.7	909	931
Gauteng	21.7	2,552	1,057
Mpumalanga	7.0	819	1,131
Northern	11.2	1,316	1,138
Marital status			
Never married	48.3	5,665	5,811
Married	33.7	3,957	3,956
Living together	9.5	1,119	992
Widowed	2.4	285	296
Divorced	2.2	256	234
Not living together	3.9	452	446
Education			
No education	6.8	804	810
Sub A - Std 3	11.0	1,291	1,359
Std 4 - Std 5	13.8	1,625	1,775
Std 6 - Std 9	44.2	5,181	5,175
Std 10	16.4	1,922	1,754
Higher	7.8	912	862
Population group			
African	77.9	9,147	8,993
Afr. urban	41.5	4,873	4,274
Afr. non-urban	36.4	4,274	4,719
Coloured	10.2	1,201	1,533
White	7.8	916	755
Asian	3.5	406	393
Missing	0.6	66	61
Total	100.0	11,735	11,735

Educational level of women aged 15-49 years

Twenty-four percent of women aged 15-49 have completed Standard 10 or have a higher qualification (Table 2.13). A clear cohort effect is observable in the educational attainment of women. The proportion of women who have received no education increases with age. Conversely, the proportion of women with a given educational level increases in each younger age category. A good example is the category Standard 6-9. Although the age group 15-19 cannot be considered due to the fact that they may not yet have completed their schooling (age censoring), 46 percent of the women in the age group 20-24 are found in this category. This proportion declines with age and in the age group 45-49 only 31 percent have attained this level. Regarding women who have completed Standard 10, the linear relationship between age and educational attainment remains constant.

Table 2.13 Level of education

Percent distribution of women aged 15-49 by the highest level of education completed and population group, according to selected background characteristics, South Africa 1998

Background characteristic	Highest level of education completed						Population group					Total	Number
	No education	Sub A-Std 3	Std 4-Std 5	Std 6-Std 9	Std 10	Higher	African	Coloured	White	Asian			
Age													
15-19	0.9	5.1	14.9	68.6	7.9	2.7	80.1	9.2	7.2	3.0	100.0	2,249	
20-24	1.7	5.7	8.5	46.3	28.0	9.8	84.1	8.7	3.7	2.9	100.0	2,075	
25-29	4.3	10.2	11.0	39.2	24.3	11.0	78.6	11.4	6.7	2.8	100.0	1,857	
30-34	7.7	12.6	15.0	38.0	17.4	9.2	76.0	10.6	8.7	4.0	100.0	1,654	
35-39	12.1	13.9	15.7	35.7	14.5	8.2	75.6	11.5	8.7	3.7	100.0	1,636	
40-44	13.2	18.4	18.1	33.7	10.1	6.5	74.0	10.3	10.9	4.3	100.0	1,294	
45-49	18.1	20.1	17.3	31.2	5.7	7.5	70.9	10.5	13.0	4.8	100.0	970	
Residence													
Urban	3.3	7.0	12.0	46.4	20.6	10.7	68.7	13.9	11.2	5.6	100.0	7,095	
Non-urban	12.2	17.1	16.7	40.7	10.0	3.3	92.1	4.6	2.6	0.2	100.0	4,640	
Province													
Western Cape	2.0	8.6	14.4	46.7	18.3	10.0	24.6	63.0	10.8	0.6	100.0	1,193	
Eastern Cape	5.1	12.5	18.5	45.8	11.3	6.8	85.4	8.8	4.8	0.5	100.0	1,566	
Northern Cape	8.5	13.5	19.1	40.2	13.6	5.1	29.0	59.4	11.4	0.0	100.0	253	
Free State	4.6	11.2	16.0	46.8	14.8	6.7	86.4	2.9	10.5	0.2	100.0	763	
KwaZulu-Natal	10.5	14.5	12.8	38.8	16.8	6.5	81.3	1.2	3.8	13.0	100.0	2,364	
North West	7.9	10.5	15.4	42.6	15.3	8.3	91.2	3.3	4.2	0.8	100.0	909	
Gauteng	2.9	6.5	10.5	47.2	23.1	9.8	76.7	3.0	17.9	2.0	100.0	2,552	
Mpumalanga	10.3	13.6	13.7	41.2	14.4	6.7	96.2	0.4	2.2	0.7	100.0	819	
Northern	12.5	11.9	12.9	45.8	10.3	6.6	97.9	0.0	0.0	1.4	100.0	1,316	
Total	6.8	11.0	13.8	44.2	16.4	7.8	77.9	10.2	7.8	3.5	100.0	11,735	

Considering the relatively low educational level of the majority of women in South Africa it is of interest to note the reasons that respondents provided for stopping schooling (Table 2.14). Two reasons predominate: "falling pregnant" is reported by 17 percent of women who failed to complete their primary education and 10 percent of women who failed to complete their secondary education. Socio-economic conditions and poverty are reported by 20 percent of women who did not complete primary education.

Table 2.14 Reasons for leaving school

Percent distribution of women aged 15-24 who had ever attended school by reason for leaving school, according to highest level of education completed, South Africa 1998

Reason stopped attending school	Highest level of education					Total
	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete	Higher	
Currently attending	38.2	61.0	71.3	28.7	47.5	58.3
Got pregnant	17.2	12.3	10.4	5.4	2.4	9.8
Got married	4.3	3.8	2.0	1.3	0.0	2.1
Take care of children	0.9	1.8	0.8	0.7	0.2	0.8
Family need help	1.2	0.1	0.3	0.8	0.0	0.5
Could not pay school fees	17.4	8.1	4.3	20.8	5.1	8.8
Need to earn money	2.6	2.7	2.1	11.6	2.1	3.9
Graduated, enough	0.1	0.3	0.3	21.5	35.5	6.2
Did not pass exams	0.6	0.5	0.9	1.5	0.0	0.9
Did not like school	4.3	3.1	2.1	0.2	0.5	2.0
School not accessible	1.1	0.0	0.2	0.2	0.0	0.3
Other	9.4	5.7	3.3	4.5	2.6	4.3
Missing	2.7	0.7	1.9	2.6	4.2	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	396	349	2 503	759	264	4,271

Marital status

The age distribution of women according to their marital status is shown in Table 2.15. Forty-eight percent of women of reproductive age have never married or are not currently living in a union. In the age group 25-29, 47 percent of women have not yet married, while almost 12 percent of women aged 45-49 have never been married.

Figure 2.3 shows women included in the sample by marital status. Only one-third of women aged 15-49 are currently married. The proportion married increases steadily with age. Between ages 35 and 49 the proportion married stabilises at just below 60 percent. Approximately 10 percent of all women are cohabiting with a man and 6 percent of the respondents are either divorced or separated.

Table 2.15 Current marital status

Percent distribution of women by current marital status, according to age, South Africa 1998

Age groups	Current marital status						Total	
	Never married	Married	Living together	Widowed	Divorced	Separated	Total	Number
15-19	95.9	1.2	2.0	0.0	0.0	0.9	100.0	2,249
20-24	75.4	11.9	10.5	0.1	0.3	1.8	100.0	2,075
25-29	46.5	34.2	14.3	0.8	1.0	3.2	100.0	1,857
30-34	28.9	49.3	11.7	2.1	2.9	5.2	100.0	1,654
35-39	18.5	58.0	10.1	3.6	3.7	6.2	100.0	1,636
40-44	14.6	55.4	11.5	6.4	4.9	7.3	100.0	1,294
45-49	11.5	58.8	8.5	9.7	6.1	5.5	100.0	970
Total	48.3	33.7	9.5	2.4	2.2	3.9	100.0	11,735

Figure 2.3 Marital status of women, South Africa 1998

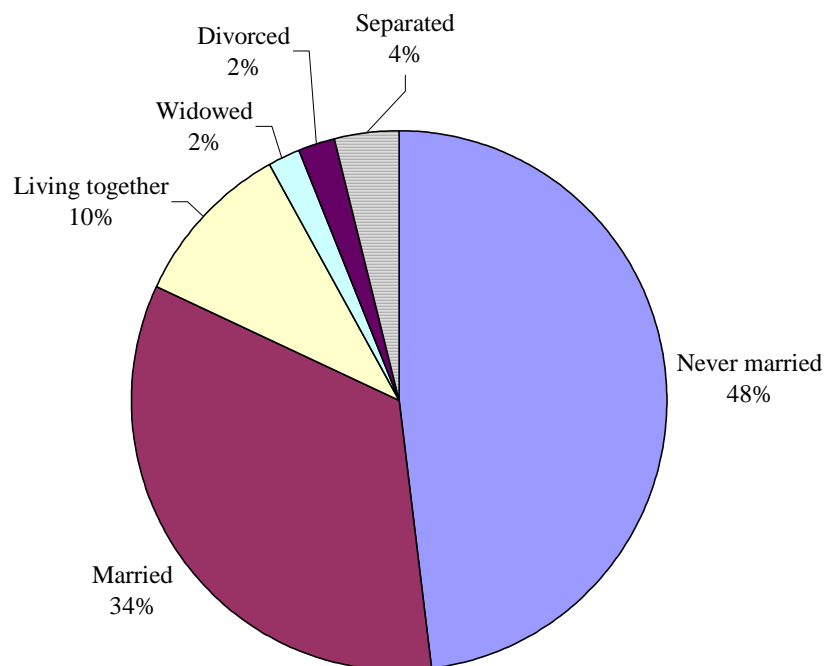


Table 2.16 Polygyny

Percentage of currently married women in a polygynous union, by age and selected background characteristics, South Africa 1998

Background characteristic	Age group						All women
	20-24	25-29	30-34	35-39	40-44	45-49	
Residence							
Urban	6.7	10.7	11.9	8.5	8.4	8.7	9.6
Non-urban	12.5	10.5	19.8	15.8	24.0	18.3	16.8
Province							
Western Cape	(7.6)	8.0	6.3	4.1	2.7	1.9	5.1
Eastern Cape	4.9	4.2	3.5	5.5	4.9	4.9	4.6
Northern Cape	(4.5)	7.3	8.8	9.5	9.3	5.5	7.8
Free State	14.3	5.0	5.9	9.0	3.0	(10.7)	7.3
KwaZulu-Natal	13.0	9.2	22.4	14.8	28.8	17.5	17.9
North West	(7.2)	10.8	15.9	10.8	13.8	(14.6)	12.7
Gauteng	(6.8)	13.5	16.5	9.9	9.7	11.4	11.9
Mpumalanga	12.3	14.1	23.8	21.1	27.9	20.7	20.7
Northern	11.4	14.8	20.8	19.0	28.0	19.1	18.9
Education							
No education	*	(23.1)	25.3	29.1	32.1	18.9	26.3
Sub A - Std 3	(17.3)	15.2	27.9	17.1	16.2	20.4	19.1
Std 4 - Std 5	11.2	7.8	11.5	15.0	18.8	11.2	13.1
Std 6 - Std 9	10.4	13.1	14.8	6.9	8.1	9.5	10.9
Std 10	3.2	5.9	9.2	3.3	7.2	(0.0)	5.8
Higher	*	1.3	1.8	2.6	4.3	(1.7)	2.2
Population group							
African	10.7	12.9	20.1	14.8	19.3	17.5	16.3
Afr. urban	7.8	14.3	18.4	12.4	12.1	14.6	14.0
Afr. non-urban	13.0	11.5	21.9	17.2	27.8	20.0	18.5
Coloured	(2.6)	7.7	5.3	3.3	4.0	1.4	4.5
White	*	2.9	0.8	1.2	0.7	2.3	1.7
Asian	*	(0.0)	0.0	5.6	(6.8)	(2.5)	3.1
Total	9.5	10.6	14.9	11.3	14.1	12.4	12.5

Note: There were too few cases (73) of married women in the 15-19 age group to show separately. Parentheses indicate that a figure is based on 25-49 respondents. An asterisk indicates a figure is based on fewer than 25 respondents and has been suppressed.

Polygyny

The prevalence of polygynous unions in South Africa was measured in the SADHS by asking currently married females the question: “Besides yourself, how many other wives does your husband have?” Thirteen percent of currently married women in South Africa reported that they are in a polygynous union (Table 2.16). Among African women, where polygynous unions most often occur, no discernible trend according to age is apparent from the data. However, between the ages of 30 and 49, between one-sixth and one-fifth of women are married to a man with more than one wife.

Age at first marriage

The median age at first marriage has increased from 22.6 years among women 45-49 to 24.7 among women in the age group 30-34 (see Table 2.17). From the data it appears that early marriage is becoming progressively rare. The proportion of women married by the exact age of 20 declined from 30 percent among women in the age group 45-49 to 14 percent among women aged 20-24 years. Overall, about one-quarter of South African women marry by age 20.

Current age	Percentage who were first married by exact age:					Percentage who had never married	Number of women	Median age at first marriage
	15	18	20	22	25			
15-19	0.4	NA	NA	NA	NA	95.9	2,249	a
20-24	1.1	7.9	14.2	NA	NA	75.4	2,075	a
25-29	2.5	11.0	20.2	30.9	44.1	46.5	1,857	a
30-34	2.9	14.2	26.9	36.7	51.5	28.9	1,654	24.7
35-39	5.0	16.9	29.5	43.0	57.2	18.5	1,636	23.3
40-44	3.1	15.1	30.3	44.9	59.9	14.6	1,294	23.1
45-49	2.8	13.2	30.0	46.7	61.9	11.5	970	22.6
Median for women 20-49	2.8	12.7	24.0	35.3	47.4	37.0	9,486	b
Median for women 25-49	3.3	14.0	26.8	39.4	53.7	26.2	7,411	24.2

NA = Not applicable
^a Less than 50 percent of respondents in age group x to $x+4$ were married by age x
^b Not calculated due to censoring

Table 2.18 shows the median age at first marriage for women aged 25-49 by selected background characteristics. The median age at first marriage for all women is 24 years. There are some striking differentials in the median age at first marriage by certain background characteristics such as province and educational level.

Whereas the median age at first marriage is about 23 years in Mpumalanga, it is nearly 25 years in the Western Cape. Age at first marriage exhibits a positive relationship with the educational level of respondents. The median age at first marriage among those with no education is approximately 21 years, while it is nearly 25 years for those with a Std 6-Std 9 qualification.

Table 2.18 Median age at first marriage						
Median age at first marriage among women aged 25-49 years, by current age and selected background characteristics, South Africa 1998						
Background characteristic	Current age					Women aged 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Urban	a	25.8	24.3	23.6	22.9	24.8
Non-urban	a	22.4	21.7	21.6	21.8	22.9
Province						
Western Cape	a	25.4	22.7	22.5	23.8	24.5
Eastern Cape	a	24.7	23.4	22.7	22.8	24.2
Northern Cape	a	27.0	25.0	24.5	23.7	a
Free State	24.0	22.5	21.3	21.8	21.5	22.3
KwaZulu-Natal	a	25.7	24.9	24.4	23.8	a
North West	a	27.3	25.7	23.2	22.4	a
Gauteng	24.8	25.2	24.8	24.3	22.4	24.4
Mpumalanga	a	23.6	21.0	21.7	21.7	23.2
Northern	23.3	21.4	19.4	19.4	20.7	20.6
Education						
No education	24.9	19.9	20.3	22.0	21.7	21.4
Sub A - Std 3	23.7	23.9	21.9	21.8	21.4	22.3
Std 4 - Std 5	a	23.1	23.2	23.1	24.6	23.8
Std 6 - Std 9	a	25.4	24.7	23.9	22.7	24.6
Std 10	a	26.2	24.4	21.7	22.2	a
Higher	a	25.5	23.9	23.6	24.4	a
Population group						
African	a	25.3	24.2	23.8	22.8	24.9
Afr. urban	a	27.5	26.4	25.4	23.7	a
Afr. non-urban	a	22.6	21.7	21.6	21.8	22.9
Coloured	a	25.2	24.1	23.4	25.7	a
White	22.0	22.0	21.1	21.2	21.2	21.4
Asian	21.8	20.6	20.4	20.3	21.7	21.0
Total	a	24.7	23.3	23.1	22.6	24.2

Note: Medians are not shown for women 20-24 because less than 50 percent of women had married by age 20.
^a Less than 50 percent of respondents in age group x to $x+4$ were first married by age x

Exposure to mass media

Table 2.19 provides information pertaining to the exposure of women to different types of mass media by age, residence, province, educational level and population group. Approximately 42 percent of the women read a newspaper at least once a week, 64 percent watch television once a week, while 72 percent listen to the radio every day. In urban areas a higher proportion watch television (79 percent) and listen to the radio (77 percent). In total, about 14 percent of the SADHS respondents are not exposed to mass media on a regular basis. African women in non-urban areas and those without any education or a low level of education have little exposure to a conventional mass media campaign.

Table 2.19 Access to mass media

Percentage of women aged 15-49 who usually read a newspaper once a week, watch television once a week, or listen to radio daily, by selected background characteristics, South Africa 1998

Background characteristic	Mass media					Number of women
	No mass media	Read newspaper weekly	Watch television weekly	Listen to radio daily	All three media	
Age						
15-19	13.5	41.9	64.6	70.6	30.1	2,249
20-24	14.5	42.7	62.4	71.3	29.4	2,075
25-29	12.3	44.1	63.3	72.6	29.8	1,857
30-34	12.0	42.0	66.5	75.0	31.6	1,654
35-39	14.2	42.9	64.7	71.7	30.5	1,636
40-44	13.0	39.2	65.0	71.6	29.2	1,294
45-49	16.1	36.4	63.4	69.1	28.3	970
Residence						
Urban	6.9	54.4	79.4	76.6	41.4	7,095
Non-urban	23.7	22.5	41.1	64.4	12.4	4,640
Province						
Western Cape	4.1	64.7	87.7	71.5	46.9	1,193
Eastern Cape	25.4	26.6	44.0	67.3	19.4	1,566
Northern Cape	11.1	54.9	73.4	63.2	36.1	253
Free State	7.5	38.1	77.1	81.5	31.4	763
KwaZulu-Natal	17.5	38.3	53.2	68.2	24.8	2,364
North West	11.0	50.4	74.3	73.8	37.1	909
Gauteng	7.3	54.5	78.0	76.8	41.7	2,552
Mpumalanga	12.7	28.5	66.1	70.8	20.1	819
Northern	19.2	22.7	43.0	69.5	12.8	1,316
Education						
No education	32.9	3.8	29.4	60.1	2.2	804
Sub A - Std 3	26.2	12.3	39.1	59.8	5.4	1,291
Std 4 - Std 5	19.9	22.0	51.6	64.4	12.8	1,625
Std 6 - Std 9	11.1	44.7	69.0	72.7	31.4	5,181
Std 10	4.1	66.9	80.9	82.6	51.5	1,922
Higher	1.1	82.9	90.9	84.6	66.2	912
Population group						
African	16.4	32.7	57.3	71.3	22.9	9,147
Afr. urban	8.9	43.7	73.8	77.8	33.8	4,873
Afr. non-urban	25.0	20.1	38.5	64.0	10.4	4,274
Coloured	5.4	64.8	84.7	65.0	43.9	1,201
White	0.2	86.7	94.0	83.1	68.4	916
Asian	1.0	78.6	93.1	78.2	61.1	406
Total	13.5	41.8	64.2	71.8	30.0	11,735

Employment and occupational status

The SADHS collected information from women regarding their employment status. The findings are shown in Table 2.20 by the usual background characteristics. Overall, 67 percent of women were not employed at the time of the survey, 28 percent were employed all year, 2 percent were employed seasonally and another 2 percent were employed occasionally. The proportions of unemployed women aged 15-19 (93 percent) and 20-24 (81 percent) are higher than the proportion of unemployed women aged 25 years and older. This is in part due to the fact that many of the younger respondents are still at school or furthering their education. Unemployment among women is higher in the non-urban than urban areas. Thirty-one percent of urban women and only 17 percent of non-urban women work all year.

The province with the smallest proportion of unemployed women during the previous 12 months preceding the survey is the Western Cape (42 percent). The provinces with the highest unemployment rates for women are the Northern Province (78 percent) and Eastern Cape (74 percent).

Educational level is related to employment status. A high percentage of women with no education are not employed (71 percent), compared to 52 percent of women with a Standard 10 certificate. Similarly, regular

full-time employment increases and seasonal employment decreases with an increase in the level of education. More African women (68 percent) are unemployed than women of other population groups (coloureds, 46 percent; whites, 33 percent; and Asians 55 percent).

Table 2.20 Employment

Percent distribution of women aged 15-49 by employment status and continuity of employment, according to selected background characteristics, South Africa 1998

Background characteristic	Not currently employed		Currently employed					Total	Number of women
	Did not work in last 12 months	Worked in last 12 months	All year		Seasonally	Occasionally	Missing		
			5+ days per week	<5 days per week					
Age									
15-19	89.2	3.7	2.7	1.4	0.9	1.6	0.5	100.0	2,249
20-24	75.3	5.5	13.9	1.6	2.2	1.0	0.6	100.0	2,075
25-29	59.0	5.4	27.6	3.1	2.6	1.8	0.5	100.0	1,857
30-34	50.6	5.9	34.4	3.8	2.9	1.7	0.7	100.0	1,654
35-39	46.8	4.7	39.5	4.7	2.4	1.8	0.2	100.0	1,636
40-44	47.0	2.8	39.5	5.3	1.6	2.9	0.8	100.0	1,294
45-49	49.6	2.3	37.6	4.4	2.4	3.2	0.5	100.0	970
Residence									
Urban	55.6	4.9	30.8	4.2	2.0	2.0	0.5	100.0	7,095
Non-urban	73.5	3.9	16.6	1.6	2.2	1.6	0.5	100.0	4,640
Province									
Western Cape	41.8	6.6	38.2	6.4	3.5	3.1	0.5	100.0	1,193
Eastern Cape	74.1	3.0	18.0	2.4	1.1	0.9	0.3	100.0	1,566
Northern Cape	63.5	2.5	27.9	2.9	1.7	1.2	0.3	100.0	253
Free State	56.6	4.4	32.7	3.0	1.9	1.2	0.2	100.0	763
KwaZulu-Natal	65.1	4.4	21.6	2.4	2.8	2.9	0.8	100.0	2,364
North West	66.9	5.8	21.9	2.9	1.5	0.6	0.4	100.0	909
Gauteng	54.5	6.3	30.5	4.4	1.9	2.0	0.5	100.0	2,552
Mpumalanga	66.7	2.8	24.1	1.9	2.3	1.1	1.0	100.0	819
Northern	77.5	1.9	16.0	1.4	1.5	1.2	0.5	100.0	1,316
Education									
No education	70.5	4.4	19.6	2.4	1.9	0.7	0.6	100.0	804
Sub A - Std 3	62.7	5.2	22.3	3.4	3.2	2.5	0.7	100.0	1,291
Std 4 - Std 5	65.4	4.1	23.3	2.3	3.0	1.6	0.4	100.0	1,625
Std 6 - Std 9	69.2	4.1	19.5	3.0	1.4	2.1	0.6	100.0	5,181
Std 10	52.0	5.4	34.5	3.9	2.5	1.3	0.3	100.0	1,922
Higher	36.4	5.0	49.9	4.6	1.9	1.6	0.6	100.0	912
Population group									
African	68.3	3.8	21.3	2.4	2.0	1.6	0.6	100.0	9,147
Afr. urban	61.6	4.1	26.7	3.3	2.1	1.5	0.6	100.0	4,873
Afr. non-urban	76.0	3.4	15.2	1.3	1.9	1.6	0.5	100.0	4,274
Coloured	45.8	7.1	36.4	6.0	2.4	1.8	0.5	100.0	1,201
White	32.5	8.5	46.0	6.3	2.2	4.5	0.0	100.0	916
Asian	54.5	5.0	32.1	4.5	1.6	2.0	0.2	100.0	406
Total	62.7	4.5	25.2	3.2	2.1	1.8	0.5	100.0	11,735

Place of employment and form of earnings

In Table 2.21 details are provided of the place of employment and the type of earnings of employed respondents. Seventeen percent of employed women are self-employed, while the vast majority of working women (79 percent) are employed by non-relatives and about 4 percent work for relatives. All but a small fraction of working women earn cash; 97 percent are paid in cash while less than 3 percent are either unpaid or paid in kind. KwaZulu-Natal (23 percent) and Mpumalanga (25 percent) have a larger proportion of women who are self-employed. A large proportion of women in all nine provinces are employed by non-relatives and earn cash. The distribution of employed women by employer and form of earnings varies little by level of education. Compared to other groups, a smaller proportion of coloured women (5 percent) are self-employed.

Table 2.21 Employer and form of earnings

Percent distribution of currently employed women aged 15-49 by employer and form of earnings, according to selected background characteristics, South Africa 1998

Background characteristic	Self-employed		Employed by a nonrelative		Employed by a relative		Missing	Total	Number of women
	Earns cash	Does not earn cash	Earns cash	Does not earn cash	Earns cash	Does not earn cash			
Age									
15-19	24.3	0.0	68.1	0.0	4.2	2.8	0.6	100.0	149
20-24	10.1	0.6	83.4	0.9	3.3	1.2	0.6	100.0	390
25-29	14.4	0.0	82.9	0.7	1.4	0.3	0.3	100.0	653
30-34	18.4	0.3	75.4	1.3	3.5	0.4	0.8	100.0	711
35-39	16.6	0.7	76.3	1.0	3.4	1.1	0.8	100.0	792
40-44	18.3	0.9	76.9	1.3	1.5	0.9	0.3	100.0	640
45-49	17.7	0.7	76.0	1.2	2.5	1.7	0.2	100.0	461
Residence									
Urban	14.6	0.2	80.4	1.0	2.5	0.9	0.4	100.0	2,771
Non-urban	22.1	1.3	70.4	1.2	3.1	1.1	0.8	100.0	1,024
Province									
Western Cape	8.1	0.0	87.2	0.2	2.8	0.4	1.2	100.0	614
Eastern Cape	15.2	0.3	79.5	2.9	1.6	0.2	0.2	100.0	354
Northern Cape	4.5	1.1	90.4	1.7	1.1	0.9	0.3	100.0	85
Free State	10.4	0.3	84.6	0.3	3.0	0.5	0.8	100.0	297
KwaZulu-Natal	22.9	0.4	71.1	0.4	3.2	1.5	0.4	100.0	704
North West	11.4	1.2	79.7	2.9	4.1	0.4	0.4	100.0	245
Gauteng	20.3	0.0	75.3	0.7	2.4	1.2	0.0	100.0	987
Mpumalanga	24.9	0.0	70.0	1.9	2.0	0.0	1.2	100.0	243
Northern	15.7	3.9	73.4	1.3	2.6	2.2	0.9	100.0	266
Education									
No education	16.9	0.0	80.0	1.6	0.6	0.0	0.9	100.0	198
Sub A - Std 3	24.5	1.1	70.3	0.3	2.8	0.3	0.8	100.0	408
Std 4 - Std 5	16.6	0.2	78.1	0.9	2.6	1.4	0.2	100.0	490
Std 6 - Std 9	18.7	0.6	75.9	0.9	2.4	0.9	0.6	100.0	1,354
Std 10	13.5	0.5	80.2	1.3	2.8	1.4	0.4	100.0	815
Higher	10.1	0.2	83.2	1.5	3.8	0.7	0.5	100.0	530
Population group									
African	19.1	0.7	75.4	1.4	2.3	0.6	0.5	100.0	2,505
Afr. urban	16.5	0.2	79.2	1.4	1.9	0.4	0.4	100.0	1,644
Afr. non-urban	24.2	1.5	68.2	1.4	3.0	1.0	0.7	100.0	861
Coloured	4.9	0.0	91.4	0.1	2.0	0.2	1.3	100.0	565
White	18.6	0.3	72.3	0.4	5.2	3.1	0.0	100.0	541
Asian	14.4	0.6	81.6	0.4	2.3	0.6	0.0	100.0	163
Total	16.6	0.5	77.7	1.0	2.7	0.9	0.5	100.0	3,795

Occupation

The distribution of employed women by occupation is presented in Table 2.22. Forty-four percent of the women are engaged in unskilled occupations, while 14 percent occupy professional, technical and management jobs and 17 percent occupy the middle white collar jobs. The majority of African non-urban women hold unskilled jobs (67 percent) compared to 51 percent of African urban women.

Background characteristic	Prof./tech./manag.	Middle white collar	Foreman & skilled artisan	Skilled manual	Unskilled manual	Other	Missing	Total	Number of women
Age									
15-19	2.3	21.9	6.5	22.2	37.0	9.3	0.7	100.0	149
20-24	10.1	23.9	4.9	16.2	36.1	7.8	1.0	100.0	390
25-29	14.8	22.8	6.7	10.3	41.3	3.7	0.3	100.0	653
30-34	16.9	17.0	5.6	13.9	40.8	4.9	0.9	100.0	711
35-39	16.3	16.1	5.3	12.9	43.8	4.9	0.9	100.0	792
40-44	14.6	12.1	7.5	11.8	48.6	4.6	0.7	100.0	640
45-49	14.1	13.1	5.0	8.2	56.3	3.0	0.2	100.0	461
Residence									
Urban	16.3	20.7	6.7	14.2	36.3	5.3	0.5	100.0	2,771
Non-urban	9.3	8.5	3.9	8.1	65.2	3.9	1.1	100.0	1,024
Province									
Western Cape	10.3	20.6	6.9	18.5	38.6	4.7	0.4	100.0	614
Eastern Cape	20.5	11.8	7.4	13.9	40.5	5.5	0.4	100.0	354
Northern Cape	13.2	19.3	4.2	10.4	45.7	4.8	2.3	100.0	85
Free State	14.1	16.8	6.4	10.0	46.5	5.7	0.5	100.0	297
KwaZulu-Natal	15.1	13.8	4.4	13.6	50.1	2.7	0.1	100.0	704
North West	16.8	15.5	4.4	8.4	48.0	6.0	0.8	100.0	245
Gauteng	14.3	23.4	6.5	12.2	37.9	5.4	0.2	100.0	987
Mpumalanga	10.9	10.6	5.3	6.8	58.4	5.0	2.9	100.0	243
Northern	16.4	12.4	5.6	8.6	48.7	6.1	2.2	100.0	266
Education									
No education	1.0	1.2	0.0	5.0	88.6	1.9	2.3	100.0	198
Sub A - Std 3	1.1	1.1	2.2	8.2	84.6	2.3	0.6	100.0	408
Std 4 - Std 5	0.8	2.7	4.2	13.0	76.0	2.7	0.7	100.0	490
Std 6 - Std 9	4.1	15.8	9.3	17.2	47.1	5.6	0.9	100.0	1,354
Std 10	17.1	40.0	7.0	12.7	15.9	7.0	0.4	100.0	815
Higher	64.5	18.9	2.4	6.7	2.3	5.0	0.2	100.0	530
Population group									
African	12.4	10.2	6.0	10.0	56.3	4.2	0.8	100.0	2,505
Afr. urban	13.6	12.1	6.9	11.6	50.7	4.4	0.6	100.0	1,644
Afr. non-urban	10.1	6.5	4.2	7.1	67.0	3.8	1.2	100.0	861
Coloured	11.5	19.6	4.9	20.0	38.7	4.7	0.6	100.0	565
White	27.0	41.9	5.9	13.4	3.4	8.4	0.1	100.0	541
Asian	13.6	40.5	9.1	21.4	10.8	3.9	0.7	100.0	163
Total	14.4	17.4	5.9	12.6	44.1	4.9	0.7	100.0	3,795

Educational level is clearly associated with type of occupation: women with no education or with primary education only are primarily engaged in unskilled occupations, while professional, technical and management jobs are occupied by women with a higher level of education. White women (27 percent) have a higher proportion of professionals than the other population groups. Younger women are less involved in unskilled manual occupations than older women.

There is a clear correlation between education level and occupation. Women with higher education are more likely to be in a professional/technical/management occupation (65 percent), while women with no education are more likely to be in unskilled occupations (89 percent).

Decision on use of earnings

Information on who decides how to use the cash earned by employed women may point to the status of women. Two-thirds (67 percent) make the decision themselves (Table 2.23). Twenty-one percent of women who earn cash make decisions jointly with their husbands/partners, while the partners of 3 percent of the women make the decisions about spending their earnings. There is little difference by age in decision making regarding earnings, except that fewer younger respondents (those between the ages of 15 and 24) make joint decisions with a partner on the use of earnings, mainly because fewer are married.

More urban women (23 percent) than non-urban women (18 percent) decide jointly with their partners on spending. Fewer women in KwaZulu-Natal (14 percent) than women in other provinces make joint decisions with their husbands on spending their earnings. In Gauteng and Northern Cape (29 percent and 31 percent) of women make decisions jointly with their partners. The partners of 6 percent of women earning cash in the Eastern Cape decide on how their earnings should be spent.

White women generally involve their husbands/partners to a larger extent in decision making about their earnings (36 percent) than is the case among African women (18 percent), Asian women (20 percent) and coloured women (23 percent). The majority of non-urban African women (72 percent) make such decisions on their own, largely due to the fact that either they are not married or their husbands/partners work away from home and return only on occasion.

Table 2.23 Decision on use of earnings

Percent distribution of women aged 15-49 receiving cash earnings by person who decides on use of earnings, according to selected background characteristics, South Africa 1998

Background characteristic	Person who decides how earnings are used					Missing	Total	Number of women
	Self only	Husband/partner	Jointly with husband/partner	Someone else	Jointly with someone else			
Age								
15-19	83.6	0.0	1.5	8.2	6.1	0.7	100.0	144
20-24	76.1	2.4	7.4	5.7	3.5	4.8	100.0	377
25-29	66.8	0.8	22.4	1.8	4.1	4.1	100.0	645
30-34	64.7	3.5	22.7	1.0	3.8	4.4	100.0	692
35-39	62.2	4.3	24.0	0.6	5.3	3.6	100.0	765
40-44	63.6	2.5	28.4	0.4	2.1	2.9	100.0	619
45-49	68.4	4.0	21.2	0.0	2.8	3.5	100.0	445
Residence								
Urban	65.8	2.6	22.5	1.4	3.7	3.9	100.0	2,704
Non-urban	69.1	3.4	18.1	2.2	4.1	3.1	100.0	984
Province								
Western Cape	65.0	2.3	21.2	5.0	3.9	2.6	100.0	605
Eastern Cape	63.8	5.9	21.3	0.8	5.9	2.3	100.0	341
Northern Cape	61.3	1.8	31.0	0.9	1.5	3.5	100.0	82
Free State	69.4	2.0	21.3	0.5	6.7	0.0	100.0	292
KwaZulu-Natal	77.5	3.3	13.8	1.2	1.3	2.8	100.0	686
North West	66.3	1.7	19.0	0.4	5.4	7.1	100.0	233
Gauteng	59.3	2.0	28.5	1.1	3.7	5.4	100.0	968
Mpumalanga	74.5	1.8	17.2	1.2	3.7	1.6	100.0	236
Northern	65.5	5.3	17.0	0.5	4.3	7.5	100.0	243
Education								
No education	69.5	2.2	20.9	0.5	4.3	2.6	100.0	193
Sub A - Std 3	68.6	3.5	21.3	0.3	3.9	2.4	100.0	400
Std 4 - Std 5	69.1	3.0	18.1	1.0	5.0	3.8	100.0	478
Std 6 - Std 9	68.8	3.2	19.4	2.3	3.3	2.9	100.0	1,315
Std 10	63.9	2.1	22.5	2.1	3.7	5.7	100.0	787
Higher	61.0	2.6	27.5	1.0	4.0	4.0	100.0	514
Population group								
African	69.1	2.9	18.0	0.8	4.3	4.8	100.0	2,428
Afr. urban	67.7	2.6	19.3	0.6	4.3	5.5	100.0	1,606
Afr. non-urban	72.1	3.6	15.5	1.1	4.3	3.4	100.0	823
Coloured	62.2	2.4	23.1	5.9	5.2	1.2	100.0	557
White	58.4	2.2	35.6	1.2	1.3	1.3	100.0	520
Asian	70.2	4.6	20.4	0.6	0.6	3.6	100.0	161
Marital status								
Currently married	90.6	0.0	0.2	3.4	2.1	3.8	100.0	1,760
Not married	44.9	5.4	40.6	0.0	5.4	3.6	100.0	1,927
Total	66.7	2.8	21.3	1.6	3.8	3.7	100.0	3,688

2.10 Child Care for Working Mothers

Table 2.24 presents the percent distribution of employed women by whether they have a child under the age of six years according to the women's background characteristics. The table also provides details on who cares for such children while their mothers are at work. Thirty-one percent of employed women have a child/children under the age of six. A higher proportion of non-urban than urban employed women have a child under the age of six (41 percent compared to 27 percent). There is no significant difference between the level of education and whether the working woman has a child under the age of six.

Women with a higher level of education are more likely to hire help and use child care institutions for their children. The role of the husband or partner and other male children in looking after such a child when the mother is working is minimal. This holds for all sub-groups of women.

Table 2.24 Child care while working

Percent distribution of currently employed women aged 15-49 by whether they have a child under six years of aged at home, and the percent distribution of employed mothers who have a child under six by person who cares for child while mother is at work, according to selected background characteristics, South Africa 1998

Background characteristic	Child's caretaker while mother is at work										Number of employed women					
	No child under six at home		One or more children under six at home		Child's caretaker while mother is at work							Total				
	at home	under six	at home	more children under six	Re-spond-ent	Husband/partner	Other relative	Neigh-bour/Friend	Hired help	Child is in school			Other female child	Other male child	Not worked since birth	Other
Residence																
Urban	72.7	27.3	12.9	27.3	1.2	17.5	4.1	11.4	36.4	2.7	0.0	0.0	0.3	6.7	7.7	100.0
Non-urban	59.2	40.8	22.2	40.8	3.6	21.3	8.1	5.4	14.8	5.6	0.6	0.6	1.2	9.3	7.9	100.0
Province																
Western Cape	69.2	30.8	9.3	30.8	2.6	18.5	8.9	3.4	38.0	0.7	0.0	0.0	0.7	11.2	8.2	100.0
Eastern Cape	65.9	34.1	22.2	34.1	2.5	22.5	3.5	17.6	14.5	2.6	0.0	0.0	0.4	4.9	9.8	100.0
Northern Cape	69.3	30.7	13.3	30.7	1.8	39.6	5.6	9.1	20.3	3.7	1.9	0.0	0.0	2.8	3.8	100.0
Free State	73.1	26.9	8.2	26.9	1.1	18.8	6.5	7.1	35.5	2.1	0.0	0.0	1.1	11.3	8.3	100.0
KwaZulu-Natal	70.1	29.9	14.8	29.9	4.9	20.2	7.6	11.1	20.1	4.7	1.0	0.0	1.0	10.0	5.1	100.0
North West	65.7	34.3	9.2	34.3	1.1	22.7	5.8	10.9	20.3	9.3	0.0	0.0	2.3	5.7	12.6	100.0
Gauteng	73.6	26.4	16.5	26.4	0.0	11.9	1.8	10.1	45.0	2.8	0.0	0.0	0.0	6.4	6.4	100.0
Mpumalanga	62.3	37.7	28.5	37.7	2.6	23.4	7.1	5.4	19.3	2.8	0.0	0.0	0.7	2.1	8.0	100.0
Northern	58.3	41.7	25.2	41.7	1.1	17.7	4.2	8.3	17.5	8.4	0.0	0.0	0.0	7.2	9.4	100.0
Education																
No education	67.4	32.6	23.6	32.6	4.0	14.1	9.5	1.1	18.8	5.7	3.6	0.0	0.0	4.5	15.2	100.0
Sub A - Std 3	70.1	29.9	26.0	29.9	3.7	19.5	9.5	1.5	14.0	8.4	0.2	0.0	1.7	9.5	5.1	100.0
Std 4 - Std 5	69.0	31.0	27.6	31.0	2.0	20.2	7.7	1.1	22.9	4.9	0.0	0.0	1.4	6.2	6.7	100.0
Std 6 - Std 9	70.4	29.6	15.9	29.6	1.6	20.5	4.5	6.2	30.9	4.3	0.0	0.0	0.8	7.6	8.1	100.0
Std 10	67.9	32.1	10.3	32.1	2.7	19.6	5.3	11.9	35.9	1.2	0.0	0.0	0.0	7.6	6.2	100.0
Higher	67.4	32.6	6.2	32.6	0.3	14.1	1.8	28.2	31.9	1.4	0.0	0.0	0.0	8.9	9.2	100.0
Population group																
African	67.6	32.4	19.8	32.4	2.1	18.0	6.0	7.5	26.1	5.0	0.3	0.0	0.9	5.9	8.4	100.0
Afr. urban	72.3	27.7	17.1	27.7	0.9	14.5	3.9	10.0	36.4	4.0	0.1	0.0	0.5	4.1	8.5	100.0
Afr. non-urban	58.7	41.3	23.4	41.3	3.6	22.5	8.6	4.4	12.8	6.2	0.6	0.0	1.4	8.2	8.3	100.0
Coloured	64.0	36.0	7.9	36.0	2.3	24.7	6.8	6.0	34.8	1.8	0.1	0.0	0.0	10.7	5.8	100.0
White	78.9	21.1	9.9	21.1	1.2	12.6	0.2	22.8	36.0	0.0	0.0	0.0	0.0	12.7	6.7	100.0
Asian	75.2	24.8	4.7	24.8	0.0	25.9	4.7	23.3	30.2	0.0	0.0	0.0	0.0	9.4	4.1	100.0
Employment status																
All year, full week	69.6	30.4	15.5	30.4	1.4	17.2	6.1	10.1	31.6	2.2	0.3	0.0	0.3	7.7	8.4	100.0
All year, part week	68.1	31.9	16.6	31.9	2.3	24.8	2.6	13.1	25.4	5.1	0.2	0.0	0.5	7.3	2.1	100.0
Seasonal	63.4	36.6	19.1	36.6	3.5	23.3	2.3	1.0	23.7	13.1	0.0	0.0	4.8	4.0	3.9	100.0
Occasional	71.4	28.6	23.7	28.6	9.0	27.4	7.0	3.1	3.7	10.3	0.0	0.0	0.0	12.8	3.0	100.0
Total	69.1	30.9	16.2	30.9	2.0	18.9	5.5	9.3	28.7	3.7	0.2	0.0	0.6	7.6	7.7	100.0

¹ Respondent is currently employed but has not worked since last birth.

CHAPTER 3

FERTILITY

3.1 Introduction

In the SADHS, data were collected on current and completed fertility. Utilising the birth histories of women interviewed during the survey, this chapter provides direct estimates of current levels, trends and differentials in fertility. During the interviews the women were requested to provide information on the total number of sons and daughters they had given birth to that were still living with them, the number living elsewhere and the number who had died. Interviewers obtained a birth history for each woman, including details on each live birth separately, according to the month and year of birth, sex and survival status. In the case of children who had died, their age at death was also recorded. The fertility indicators reported here are based on the answers provided by women aged 15-49 years regarding their reproductive histories.

3.2 Fertility Levels

The total fertility rate (TFR) and age-specific fertility rates (ASFRs) are a common measure of recent fertility. The TFR is defined as the number of children a woman would have by the end of her childbearing years if she were to pass through these years bearing children at the prevailing age-specific rates. Table 3.1 shows the age-specific and other aggregate fertility measures calculated from the 1998 SADHS data for the three-year period prior to the survey (roughly 1995- early 1998). The TFR for South Africa, derived from the survey data was 2.9. Using data from the 1996 population census, indirect methods yielded a slightly higher TFR level of 3.3 for 1996, two years before the SADHS. (Udjo, 1999). Another study utilising indirect methods and the same Census data, estimated the TFR at 3.1 (Dorrington *et al.*, 1999).

Fertility in urban areas (TFR=2.3) is substantially lower than in rural areas (TFR=3.9). This lower fertility in urban areas is apparent at all ages. Peak childbearing occurs between the ages of 20 and 34. Rural women continue to bear children at later ages than urban women. The derived crude birth rate is only 22 births per 1 000 population.

Age group	Residence		Total
	Urban	Non-urban	
15-19	56	99	76
20-24	113	178	139
25-29	123	174	143
30-34	88	149	109
35-39	53	111	74
40-44	18	50	29
45-49	1	24	9
TFR women 15-49	2.25	3.92	2.90
TFR women 15-44	2.25	3.80	2.85
General fertility rate	79	133	100
Crude birth rate	19.2	25.4	21.9

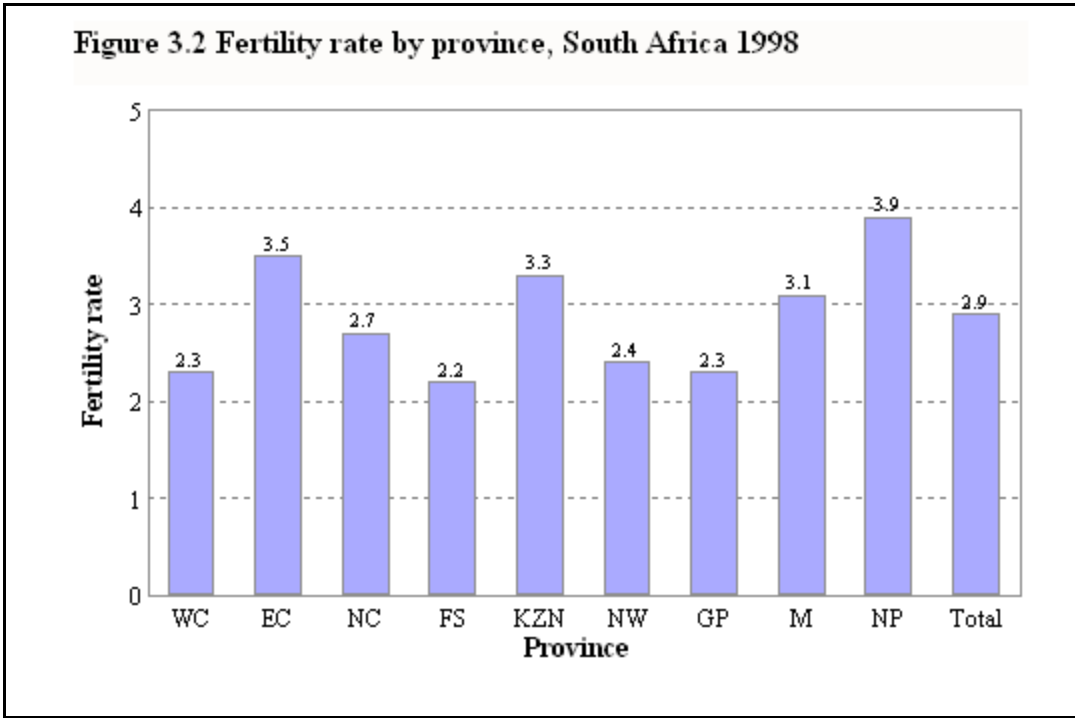
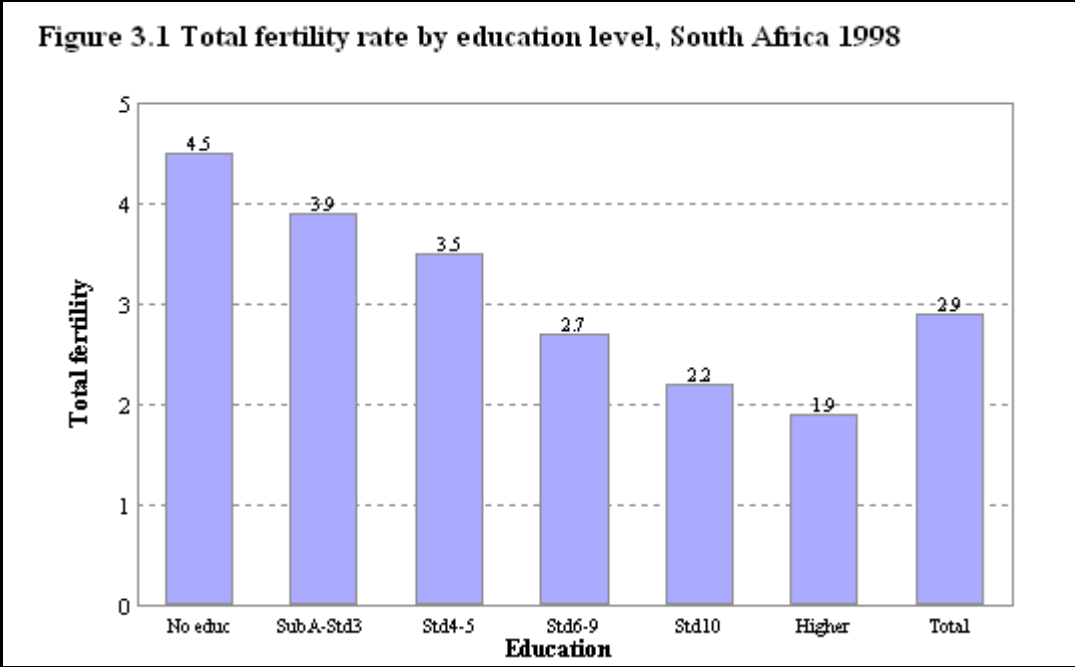
3.3 Fertility Differentials

Differentials in fertility are shown in Table 3.2. The SADHS data indicate a strong negative linear association between education and fertility. Whereas women with no education had a TFR of 4.5, those who have completed Standard 10 have 2.2 children on average (see Figure 3.1). The Northern Province has the highest TFR (3.9), while Free State has the lowest (2.2) (see Figure 3.2). The TFR for African women is 3.1, for coloured women 2.5 and 1.9 for white women.

Unfortunately, despite attempts to design the sample so as to over sample Asian households, the sample of Asian women was too small to allow a reliable estimate of the TFR. Table 3.2 also allows for the assessment of differential trends in fertility over time. The mean number of children ever born to women aged 40-49 is a measure of past fertility. By comparing current (total) fertility with past (completed) fertility, it is clear that substantial declines in fertility occurred among all sub-groups of the population. For instance, among urban African women there was a decline from 3.5 to 2.4.

<u>Table 3.2 Fertility by background characteristics</u>			
Total fertility rate for the three years preceding the survey, percentage currently pregnant and mean number of children ever born to women age 40-49, by selected background characteristics, South Africa 1998			
Background characteristic	Total fertility rate [†]	Percentage currently pregnant	Mean number of children ever born to women age 40-49
Residence			
Urban	2.3	2.7	3.2
Non-urban	3.9	4.7	4.7
Province			
Western Cape	2.3	3.2	3.0
Eastern Cape	3.5	3.4	4.0
Northern Cape	2.7	3.6	3.6
Free State	2.2	3.6	3.6
KwaZulu-Natal	3.3	4.3	4.0
North West	2.4	3.2	3.7
Gauteng	2.3	2.2	3.2
Mpumalanga	3.1	4.6	4.5
Northern	3.9	4.6	4.9
Education			
No education	4.5	3.3	4.9
Sub A - Std 3	3.9	4.8	4.4
Std 4 - Std 5	3.5	4.0	4.1
Std 6 - Std 9	2.7	3.0	3.2
Std 10	2.2	3.5	2.4
Higher	1.9	3.8	2.5
Population group			
African	3.1	3.7	4.1
Afr. urban	2.4	2.8	3.5
Afr. non-urban	4.0	4.7	4.9
Coloured	2.5	3.5	3.2
White	1.9	2.5	2.5
Total	2.9	3.5	3.7
Note: The number of Asian women interviewed was too small to provide a reliable measure of the total fertility rate. [†] Women age 15-49 years			

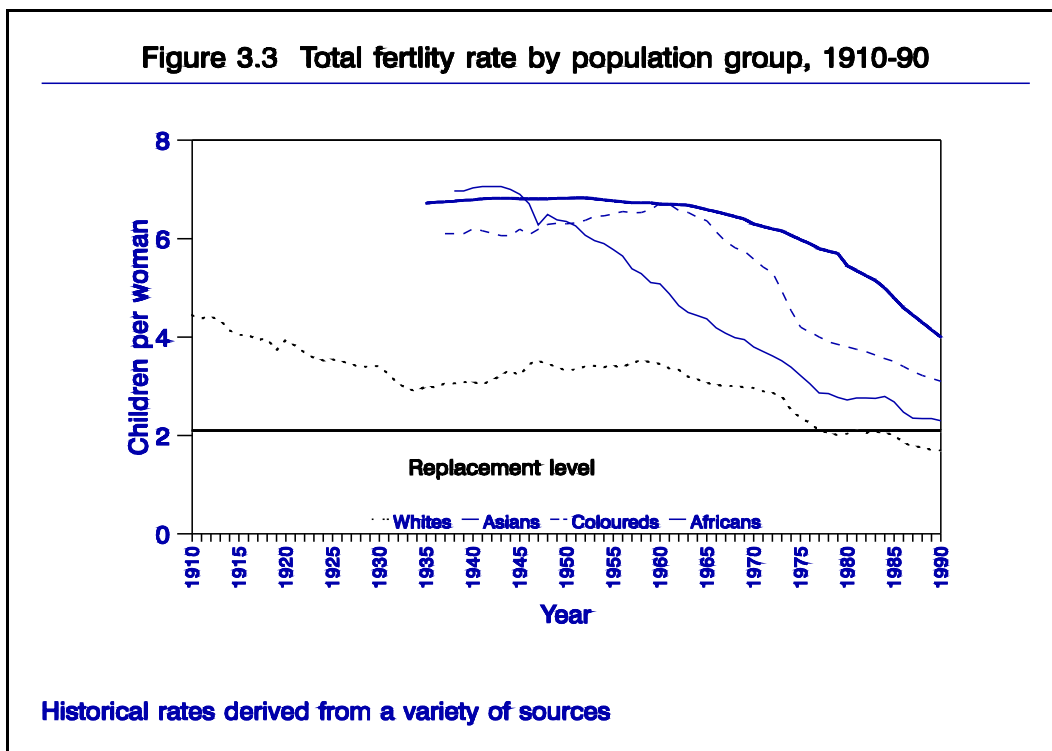
Less than 4 percent of women reported they were pregnant at the time of the survey. Although this underestimates the proportion of pregnant women, as many women in the early stages of pregnancy would not have known that they were pregnant, the differentials in pregnancy status closely follow the differentials in current fertility.



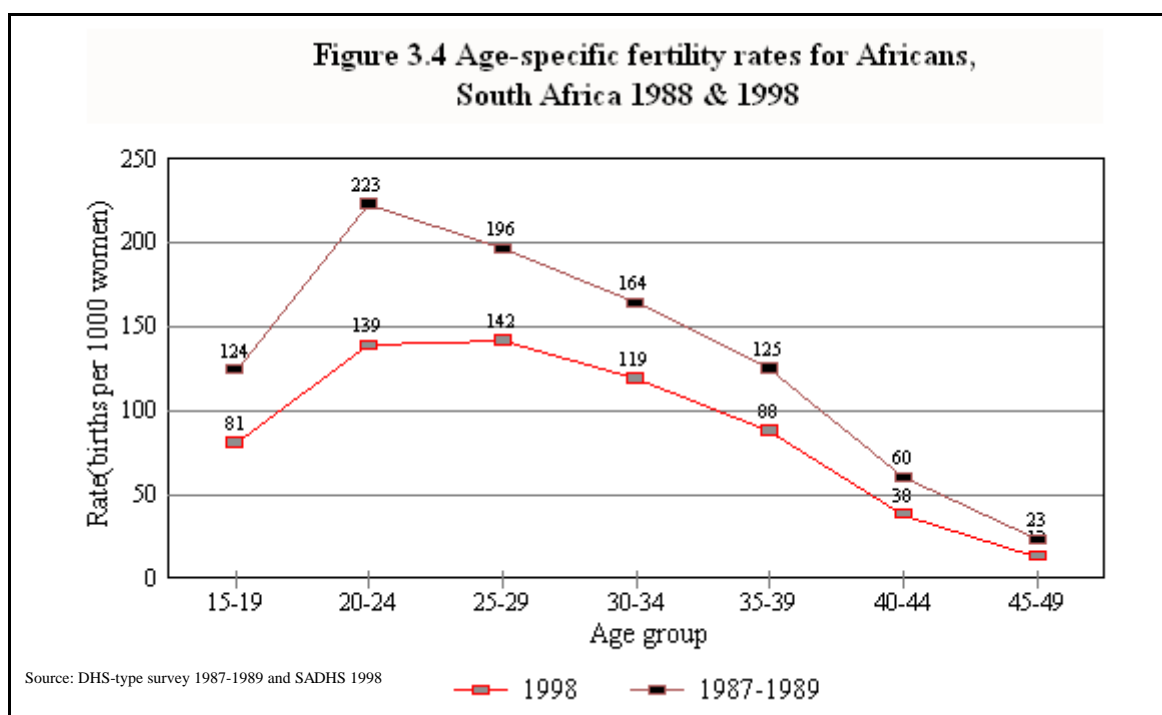
3.4 Fertility Trends

Adequate historical demographic statistics are only available for certain sections of the population. For the white population, birth statistics are available from 1910 and for the Indian and coloured population from about the 1940s. For the African population incomplete birth registration statistics created a vacuum in our knowledge of demographic trends. Fertility rates for the African population were calculated with the aid of census statistics by Sadie (1970). In addition, the Human Sciences Research Council (HSRC) conducted a number of small-scale surveys from the 1960s to the 1980s, the results of which were used to estimate fertility levels (Mostert and Malherbe, 1974; Lötter and van Tonder, 1976; Van Tonder, 1985). Probably the most comprehensive source of information on fertility patterns before the 1998 SADHS was a large DHS-type survey conducted in 1987-1989 (Mostert, 1990). This collection of vital statistics, analytical work and surveys provide reasonably accurate pointers to historical fertility trends (see Figure 3.3) for different population groups.

The data in Figure 3.3 show that fertility among whites started to decline during the 19th century and then remained at a level of between 3 and 4 for more than six decades before declining below 3 towards the late 1960s. Thereafter the decline continued to below the replacement level. In 1990 the TFR was 1.7. The fertility of the Asian segment of the population started its decline in the 1950s, largely due to increasing age at marriage and the use of contraception. By 1990, the fertility of this population (TFR of 2.3) was nearing the replacement level. The fertility of the coloured population gradually increased in the two decades before the 1960s. Thereafter, the introduction of modern contraception heralded a decline which continues to the present. The fertility of the African population was at a high level during the middle of this century (a TFR of nearly 7). After 1960, African fertility started to decline, slowly at first, but subsequently gained momentum. By the mid-1980s, African fertility was about 4.5, and by 1990 it had declined to an estimated level of around 4.0.



The fertility of the white population in South Africa mirrors fertility trends in the more developed world, where the transition from high to low fertility has been completed. The Asian and the coloured population have almost completed their fertility transition. The most interesting fertility transition taking place in South Africa at present is that of the African population. Besides the fact that Africans constitute the majority of the South African population, and therefore determine overall fertility levels, their fertility behaviour may also predict the path of future fertility trends in other African countries. Therefore it is useful to examine trends in African fertility by comparing the results of the 1998 SADHS with a large-scale DHS-type survey conducted in the period 1987-1989 (Mostert 1990). In both surveys similar methodologies were utilised. The age-specific fertility rates (ASFRs) for the three years preceding the surveys are shown in Figure 3.4. Whereas the calculated total fertility rate for the African population was 4.6 in the first survey, it was 3.1 in 1998.



Fertility trends can also be examined by looking at rates reported for previous times in the birth histories of women interviewed in the SADHS. Such rates were calculated for four-year periods prior to the survey and are presented in Table 3.3. They also show a decline in fertility over the past 12-15 years, although a much gradual one than implied by comparing external data sources.

Table 3.3 Trends in fertility

Age-specific fertility rates for four-year periods preceding the survey, South Africa 1998

Age group	0-3	4-7	8-11	12-15	16-19
15-19	78	93	90	116	104
20-24	136	156	170	196	190
25-29	138	159	162	183	183
30-34	108	134	128	153	[143]
35-39	72	89	99	[122]	-
40-44	30	42	[57]	-	-
45-49	10	[12]	-	-	-

Note: Age-specific fertility rates per 1,000 women. Estimates enclosed in brackets are truncated.

3.5 Children Ever Born and Living

The distribution of women by the number of children ever born to them is shown in Table 3.4 for all women and currently married women. In addition, the table gives the mean number of children ever born to women in each five-year age group as well as the mean number of living children. It is clear that most women have had at least one birth by age 35. Women in their late thirties have given birth to an average of 3.2 children. The results also show that 5 percent of women in the age group 45-49 have never given birth, while a quarter of women in this age group have given birth to 6 children or more. In the age group 45-49 the mean number of children ever born is 4.0; of whom 3.6 were still living.

Differences in the findings for currently married women compared to all women are mainly found among the younger women. For example, nearly 80 percent of married women aged 20-24 have given birth, compared to 60 percent of all women in the same age category. Nearly 4 percent of currently married women aged 40 and older have never given birth, which can be regarded as a rough measure of primary infertility in the population, since voluntary childlessness is uncommon in most African societies.

Table 3.4 Children ever born and living

Percent distribution of all women and currently married women by number of children ever born and mean number ever born and living children, by age of woman, South Africa 1998

Age group	Number of children ever born (CEB)											Total	Number of women	Mean no. of CEB	Mean no. of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	86.8	12.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	2,249	0.14	0.13
20-24	41.7	40.8	14.4	2.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	100.0	2,075	0.79	0.74
25-29	18.4	33.2	29.3	12.7	4.4	1.4	0.5	0.0	0.0	0.0	0.0	100.0	1,857	1.58	1.50
30-34	6.8	18.3	31.2	21.0	13.9	4.7	2.5	1.1	0.2	0.2	0.0	100.0	1,654	2.49	2.34
35-39	4.9	11.6	22.7	21.5	16.2	10.7	6.9	3.2	1.5	0.5	0.4	100.0	1,636	3.23	2.99
40-44	4.7	11.0	19.8	19.7	15.1	12.5	9.2	4.0	1.8	0.9	1.4	100.0	1,294	3.52	3.18
45-49	5.2	9.9	14.7	15.7	17.2	12.5	9.6	5.9	3.7	1.8	3.6	100.0	970	4.03	3.57
Total	29.5	21.1	18.2	12.0	8.0	4.8	3.2	1.5	0.7	0.3	0.5	100.0	11,735	1.94	1.79
CURRENTLY MARRIED WOMEN															
15-19	63.4	33.0	2.1	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	73	0.42	0.40
20-24	20.4	43.4	27.6	7.9	0.7	0.0	0.0	0.0	0.0	0.0	0.0	100.0	465	1.25	1.17
25-29	11.6	25.6	34.9	18.2	6.2	2.5	1.0	0.0	0.1	0.0	0.1	100.0	900	1.94	1.83
30-34	3.7	12.5	31.3	23.2	17.6	5.8	3.8	1.7	0.3	0.3	0.0	100.0	1,008	2.83	2.66
35-39	3.5	8.0	22.7	21.8	17.7	11.9	7.5	3.9	2.0	0.5	0.5	100.0	1,114	3.47	3.25
40-44	3.6	8.8	19.3	19.7	15.7	13.2	10.0	4.5	2.2	1.1	1.8	100.0	865	3.74	3.37
45-49	4.1	6.8	14.5	14.5	18.3	14.5	9.8	6.4	4.3	2.2	4.6	100.0	652	4.34	3.89
Total	7.5	15.6	25.1	18.6	13.6	8.3	5.5	2.8	1.4	0.6	1.0	100.0	5,077	2.98	2.75

3.6 Birth Intervals

The birth interval is a notable factor in the survival of infants. A baby born soon after a previous child is at an increased risk of poor health. As a general rule, births with an interval of less than 24 months are classified as high-risk births. Table 3.5 presents the percent distribution of births in the five years before the survey by interval since the previous birth, according to selected background characteristics.

Fourteen percent of second and higher order births take place within 24 months of the previous birth. More than 20 percent of births to women with a tertiary qualification take place less than 24 months after the previous birth, a higher proportion than found in any other educational category. Among white women short intervals are even more common, as 30 percent of births take place within 24 months of the previous birth.

Table 3.5 shows that 53 percent of second and third births occurred at an interval of more than 48 months. This suggests that many South African women have an early first birth, many while still teenagers, but postpone the birth of a second child for a considerable period of time.

The median birth interval was 47 months, a very long interval when compared to other sub-Saharan countries. Urban women have substantially longer birth intervals than rural women (54 months as opposed to 43 months). A significant difference in birth interval was also found when comparing the survival status of the previous baby. Where the previous baby has died, the interval is 17 months less than when the previous sibling survived.

Table 3.5 Birth intervals

Percent distribution of births in the five years preceding the survey by number of months since previous birth, according to selected background characteristics, South Africa 1998.

Characteristic	Number of months since previous birth					Total	Median no. of months since previous birth	Number of births
	7 - 17	18 - 23	24 - 35	36 - 47	48+			
Age of mother								
15-19	*	*	*	*	*	100.0	28.4	15
20-29	7.3	11.0	22.4	20.7	38.6	100.0	40.7	1,312
30-39	4.0	6.6	17.5	16.8	55.1	100.0	53.0	1,586
40+	5.7	4.7	15.3	15.6	58.8	100.0	60.5	416
Birth order								
2-3	4.8	7.9	17.2	17.2	52.9	100.0	49.7	1,997
4-6	6.4	8.4	20.4	18.4	46.5	100.0	45.6	1,082
7+	8.3	9.3	31.7	24.8	25.9	100.0	36.1	251
Sex of previous baby								
Male								
Female	5.9	8.3	18.2	18.4	49.3	100.0	47.1	1,745
Survival of previous baby	5.3	7.9	20.6	17.9	48.3	100.0	47.0	1,585
Living								
Dead	4.4	7.8	19.2	18.6	49.9	100.0	47.9	3,122
	22.9	13.2	21.2	10.8	31.8	100.0	30.6	208
Residence								
Urban								
Rural	4.3	6.8	15.3	17.1	56.5	100.0	53.7	1,557
	6.7	9.3	22.8	19.0	42.1	100.0	42.9	1,773
Province								
Western Cape								
Eastern Cape	4.1	6.6	11.3	16.9	61.0	100.0	58.5	251
Northern Cape	7.9	10.6	24.1	17.6	39.8	100.0	40.3	519
Free State	4.2	4.2	13.5	17.4	60.8	100.0	53.9	64
KwaZulu-Natal	3.8	4.0	17.2	16.5	58.5	100.0	54.9	169
North West	7.6	9.0	19.7	18.8	45.0	100.0	45.0	749
Gauteng	3.7	6.4	17.3	16.9	55.7	100.0	52.4	212
Mpumalanga	2.9	7.4	14.2	17.5	58.0	100.0	53.7	614
Northern	5.4	8.5	18.7	19.2	48.2	100.0	46.7	247
	5.8	8.5	26.7	19.8	39.1	100.0	41.5	504
Education								
No education								
Sub A-Std 3	6.6	6.8	23.0	21.4	42.1	100.0	43.5	404
Std 4-Std 5	4.9	8.5	23.6	20.6	42.4	100.0	42.2	561
Std 6-Std 9	4.9	7.8	17.3	16.3	53.6	100.0	51.2	594
Std 10	5.3	8.9	19.2	17.5	49.1	100.0	47.0	1,239
Higher	5.0	6.5	14.6	14.0	59.9	100.0	58.3	372
	11.1	9.2	14.7	22.6	42.4	100.0	41.3	159
Population group								
African								
African urban	5.3	8.0	20.1	17.9	48.8	100.0	47.1	2,795
African rural	3.0	5.9	15.6	15.6	59.9	100.0	55.9	1,130
Coloured	6.8	9.4	23.2	19.4	41.2	100.0	42.4	1,665
White	2.9	5.7	11.0	15.7	64.7	100.0	58.2	290
Asian	13.6	16.6	20.6	21.6	27.6	100.0	35.4	149
	8.1	9.2	16.4	32.8	33.5	100.0	39.1	71
Total								
	5.6	8.1	19.3	18.2	48.8	100.0	47.1	3,330

Note: An asterisk indicates a figure is based on fewer than 25 respondents and has been suppressed.

3.7 Age at First Birth

Table 3.6 shows the percent distribution of women by the age at the birth of their first child and the median age at first birth. The median age at first birth was approximately 21 years for most age cohorts. Forty-eight percent of women in the age group 30-34 interviewed by the SADHS had given birth before turning 20. However, there are indications that this trend is changing. For instance, 40 percent of respondents aged 20-24 and 25-29 had given birth before reaching age 20, eight percentage points lower than that of the older cohort of women. Teenage childbearing is discussed further in Chapter 9.

Table 3.6 Age at first birth

Percent distribution of women 15-49 years by age at first birth, according to current age, South Africa 1998

Current age	Women with no births	Age at first birth						Total	Number of women	Median age at first birth
		<15	15-17	18-19	20-21	22-24	25+			
15-19	86.8	0.6	8.8	3.8	NA	NA	NA	100.0	2,249	a
20-24	41.7	1.6	18.7	19.8	13.2	5.0	NA	100.0	2,075	a
25-29	18.4	2.9	16.9	20.6	17.8	15.6	7.8	100.0	1,857	20.9
30-34	6.8	3.6	21.0	23.4	16.6	14.3	14.3	100.0	1,654	20.2
35-39	4.9	2.8	19.0	20.6	18.7	19.1	14.9	100.0	1,636	20.7
40-44	4.7	3.1	15.2	21.2	20.9	17.6	17.2	100.0	1,294	21.0
45-49	5.2	2.7	15.3	23.2	16.8	19.3	17.4	100.0	970	21.0

Note: NA = Not applicable.

a = Half or more of women in these age groups had not given birth before entering the age group, making the calculation of a median age at birth unfeasible.

Table 3.7 shows the median age at first birth for the age cohorts 25-29 to 45-49 by selected background characteristics. No median age at first birth is provided for the age group 15-24 since a substantial proportion of women in this age cohort had not yet given birth at the time of the survey. The results show that median age at first birth is higher for women in urban areas than for women in rural areas. Similarly, age at first birth increases with higher levels of education. For example, in the age cohort 30-34, women without any formal education have their first birth around age 19, compared with age 26 for women with secondary or higher education.

There is considerable regional variation in age at first birth. Age at first birth is lowest in Mpumalanga (19.5) and highest in the Western Cape (21.8 years). Age at first birth also varies by population group. Whites have the highest age at first birth (23.8), followed by Asians (22.3) and coloureds (21.2). African women recorded the lowest age at first birth (20.3 years).

Table 3.7 Median age at first birth by background characteristics

Median age at first birth among women 25-49, by current age and selected background characteristics, South Africa 1998

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Urban	21.9	20.9	21.2	21.3	21.0	21.3
Non-urban	20.0	19.5	20.0	20.6	21.0	20.1
Province						
Western Cape	23.4	21.4	21.9	21.2	21.9	21.8
Eastern Cape	20.8	20.5	20.9	21.5	21.9	21.1
Northern Cape	20.7	20.5	20.8	21.9	20.0	20.8
Free State	21.0	20.1	20.5	21.4	20.6	20.7
KwaZulu-Natal	20.6	20.5	20.7	21.1	22.2	20.9
North West	20.8	20.1	21.3	20.9	19.7	20.7
Gauteng	21.7	20.2	21.3	21.0	20.6	21.0
Mpumalanga	19.7	19.0	20.0	19.3	19.2	19.5
Northern	19.6	19.2	19.3	20.2	20.8	19.7
Education						
No education	19.5	18.6	19.8	20.3	20.3	19.8
Sub A - Std 3	19.5	18.9	19.8	20.2	20.8	19.8
Std 4 - Std 5	19.0	19.3	19.9	20.2	20.0	19.7
Std 6 - Std 9	20.5	20.1	20.5	20.9	20.6	20.5
Std 10	23.2	22.1	22.6	23.2	24.2	22.7
Higher	a	25.8	24.5	24.9	24.8	24.9
Population group						
African	20.6	19.8	20.3	20.6	20.5	20.3
Afr. urban	21.2	20.1	20.6	20.8	19.9	20.6
Afr. non-urban	19.9	19.4	19.9	20.5	21.1	20.0
Coloured	22.0	21.0	21.5	20.8	20.5	21.2
White	24.4	24.7	24.0	23.5	22.8	23.8
Asian	24.2	21.7	20.9	22.2	22.6	22.3
Total	20.9	20.2	20.7	21.0	21.0	20.8

Note: The medians for cohorts 15-19 and 20-24 could not be determined because half of the women had not had a birth before reaching the lowest age of the age group.

a = Omitted because less than 50 percent in the age group had given birth by age 20

CHAPTER 4

CONTRACEPTION AND FERTILITY PREFERENCES

4.1 Knowledge of Contraceptive Methods

Knowledge of contraceptive methods has been recognised as a key factor in the uptake of contraceptives and lack of information is an important reason for unmet need. Women who know about a range of contraceptive methods are more likely to use a method. Women interviewed in the SADHS were asked if they had heard about methods a couple could use to avoid or delay pregnancy. Respondents were asked to name any methods they had heard of. If the respondent did not mention a particular method, that method was described and she was asked if she had heard of it. Respondents were then asked to mention any other additional methods that the interviewer did not describe.

Table 4.1 shows the percentage of all women, of currently married women, of sexually active unmarried women and of women who have no sexual experience who know of contraceptive methods. Almost all women (97 percent) have heard of at least one modern method. Knowledge is equally high in both the married and the sexually active unmarried groups. Although lower than the other groups, women with no sexual experience still exhibit significant knowledge of at least one modern method (86 percent).

Among all groups of women, the two best-known methods are the injection (94 percent) and the pill (93 percent). The majority of women (89 percent) also know of the male condom. The female condom which is available on a limited basis in South Africa was mentioned by a very small number of women. Over three-quarters of married and sexually active women have heard of the IUD, however less than half of those without sexual experience know of this method (40 percent). This may be due to the fact that the group with no sexual experience is younger than the married and sexually active unmarried, and the IUD is generally used by women who have had children. The use of this method has decreased over time and it is no longer available in some clinics, as trained staff are required to fit the device. Vaginal methods such as the diaphragm, foam, and jelly, were the least known of the modern methods. The diaphragm had previously been available in the public and private services but has now been discontinued from both services. Just over two-thirds (68 percent) of all women have heard of female sterilisation, compared to only a third who know of male sterilisation. Married women are more likely to know of these permanent methods than women in the other groups. Emergency contraceptive pills were mentioned by very few women in the unprompted "other" section. This low level of spontaneous reporting of this method may be due to both limited knowledge of the method as well as the fact that some women do not think of this as a usual method of contraception.

Traditional methods of family planning are less widely known than modern methods, with 42 percent of all women having heard of a traditional method. Withdrawal was mentioned by almost a third (31 percent) of women. Natural methods such as periodic abstinence (the rhythm method) are known by a quarter of all respondents (25 percent). A wide variety of other methods were described by women, including tying a rope or string around the waist. A number of post-coital methods were mentioned including drinking water, coke or milk and burying menses. One of the interesting points about many of the traditional methods is that they are often only used post-coitally rather than on a regular basis of any sort.

Table 4.1 Knowledge of contraceptive methods

Percentage of all women, of currently married women of sexually active unmarried women, and of those with no sexual experience who know specific contraceptive methods, South Africa 1998

Contraceptive method	All women	Currently married women	Sexually active unmarried women	No sexual experience
Any method	96.7	98.1	99.2	85.5
Any modern method	96.5	98.0	99.2	85.5
Pill	93.2	95.4	96.4	79.4
IUD	71.4	79.5	76.9	39.8
Injectables	94.4	96.7	98.2	78.0
Diaphragm/Foam/Jelly	16.4	21.1	12.8	15.6
Condom	88.7	89.1	94.3	77.1
Female sterilisation	67.9	77.8	66.4	44.5
Male sterilisation	35.3	44.1	29.8	30.3
Any traditional method	41.8	50.0	45.0	22.5
Periodic abstinence	25.3	30.9	26.7	14.5
Withdrawal	30.5	39.3	32.0	14.0
Herbs	12.4	14.2	13.4	6.1
Other	4.8	5.4	6.1	4.0
Number of respondents	11,735	5,077	2,074	1,545
Mean number of methods	5.4	5.9	5.5	4.0

4.2 Ever Use of Contraception

Respondents were asked if they had ever used anything to delay or avoid pregnancy. Table 4.2 shows the percentage of women who have ever used a method of family planning, according to method used and age. Over 80 percent of married women between the ages of 20 and 44 have used a method of contraception. This figure falls slightly in the oldest age group (45-49) where three quarters (75 percent) have ever used a method. The lowest use was recorded in the youngest married group where two thirds (66 percent) have ever used a method.

Injectables are by far the most commonly cited method for all women, followed by the pill. The male condom has been used by less than one-fifth of all women (18 percent). Women between the ages of 20 and 34 are more likely to have ever used a condom than those aged 35 and over.

Table 4.3 shows what methods women used when they first started using contraception. There are major differences by population group in the contraceptive method first used. Two-thirds of white and Asian women used the pill as their first method (65 and 68 percent, respectively) and only a very small number used the injection. In contrast, almost two-thirds of African and coloured women (65 and 64 percent respectively) used injectables as their first method.

Looking at changes over time, an increasing proportion of women are using the injection as their first contraceptive method. Three-quarters of women aged 15-19 years used the injection as their first method, compared to less than half of those aged between 35-39 and a third of the 45-49 age group. It can also be seen that the opposite effect has occurred with the pill with a much lower proportion of the youngest group using the method compared to the older group. The IUD is generally recommended for parous women and so naturally has been used by a higher number of women in the older age groups. Use of the condom as a first method is highest in the youngest age group.

Table 4.2 Ever use of contraception

Percentage of all women and of currently married women who have ever used a contraceptive method, by method and age, South Africa 1998

Age	Modern method									Traditional method				Number of women
	Any method	Any modern method	Pill	IUD	Injections	Diaph., foam, jelly	Condom	Female sterilisation	Male sterilisation	Any trad. method	Periodic abstinence	Withdrawal	Other	
ALL WOMEN														
15-19	38.9	38.0	9.6	0.2	31.1	0.1	9.5	0.0	0.0	4.1	1.8	2.7	0.5	2,249
20-24	80.3	79.3	30.1	1.5	66.9	0.3	24.0	0.4	0.1	9.9	4.9	6.6	2.1	2,075
25-29	86.9	85.9	44.4	4.6	73.0	0.5	23.8	2.8	0.8	12.5	7.1	8.1	1.7	1,857
30-34	87.9	86.9	48.6	11.3	68.7	0.7	23.0	8.4	1.6	12.4	3.7	10.5	2.8	1,654
35-39	86.8	85.6	51.6	15.2	62.1	1.1	16.4	17.0	2.7	11.5	4.7	8.9	3.0	1,636
40-44	81.6	80.2	51.5	20.6	54.3	1.7	13.2	24.3	2.8	9.3	3.8	7.2	3.1	1,294
45-49	73.5	71.7	44.8	17.4	40.2	2.2	11.7	23.6	2.6	11.1	3.0	9.9	2.7	970
Total	75.0	73.9	37.6	8.5	57.0	0.8	17.8	8.7	1.3	9.8	4.2	7.3	2.1	11,735
CURRENTLY MARRIED WOMEN														
15-19	66.4	63.6	18.5	0.0	51.2	1.6	26.6	0.0	0.0	13.2	3.5	9.8	1.6	73
20-24	84.4	83.5	40.8	3.4	70.3	0.2	26.7	1.1	0.6	13.4	5.8	10.7	1.5	465
25-29	87.6	86.5	47.3	5.1	70.4	0.3	25.1	4.7	1.4	15.3	7.8	11.1	1.7	900
30-34	88.8	87.4	50.5	10.8	65.7	1.2	22.1	10.2	2.7	14.6	4.1	12.3	3.2	1,008
35-39	86.6	85.5	53.9	16.7	58.8	1.1	17.3	20.2	3.6	12.5	4.9	9.9	2.9	1,114
40-44	82.6	80.9	53.9	21.4	50.1	2.0	12.8	29.5	4.0	11.1	4.0	8.6	3.3	865
45-49	75.4	72.9	45.8	19.1	38.4	3.1	12.2	26.3	3.5	13.1	3.8	11.8	2.9	652
Total	84.6	83.2	49.3	13.1	59.1	1.3	19.2	15.8	2.8	13.4	5.0	10.7	2.7	5,077

Table 4.3 Contraceptive method first used

Percent distribution of women who have ever used contraception by method first used, South Africa 1998

Background characteristic	Pill	IUD	Injections	Diaph., foam, jelly	Sterilisation		Periodic abstinence	Withdrawal	Other methods	Missing	Total	Number	
					Condom	Female Male							
Age													
15-19	12.6	0.2	74.4	0.0	9.3	0.0	0.0	1.1	1.5	0.3	0.5	100.0	875
20-24	17.3	0.8	73.3	0.1	6.1	0.0	0.1	0.9	0.6	0.6	0.3	100.0	1,666
25-29	24.5	2.2	66.3	0.0	3.3	0.1	0.0	1.0	1.3	0.6	0.7	100.0	1,614
30-34	29.2	5.3	56.5	0.0	3.7	1.2	0.0	0.8	2.4	0.8	0.1	100.0	1,453
35-39	37.1	7.9	45.6	0.3	2.6	2.4	0.0	0.6	1.8	1.1	0.5	100.0	1,420
40-44	43.4	6.5	39.7	0.7	1.2	4.2	0.0	0.9	2.7	0.5	0.1	100.0	1,055
45-49	46.1	6.4	32.4	0.5	3.1	5.1	0.0	0.7	4.4	0.8	0.5	100.0	713
Residence													
Urban	31.3	5.3	54.1	0.3	5.0	1.4	0.0	0.8	1.0	0.4	0.4	100.0	5,673
Non-urban	24.2	1.7	63.8	0.0	2.5	1.8	0.0	1.1	3.4	1.1	0.3	100.0	3,122
Province													
Western Cape	29.7	1.0	60.6	0.0	4.9	1.9	0.0	0.4	0.1	0.6	0.8	100.0	964
Eastern Cape	28.7	1.8	65.1	0.0	1.3	1.6	0.0	0.6	0.6	0.2	0.2	100.0	1,119
Northern Cape	26.2	2.0	67.6	0.0	1.1	2.5	0.1	0.0	0.1	0.1	0.1	100.0	191
Free State	24.6	3.6	66.1	0.0	2.7	0.8	0.0	0.7	1.1	0.4	0.1	100.0	612
KwaZulu-Natal	29.6	2.4	53.9	0.1	5.7	2.1	0.0	1.1	3.6	1.4	0.1	100.0	1,604
North West	26.3	4.0	64.6	0.0	2.8	1.2	0.0	0.3	0.3	0.2	0.4	100.0	718
Gauteng	32.6	8.8	47.4	0.6	5.4	0.9	0.0	1.1	2.3	0.6	0.3	100.0	2,113
Mpumalanga	22.3	4.1	63.8	0.1	2.8	2.3	0.1	1.7	1.5	0.6	0.5	100.0	634
Northern	27.5	2.3	57.1	0.1	4.4	1.6	0.0	1.2	3.7	0.9	1.0	100.0	841
Population group													
African	23.4	4.3	64.5	0.2	2.5	1.4	0.0	1.0	1.7	0.7	0.4	100.0	6,823
Coloured	27.5	1.6	63.9	0.0	3.0	1.9	0.1	0.4	0.6	0.7	0.3	100.0	905
White	65.3	5.3	5.0	0.8	15.6	1.8	0.0	0.8	5.1	0.3	0.0	100.0	735
Asian	67.7	3.5	6.7	0.0	16.8	1.7	0.0	0.3	1.7	1.2	0.3	100.0	284
Total	28.8	4.0	57.5	0.2	4.1	1.5	0.0	0.9	1.9	0.7	0.4	100.0	8,796

Note: includes 49 women not stated as to population group.

4.3 Source of Contraceptive Information

Women who had ever used a contraceptive method were asked where they got their initial information on contraceptive use. Overall, the most important sources of first information are nurses, mothers, and friends. Increasingly, younger women are getting contraceptive information from their mothers (Table 4.4). Over a third of women (39 percent) in the youngest age group received information from their mothers and for this age group this is the most common source of information. Looking at the oldest age group, only 10 percent cited their mothers as the first source of contraceptive information. These older women mainly got their contraceptive information from a nurse (50 percent) or a doctor (17 percent). This is probably because the mothers of the older women were unlikely to have used a method of contraception and so were not in a position to give information. The proportion who obtained information from pamphlets and radio/TV is low across all age groups. Looking at differences across population groups, it can be seen that overall few Asian (7 percent) and coloured (11 percent) women received contraceptive advice from their mothers, compared to almost a fifth (19 percent) of African women and almost a third of white women.

Table 4.4 First source of contraceptive information

Among women who have ever used a contraceptive method, percentage who first got information about methods from various sources, South Africa 1998

Background characteristic	Mother	Sister	Father	Other relative	Friend	Teacher	Nurse	Doctor	Poster, leaflet	Radio, TV	Other	Number
Age												
15-19	39.4	11.5	0.3	7.7	17.2	8.6	20.3	3.2	0.9	1.4	5.6	875
20-24	23.7	10.1	0.1	4.7	17.8	6.7	38.7	2.9	1.5	1.8	6.4	1,666
25-29	18.6	9.2	0.6	4.6	14.9	7.1	45.0	3.2	1.9	1.6	6.1	1,614
30-34	17.3	8.5	0.2	3.8	15.7	5.0	46.6	6.2	1.8	0.5	6.6	1,453
35-39	12.3	5.7	0.1	3.6	13.7	2.8	51.3	8.2	1.3	2.2	7.8	1,420
40-44	10.8	4.3	0.2	4.2	11.4	2.8	53.4	11.1	2.5	1.4	8.1	1,055
45-49	10.2	5.2	0.1	3.0	11.5	2.6	49.9	17.2	2.6	1.6	7.0	713
Residence												
Urban	21.2	8.1	0.3	4.3	13.9	6.5	42.1	8.0	2.6	1.5	6.3	5,674
Non-urban	14.5	7.9	0.2	4.8	16.8	3.1	47.7	3.8	0.3	1.5	7.5	3,122
Province												
Western Cape	15.4	4.1	0.5	2.7	4.6	5.6	54.1	10.6	2.1	0.5	3.9	964
Eastern Cape	20.6	8.8	0.1	3.0	10.2	3.7	48.0	4.0	0.6	0.6	4.6	1,119
Northern Cape	18.2	5.8	0.1	4.0	7.2	6.7	57.9	9.8	2.6	0.6	2.6	191
Free State	26.9	9.6	0.1	2.0	8.7	6.4	45.3	11.3	1.0	1.2	7.6	612
KwaZulu-Natal	7.8	7.3	0.2	3.4	15.6	3.3	53.4	5.0	0.8	1.4	7.7	1,604
North West	35.8	10.7	0.7	6.7	15.3	7.1	32.1	3.0	0.4	1.4	10.0	718
Gauteng	22.2	8.1	0.1	6.3	18.4	8.0	35.7	8.8	4.2	2.2	5.4	2,113
Mpumalanga	21.3	9.8	0.1	4.9	24.1	4.7	40.8	4.3	0.9	1.9	11.5	634
Northern	10.4	8.2	0.3	5.2	21.9	1.5	39.1	3.0	0.5	2.5	8.6	841
Population group												
African	19.1	9.4	0.2	5.0	16.1	4.9	44.7	3.0	0.7	1.5	6.6	6,823
Coloured	10.8	2.3	0.3	2.2	5.2	5.5	65.0	7.6	2.0	0.7	3.2	905
White	31.0	3.4	0.4	2.7	17.2	7.7	12.5	34.2	9.5	2.6	8.9	735
Asian	7.3	3.7	0.3	2.2	12.5	6.6	43.1	16.0	4.6	2.7	15.7	284
Total	18.8	8.0	0.2	4.4	14.9	5.3	44.1	6.5	1.7	1.5	6.8	8,796

Note: includes 49 women not stated as to population group.

4.4 Age at First Use

Age at first contraceptive use has dropped considerably, from 24 years among women 45-49 to 19 years among women 20-24 at the time of the survey (Table 4.5). This may reflect a number of factors, including an increase in acceptability of using a method at a younger age, the trend to delay childbearing, and a drop in the age at first sexual intercourse. There are no real differences in age at first use among ethnic groups, provinces and urban and non-urban women.

The proportion of women who were given advice and information on how to use contraception by parents has changed over the years, with 41 percent of the youngest age group reporting parental or guardian support, compared with just over a fifth (21 percent) in the oldest age group.

Background characteristic	Among all ever users			Those who used before age 19	
	Median age at first use	First used before age 19	Number of women who ever used	Percentage who got help from parents	Number who used before age 19
Age					
15-19	16.5	NA	875	40.5	849
20-24	18.8	55.0	1,666	30.7	913
25-29	19.7	42.0	1,614	27.3	675
30-34	20.4	34.0	1,453	23.7	500
35-39	21.6	26.0	1,420	22.7	368
40-44	22.0	21.0	1,055	18.1	224
45-49	24.0	13.0	713	21.1	90
Residence					
Urban	19.7	43.0	5,674	31.9	2,440
Non-urban	20.3	38.0	3,122	24.7	1,179
Province					
Western Cape	20.0	38.0	964	26.9	369
Eastern Cape	19.7	44.0	1,119	35.0	492
Northern Cape	20.7	30.0	191	26.8	57
Free State	20.2	40.0	612	43.9	247
KwaZulu-Natal	20.5	34.0	1,604	12.6	309
North West	19.7	43.0	718	47.8	539
Gauteng	19.4	46.0	2,113	30.3	980
Mpumalanga	19.0	50.0	634	29.9	315
Northern	20.4	37.0	841	21.6	310
Population group					
African	19.6	44.0	6,823	30.1	3,012
Coloured	20.7	33.0	905	19.2	294
White	20.3	32.0	735	40.7	232
Asian	21.3	24.0	284	9.8	68
Total	19.9	41.0	8,796	29.6	3,618

NA = Not applicable

4.5 Current Contraceptive Use

Contraceptive use is an important reproductive health indicator and can inform on the level of unmet need for contraception. The contraceptive prevalence rate (CPR) is usually defined as the percentage of currently married women who are currently using a method of contraception. Given the relatively high level of contraceptive use among unmarried women in South Africa, the data on contraceptive use in Table 4.6 are presented for all women, currently married women and all sexually active women.

Over half of all women are using a method of contraception, almost all of which are modern methods (Table 4.6 and Figure 4.1). By far the most widely used method is the injection (27 percent), followed by the pill and female sterilisation (9 percent each). Both the IUD, condom and male sterilisation are used by less than two percent of all women. Few women (less than 1 percent) use traditional methods of contraception. Looking at method use by age, injection is more popular at the younger ages, while sterilisation is the more popular method after the age of 35 years, with almost one in four women over the age of 40 having being sterilised. As expected, contraceptive use is higher among currently married women (56 percent) than all women and is highest among women who were sexually active in the four weeks before the survey (62 percent).

The highest prevalence is recorded in the 20-24 age group where 69 percent of all sexually active women are using a method of contraception. Rates drop to 57 percent in the 40-44 age group and to 46 percent among those 45 and over.

Some women are much more likely to use contraception than others. Table 4.7 shows current contraceptive use by background characteristics for all women - whether married or unmarried - who were sexually active in the four weeks preceding the interview. There is a large difference in current contraceptive use between urban and non-urban women with two-thirds (67 percent) of women in the urban areas using a method, compared to 54 percent in non-urban areas. The proportion of women using injectables is slightly higher in the non-urban areas (33 percent) than in the urban areas (28 percent). These differences can be partly explained by the fact that some non-urban areas rely on mobile clinics, which often supply injections in favour of pills. Use of the pill and female and male sterilisation is more common in urban areas, which may reflect differences in service availability or cultural acceptability.

Provincial differences in contraceptive prevalence are large. KwaZulu-Natal, Northern and Mpumalanga Provinces record the lowest rates, with levels of contraceptive prevalence below 60 percent. The lowest recorded prevalence is in Northern Province where only 55 percent of sexually active women are using a method of contraception. At 74 percent, Western Cape Province records the highest prevalence of all the provinces. This could be attributed to historically better health services and to the different demographic profile of the Western Cape compared to the rest of the country. There are also differences in the specific methods used. The proportion of women using injectables is highest in the North West, Eastern Cape and Free State. Twenty-four percent of sexually active women in the Western Cape have been sterilised, compared to only 4 percent of women in Northern Province.

Education plays a major role in contraceptive use with only a third (35 percent) of those who have not attended school using a method, compared to over three-quarters (79 percent) who attained a minimum of Standard 9..

There are also strong differences between ethnic groups, with white and Asian women reporting highest method use (76 and 80 percent, respectively), compared to 59 percent of African women and 69 percent of coloured women. There are also differences in use between urban and non-urban African women with contraceptive prevalence higher in the urban areas. The injection is the most popular method among African women (35 percent), followed by the pill (12 percent) and female sterilisation (8 percent).

Coloured women are also high users of injectables with over a quarter (27 percent) using this method. In contrast, Asian women have the highest levels of use of the pill and female sterilisation (34 and 32 percent, respectively) and only a very small proportion use the injection (4 percent). Similarly, among white women, the pill and sterilisation are the most popular methods (20 and 27 percent, respectively). White women also report the highest levels of use of male sterilisation (15 percent); far lower proportions of coloured and Asian women and no African women reported that their partners had been sterilised.

Contraceptive use increases with number of living children up to three children, and declines thereafter.

Table 4.6 Current use of contraception

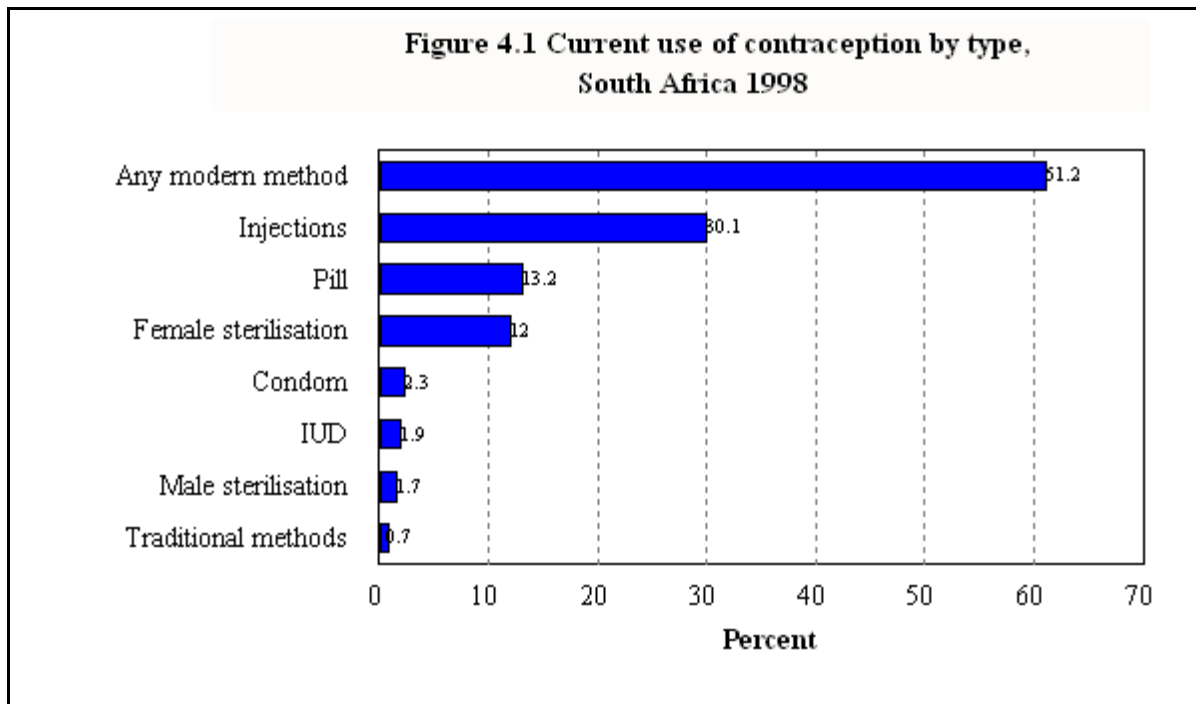
Percentage of all women, of currently married women, and of sexually active women who are currently using a contraceptive method, by method and age, South Africa 1998

Age	ALL WOMEN										Number of women				
	Modern method					Traditional method						Total			
	Any modern method	Pill	IUD	Injectables	Condom	Female sterilisation	Male sterilisation	Any trad. method	Periodic abstinence	Withdrawal			Herbs	Other	Not currently using
15-19	29.1	28.5	0.1	22.9	2.0	0.0	0.0	0.6	0.2	0.3	0.1	0.1	70.9	100.0	2,249
20-24	57.2	56.5	0.4	42.5	3.5	0.4	0.1	0.6	0.2	0.3	0.1	0.1	42.8	100.0	2,075
25-29	58.8	57.8	0.9	38.1	1.2	2.8	0.6	1.0	0.4	0.3	0.3	0.0	41.2	100.0	1,857
30-34	59.8	58.6	1.8	30.5	2.2	8.4	1.1	1.2	0.3	0.7	0.1	0.1	40.2	100.0	1,654
35-39	56.8	55.8	2.4	22.6	1.3	17.0	1.8	0.9	0.2	0.5	0.1	0.1	43.2	100.0	1,636
40-44	50.8	50.2	1.9	13.2	1.0	24.3	2.3	0.6	0.2	0.3	0.0	0.1	49.2	100.0	1,294
45-49	38.3	38.0	2.1	5.3	1.4	23.6	1.8	0.3	0.0	0.2	0.1	0.0	61.7	100.0	970
Total	50.1	49.3	1.2	27.3	1.9	8.7	0.9	0.8	0.2	0.4	0.1	0.1	49.9	100.0	11,735
CURRENTLY MARRIED WOMEN															
15-19	49.4	48.2	0.0	34.5	3.4	0.0	0.0	1.2	1.2	0.0	0.0	0.0	50.6	100.0	73
20-24	53.8	52.9	0.7	36.7	4.1	1.1	0.4	0.9	0.0	0.8	0.0	0.1	46.2	100.0	465
25-29	59.7	58.3	1.4	35.8	1.1	4.7	1.2	1.4	0.6	0.5	0.4	0.0	40.3	100.0	900
30-34	61.0	59.4	1.6	29.6	2.1	10.2	1.9	1.7	0.4	1.1	0.2	0.0	39.0	100.0	1,008
35-39	59.0	57.7	2.9	19.8	1.3	20.2	2.7	1.3	0.3	0.6	0.2	0.1	41.0	100.0	1,114
40-44	55.2	54.4	1.8	11.7	0.9	29.5	3.4	0.8	0.3	0.5	0.0	0.1	44.8	100.0	865
45-49	43.3	42.9	2.4	5.9	1.5	26.3	2.7	0.4	0.0	0.3	0.1	0.0	56.7	100.0	652
Total	56.3	55.1	1.8	23.2	1.7	15.8	2.1	1.1	0.3	0.6	0.2	0.1	43.7	100.0	5,077
SEXUALLY ACTIVE WOMEN															
15-19	66.4	64.4	0.5	50.7	4.0	0.0	0.0	2.0	0.7	0.7	0.4	0.2	33.6	100.0	412
20-24	68.6	68.0	1.3	48.9	4.2	0.7	0.2	0.6	0.0	0.4	0.1	0.1	31.4	100.0	960
25-29	65.4	64.3	1.3	39.6	1.1	3.4	1.0	1.1	0.5	0.2	0.3	0.0	34.6	100.0	1,122
30-34	63.8	62.9	2.4	29.1	2.7	9.9	1.6	0.9	0.3	0.4	0.2	0.1	36.2	100.0	1,102
35-39	62.4	61.1	3.2	21.3	1.8	19.4	2.7	1.3	0.3	0.7	0.1	0.1	37.6	100.0	1,073
40-44	56.6	55.9	2.4	13.8	0.9	26.5	3.4	0.8	0.3	0.4	0.0	0.1	43.4	100.0	838
45-49	45.5	45.1	2.6	6.1	2.4	26.1	2.7	0.4	0.0	0.4	0.0	0.0	54.5	100.0	554
Total	62.1	61.2	1.9	30.1	2.3	12.0	1.7	1.0	0.3	0.4	0.2	0.1	37.9	100.0	6,062

Table 4.7 Current use of contraception by background characteristics

Percent distribution of sexually active women by contraceptive method currently being used, according to background characteristics, South Africa 1998

Background characteristic	Any method		Pill	IUD	Injections	Condom	Sterilisation		Any traditional method	Periodic abstinence	Withdrawal	Herbs	Other methods	Not currently using	Total	Number
	Any method	Any modern method					Female	Male								
Residence																
Urban	66.8	66.0	15.2	2.6	28.4	2.7	14.7	2.3	0.8	0.4	0.3	0.1	0.0	33.2	100.0	3,855
Non-urban	53.9	52.7	9.7	0.6	32.9	1.6	7.4	0.6	1.2	0.1	0.7	0.2	0.1	46.1	100.0	2,207
Province																
Western Cape	73.9	73.7	11.3	1.3	32.2	2.2	23.9	2.7	0.2	0.2	0.0	0.0	0.0	26.1	100.0	594
Eastern Cape	60.2	59.9	9.0	1.4	36.6	1.4	9.7	1.9	0.3	0.1	0.1	0.0	0.1	39.8	100.0	691
Northern Cape	65.9	65.9	11.4	1.2	30.0	0.4	21.0	1.9	0.0	0.0	0.0	0.0	0.0	34.1	100.0	118
Free State	68.5	67.9	13.1	0.6	36.4	3.0	10.8	4.0	0.6	0.0	0.6	0.0	0.0	31.5	100.0	384
KwaZulu-Natal	58.3	57.1	13.5	1.2	26.1	2.5	13.4	0.3	1.2	0.2	0.9	0.0	0.2	41.7	100.0	1,146
North West	69.8	69.6	16.1	2.9	41.4	1.6	6.7	0.9	0.2	0.2	0.0	0.0	0.0	30.2	100.0	470
Gauteng	62.0	60.9	15.8	3.7	22.8	2.8	13.1	2.8	1.1	0.5	0.5	0.2	0.0	38.0	100.0	1,553
Mpumalanga	55.5	53.2	11.0	0.7	30.1	2.2	8.1	1.2	2.2	1.1	0.3	0.4	0.5	44.5	100.0	510
Northern	54.9	53.3	12.8	0.8	33.8	2.1	3.9	0.0	1.6	0.0	0.8	0.8	0.0	45.1	100.0	595
Education																
No education	35.1	33.1	3.7	0.0	20.1	0.5	8.8	0.0	2.0	0.5	1.4	0.0	0.1	64.9	100.0	455
Sub A - Std 3	45.0	43.7	6.4	0.4	22.7	1.6	12.6	0.0	1.3	0.0	1.1	0.2	0.0	55.0	100.0	704
Std 4 - Std 5	53.9	53.6	8.7	0.4	31.6	1.1	11.3	0.4	0.3	0.1	0.1	0.1	0.0	46.1	100.0	813
Std 6 - Std 9	65.7	64.6	11.7	2.1	34.2	2.2	13.2	1.2	1.1	0.3	0.4	0.3	0.1	34.3	100.0	2,416
Std 10	73.5	73.1	21.7	3.3	31.8	3.3	9.1	3.9	0.4	0.0	0.1	0.1	0.2	26.5	100.0	1,099
Higher	79.4	78.1	25.7	3.8	23.9	4.4	15.5	4.8	1.3	1.3	0.0	0.0	0.0	20.6	100.0	574
Population group																
African	58.6	57.6	11.5	1.5	35.1	1.8	7.7	0.0	1.0	0.3	0.5	0.2	0.1	41.4	100.0	4,636
Afr. urban	63.3	62.4	13.1	2.1	35.7	1.9	9.5	0.0	0.9	0.4	0.3	0.2	0.0	36.7	100.0	2,646
Afr. non-urban	52.4	51.2	9.2	0.6	34.3	1.7	5.4	0.0	1.2	0.1	0.8	0.2	0.2	47.6	100.0	1,991
Coloured	68.8	68.4	11.3	2.0	27.4	3.1	22.4	2.1	0.4	0.2	0.0	0.0	0.2	31.2	100.0	564
White	76.2	74.9	19.6	4.2	4.7	4.1	26.9	15.4	1.3	0.7	0.4	0.0	0.2	23.8	100.0	587
Asian	80.1	80.1	34.4	4.5	3.6	5.3	31.9	0.4	0.0	0.0	0.0	0.0	0.0	19.9	100.0	237
Living kids																
None	50.5	49.3	13.3	0.4	30.7	4.3	0.5	0.1	1.2	0.6	0.3	0.2	0.0	49.5	100.0	1,113
1	59.9	59.5	15.6	1.5	38.0	2.5	1.3	0.5	0.4	0.2	0.1	0.1	0.1	40.1	100.0	1,351
2	68.4	66.9	16.0	2.8	30.0	2.4	11.6	4.2	1.5	0.5	0.5	0.3	0.1	31.6	100.0	1,452
3	69.6	68.8	11.4	3.6	26.5	1.6	23.5	2.2	0.8	0.1	0.6	0.1	0.1	30.4	100.0	953
4+	61.9	61.0	8.4	1.2	23.4	0.7	26.2	1.1	0.9	0.0	0.8	0.0	0.1	38.1	100.0	1,193
Total	62.1	61.2	13.2	1.9	30.1	2.3	12.0	1.7	1.0	0.3	0.4	0.2	0.1	37.9	100.0	6,062



4.6 Number of Children at First Use

Table 4.8 shows how first use of contraception has changed over the years. In the youngest group of 15-19 years, over half (52 percent) used a method before their first child, compared to only 18 percent of women 45-49. Each five-year age group shows the trend towards starting to use a method earlier in their reproductive lives and reflects either a move towards delaying childbearing or the earlier onset of sexual activity.

Table 4.8 Number of children at first use of contraception

Percent distribution of ever-married women by number of living children at the time of first use of contraception, and median number of children at first use, according to current age, South Africa 1998

Current age	Never used contraception	Number of living children at time of first use of contraception							Total	Number of women	Median number of children at first use ¹
		0	1	2	3	4+	Missing				
15-19	29.4	52.0	18.6	0.0	0.0	0.0	0.0	100.0	93	0.0	
20-24	15.5	37.6	38.6	6.5	1.5	0.3	0.0	100.0	511	0.1	
25-29	11.8	38.4	37.5	6.7	3.6	1.4	0.6	100.0	994	0.1	
30-34	11.3	31.6	38.6	9.1	3.7	5.2	0.4	100.0	1,176	0.3	
35-39	12.8	28.0	32.2	11.1	7.4	7.7	0.8	100.0	1,333	0.5	
40-44	17.8	21.7	32.7	12.5	6.5	8.8	0.0	100.0	1,105	0.6	
45-49	24.7	18.0	20.4	13.4	9.4	13.5	0.6	100.0	859	0.9	
Total	15.4	29.0	33.1	10.0	5.6	6.5	0.4	100.0	6,070	0.4	

¹ Among ever-married women who have ever used contraception

4.7 Knowledge of Fertile Period

An elementary knowledge of reproductive physiology provides a useful background for successful practice of coitus-related methods such as the calendar method, the Billings method, and other types of periodic abstinence. In the SADHS, women were asked when during a woman's monthly cycle, she has the greatest chance of becoming pregnant. Over a third of women (38 percent) reported that they did not know when this time was. Only 11 percent gave the correct answer by stating that the greatest risk was in the middle of the cycle. Twenty percent thought the most likely time to conceive is just before a woman's period begins and 23 percent said it is right after the period has ended. Five percent said that women are most likely to conceive during their menstrual periods.

4.8 Postpartum Amenorrhoea, Abstinence and Insusceptibility

Table 4.9 shows that about half of women in South Africa remain amenorrhoeic for at least two months following a birth. Thirty-five percent of women remain amenorrhoeic for at least one year following a birth while 28 percent abstains from sexual relations for this duration. On average, women are amenorrhoeic for ten months and abstain from sexual relations for 10 months following a birth. The median duration of postpartum sexual abstinence is 4.9 months. Forty percent of women remain insusceptible to the risk of pregnancy for at least 16 months after a birth. Thereafter, women become increasingly susceptible although the loss of insusceptibility is not dramatic in subsequent months after a birth. The loss of insusceptibility does not necessarily increase with increase in months since a birth. The lower and upper bounds of percentages insusceptible are 20.1 for 28-29 months and 31.8 for 22-23 months following a birth.

Table 4.10 presents the median duration of postpartum insusceptibility by background characteristics. The median duration of amenorrhoea is 2.4 months while the median duration of post partum sexual abstinence is 4.9 months following a birth. Uneducated women and those in Northern Province have remarkably higher duration of amenorrhoea than others. Similarly, the duration of post partum sexual abstinence is highest in Northern Province.

Postpartum				
Months since birth	Amenorrhoeic	Abstaining	Insusceptible	Number of births
<2	57.7	88.7	90.8	123
2-3	51.6	68.0	80.1	195
4-5	43.2	46.9	65.8	204
6-7	42.1	40.6	62.0	173
8-9	37.7	36.8	59.6	184
10-11	36.8	28.6	51.7	162
12-13	35.3	27.6	48.6	165
14-15	30.9	26.3	48.1	167
16-17	24.8	21.1	40.0	176
18-19	16.6	12.9	27.6	177
20-21	22.2	13.1	31.8	151
22-23	13.5	17.3	27.1	181
24-25	18.5	9.8	27.0	190
26-27	15.4	14.0	25.1	175
28-29	9.9	11.6	20.1	161
30-31	13.6	9.1	20.3	147
32-33	19.8	17.0	29.3	144
34-35	14.0	19.6	28.7	163
Total	28.0	28.1	43.6	3,037
Median	2.4	4.9	12.2	-
Mean	10.5	10.5	16.0	-
Prev/Incidence Mean	10.0	10.0	15.5	-

Table 4.10 Median duration of postpartum insusceptibility by background characteristics

Median number of months of postpartum amenorrhoea and postpartum insusceptibility by selected background characteristics, South Africa 1998

	Postpartum			Number of births
	Amenorrhoeic	Abstaining	Insusceptible	
Respondent's age				
<30	2.4	5.3	14.4	1, 869
30+	2.4	4.5	10.8	1, 169
Residence				
Urban	0.7	3.8	10.7	1, 472
Non-urban	6.3	5.8	14.0	1, 565
Province				
Western Cape	4.9	5.2	9.1	255
Eastern Cape	5.3	6.2	11.6	453
Northern Cape	0.8	3.7	14.0	60
Free State	2.4	7.1	16.6	153
KwaZulu-Natal	3.4	2.9	8.9	676
North West	1.4	5.8	13.9	211
Gauteng	0.5	2.5	6.5	559
Mpumalanga	3.7	4.5	7.1	228
Northern Province	8.9	11.9	17.7	441
Education				
No education	12.5	4.6	15.3	261
SubA-Std3	0.6	5.4	13.4	386
Std4-Std5	2.1	4.5	15.9	457
Std6-Std9	3.6	5.5	11.1	1, 267
Std 10	0.6	4.2	9.3	479
Higher	0.7	3.4	8.4	189
Population group				
African	2.4	5.2	13.3	2, 540
Afr. urban	0.6	4.1	11.8	1, 075
Afr. non-urban	6.4	5.8	14.1	1, 466
Coloured	0.7	5.5	10.3	284
White	3.4	2.2	4.8	132
Asian	2.1	0.4	2.5	62
Total	2.4	4.9	12.2	3, 037

4.9 Timing of Sterilisation

Almost one-quarter of women over the age of 40 in South Africa have been sterilised. The median age at which women have the procedure done has increased slightly from 32 to 34 years over the past decade or so (Table 4.11). This increase may reflect the move towards women starting their families later.

Table 4.11 Timing of sterilisation

Percent distribution of sterilised women by age at the time of sterilisation, according to the number of years since the operation, South Africa 1998

Years since operation	Age at time of sterilisation						Total	Number of women	Median age ¹
	<25	25-29	30-34	35-39	40-44	45-49			
<2	6.0	20.3	23.8	28.7	16.3	4.8	100.0	195	33.8
2-3	0.9	17.7	31.0	28.3	16.9	5.2	100.0	170	33.8
4-5	6.8	15.0	36.3	30.7	11.2	0.0	100.0	151	33.6
6-7	0.6	19.0	40.0	33.3	7.1	0.0	100.0	130	33.0
8-9	10.4	25.1	38.7	23.4	2.5	0.0	100.0	114	32.0
10+	9.0	36.8	39.6	14.6	0.0	0.0	100.0	259	a
Total	5.9	23.6	34.6	25.3	8.8	1.8	100.0	1,020	32.6

¹ Median age was calculated only for women less than 40 years of age to avoid problems of censoring.

^a Not calculated due to censoring

4.10 Source of Contraceptive Method

In the SADHS, women who reported using a modern method of contraception at the time of the survey were asked where they obtained their method the last time. Table 4.12 shows that the majority of users (84 percent) obtain their contraceptives from the public sector. Government hospitals are the most common public source (38 percent), followed by day hospital/clinics (20 percent) and family planning clinics (20 percent). Mobile clinics are used by six percent of modern method users. A tiny fraction of women reported obtaining their method from a community health worker, which might refer to the community-based distribution programme that is available as a pilot project at limited sites in six provinces.

Fourteen percent of women use the private medical sector to get their contraceptives. Half of the private sector users (7 percent) go to a private doctor or gynaecologist, while five percent use a private hospital and two percent a pharmacy.

Although the private sector is used by a smaller proportion of women, it is the source of supply for almost half (46 percent) of IUD users and a quarter of pill users (25 percent). Half of male sterilisations (48 percent) are also performed in the private sector. Public sector sources supplied almost all (93 percent) of injectable users and over three-quarters (77 percent) of condom users.

Table 4.12 Source of supply for modern contraceptive methods

Percent distribution of current users of modern contraceptive methods by most recent source of supply, according to specific methods, South Africa 1998

Source of supply	Pill	IUD	Injectables	Condom	Female sterilisation	Male sterilisation	All modern methods
Public	73.2	53.1	93.0	77.1	76.4	30.9	83.6
Government hospital	24.1	22.1	32.9	26.1	72.0	26.9	37.5
Day hospital/clinic	18.2	10.0	27.3	17.1	4.3	4.0	20.3
Family planning clinic	24.9	19.3	24.2	26.3	0.2	0.0	19.6
Mobile clinic	5.9	1.7	8.5	7.0	0.0	0.0	6.1
Community health worker	0.2	0.0	0.1	0.0	0.0	0.0	0.1
Other public	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Private medical	24.8	46.3	6.3	7.4	22.2	48.1	14.4
Private hospital/clinic	1.4	5.9	0.6	0.0	21.4	47.1	5.4
Pharmacy	7.3	0.8	0.5	7.4	0.0	0.0	2.0
Private doctor/gynecologist	16.1	37.9	5.1	0.0	0.8	1.0	7.0
Other private	0.0	1.7	0.0	0.0	0.0	0.0	0.0
Other private	1.5	0.0	0.2	13.3	0.0	0.0	0.9
Shop	0.0	0.0	0.0	6.2	0.0	0.0	0.2
Friend/relative	0.2	0.0	0.0	1.8	0.0	0.0	0.1
Other	1.3	0.0	0.2	5.4	0.0	0.0	0.6
Missing	0.5	0.7	0.5	2.2	1.4	20.9	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1,096	143	3,199	224	1,020	108	5,790

4.11 Quality of Contraceptive Services

Information on the perceived quality of care for women accessing family planning services was collected in the SADHS. Specifically, women using modern methods other than sterilisation were asked if they agreed with each of four statements about the family planning service they used: (1) the staff shout and scold; (2) the staff do not explain much about the family planning method; (3) the staff ignore problems which you report; and (4) the staff are unfriendly.

Overall, about one in 6 or 7 users agreed with each statement (Table 4.13). In the public services, family planning clinics were rated as giving the poorest quality in all areas that were assessed by the survey. A fifth of family planning clinic users feel that staff shout or scold (21 percent), do not explain much about their method to them (21 percent) or are unfriendly (20 percent). These figures are slightly lower for those who use government hospitals and day hospitals/clinics. Staff at mobile clinics were rated overall as the least unfriendly (14 percent) and least likely to scold and shout (15 percent), among government-sector users.

Quality is also an issue for private sector family planning users. Pharmacies were seen as providing the least quality service of all private and public outlets with a quarter (25 percent) of users regarding them as unfriendly. Seventeen percent of women who go to private doctors or gynaecologists reported that staff shout or scold and one fifth (20 percent) reported that staff did not explain the method to them. Private hospitals and clinics appear to provide the best service with only small numbers reporting poor quality.

Table 4.13 Quality of family planning services

Percentage of current users of modern contraceptive methods who agree with statements about the family planning service they use, according to source of service, South Africa 1998

Source of method	Shout and scold	Does not explain much about the method	Ignore problems I report	Are un-friendly	Number of current users
Public	17.9	16.4	14.1	17.0	4,839
Government hospital	16.6	15.9	13.9	16.4	2,170
Day hospital/clinic	18.8	13.3	12.1	16.0	1,173
Family planning clinic	20.6	20.7	17.1	20.2	1,136
Mobile clinic	14.7	16.8	12.7	13.9	354
Private	12.6	15.1	11.6	13.6	834
Private hospital/clinic	3.3	4.3	2.5	3.8	313
Pharmacy	21.6	26.3	23.6	24.7	115
Private doctor/gynecologist	17.4	20.4	15.3	18.1	403
Total	16.8	15.9	13.4	16.1	5,790

Note: Total includes some users of other private sources

4.12 Breaks in Contraceptive Use

All women who reported that they were currently using a modern method other than sterilisation were asked if they had a break in their contraceptive use for any reason in the last year (Table 4.14). If a break was reported women were asked to specify the reason for this break. In total, 22 percent of women had taken a break from using contraception in the last year. This was highest in the 25-29 age group where one quarter (25 percent) had stopped their method. Women over the age of forty were least likely to have taken a break and this may be because women in this age group are more likely to have completed their families. It may also be that women in this age group are highly motivated not to fall pregnant. Provincial differences can also be seen, with almost one-third of users in Mpumalanga having taken a break, compared to much lower figures in the other provinces.

Being pregnant was the main reason for the break in use in all age groups. Other reasons included health reasons, sexual inactivity and wanting to see menstruation. The majority (84 percent) of women wanting to see a menstrual period were injectable users (data not shown). Amenorrhoea is a common menstrual side effect of the method and one that affects up to 50 percent of users after one year of use. This number increases with prolonged use of the method. Many women are concerned that their fertility may be affected if they do not menstruate. A smaller number of women (11 percent) in this group were pill users, which can also reduce menstruation.

Table 4.14 Breaks in contraceptive use

Percentage of women using modern methods other than sterilisation who have had a break in use in the 12 months preceding the survey and of those, reasons for the break, South Africa 1998

Characteristic	Percentage with break	No. of users	Was pregnant	No boyfriend/sexually inactive	Wanted to see menstruation	Health reasons	Other	Missing	Total	Number of women
Age										
15-19	18.6	642	32.7	18.6	17.9	17.8	13.0	0.0	100.0	119
20-24	23.1	1,164	38.5	10.3	15.2	25.0	10.6	0.4	100.0	268
25-29	25.1	1,010	49.0	12.2	12.5	15.7	10.6	0.0	100.0	253
30-34	24.0	811	46.8	5.7	13.5	15.1	18.0	0.9	100.0	195
35-39	18.9	606	41.5	7.6	15.6	26.1	9.2	0.0	100.0	114
40-44	17.6	306	31.6	9.7	11.7	29.5	17.5	0.0	100.0	54
45-49	6.6	122	*	*	*	*	*	*	100.0	8
Residence										
Urban	21.6	3,006	37.9	12.9	15.4	20.6	12.9	0.3	100.0	650
Non-urban	21.9	1,655	48.4	7.1	12.9	19.4	12.0	0.2	100.0	362
Province										
Western Cape	22.0	497	47.6	13.3	8.3	10.7	20.2	0.0	100.0	109
Eastern Cape	23.0	621	34.4	14.1	18.5	18.3	14.7	0.0	100.0	143
Northern Cape	18.5	95	71.0	1.4	6.8	11.1	9.8	0.0	100.0	18
Free State	21.1	356	43.0	5.6	12.3	25.8	13.3	0.0	100.0	75
KwaZulu-Natal	17.8	763	44.7	9.1	12.2	21.0	12.9	0.0	100.0	136
North West	15.3	471	28.5	10.5	17.6	26.9	13.7	2.9	100.0	72
Gauteng	25.1	1,051	43.4	11.8	12.7	21.7	10.4	0.0	100.0	264
Mpumalanga	31.4	322	44.4	14.4	24.1	9.4	7.0	0.6	100.0	101
Northern	19.3	485	37.0	4.9	14.8	32.1	11.1	0.0	100.0	94
Population group										
African	21.7	3,844	40.7	11.2	16.9	21.1	9.7	0.3	100.0	835
Coloured	23.0	441	56.4	8.1	3.5	12.5	19.6	0.0	100.0	101
White	22.2	228	37.1	6.1	0.0	23.2	33.6	0.0	100.0	50
Asian	13.9	129	*	*	*	*	*	*	100.0	18
Total	21.7	4,661	41.7	10.8	14.5	20.2	12.6	0.3	100.0	1,012

An asterisk refers to a figure based on fewer than 25 cases that has been suppressed.

4.13 Intention to Use among Non-users

For nonusers of contraception, intention to use in the future is an important indicator of potential demand. This survey showed that 44 percent of married women were not using a method of contraception at the time of interview. These women were asked if they intended to use a method in the future.

Almost half (47 percent) of married nonusers said they do not intend to use a method in the future (Table 4.15). One-third (34 percent) reported that they would use in the next 12 months and ten percent said they would use later than this. The proportion of those not intending to use is highest among women who have no children (56 percent).

Table 4.15 Future use of contraception

Percent distribution of currently married women who are not using a contraceptive method by intention to use a method in the future, according to number of living children, South Africa 1998

Future use of contraception	Number of living children ¹					Total
	0	1	2	3	4+	
Intend to use in next 12 months	15.8	34.6	35.5	40.4	34.8	33.6
Intend to use later	18.6	16.1	9.9	6.3	4.7	10.0
Unsure as to timing	0.7	1.9	0.5	1.2	0.4	0.9
Unsure as to intention	7.7	3.6	5.8	5.4	4.9	5.3
Do not intend to use	56.2	42.8	43.5	41.7	50.5	46.7
Don't know/Missing	0.9	1.0	4.7	4.9	4.7	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	265	433	506	357	660	2,221

¹ Includes current pregnancy

4.14 Reasons for Non-use

Currently married women who were not using any method of contraception and did not intend to use in the future were asked why they did not want to use (Table 4.16). The main reason cited in the under 30 age group is a desire to have more children (47 percent), followed by health reasons (18 percent). In some cases, either the woman or her husband are opposed to using family planning (11 and 6 percent, respectively). In the over 30 age group, one-fifth (20 percent) cited wanting more children as the main reason for not wanting to use contraception. Health concerns are also a major reason in this group. Seventeen percent reported they were menopausal or had undergone a hysterectomy, while 10 percent of women in this age group reported they were infertile or subfertile. The level of opposition from the husband in the under 30 age group was surprisingly similar to that of the 30-49 year age group.

Table 4.16 Reasons for not intending to use contraception

Percent distribution of currently married women who are not using a contraceptive method and who do not intend to use in the future, by main reason for not intending to use, according to age, South Africa 1998

Reason for not intending to use contraception	Age		Total
	<30	30-49	
Infrequent sex	3.7	4.5	4.4
Menopausal, hysterectomy	0.0	17.1	14.9
Subfecund, infecund	0.9	9.5	8.4
Wants more children	47.0	20.2	23.8
Respondent opposed	11.3	7.9	8.4
Husband opposed	5.9	4.7	4.9
Religious prohibition	4.5	4.1	4.2
Knows no method	0.4	1.8	1.6
Knows no source	0.0	0.7	0.7
Health concerns	17.6	17.1	17.2
Fear side effects	3.5	2.1	2.3
Inconvenient to use	0.6	0.4	0.5
Interferes with body	3.6	1.9	2.2
Other	0.2	5.8	5.0
Don't know	0.0	0.8	0.7
Missing	0.9	1.0	1.0
Total	100.0	100.0	100.0
Number	137	899	1,036

4.15 Preferred Contraceptive Method for Future Use

Married women who were not currently using contraception but who stated an intention to use in the future were asked what method they would choose. Almost half said they would use the injection (48 percent) and almost a quarter the pill (24 percent). Fewer said they would choose sterilisation (15 percent), the IUD (4 percent) and condoms (3 percent). These proportions are similar to current use of contraception and therefore do not indicate any change in demand for any particular method.

4.16 Exposure to Family Planning Messages in the Electronic Media

To gauge exposure to media, women were asked if they had heard a radio or television message about family planning in the few months prior to the interview. Table 4.17 shows that almost three-quarters of women (73 percent) had heard a family planning message on either radio or television or both. Forty-two percent had been exposed to messages on both radio and television. The age group least accessed by radio or television are those aged 15-19, 35 percent of whom reported not having heard family planning messages on either media. Non-urban women are less exposed to family planning messages than urban women; almost a third (32 percent) of non-urban women reported not having heard any family planning messages on either radio or television, compared to 24 percent in the urban group. Almost half (49 percent) of urban women had heard messages on both radio and television, compared to 30 percent of non-urban women. There are also distinct provincial differences in media coverage. Fifty-five percent of women in the Free State and North West reported they had heard messages on both television and radio, compared to only 24 percent reported in the Northern Province. In some provinces, the health promotion departments work through community radio as a medium for family planning messages which may contribute to the differences between provinces.

As expected, less educated women are more likely to hear messages on the radio only, while those with higher education are more likely to hear messages on both radio and television. African women are most likely to have heard messages through radio and least likely to have heard messages on television, compared to the other ethnic groups.

4.17 Acceptability of Media Messages on Family Planning

In an effort to gauge the acceptability of contraceptive messages, women interviewed in the SADHS were asked if they thought it was acceptable for information about family planning to be provided on the radio and on television. Results show that acceptability of media messages on family planning is very high with almost all (94 percent) women finding radio and television acceptable means of disseminating information. There are only slight differences in acceptability by age, province and ethnic group. The level of acceptability among non-urban women is only marginally lower than that of the urban group. A gradient is noted by education, with an increasing level of acceptability amongst the more educated respondents. These differences may reflect cultural differences between these respondents, or lack of access to the media in the less well educated respondents.

Table 4.17 Heard about family planning on radio and television

Percent distribution of women by whether they heard a radio and/or television message about family planning in the six months prior to the interview, according to selected background characteristics, South Africa 1998

Background characteristic	Heard on both radio and TV	Radio only	Television only	Heard on neither	Missing	Total	Number of women
Age							
15-19	35.9	21.4	7.5	35.1	0.1	100.0	2,249
20-24	42.5	25.5	6.5	25.3	0.2	100.0	2,075
25-29	43.6	25.3	6.4	24.6	0.2	100.0	1,857
30-34	42.6	24.6	8.2	24.4	0.1	100.0	1,654
35-39	45.0	24.1	7.0	23.8	0.0	100.0	1,636
40-44	45.1	21.2	7.4	25.9	0.5	100.0	1,294
45-49	40.6	24.3	7.4	27.7	0.0	100.0	970
Residence							
Urban	49.4	16.3	10.2	24.0	0.2	100.0	7,095
Non-urban	30.4	35.3	2.5	31.6	0.2	100.0	4,640
Province							
Western Cape	43.2	9.8	16.4	30.5	0.1	100.0	1,193
Eastern Cape	30.8	28.2	3.7	37.3	0.0	100.0	1,566
Northern Cape	33.5	13.7	8.3	44.4	0.1	100.0	253
Free State	55.1	21.1	4.4	19.2	0.2	100.0	763
KwaZulu-Natal	41.8	28.6	5.4	24.0	0.2	100.0	2,364
North West	54.7	14.1	4.7	26.5	0.1	100.0	909
Gauteng	50.1	17.6	11.2	20.9	0.2	100.0	2,552
Mpumalanga	40.8	30.8	4.5	23.8	0.1	100.0	819
Northern	24.1	40.6	2.9	32.1	0.3	100.0	1,316
Education							
No education	22.7	40.9	1.5	34.8	0.1	100.0	804
Sub A - Std 3	34.4	33.4	2.7	29.5	0.0	100.0	1,291
Std 4 - Std 5	37.8	27.0	4.7	30.1	0.2	100.0	1,625
Std 6 - Std 9	44.2	21.8	7.8	26.0	0.2	100.0	5,181
Std 10	49.4	18.2	10.4	21.9	0.2	100.0	1,922
Higher	47.8	12.3	12.3	27.5	0.0	100.0	912
Population group							
African	43.7	27.6	3.5	24.9	0.2	100.0	9,147
Afr. urban	55.4	19.7	5.1	19.7	0.1	100.0	4,873
Afr. non-urban	30.4	36.7	1.7	31.0	0.2	100.0	4,274
Coloured	39.1	10.2	18.2	32.3	0.2	100.0	1,201
White	27.5	11.7	22.5	38.0	0.3	100.0	916
Asian	40.4	5.2	22.2	32.1	0.0	100.0	406
Total	41.9	23.8	7.1	27.0	0.2	100.0	11,735

4.18 Exposure to Family Planning Messages in the Print Media

Women were asked if they had seen any family planning messages in the print media in the few months prior to the interview. This includes newspapers, magazines, posters, leaflets and brochures. Just over half of all women (54 percent) have been exposed to family planning messages through at least one print medium (Table 4.18). Differences in exposure among the print media are small, with newspapers and magazines reaching 41 percent of women, posters reaching 39 percent and leaflets and brochures slightly lower at 35 percent.

The most striking difference is by education; less than one-fifth (18 percent) of those with no education saw a family planning message in the few months before the survey, compared with 81 percent of women with the highest education. This largely reflects the lower literacy levels in the poorly educated groups.

Provincial differences also highlight wide ranges of exposure. Only 31 percent of women in the Eastern Cape report exposure to family planning messages in the print media, compared to 77 percent of women in Gauteng and 65 percent in the Western Cape. Women in urban areas are almost twice as likely as their non-urban counterparts to have been exposed to messages in the print media (66 vs. 36 percent, respectively). Racial differences in exposure to family planning messages in the print media show similar patterns as those seen for the electronic media with African women least likely to report exposure.

Source of method	Any source	News-paper magazine	Poster	Leaflet, brochure	Number of women
Age					
15-19	48.0	36.2	33.9	28.3	2,249
20-24	57.4	44.9	42.3	39.0	2,075
25-29	58.7	46.4	42.2	37.8	1,857
30-34	57.3	43.5	41.7	35.2	1,654
35-39	54.8	41.6	42.8	35.6	1,636
40-44	53.0	40.1	38.5	34.7	1,294
45-49	43.6	33.0	32.5	29.0	970
Residence					
Urban	65.6	51.4	48.5	43.6	7,095
Non-urban	35.7	25.9	25.6	20.5	4,640
Province					
Western Cape	65.2	49.4	49.7	43.1	1,193
Eastern Cape	31.4	24.0	22.9	19.2	1,566
Northern Cape	48.3	35.4	29.7	24.8	253
Free State	49.2	35.7	34.0	26.4	763
KwaZulu-Natal	47.5	41.1	31.1	28.2	2,364
North West	56.7	46.4	40.9	33.8	909
Gauteng	77.0	59.7	57.6	55.1	2,552
Mpumalanga	58.5	36.0	50.0	40.0	819
Northern	35.2	23.6	26.7	19.6	1,316
Education					
No education	17.7	9.8	14.4	11.6	804
Sub A - Std 3	30.5	18.9	23.5	20.1	1,291
Std 4 - Std 5	41.3	28.3	30.1	25.4	1,625
Std 6 - Std 9	57.2	43.7	41.1	36.6	5,181
Std 10	73.1	60.9	54.5	47.9	1,922
Higher	80.7	69.3	59.3	50.7	912
Population group					
African	49.2	37.5	36.8	32.9	9,147
Afr. urban	62.8	48.9	47.3	44.2	4,873
Afr. non-urban	33.6	24.5	24.8	20.0	4,274
Coloured	66.2	51.0	50.0	45.6	1,201
White	75.9	57.5	46.9	32.1	916
Asian	69.4	61.7	47.8	41.2	406
Total	53.8	41.3	39.4	34.5	11,735

4.19 Discussion of Family Planning with Husband

Married women were asked how often they had discussed family planning issues with their husband in the past year. Overall, more than two-thirds (68 percent) said they had discussed family planning with their husbands, mostly once or twice but commonly more often (Table 4.19). About one-third said they had not discussed family planning with their husbands at all in the year prior to the survey. The 20-24 age group are the most likely to discuss family planning issues, with 81 percent reporting discussion at least once in the last year. Women over the age of forty are less likely to discuss this issue, with 42 percent of the 40-44 age group and 51 percent of the 45-49 age group reporting that they had not talked about family planning issues with their husbands in the last year. This may reflect cultural reluctance in the older age group or the higher use of longer-term methods or the lower frequency of sexual intercourse.

Table 4.19 Discussion of family planning with husband

Percent distribution of currently married, nonsterilised women who know a contraceptive method by the number of times family planning was discussed with their husband in the past year, according to selected background characteristics, South Africa 1998

Age	Number of times family planning discussed with husband			Missing	Total	Number of women
	Never	Once or twice	More often			
15-19	32.1	34.2	33.7	0.0	100.0	69
20-24	18.1	43.5	37.3	1.1	100.0	450
25-29	22.6	45.4	31.4	0.6	100.0	832
30-34	27.2	40.0	31.9	0.9	100.0	873
35-39	33.0	40.6	26.2	0.2	100.0	840
40-44	41.8	37.2	20.0	1.1	100.0	561
45-49	51.4	32.5	14.8	1.3	100.0	446
Total	31.2	40.3	27.7	0.8	100.0	4,071

4.20 Attitudes of Couples Toward Family Planning

Women interviewed in the SADHS were asked if they themselves approved of couples using a method to avoid getting pregnant and if their husbands approved. The results are shown in Table 4.20. Two-thirds of married, non-sterilised women (67 percent) report they together with their husbands, approved of family planning. In couples where there is not joint approval, it is nearly always the case that the husband disapproves (17 percent) while the woman approves. Only a small minority (less than one percent) of women say that they disapprove of family planning and their husbands approve. Lack of communication is evident in some cases where the respondent was not aware of her husband's position on family planning (7 percent). Five percent of women say that both they and their husbands disapprove of use of a method.

From the totals it seems as if far fewer men than women approve of family planning use, at least according to the reports of their wives. This difference can be seen in all age, racial and education groups, as well as by province and urban/non-urban residence. The gap between men and women is smallest for the most educated group of women. The widest gap in opinion can be seen among women with no education, where although 79 percent of the women approve of family planning less than half (47 percent) say their partners approve. Spousal approval of family planning is fairly constant (68-73 percent for women under the age of 40; however, this figure decreases among women in their 40s, until it reaches a low of 58 percent in the 45-

49 age group. Although 90 percent of married African women approve of family planning, only 64 percent say their husbands are likely to agree with them.

Similar levels of joint approval by both husband and wife can be seen between the ages of 20 to 34. After this age group, the level of approval by both partners starts to decrease, with the lowest level reported in the 45-49 age group (57 percent). The level of approval varies by residence, with couples in urban areas reporting higher levels of joint approval than those in non-urban areas (72 and 60 percent, respectively). Education plays an important role in joint approval with the majority of the highest educated women (93 percent) saying that both they and their husbands approve of use of family planning. This figure drops to less than half (44 percent) of the women with no education. Women with no education are also most likely to report they are unsure of their husband's opinion on the matter (14 percent) and that both disapprove of use (12 percent).

Table 4.20 Wives' perceptions of couple's attitude toward family planning

Percent distribution of currently married, nonsterilised women who know of a contraceptive method by wife's attitude toward family planning and wife's perception of her husband's attitude toward family planning, according to selected background characteristics, South Africa 1998

Background characteristic	Woman approves			Woman disapproves				Missing	Total	Wife approves	Husband approves ¹	Number of women
	Both approve	Husband disapproves	Husband's attitude unknown	Both disapprove	Husband's attitude approves	Husband's attitude unknown	Wife unsure					
Age												
15-19	64.6	15.5	9.8	3.9	3.4	0.0	2.2	0.7	100.0	89.8	67.9	69
20-24	69.5	18.0	4.9	4.1	0.9	0.1	1.5	1.1	100.0	93.3	70.7	450
25-29	71.6	17.0	5.2	3.1	0.6	0.2	1.4	1.0	100.0	94.3	72.9	832
30-34	71.1	14.0	7.1	4.4	0.5	0.1	1.9	1.0	100.0	93.0	72.0	873
35-39	67.0	18.1	5.6	4.2	1.4	1.2	2.2	0.3	100.0	90.8	69.4	840
40-44	59.0	16.8	9.2	6.9	1.2	1.5	4.1	1.3	100.0	86.1	61.0	561
45-49	57.4	20.1	7.4	9.3	0.7	1.3	2.4	1.5	100.0	86.1	58.1	446
Residence												
Urban	72.2	13.6	5.3	4.3	0.8	0.8	2.0	0.9	100.0	91.9	73.7	2,304
Non-urban	60.0	21.3	8.0	5.7	1.1	0.6	2.3	1.0	100.0	90.0	61.5	1,768
Province												
Western Cape	77.4	7.3	8.1	2.6	0.0	0.3	3.6	0.7	100.0	93.5	78.1	352
Eastern Cape	66.4	17.7	4.8	4.9	0.6	1.4	2.6	1.4	100.0	90.1	67.6	489
Northern Cape	66.5	13.6	8.7	5.8	1.1	1.1	3.2	0.0	100.0	88.7	68.2	85
Free State	75.9	13.6	5.4	1.9	1.1	0.3	1.2	0.6	100.0	95.2	77.6	288
KwaZulu-Natal	59.9	21.4	9.7	4.9	0.5	0.8	2.2	0.5	100.0	91.6	60.6	734
North West	74.1	8.8	6.3	4.2	2.2	1.0	2.2	1.3	100.0	89.5	78.2	306
Gauteng	68.9	15.6	5.1	5.2	0.7	0.7	2.5	1.2	100.0	90.6	70.4	965
Mpumalanga	60.2	23.5	6.9	5.7	1.2	0.6	0.8	1.1	100.0	91.5	62.0	262
Northern	61.5	22.2	5.5	7.3	1.4	0.0	1.4	0.8	100.0	89.6	62.9	590
Education												
No education	44.2	19.1	13.6	11.5	1.7	1.9	5.9	2.1	100.0	78.6	46.7	428
Sub A - Std 3	50.3	27.3	10.3	7.5	0.5	0.7	2.6	0.6	100.0	88.5	51.1	610
Std 4 - Std 5	64.2	19.0	6.2	5.9	0.4	0.9	2.6	0.8	100.0	89.9	65.0	630
Std 6 - Std 9	70.4	16.4	5.8	3.6	0.9	0.3	1.5	1.1	100.0	93.3	72.1	1,490
Std 10	80.7	11.2	2.7	1.7	1.5	0.6	0.9	0.8	100.0	95.1	82.7	596
Higher	92.6	3.7	0.8	1.2	0.5	0.4	0.8	0.0	100.0	97.1	93.1	316
Population group												
African	62.5	20.0	7.0	5.7	0.9	0.6	2.3	1.0	100.0	90.2	63.9	3,162
Afr. urban	66.1	17.7	5.7	5.5	0.9	0.7	2.3	1.1	100.0	90.5	67.6	1,543
Afr. non-urban	59.0	22.3	8.1	5.9	1.0	0.4	2.3	0.9	100.0	90.0	60.4	1,619
Coloured	73.3	10.2	7.8	3.5	1.0	0.7	2.6	0.9	100.0	92.1	75.4	384
White	89.7	2.1	2.8	0.8	0.3	1.8	1.7	0.9	100.0	94.6	90.9	346
Asian	90.7	3.7	3.6	2.0	0.0	0.0	0.0	0.0	100.0	98.0	90.7	157
Total	66.9	17.0	6.5	4.9	0.9	0.7	2.2	0.9	100.0	91.1	68.4	4,071

¹ Includes women who are unsure about their own attitude, but know their husband's attitude

4.21 Perceptions About the Legality of Abortion

In 1996, the Choice on Termination of Pregnancy Act (Act No. 92 of 1996) was passed by Parliament and provincial health departments were required to establish accessible and high quality abortion services. One of the basic prerequisites for an accessible service is that potential service users should know their rights in terms of the legislation. In order to assess the extent to which women have this knowledge, all women interviewed in the SADHS were asked whether the present law allowed a woman in early pregnancy to have an abortion. The results are presented in Table 4.21. Overall, 53 percent of women know about the law. Knowledge is poorest amongst teenage women and those aged 45-49, those living in non-urban areas and those in Eastern Cape, Northern and Northern Cape provinces. There were marked differences in knowledge among racial groups and by education. White and Asian women and those who are more educated are much more likely to know about the legislation.

Background characteristic	No	Yes	Don't know Missing	Total	Number
Age					
15-19	21.7	40.1	38.2	100.0	2,249
20-24	20.2	55.1	24.7	100.0	2,075
25-29	18.7	57.3	24.0	100.0	1,857
30-34	19.5	58.2	22.3	100.0	1,654
35-39	17.3	56.2	26.5	100.0	1,636
40-44	16.1	56.0	27.8	100.0	1,294
45-49	17.4	51.1	31.5	100.0	970
Residence					
Urban	14.6	62.1	23.3	100.0	7,095
Non-urban	25.9	38.9	35.1	100.0	4,640
Province					
Western Cape	15.7	51.0	33.4	100.0	1,193
Eastern Cape	32.0	30.7	37.3	100.0	1,566
Northern Cape	15.7	45.2	39.1	100.0	253
Free State	10.4	59.7	29.9	100.0	763
KwaZulu-Natal	19.4	50.1	30.4	100.0	2,364
North West	17.6	52.7	29.7	100.0	909
Gauteng	9.1	77.7	13.2	100.0	2,552
Mpumalanga	22.0	57.7	20.3	100.0	819
Northern	30.2	33.0	36.8	100.0	1,316
Education					
No education	23.0	32.5	44.5	100.0	804
Sub A - Std 3	23.9	33.1	42.9	100.0	1,291
Std 4 - Std 5	21.9	41.9	36.2	100.0	1,625
Std 6 - Std 9	19.9	53.5	26.6	100.0	5,181
Std 10	14.3	71.5	14.2	100.0	1,922
Higher	8.9	76.5	14.6	100.0	912
Population group					
African	20.8	50.2	29.0	100.0	9,147
Afr. urban	15.4	61.0	23.7	100.0	4,873
Afr. non-urban	27.1	37.9	35.0	100.0	4,274
Coloured	16.2	48.5	35.3	100.0	1,201
White	5.9	81.1	12.9	100.0	916
Asian	17.5	65.5	17.0	100.0	406
Total	19.1	52.9	28.0	100.0	11,735

4.22 Fertility Preferences

Table 4.20 shows fertility preferences for married women according to number of living children. Thirty percent of currently married women would like to have another child, with 16 percent of currently married women wanting another child soon and 12 percent after two or more years. Almost 44 percent of currently married women in South Africa want no more children. More than half of currently married women would like to stop childbearing altogether or delay the next birth for another two or more years. These are the women potentially “in need of family planning” for spacing and stopping.

Desire for children	Number of living children ¹							Total
	0	1	2	3	4	5	6+	
Have another soon ²	57.4	33.8	13.5	8.0	5.4	1.5	0.7	15.8
Have another later ³	13.6	26.3	13.5	10.8	6.2	4.9	2.0	12.4
Have another, undecided when	3.3	4.0	2.1	1.0	1.2	1.5	0.6	2.0
Undecided	7.2	7.2	5.1	3.7	3.2	3.7	1.4	4.6
Want no more	5.7	21.9	45.0	48.7	53.5	61.4	70.4	43.6
Sterilised	2.0	3.5	17.3	25.5	28.5	23.9	21.0	17.9
Declared infecund	10.4	2.9	1.8	1.4	0.7	1.5	3.2	2.5
Missing	0.3	0.4	1.7	0.9	1.3	1.5	0.7	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	378	818	1,349	1,021	703	394	414	5,077

¹ Includes current pregnancy
² Want next birth within two years
³ Want to delay next birth for two or more years

The desire to discontinue childbearing increases sharply with an increase in the number of living children. Almost 6 percent of currently married women with no living children expressed a wish not to have children, whereas, 70 percent of respondents with six or more living children, want no more.

Table 4.23 presents the percent distribution of currently married women by desire for children and age of respondents. Between a third to almost half the women in the two youngest age groups indicated that they wanted to delay childbearing by at least two years (48 percent of women aged 15 to 19 years and 33 percent of women aged 20 to 24 years). This proportion decreases with age to a low 0.5 percent in the age group 45 to 49 years. The percentage of women wanting no more children increases from 13 percent among married teenage women to more than half (53 percent) of those women aged 45 to 49 years.

The desire to stop childbearing varies significantly by background characteristics of respondents (see Table 4.24). Although the pattern of increased desire to cease childbearing with higher numbers of living children is maintained in the urban/non-urban variable, larger proportions of women living in urban areas than women living in non-urban areas expressed a desire for no more children in all categories. Overall, 64 percent of urban married women versus 58 percent of non-urban women wished to cease childbearing.

Table 4.23 Fertility preferences by age

Percent distribution of currently married women by desire for more children, according to age, South Africa 1998

Desire for children	Age of woman							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Have another soon ¹	15.7	18.7	22.3	19.3	15.2	11.8	6.0	15.8
Have another later ²	48.2	33.0	25.0	12.6	5.9	2.4	0.5	12.4
Have another, undecided when	3.8	4.6	2.4	1.9	1.5	1.5	0.6	2.0
Undecided	17.8	8.9	7.1	5.3	3.3	2.3	1.1	4.6
Want no more	12.9	32.3	36.2	47.4	47.8	43.0	53.2	43.6
Sterilised	0.0	1.5	6.0	12.1	22.8	32.9	29.0	17.9
Declared infecund	0.0	0.9	0.6	0.6	2.1	4.8	7.1	2.5
Missing	1.6	0.1	0.4	0.7	1.3	1.3	2.5	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	73	465	900	1,008	1,114	865	652	5,077

¹ Want next birth within two years

² Want to delay next birth for two or more years

The variation in the desire for children according to province is not very pronounced. Northern Province and Mpumalanga are the exceptions with figures below 60 percent for women wanting no more children. In Northern Province, the majority of women expressed the desire to cease childbearing once they have reached a parity of three to four. The increase in proportions indicating the desire to stop childbearing with increased levels of education is revealed when one looks at the different categories of numbers of living children. For example, in the category of three living children, the proportion of women wanting no more children at the level of standard 10 (87 percent) is almost 1 and a half times that of women at the lowest level of education (57 percent).

The proportion of Asian women expressing the desire to cease childbearing is almost 1 and a quarter times that of the proportion of African women wishing to have no more children. These differences according to population group are evident for all categories of number of living children. Of interest is the fact that more than one in every six white married women expressed the desire to remain childless, compared to 5 percent of African and 8 percent of coloured women. The breakdown of African women according to urban and non-urban areas shows increased desire to stop childbearing amongst urban African women than amongst non-urban African women. Comparisons for these two groups within the different categories of number of living children show that whereas 62 percent of urban African women with two living children expressed the desire to stop childbearing, a proportion of more than half (59 percent) was only reached in respect of non-urban African women at a level of three living children. These trends indicate fairly low fertility aspirations for South African women overall, with marked differences according to level of education, urban and non-urban residence and population group. The proportions of women with a desire to stop childbearing increase with levels of education.

Table 4.24 Desire to limit childbearing by background characteristics

Percentage of currently married women who want no more children, by number of living children and selected background characteristics, South Africa 1998

Background characteristic	Number of living children ¹							Total
	0	1	2	3	4	5	6+	
Residence								
Urban	8.5	27.8	69.1	82.4	90.1	88.0	95.8	64.2
Non-urban	6.1	20.7	46.5	61.5	71.9	83.4	89.4	57.7
Province								
Western Cape	(6.6)	24.7	61.4	87.9	90.5	(84.3)	*	61.7
Eastern Cape	8.3	28.7	62.3	75.4	87.8	89.5	96.3	67.2
Northern Cape	(16.2)	30.6	61.2	90.4	85.7	(100.0)	*	68.0
Free State	(3.6)	17.2	62.8	86.5	91.3	(86.7)	*	61.1
KwaZulu-Natal	8.4	25.3	60.2	68.7	80.6	79.6	87.5	61.1
North West	*	30.1	59.2	85.5	76.9	(90.5)	*	65.4
Gauteng	(9.9)	28.3	73.5	74.0	85.0	*	*	63.6
Mpumalanga	(11.3)	34.0	42.5	66.2	72.6	(86.7)	85.8	58.2
Northern	(2.9)	16.3	42.5	49.4	71.2	74.3	90.9	51.7
Education								
No education	*	26.6	50.4	56.5	70.1	76.6	87.5	63.9
Sub A - Std 3	(6.8)	23.4	47.5	57.4	72.5	81.8	90.6	60.1
Std 4 - Std 5	2.4	26.9	49.8	75.1	78.6	89.5	95.5	65.0
Std 6 - Std 9	7.5	22.1	62.5	77.8	89.5	93.8	93.1	60.8
Std 10	6.9	32.4	69.6	87.4	92.6	*	*	59.8
Higher	(17.3)	21.9	74.8	84.0	85.3	*	*	61.4
Population group								
African	4.7	22.0	53.5	67.5	80.0	83.9	90.9	58.6
Afr. urban	3.7	23.8	61.9	75.7	89.1	86.8	95.2	60.3
Afr. non-urban	6.0	19.5	41.3	59.2	71.9	82.3	89.3	56.9
Coloured	7.8	25.9	64.9	87.8	90.8	96.7	*	65.2
White	17.4	42.2	81.2	87.4	(80.9)	*	*	70.3
Asian	*	37.1	87.4	93.2	(96.5)	*	*	75.1
Total	7.8	25.4	62.3	74.2	82.0	85.3	91.3	61.6

Note: Women who have been sterilised or whose spouses are sterilised are considered to want no more children. Parentheses indicate that a figure is based on 25-49 respondents. An asterisk indicates a figure was based on fewer than 25 respondents and has been suppressed.

¹ Includes current pregnancy

4.23 Need for Family Planning Services

For purposes of analysis, currently married women, who are not currently using family planning methods to regulate their fertility, but, at the same time, express the desire to either avoid further childbearing or space the next birth by two years or more, are defined as having an unmet need for family planning. The notion “total demand for family planning” denotes a combination of women using contraception (ie those with a “met need” for family planning) and those with an unmet need for family planning. Table 4.25 shows data on unmet need, met need and total demand for family planning. The data make special reference of the need status according to a need for spacing or a need for limiting (stopping) births.

The data in Table 4.25 reveal that the potential demand for family planning in South Africa includes 71 percent of currently married women, more than half of not currently married and 60 percent of all women in their reproductive ages. Contraceptive practice is the main component of the total demand for family planning, with more than half of currently married and all women (56 percent and 50 percent respectively) using family planning methods to either space or limit births.

Fifteen percent of married South African women, however, have an unmet need for family planning. Corresponding proportions for all women are 10 percent and for unmarried women 6 percent. Amongst currently married women the proportion with an unmet need for limiting outweighs the proportion with an unmet need for spacing. If all currently married South African women who have unmet needs for spacing or limiting were to start using family planning methods, the contraceptive prevalence rate will increase from 56 percent of married women to reach a level of 71 percent of married women. A high proportion (79 percent) of the potential demand for family planning in South Africa is being satisfied.

The pattern in unmet need for family planning follows an U-shaped pattern according to age group with the greatest unmet need observable for the under 25-age group and the 45 to 49-year age groups. Unmet need for spacing is the greatest at the younger age groups and the unmet need for limiting increases with age.

There is a marked difference in unmet need for family planning according to urban and non-urban residence with the need in the non-urban areas almost twice as high as in the urban areas. These differences are also marked for urban and non-urban African women (14 percent for non-urban African women and 22 percent for urban African women).

Total demand for limiting is more pronounced for urban women overall in comparison to the total demand for spacing (total demand for limiting is almost three times higher than the total demand for spacing), whereas these differences in the total demand (ie difference between spacing and limiting) are more moderate for non-urban women (total demand for limiting is almost twice as high as the total demand for spacing).

Large differences in the proportions of women with unmet need for family planning can be seen in the breakdown for the different provinces. The province with the lowest figure for the percentage of married women with an unmet need for family planning is Western Cape with 5 percent of women with the corresponding figures for Northern Province and Eastern Cape being almost four times higher, namely 22 percent and 21 percent respectively. The Eastern Cape also stands out as a province in which the unmet need for limiting is almost four times as high as the unmet need for spacing and in which the unmet need is relatively high in comparison with the met need.

There are significant differences among women in South Africa in their reproductive needs. Unmet need seems to be inversely related to level of education, with the percentage of women with an unmet need for family planning with no formal education being almost six times higher than the percentage with an unmet need at the highest level of education (ie post matric level). Furthermore, although limiting childbirth seems to be the predominant unmet family planning concern for South African women 30 years and older, unmet need for family planning shows marked differences according to racial group (Table 4.23). The percentage married women with an unmet need for family planning is low for married white and Asian women (5 percent and 6 percent respectively) and more pronounced for married coloured women (8 percent) and African women (18 percent, almost four times higher than among white and Asian women). The larger proportions of non-urban African women (almost one and a half times higher) with an unmet need for family planning in comparison with urban African women are remarkable.

Table 4.25 Need for family planning

Percentage of currently married women and women not currently married with unmet need for family planning, met need for family planning, and the total demand for family planning, by selected background characteristics, South Africa 1998

Background characteristic	Unmet need for family planning ¹			Met need for family planning (currently using) ²			Total demand for family planning			Percentage of demand satisfied	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total		
Age											
15-19	25.0	1.2	26.1	44.2	5.2	49.4	69.1	6.4	75.5	65.4	73
20-24	12.8	5.3	18.1	31.9	21.9	53.8	44.7	27.2	71.9	74.8	465
25-29	7.0	6.0	12.9	29.2	30.6	59.7	36.1	36.5	72.6	82.2	900
30-34	4.2	9.0	13.2	17.7	43.3	61.0	21.9	52.4	74.3	82.2	1,008
35-39	2.6	12.3	14.9	7.4	51.6	59.0	10.1	63.8	73.9	79.8	1,114
40-44	2.2	12.3	14.6	2.6	52.6	55.2	4.8	65.0	69.8	79.1	865
45-49	0.9	16.7	17.6	1.0	42.3	43.3	2.0	59.0	61.0	71.1	652
Residence											
Urban	2.8	8.1	10.9	14.9	48.8	63.7	17.7	57.0	74.6	85.4	3,038
Non-urban	7.5	13.5	21.0	13.7	31.4	45.1	21.2	44.9	66.1	68.2	2,039
Province											
Western Cape	2.4	2.9	5.2	17.1	53.8	70.9	19.5	56.7	76.1	93.1	543
Eastern Cape	4.7	16.7	21.4	9.0	37.3	46.4	13.8	54.0	67.8	68.4	583
Northern Cape	2.7	6.0	8.7	12.4	52.9	65.3	15.2	58.9	74.1	88.2	118
Free State	2.5	6.7	9.3	19.3	46.8	66.1	21.8	53.5	75.3	87.7	355
KwaZulu-Natal	5.9	11.7	17.5	12.3	38.5	50.8	18.2	50.2	68.4	74.3	955
North West	2.1	10.8	12.9	20.0	46.2	66.1	22.1	56.9	79.0	83.7	352
Mpumalanga	3.1	9.5	12.6	12.7	47.1	59.8	15.8	56.6	72.4	82.6	1,224
Gauteng	5.7	12.6	18.4	12.4	36.1	48.5	18.1	48.8	66.9	72.5	309
Northern	10.2	11.6	21.8	19.2	26.1	45.4	29.4	37.8	67.2	67.5	639
Education											
No education	6.2	19.1	25.3	6.7	26.5	33.2	12.9	45.6	58.5	56.8	518
Sub A - Std 3	7.3	12.6	19.9	8.9	34.6	43.5	16.2	47.2	63.3	68.6	739
Std 4 - Std 5	4.5	13.6	18.1	10.2	40.7	50.9	14.7	54.3	69.0	73.8	762
Std 6 - Std 9	4.8	8.7	13.5	15.7	44.8	60.5	20.5	53.4	74.0	81.8	1,876
Std 10	3.0	6.7	9.7	21.0	47.0	68.0	24.1	53.7	77.7	87.5	748
higher	1.1	3.3	4.3	23.7	52.7	76.4	24.7	56.0	80.7	94.6	434
Population group											
African	5.9	12.4	18.3	14.9	35.2	50.2	20.9	47.6	68.5	73.3	3,628
Afr. urban	3.8	10.4	14.2	15.7	41.6	57.3	19.5	52.1	71.6	80.1	1,810
Afr. non-urban	8.0	14.3	22.3	14.2	28.9	43.1	22.2	43.2	65.4	65.9	1,818
Coloured	2.4	6.0	8.4	14.6	53.6	68.2	17.0	59.5	76.6	89.0	553
White	0.7	4.0	4.6	11.6	61.1	72.7	12.2	65.1	77.3	94.0	615
Asian	0.7	4.9	5.7	14.0	63.5	77.5	14.7	68.4	83.2	93.2	250
Total currently married women	4.7	10.3	15.0	14.4	41.8	56.3	19.1	52.1	71.2	79.0	5,077
Total women not currently married	2.8	3.0	5.7	23.5	21.9	45.4	26.3	24.8	51.1	88.8	6,658
All women	3.6	6.1	9.7	19.6	30.5	50.1	23.2	36.6	59.8	83.8	11,735

¹ Unmet need for *spacing* includes pregnant women whose pregnancy was mistimed, amenorrhoeic women whose last birth was mistimed, and women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning and say they want to wait two or more years for their next birth. Also included in unmet need for spacing are women who are unsure whether they want another child or who want another child but are unsure when to have the birth. Unmet need for *limiting* refers to pregnant women whose pregnancy was unwanted, amenorrhoeic women whose last child was unwanted and women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning and who want no more children. Excluded from the unmet need category are pregnant and amenorrhoeic women who became pregnant while using a method (these women are in need of *better contraception*). Also excluded are menopausal or infertile women.

² Using for *spacing* is defined as women who are using some method of family planning and say they want to have another child or are undecided whether to have another. Using for *limiting* is defined as women who are using and who want no more children. Note that the specific methods used are not taken into account here.

4.24 Ideal Number of Children

In order to quantify and measure what South African women consider to be the ideal number of children, they were asked the following questions. Respondents who had no children were asked: “If you could choose exactly the number of children to have in your whole life, how many would that be?” Respondents who had children in turn, were asked: “If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?” Analyses of the responses to these questions are useful in providing measures of the level of completed fertility desired by women under the idealised circumstances that they are able to perfectly control their fertility.

Table 4.26 shows that a low 2 percent of women were not able to give a numerical response to these questions. South African women seem, on average, to regard a relatively low number of children (between 2,9 for all women and 3,3 for currently married women) as the ideal number of offspring.

Ideal number of children	Number of living children ¹							Total
	0	1	2	3	4	5	6+	
0	6.0	1.5	1.9	1.9	0.7	1.2	1.2	2.9
1	10.7	16.8	5.6	3.0	2.7	0.3	0.2	8.5
2	51.9	41.2	46.1	20.8	21.1	12.2	7.1	38.3
3	16.0	22.5	20.5	32.6	12.2	15.3	6.7	19.6
4	10.3	13.5	19.4	28.6	41.2	26.4	31.2	19.1
5	1.8	2.0	2.8	5.5	7.8	22.4	12.0	4.3
6+	1.3	1.2	3.1	6.3	13.0	19.5	37.8	5.6
Non-numeric response	1.9	1.3	0.7	1.3	1.4	2.9	3.8	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	3,470	2,584	2,230	1,473	941	522	515	11,735
Mean ideal number for								
All women	2.3	2.4	2.7	3.3	3.8	4.4	5.1	2.9
Currently married women	2.6	2.7	2.8	3.4	3.8	4.3	5.2	3.3

Note: The means exclude women who gave non-numeric responses.
¹ Includes current pregnancy

The data in Table 4.26 furthermore reveals the expected pattern of the ideal number of children increasing with the actual number of living children. The mean ideal number of children increases from 2.3 among childless women to 5.1 for women with six or more children.

Table 4.27 shows the mean ideal number of children by age group and selected background characteristics. Typically, urban women, women with higher levels of education and urban African women have smaller mean ideal family sizes. For all the background variables presented in Table 4.27, the mean ideal number of children amongst the younger women (under 30 years of age) is lower than amongst the older age groups. Women 30 years and older, non-urban women, on average, have larger mean ideal family sizes (almost 1 child more in each age group category) than urban women.

Table 4.27 Mean ideal number of children by background characteristics

Mean ideal number of children for all women age 15-49 by age and selected background characteristics, South Africa 1998

Background characteristic	Age							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Residence								
Urban	2.0	2.2	2.4	2.7	2.9	3.2	3.2	2.6
Non-urban	2.4	2.7	3.1	3.6	4.0	4.1	4.8	3.3
Province								
Western Cape	1.9	1.9	2.4	2.6	2.6	3.3	2.8	2.4
Eastern Cape	2.2	2.3	2.7	3.0	3.4	3.4	3.6	2.8
Northern Cape	2.0	2.2	2.4	2.6	2.9	2.8	3.4	2.5
Free State	1.9	2.0	2.4	2.6	2.9	3.0	3.2	2.5
KwaZulu-Natal	2.4	2.7	3.0	3.3	3.4	3.8	4.0	3.1
North West	1.9	2.2	2.5	2.8	3.3	3.5	4.1	2.7
Gauteng	2.1	2.2	2.5	2.9	3.0	3.2	3.1	2.7
Mpumalanga	2.4	2.7	2.9	3.4	3.9	4.1	4.8	3.2
Northern	2.5	2.8	3.2	3.8	4.4	4.6	5.6	3.4
Education								
No education	*	(2.6)	3.3	4.1	4.4	4.5	5.1	4.3
Sub A - Std 3	2.2	3.0	3.3	3.6	3.7	3.9	4.5	3.6
Std 4 - Std 5	2.1	2.5	3.0	3.1	3.6	3.7	3.6	3.0
Std 6 - Std 9	2.2	2.4	2.7	2.9	3.0	3.1	3.1	2.6
Std 10	2.0	2.2	2.4	2.4	2.7	2.9	2.2	2.4
Higher	2.1	2.4	2.2	2.6	2.9	3.0	3.0	2.6
Population group								
African	2.2	2.5	2.8	3.2	3.6	3.7	4.2	3.0
Afr. urban	2.0	2.2	2.5	2.8	3.1	3.3	3.5	2.7
Afr. non-urban	2.4	2.7	3.2	3.7	4.1	4.2	4.9	3.3
Coloured	2.0	2.0	2.4	2.6	2.7	3.2	3.0	2.5
White	2.1	2.1	2.1	2.3	2.3	2.7	2.7	2.3
Asian	2.2	2.3	(2.2)	2.5	2.6	2.7	(2.8)	2.5
Total	2.2	2.4	2.7	3.0	3.3	3.5	3.8	2.9

Note: Parentheses indicate that a figure is based on 25-49 respondents. An asterisk indicates a figure was based on fewer than 25 respondents and has been suppressed.

In Northern Province and Mpumalanga the ideal family sizes of women are on average above 3, with the older age groups reporting fairly large mean ideal family sizes of 4 and more children. A clear pattern of decreasing ideal family size with increasing levels of education can be seen in the data. As with the other background variables, however, the differences in the mean ideal family sizes according to racial groups become more pronounced amongst the older age groups.

Differences in the mean ideal number of children according to racial group in Table 4.27 show that African women have slightly higher ideal family sizes than coloured, white and Asian women. Family size ideals are higher amongst non-urban African women. Urban African women's reported patterns for the ideal number of children is similar to the patterns reported by the coloured group. Notably, the younger (under 30 years) urban African women expressed small ideal numbers of children.

4.25 Wanted and Unwanted Fertility

Much of the results discussed so far seem to indicate that mistimed and unwanted births are important issues in fertility planning and fertility performance in South Africa. Quantification and measurement of undesired reproductive events are therefore necessary to shed light on the degree to which couples are successful in controlling their fertility and in implementing their reproductive preferences and goals.

Table 4.28 shows the percent distribution of births in the five years preceding the survey by the status of the pregnancy in terms of whether it was wanted at the time (ie planned pregnancies), whether it was actually wanted later (ie mistimed pregnancies) or unwanted. Although 46 percent of the births were reported by the respondents as “wanted” at the time of their occurrence, more than a third (36 percent) of the births were reported as mistimed and 17 percent (almost one in every five births) as not wanted at all. More than half of recent first births were reported as mistimed and the percentage of births that were unwanted increases steadily with birth order from 8 percent of all first births to an astounding one third of all fourth or higher order births. Combining the two categories (ie. mistimed and unwanted) across the different categories of birth order, an U-shaped relationship between mistimed and unwanted births and birth-order can be observed.

Birth order and mother's age at birth	Planning status at conception				Total	Number of births ¹
	Wanted then	Wanted later	Not wanted	Missing		
Birth order						
1	38.6	51.8	8.3	1.3	100.0	1,794
2	53.6	31.7	13.5	1.2	100.0	1,336
3	54.6	27.4	16.9	1.1	100.0	843
4+	42.1	23.5	32.5	1.9	100.0	1,430
Age at birth						
<20	20.2	65.8	12.5	1.6	100.0	900
20-24	42.9	44.2	11.7	1.2	100.0	1,410
25-29	57.4	28.4	12.9	1.3	100.0	1,279
30-34	57.2	21.5	20.2	1.1	100.0	988
35-39	49.4	14.1	35.2	1.3	100.0	612
40-44	38.9	20.4	35.4	5.3	100.0	187
45-49	37.7	19.3	43.0	0.0	100.0	28
Total	45.7	35.5	17.3	1.4	100.0	5,404

¹ Includes current pregnancies

The dissatisfaction amongst South African women regarding early commencement of childbearing is also reflected in the fact that two thirds of all births to women in their teenaged years (under 19 years of age) were reported as mistimed. The percentage of births reported as unwanted rises with age from 13 percent of births to women 19 years and younger to 43 percent of births to women 40 years and older.

The potential demographic impact of avoiding unwanted births can be estimated by calculating the wanted fertility rate. The wanted fertility rate is calculated in the same manner as the conventional age-specific fertility rate, except that those births classified as unwanted are omitted from the numerator. For the purposes of this calculation, unwanted births are defined as those which exceed the number considered as ideal by the respondent. For those women who did not report an ideal family size, it was assumed that all their births were wanted. This rate should be interpreted as a hypothetical measure of what the total fertility

rate would have been in the three years preceding the survey, given age-specific fertility rates for the preceding three years, under the condition that all unwanted births had been prevented. The comparison of the total wanted fertility rate and the actual total fertility rate provides an indication of the potential demographic impact of the elimination of unwanted births. It is indicative of the extent to which observed fertility exceeds wanted fertility and of the potential demand for family planning services and of the potential for future fertility decline.

Table 4.29 Wanted fertility rates		
Total wanted fertility rates and total fertility rates for the three years preceding the survey, by selected background characteristics, South Africa 1998		
Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	1.8	2.3
Non-urban	2.9	3.9
Province		
Western Cape	1.9	2.3
Eastern Cape	2.5	3.5
Northern Cape	2.1	2.7
Free Statet	1.8	2.2
KwaZulu-Natal	2.5	3.3
North West	1.9	2.3
Gauteng	1.9	2.4
Mpumalanga	2.4	3.1
Northern	3.0	3.9
Education		
No education	3.3	4.5
Sub A - Std 3	3.2	3.9
Std 4 - Std 5	2.6	3.5
Std 6 - Std 9	2.1	2.7
Std 10	1.9	2.2
Higher	1.7	1.9
Population group		
African	2.4	3.1
Afr. urban	1.9	2.3
Afr. non-urban	3.0	4.0
Coloured	2.1	2.5
White	1.5	1.9
Total	2.3	2.9
Note: Rates are based on births to women 15-49 in the period 1-36 months preceding the survey.		

Table 4.29 presents a comparison of wanted fertility rates and total fertility rates by background characteristics. Overall, the difference between the wanted fertility rate and the total fertility rate is 0,6 child. The gap between wanted and observed fertility is greater for non-urban women, women residing in the Eastern Cape, women in the Northern Province, uneducated women, African women and African women in non-urban areas. These gaps suggest that a considerable share of current fertility is unwanted and that sufficient latent demand for family planning exists in the South African population.

CHAPTER 5

SEXUAL BEHAVIOUR, HIV/AIDS AND THE MISTREATMENT OF WOMEN

5.1 Introduction

In the SADHS, the women's questionnaire included a series of questions about HIV/AIDS. Women were first asked if they had ever heard of AIDS and if so, whether they thought they could protect themselves against the disease through certain specific behaviours such as having a good diet or staying with one faithful partner, etc. Other questions asked include the source of information on HIV/AIDS, whether a person infected with the AIDS virus always shows symptoms or looks perfectly healthy, opinions about reporting HIV/AIDS status and personal knowledge of someone who has been diagnosed with HIV/AIDS or who has died of AIDS.

Gender issues are increasingly being recognised as critical influences on the HIV epidemic in Southern Africa. Violence against women makes women vulnerable to HIV through three main mechanisms (Maman *et al.*, 2000a). Forced or coercive sexual intercourse with an infected partner can directly result in HIV transmission. Violence may limit women's ability to negotiate safer sexual practices. For example, women fear that asking their partner to wear a condom will result in violence (Weiss and Rao Gupta, 1998). Finally, violence is associated with high risk behavior among women (Wingood and DiClemente, 1997). Experiences of forced sex in childhood and adolescence have been shown in many studies internationally to impact negatively on sexual behaviour in later years (Jewkes *et al.*, 2001). The SADHS questionnaire asked about experiences of physical, sexual and economic violence against women and girl children.

Furthermore, women were asked about their sexual relationships and behaviours. Information on age at first sexual intercourse, sexual relations of unmarried women, recent sexual behaviour and postpartum amenorrhoea and abstinence.

5.2 AIDS Knowledge and Awareness

According to the Table 5.1, knowledge of AIDS is almost universal. Ninety seven percent of women age 15-49 say they have heard of the disease. The data in Table 5.2 indicate that they are well-informed about the way the HI virus is transmitted. More than 85 percent of women report that it is true that staying with one faithful partner, using condoms, using clean needles for injections, and avoiding sharing razor blades are valid means of protection against the virus.

Between 65 and 75 percent of women know that it is not true that having a good diet, not using public toilets, avoiding touching people with AIDS, and not sharing food with a person who has AIDS are effective means of protection from getting HIV/AIDS. Overall, urban women are more knowledgeable about HIV/AIDS than non-urban women.

Table 5.1. Knowledge of AIDS

Percentage of respondents by knowledge of AIDS and source of knowledge, according to background characteristics, South Africa 1998.

	Knowledge of AIDS		Source of knowledge						Total
	Knows AIDS	TV	Radio	News-papers	Pamph-lets	Health worker	Friends	Rela-tives	
Age 5-year groups									
15-19	95.1	72.7	81.3	62.1	60.3	71.8	72.4	52.7	2,249
20-24	97.6	78.3	88.7	72.1	70.1	83.6	79.8	67.6	2,075
25-29	98.0	78.4	88.6	70.8	69.6	80.9	79.5	66.9	1,857
30-34	97.6	78.6	88.4	69.4	68.9	78.0	75.7	66.4	1,654
35-39	96.5	76.5	86.6	64.5	64.3	74.6	72.9	65.4	1,636
40-44	96.1	75.4	84.2	61.8	62.0	73.1	73.9	63.1	1,294
45-49	95.2	74.0	81.7	57.5	55.6	69.5	69.2	58.6	970
Residence									
Urban	97.9	88.6	87.5	77.1	76.2	78.9	80.0	68.9	7,095
Non-urban	94.7	57.6	83.4	49.6	48.1	72.9	68.1	53.8	4,640
Current marital status									
Currently in union	96.6	75.9	86.3	63.8	63.3	74.2	72.7	62.4	5,077
Formerly in union	96.2	74.1	86.3	61.1	62.2	77.8	75.4	62.5	993
Had sex	97.7	78.4	87.7	71.0	69.3	83.3	81.2	68.9	4,121
Never had sex	94.5	74.1	79.4	64.8	61.8	65.5	67.8	48.9	1,544
Province									
Western Cape	98.2	89.6	80.7	75.6	75.5	69.4	70.6	49.1	1,193
Eastern Cape	95.6	59.6	81.3	50.2	46.9	72.9	68.3	58.1	1,566
Northern Cape	93.4	74.9	72.0	62.9	57.3	60.8	65.5	55.7	253
Free State	92.9	85.8	88.1	60.7	66.4	79.1	74.3	65.0	763
KwaZulu-Natal	96.0	72.4	86.6	66.9	60.6	74.2	72.0	61.6	2,364
North West	99.3	84.8	87.2	72.2	67.7	82.7	81.2	69.7	909
Gauteng	98.9	89.7	88.9	80.4	80.3	83.0	83.7	75.8	2,552
Mpumalanga	97.6	82.8	92.6	67.0	70.7	86.0	85.9	78.8	819
Northern	93.9	50.7	84.9	47.2	51.1	70.5	69.1	44.2	1,316
Education									
No education	90.2	44.3	76.6	19.4	22.6	63.4	54.1	45.7	804
Sub A - Std 3	93.3	56.3	81.6	37.4	39.5	72.3	62.0	54.0	1,291
Std 4 - Std 5	94.7	66.9	80.7	54.9	52.9	74.3	70.0	57.4	1,625
Std 6 - Std 9	97.7	80.6	87.2	72.4	70.9	79.9	79.0	64.9	5,181
Std 10	99.3	91.7	91.2	87.0	84.8	79.1	84.9	73.4	1,922
Higher	99.6	93.5	90.1	89.2	85.9	73.9	80.5	67.1	912
Population group									
African	95.9	72.1	87.8	62.8	62.0	81.4	77.0	65.2	9,147
Afr. urban	97.1	86.1	91.1	75.1	74.6	87.7	84.5	75.0	4,873
Afr. non-urban	94.6	56.1	84.0	48.8	47.6	74.2	68.4	54.0	4,274
Coloured	98.6	89.1	78.4	76.5	75.4	72.5	71.6	55.4	1,201
White	99.9	93.6	78.1	75.9	74.8	43.9	61.0	49.5	916
Asian	100	95.8	81.1	89.9	81.5	51.9	79.4	63.4	406
Total	96.7	76.4	85.9	66.2	65.1	76.6	75.3	62.9	11,735

Table 5.2. Knowledge of ways

Percentage women by knowledge of ways to avoid AIDS and with misinformation, according to urban/non-urban residence, South Africa 1998

	Type of place of residence			Number
	Urban	Non-urban	Total	
Avoid AIDS: having a good diet				
No	71.1	56.7	65.5	7,434
Yes	17.3	23.5	19.7	2,235
Don't Know	11.5	19.6	14.6	1,659
Missing	0.1	0.2	0.1	15
Avoid AIDS: staying faithful to partner				
Not true	7.8	9.7	8.5	968
True	89.9	83.6	87.4	9,919
Don't Know	2.2	6.5	3.9	437
Missing	0.2	0.2	0.2	19
Avoid AIDS: avoiding public toilets				
Not true	71.4	55.4	65.2	7,395
True	21.1	29.0	24.1	2,737
Don't Know	7.3	15.1	10.3	1,173
Missing	0.2	0.6	0.3	40
Avoid AIDS: by using condoms				
Not true	5.5	8.5	6.6	751
True	91.4	81.2	87.4	9,916
Don't Know	3.0	10.1	5.7	649
Missing	0.2	0.3	0.2	28
Avoid AIDS: avoid touching person				
Not true	82.8	61.5	74.5	8,455
True	10.4	21.8	14.8	1,680
Don't Know	6.5	16.2	10.2	1,162
Missing	0.3	0.6	0.4	48
Avoid AIDS: avoid sharing food				
Not true	78.5	58.4	70.7	8,018
True	13.3	24.0	17.5	1,981
Don't Know	7.9	17.0	11.4	1,294
Missing	0.3	0.6	0.4	50
Avoid AIDS: avoid being bitten by mosquitoes				
Not true	47.8	38.7	44.3	5,021
True	35.9	40.0	37.5	4,250
Don't Know	15.9	20.5	17.7	2,008
Missing	0.4	0.8	0.6	65
Avoid AIDS: injection with clean needle				
Not true	4.1	6.7	5.1	577
True	92.1	83.9	88.9	10,086
Don't Know	3.7	9.2	5.8	661
Missing	0.2	0.2	0.2	19
Avoid AIDS: avoid sharing razors				
Not true	7.7	6.4	7.2	818
True	86.7	84.2	85.7	9,726
Don't Know	5.2	9.1	6.7	762
Missing	0.4	0.3	0.3	38
Total	100	100	100	11,344
Number	6 949.2	4 394.5	11 343.7	11,344

5.3 Source of Knowledge About HIV/AIDS

The most common source of information on HIV/AIDS among all women in the survey, is the television. According to Table 5.1, 86 percent of the women report that the television is their source of information on HIV/AIDS. The next major sources of information are health workers (77 percent), radio (76 percent) and friends (75 percent).

There is not much variation in the sources of information by background variables. But it is important to note that for any given source of information on HIV/AIDS, access increases as the level of the woman's education increases. The exceptions are observed among women with the highest level of education. Among these women, the observed pattern assumes a lower value for television, health workers, friends and relatives.

African women have the highest level of access to HIV/AIDS messages on television (89 percent), by health workers (81 percent) and friends (65 percent) than other women. Asian women have the highest level of access via radio (96 percent), newspapers (90 percent), pamphlets (81 percent) and friends (79 percent). Urban African women have greater access to the sources of information on HIV/AIDS, than the non-urban ones.

5.4 Perception of Risk of Getting HIV/AIDS

Women were asked whether a person infected with the AIDS virus always shows symptoms or looks perfectly healthy. They were also asked whether they have a personal knowledge of someone who has been diagnosed with HIV/AIDS or who has died of AIDS. The results in Table 5.3 show that about 55 percent of the women say yes, a healthy person can have AIDS. Less than a third (30 percent) said no, a healthy person cannot have AIDS. On the other hand, only 17 percent report that they know someone with or who has died of AIDS.

Urban women are more likely to report that a healthy person can have AIDS (61 percent) and know more people with AIDS (20 percent) than non-urban women. The highest percentage of women who report that a healthy person can have AIDS is found in the Western Cape province. More than three quarters of the women in that province (78 percent) report this. This is followed by women in Mpumalanga (63 percent) and Gauteng (61 percent) provinces. The more educated women are, the more likely they will report yes, a healthy looking person can have AIDS. African women are the least to report yes compared to other women. The highest percentage of those who report that they do not know or did not respond to the question was found among women with no education (32 percent). About one in five women aged 45-49 years, those living in the Eastern Cape and Northern Province and women with low levels of education (below standard six) are more likely to report that they do not know.

Table 5.3 shows that more than 20 percent of women who were formerly in a union, those living in Gauteng province, those with standard 10 or more education and urban African women report that they know someone with AIDS or who has died of the disease. The highest percentage of women who know someone with AIDS or have died of the disease (30 percent) was found among women whose level of education is higher than standard 10.

Table 5.3. Perceptions of risks of AIDS

Percent of women who know about AIDS by perception or risk of AIDS, according to background characteristics, South Africa 1998.

	Can a person with HIV look healthy?			Know someone with HIV/AIDS			Total
	Yes	No	Missing/ Don't Know	No	Yes	Missing	
Age							
15-19	54.2	29.7	16.1	86.4	12.8	0.8	2,139
20-24	57.0	31.2	11.8	81.2	18.2	0.6	2,026
25-29	55.8	29.0	15.2	81.7	17.6	0.7	1,820
30-34	56.8	28.8	14.4	81.0	18.6	0.4	1,614
35-39	54.6	30.1	15.3	81.2	17.7	1.1	1,578
40-44	51.4	30.5	18.0	80.0	19.7	0.3	1,243
45-49	49.3	29.3	21.5	82.3	16.9	0.8	923
Current marital status							
Currently in union	55.3	28.6	16.1	82.2	17.2	0.6	4,904
Formerly in union	49.5	32.5	18.0	78.8	20.5	0.7	955
Had sex	54.0	32.2	13.8	80.7	18.5	0.8	4,025
Never had sex	58.0	25.7	16.3	88.4	10.9	0.7	1,459
Residence							
Urban	61.2	25.4	13.4	79.5	19.9	0.6	6,949
Non-urban	44.4	36.8	18.8	86.4	12.8	0.8	4,394
Province							
Western Cape	78.0	10.9	11.1	87.8	11.8	0.5	1,172
Eastern Cape	47.3	32.1	20.6	82.2	17.1	0.7	1,497
Northern Cape	58.3	19.4	22.3	88.3	11.5	0.2	236
Free State	50.9	34.0	15.0	83.8	16.0	0.2	708
KwaZulu-Natal	45.2	37.7	17.1	80.5	19.2	0.2	2,269
North West	53.4	30.0	16.6	85.6	11.9	2.4	902
Gauteng	61.0	24.3	14.6	74.9	24.4	0.7	2,523
Mpumalanga	63.0	28.9	8.1	79.8	19.4	0.8	800
Northern Province	43.1	42.0	14.9	91.6	7.5	0.8	1,236
Education							
No education	38.1	29.5	32.4	89.8	9.0	1.2	725
Sub A - Std 3	39.4	36.5	24.1	87.1	12.6	0.4	1,205
Std 4 - Std 5	46.0	33.1	20.9	87.0	12.2	0.8	1,539
Std 6 - Std 9	55.1	30.7	14.2	82.4	16.8	0.8	5,060
Std 10	66.3	25.9	7.8	77.8	22.0	0.2	1,908
Higher	76.2	19.6	4.2	69.3	29.7	1.0	908
Population group							
African	48.3	34.3	17.5	81.4	17.8	0.8	8,775
Afr. urban	53.0	31.0	16.0	77.2	22.0	0.8	4,734
Afr. non-urban	42.6	38.1	19.2	86.2	12.9	0.9	4,041
Coloured	73.7	15.7	10.6	85.8	13.8	0.4	1,183
White	89.3	7.4	3.3	80.1	19.9	0.0	915
Asian	60.6	25.8	13.7	94.0	5.8	0.2	406
Total	54.7	29.8	15.5	82.2	17.1	0.7	11,344

5.5 Opinions About Reporting HIV/AIDS Status

Women who have ever heard of AIDS were asked of their opinions about reporting HIV/AIDS status. They were asked whether they believe that people with HIV/AIDS should be told of the status, whether HIV/AIDS patients should tell their partners and whether diagnosed cases of HIV/AIDS should be reported to health authorities.

Over 80 percent of the women believe that HIV and AIDS status should be reported to the patients themselves and their partners, while 70 percent believe that HIV and AIDS should be reported to the health authorities (Table 5.4). Less than 10 percent of women report that they do not know whether HIV and AIDS status should be reported to health authorities. Place of residence plays an important role in whether a woman would say yes to reporting HIV and AIDS status or not. Table 5.4 shows that women in the urban areas are more likely to say yes than their counterparts in the non-urban areas. Furthermore, non-urban women (12 to 13 percent) are more likely than the urban women to say that they do not know whether diagnosed cases of HIV and AIDS should be reported to health authorities or not.

Table 5.4 Beliefs about reporting AIDS

Percent distribution of women who have ever heard of AIDS by whether they believe certain statements about divulging HIV/AIDS status to various people or not, according to urban/non-urban residence, South Africa 1998.

	Residence			Number
	Urban	Non-urban	Total	
People with AIDS be told status				
No	9.1	18.3	12.7	1,439
Yes	87.1	74.5	82.2	9,327
Don't Know	2.8	6.3	4.2	473
Missing	1.0	0.9	0.9	105
People with HIV be told of their status				
No	8.5	17.7	12.1	1,372
Yes	87.7	74.8	82.7	9,382
Don't Know	2.8	6.5	4.2	482
Missing	1.0	0.9	0.9	107
HIV/AIDS patients tell partners				
No	7.2	11.5	8.9	1,008
Yes	89.1	80.4	85.7	9,722
Don't Know	2.7	7.2	4.4	501
Missing	1.0	0.9	1.0	113
Diagnosed cases of AIDS be reported to health authorities				
No	18.3	23.3	20.3	2,298
Yes	73.1	63.6	69.4	7,873
Don't Know	7.6	12.1	9.4	1,062
Missing	1.0	0.9	1.0	111
Diagnosed cases of HIV be reported to health authorities				
No	18.2	23.2	20.2	2,288
Yes	72.9	62.7	68.9	7,818
Don't Know	7.9	13.2	9.9	1,129
Missing	1.0	0.9	1.0	110
Total	100	100	100	11,344
Number	6,949	4,395	11,344	11,344

5.6 Age at First Sexual Intercourse

Table 5.5 shows that eight percent of women in the reproductive age group who have had sexual intercourse did so by the age of 15. Almost half all women who have had sexual intercourse had their first experience by the age of 18 (46 percent). A majority had their first sexual intercourse by the age

of 20 (71 and 69 percent of women aged 20-49 and 25-49 respectively). The median age at first sexual intercourse ranges from 18.1 for women aged 15-29 to 18.7 for those aged 45-49. For all women aged 20-49 the median age at first sexual intercourse is 18.2 years.

The data in Table 5.6 show the differences in age at first sexual intercourse by current age and selected background characteristics. For all women aged 25-49, education and race show significant differences in the median age at first sexual intercourse. Women with standard 10 or higher and Asian and white women currently in the oldest reproductive age group have comparatively high age at first sexual intercourse.

Table 5.5 Age at First Sexual Intercourse

Percentage of women ever having sexual intercourse by exact specified ages and median age at first sexual intercourse, according to current age, South Africa 1998.

Current age	Percent who had first intercourse by exact age					Percentage Number never had intercourse	Median of women	Age at first intercourse
	15	18	20	22	25			
15-19	8.5	NA	NA	NA	NA	54.8	2,249	-
20-24	7.4	52.8	77.2	NA	NA	10.6	2,075	-
25-29	7.6	48.6	74.6	85.3	90.3	3.0	1,857	18.1
30-34	8.5	47.3	70.5	80.6	85.4	1.1	1,654	18.2
35-39	8.9	43.2	69.1	81.1	86.0	0.7	1,636	18.5
40-44	6.5	38.9	64.8	79.2	85.1	0.3	1,294	18.7
45-49	5.8	41.6	63.3	76.7	83.2	0.5	970	18.7
Women (20-49)	7.6	46.3	71.0	81.8	86.2	3.3	9,486	18.2
Women (25-49)	7.7	44.5	69.3	81.1	86.4	1.3	7,411	18.4

NA = Not applicable

- Omitted because less than 50 percent in the age group x to $x + 4$ had had intercourse by age x .

Table 5.6 Median Age at First Sexual Intercourse

Median age at first sexual intercourse among women age 20 (25)- 49 years, by current age and selected background characteristics, South Africa 1998.

	Age 5-year groups						Median	Median
	20-24	25-29	30-34	35-39	40-44	45-49	20-49	25-49
Residence								
Urban	18.2	18.2	18.5	18.6	18.9	19.2	18.5	18.6
Non-urban	17.3	17.8	17.7	18.1	18.4	17.9	17.8	17.9
Province								
Western Cape	18.7	18.9	19.0	19.1	19.1	20.0	19.0	19.2
Eastern Cape	17.5	17.6	17.6	18.0	18.0	18.1	17.8	17.8
Northern Cape	18.4	18.6	18.7	18.9	19.6	18.9	18.8	18.9
Free State	18.1	17.8	18.1	18.1	18.2	18.6	18.1	18.1
KwaZulu-Natal	18.0	18.5	18.4	18.8	19.4	18.6	18.5	18.7
North West	18.2	18.3	18.7	18.7	18.9	18.6	18.5	18.6
Gauteng	18.0	18.1	18.1	18.6	18.9	18.9	18.3	18.4
Mpumalanga	16.8	16.9	17.0	17.4	17.3	17.1	17.0	17.1
Northern	17.3	17.6	17.6	17.9	18.1	19.0	17.7	17.9
Education								
No education	17.3	16.9	17.7	17.9	18.4	18.4	18.0	18.0
Sub A - Std 3	16.7	17.3	17.2	17.0	18.2	17.6	17.3	17.4
Std 4 - Std 5	16.6	17.4	17.6	17.9	18.0	17.8	17.6	17.7
Std 6 - Std 9	17.5	17.7	18.2	18.5	18.8	19.1	18.1	18.3
Std 10	18.5	19.0	18.7	19.3	19.7	21.5	18.9	19.2
Higher	19.3	19.0	20.2	20.1	20.7	21.7	19.9	20.1
Population group								
African	17.6	17.8	17.8	18.0	18.4	18.1	17.9	18.0
Afr. urban	17.8	17.9	18.1	18.0	18.5	18.2	18.0	18.1
Afr. non-urban	17.3	17.7	17.6	18.0	18.3	17.9	17.7	17.9
Coloured	19.0	18.8	18.8	19.2	18.9	19.4	19.0	19.0
White	*	19.4	19.6	20.2	20.1	20.8	*	20.0
Asian	*	20.8	20.5	21.0	20.4	21.1	*	20.7
Total	17.8	18.1	18.2	18.5	18.7	18.7	18.2	18.4

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

5.7 Recent Sexual Activity

Table 5.7 shows that just over half (51.7 percent) of all women were sexually active in the four weeks before the survey. Seven percent were abstaining from sexual relations for post-partum reasons while 25.5 percent were abstaining for other reasons. Teenagers, women who have never been married and those who were not currently using any method of contraception were less likely to be sexually active than others. Highly educated women were more likely to have had sexual intercourse in the four weeks before the survey than other women. Asians and whites were more sexually active than Africans and coloureds.

Table 5.7 Recent sexual activity

Percent distribution of women by sexual activity in the 4 weeks prior to the survey and duration of abstinence by whether or not postpartum, according to background characteristics, South Africa 1998.

Background Characteristic/ contraceptive method	Sexually active in last 4 weeks	Not sexually active in last 4 weeks					Never had sex	Total	Number of women
		Abstaining (Post-partum)		Abstaining (not post-partum)		Missing			
		0-1 years	2+ years	0-1 years	2+ years				
Age									
15-19	18.3	5.7	0.6	18.4	1.2	1.1	54.8	100	2,249
20-24	46.3	8.8	3.0	27.3	1.7	2.4	10.6	100	2,075
25-29	60.4	7.4	2.7	20.6	2.9	3.0	3.0	100	1,857
30-34	66.7	5.8	2.1	17.1	4.3	2.9	1.1	100	1,654
35-39	65.6	4.3	1.6	19.9	5.2	2.8	0.7	100	1,636
40-44	64.8	1.9	2.0	18.0	10.8	2.1	0.3	100	1,294
45-49	57.1	0.3	0.9	20.7	18.0	2.4	0.5	100	970
Marital duration (grouped)									
Never married	31.0	6.7	2.3	25.5	5.0	2.2	27.3	100	5,665
0-4	77.3	7.5	1.6	11.0	0.8	1.8	0.0	100	1,165
5-9	74.1	5.5	1.5	13.6	2.5	2.9	0.0	100	1,174
10-14	73.0	3.2	1.0	16.2	3.5	3.1	0.0	100	1,109
15-19	68.6	4.5	2.0	17.1	5.5	2.1	0.1	100	1,094
20-24	65.8	2.4	1.4	19.4	8.8	2.2	0.0	100	861
25-29	62.6	0.6	1.5	20.2	12.6	2.4	0.0	100	563
30+	55.4	0.0	0.0	24.7	15.4	4.6	0.0	100	103
Residence									
Urban	54.3	3.9	1.7	18.6	5.9	2.6	13.0	100	7,095
Non-urban	47.6	7.9	2.1	23.4	3.5	2.0	13.4	100	4,640
Province									
Western Cape	49.8	5.3	2.0	15.0	6.5	6.5	15.0	100	1,193
Eastern Cape	44.1	7.4	2.1	26.7	5.6	1.4	12.7	100	1,566
Northern Cape	46.6	5.5	3.8	14.5	9.2	3.0	17.4	100	253
Free State	50.3	6.3	1.2	22.2	6.3	0.5	13.1	100	763
KwaZulu-Natal	48.5	3.8	1.4	22.2	5.5	1.8	16.7	100	2,364
North West	51.8	5.3	2.3	19.8	5.3	2.3	13.3	100	909
Gauteng	60.9	3.2	1.5	18.3	4.5	2.2	9.4	100	2,552
Mpumalanga	62.3	5.1	1.5	17.4	3.3	1.5	9.0	100	819
Northern Province	45.2	10.8	3.0	21.8	2.1	2.5	14.5	100	1,316
Education									
No education	56.6	6.5	2.1	20.7	8.7	2.8	2.5	100	804
SubA-Std3	54.5	5.7	1.4	23.1	7.6	2.6	5.1	100	1,291
Std4-Std5	50.1	6.1	2.2	20.2	6.1	2.3	13.1	100	1,625
Std6-Std9	46.6	5.6	2.1	21.3	4.0	2.2	18.2	100	5,181
Std 10	57.2	4.8	1.6	19.5	3.7	2.5	10.7	100	1,922
Higher	62.9	3.5	1.5	14.8	4.6	1.8	10.9	100	912
Population group									
African	50.7	6.1	2.0	22.8	4.7	2.4	11.4	100	9,147
Afr. urban	54.3	4.4	1.8	21.5	5.7	2.8	9.6	100	4,873
Afr. non-urban	46.6	8.1	2.1	24.4	3.5	1.9	13.4	100	4,274
Coloured	47.0	5.7	3.0	16.4	7.5	2.1	18.4	100	1,201
White	64.1	1.0	0.3	8.6	4.7	2.2	19.1	100	916
Asian	58.4	0.7	0.0	7.9	5.6	2.6	24.8	100	406
Total	51.7	5.5	1.9	20.5	5.0	2.3	13.2	100	11,735

5.8 Number of Sexual Partners

Table 5.8 shows that a high percentage of currently married women (95 percent) reportedly have one sexual partner. Less than three percent of currently married women report that they have no sexual partner.

Less than two percent of currently married women report having two or more sexual partners. Sexual partnership among currently married women with two or more people is highest (5 percent) among teenage

women aged 15-19 years. Surprisingly, currently non-married women in the same age group have a much lower percentage (3 percent).

More than half (56 percent) of never married currently non-married women reported that they have one sexual partner. Only thirty eight percent of these women reported having no sexual partner. More than three percent reported two or more sexual partners. More than seventy percent of currently non-married women in the 20-24 (71 percent) and 25-29 (74 percent) age groups have one sexual partner. More than a third (35 percent) of currently non-married teenagers aged 15-19 years have a sexual partner.

The highest percentage of sexual partnership with two or more people (7 percent) was reported among currently non-married women aged between 30-34 years. Among currently married women, sexual partnership with two or three men decreases as the woman stays longer in her marriage. Place of residence did not make any major difference in the number of sexual partners a woman has whether she is currently married or not. At any level of education, most women have one sexual partner. But the highest percentage of currently married women without a sexual partner (5 percent) was found among women with no education.

The highest percentage of women with no sexual partners (81 percent) was found among non-currently married Asian women. This is closely followed by white women (73 percent). Only about a third of African women reported that they have no sexual partners. More than half of coloured women (57 percent) reported having no sexual partner. More African women reported sexual partnership with two or more people than other ethnic groups. Place of residence did not make a major difference.

5.9 Relationship with Last Sexual Partner

Table 5.9 shows that the person with whom most women had their last sexual intercourse was either their husbands (44 percent) or a regular partner (38 percent). Sex with a casual acquaintance during their last sex occurred among 5 percent of the women. Most currently married women (80 percent) had their last sexual encounter with their husbands and intercourse with a casual acquaintance is quite low among them. Currently married women aged between 35-39 years tend to have their last sexual intercourse with their husbands compared to other categories.

More than half (68 percent) of non-currently married women, had their last sexual intercourse with a regular partner. Non-currently married women have a higher level of sexual intercourse with a casual acquaintance more than currently married women. As many as one in every 10 non-currently married women had their last sexual intercourse with a casual acquaintance.

Table 5.8 Number of sexual partners

Percent distribution of women aged 15-49 by number of persons with whom they had sexual intercourse in the last 12 months according to background characteristics, South Africa 1998

Background characteristic	Currently married women						Currently non-married women						All women										
	0		1		2+		0		1		2+		0		1		2+						
	Missing	Total	Mean	Number	Mean	Number	Missing	Total	Mean	Number	Mean	Number	Missing	Total	Mean	Number	Mean	Number					
Age																							
15-19	1.1	91.9	5.4	1.5	100.0	1.0	7.3	61.6	34.8	2.9	0.7	100.0	0.4	2,176	59.7	36.7	2.9	0.7	100.0	0.4	2,249		
20-24	1.1	96.7	2.1	0.2	100.0	1.0	465	22.6	71.2	3.9	2.2	100.0	0.8	1,610	17.8	76.9	3.5	1.8	100.0	0.9	2,075		
25-29	1.2	96.0	2.5	0.4	100.0	1.0	900	18.7	73.6	4.9	2.7	100.0	0.9	957	10.2	84.5	3.7	1.6	100.0	0.9	1,857		
30-34	1.5	96.3	1.9	0.3	100.0	1.0	1,008	21.2	69.7	6.7	2.4	100.0	0.9	646	9.2	85.9	3.7	1.1	100.0	1.0	1,654		
35-39	1.6	96.2	0.7	1.4	100.0	1.0	1,114	27.1	65.0	4.9	3.0	100.0	0.8	522	9.7	86.3	2.1	1.9	100.0	0.9	1,636		
40-44	4.1	94.5	0.8	0.6	100.0	1.0	865	58.5	53.5	3.5	4.5	100.0	0.6	429	15.5	81.0	1.6	1.9	100.0	0.9	1,294		
45-49	6.5	92.0	1.3	0.2	100.0	1.0	632	57.3	39.9	1.0	1.9	100.0	0.4	318	23.1	74.9	1.2	0.7	100.0	0.8	970		
Marital duration																							
Never married																							
0-4	0.7	95.7	3.1	0.6	100.0	1.0	1,059	38.1	56.1	3.7	2.0	100.0	0.7	5,665	38.1	56.1	3.7	2.0	100.0	0.7	5,665		
5-9	1.3	96.8	1.6	0.4	100.0	1.0	1,024	17.3	69.9	10.8	2.1	100.0	1.0	106	2.2	93.3	3.8	0.7	100.0	1.0	1,165		
10-14	2.1	96.4	1.1	0.4	100.0	1.0	928	29.5	62.3	6.6	1.6	100.0	0.8	150	4.9	92.4	2.2	0.5	100.0	1.0	1,174		
15-	4.3	94.0	0.8	0.9	100.0	1.0	2,065	25.3	64.9	6.5	3.3	100.0	0.9	181	5.9	91.3	2.0	0.9	100.0	1.0	1,109		
Residence																							
Urban	2.6	95.2	1.5	0.7	100.0	1.0	3,038	39.2	54.3	4.1	2.4	100.0	0.7	4,057	23.6	71.8	2.9	1.7	100.0	0.8	7,095		
Non-urban	2.3	95.5	1.7	0.5	100.0	1.0	2,039	35.4	59.6	5.6	1.4	100.0	0.7	2,601	20.9	75.4	2.7	1.0	100.0	0.8	4,640		
Education																							
No education	5.2	93.1	1.1	0.6	100.0	1.0	518	35.1	56.1	3.1	5.7	100.0	0.7	286	15.8	79.9	1.9	2.4	100.0	0.9	804		
Sub A - Std 3	1.6	95.3	2.6	0.5	100.0	1.0	739	35.9	58.4	4.6	1.1	100.0	0.7	552	16.3	79.6	3.5	0.7	100.0	0.9	1,291		
Std 4 - Std 5	3.0	94.5	1.8	0.6	100.0	1.0	762	42.1	51.3	4.2	2.5	100.0	0.6	863	23.8	71.5	3.1	1.6	100.0	0.8	1,625		
Std 6 - Std 9	2.6	95.1	1.8	0.6	100.0	1.0	1,876	40.6	54.1	3.9	1.4	100.0	0.6	3,305	26.8	68.9	3.2	1.1	100.0	0.8	5,181		
Std 10	1.5	97.2	0.4	0.8	100.0	1.0	748	29.5	64.7	2.9	2.9	100.0	0.7	1,174	18.6	77.4	2.0	2.1	100.0	0.8	1,922		
Higher	1.3	97.3	0.6	0.8	100.0	1.0	434	34.1	58.9	5.0	2.0	100.0	0.7	478	18.5	77.2	2.9	1.4	100.0	0.9	912		
Population Group																							
African	2.6	95.0	1.8	0.6	100.0	1.0	3,628	32.3	61.3	4.4	2.1	100.0	0.7	5,519	20.5	74.6	3.3	1.5	100.0	0.8	9,147		
Afr. urban	2.6	94.9	1.8	0.6	100.0	1.0	1,810	30.4	62.1	4.8	2.6	100.0	0.7	3,063	20.1	74.3	3.7	1.9	100.0	0.8	4,873		
Afr. non-urban	2.5	95.1	1.8	0.6	100.0	1.0	1,818	34.6	60.2	3.8	1.4	100.0	0.7	2,456	21.0	75.0	2.9	1.1	100.0	0.8	4,274		
Coloured	2.7	96.0	0.9	0.4	100.0	1.0	553	56.9	39.1	1.3	2.6	100.0	0.4	648	31.9	65.3	1.1	1.6	100.0	0.7	1,201		
White	2.0	96.9	0.7	0.4	100.0	1.0	615	73.1	24.8	2.1	0.0	100.0	0.3	301	25.3	73.2	1.2	0.2	100.0	0.8	916		
Asian	2.7	94.7	0.4	2.2	100.0	1.0	250	81.1	18.9	0.0	0.0	100.0	0.2	156	32.9	65.5	0.2	1.4	100.0	0.7	406		
Total	2.5	95.3	1.5	0.6	100.0	1.0	5,077	37.7	56.4	3.9	2.0	100.0	0.7	6,658	22.5	73.2	2.9	1.4	100.0	0.8	11,735		

Table 5.9 Relationship with last person with whom had sexual intercourse

Percent distribution of women who ever had sexual intercourse by relationship with last person with whom she had sexual intercourse, according to marital status, and background characteristics, South Africa 1998

	Currently married women										Not currently married women					Total				
	Marital partner	Regular partner	Casual acquaintance	Other	Missing/ no sex last 12	Total	Number	Regular partner	Casual acquaintance	Other	Missing/ no sex last 12	Total	Number	Marital partner	Regular partner	Casual acquaintance	Other	Missing/ no sex last 12	Total	
Age																				
15-19	49.5	46.7	0.0	1.2	2.6	100.0	73	71.0	13.1	4.6	11.3	100.0	944	9.2	63.6	12.2	4.4	10.7	100.0	
20-24	61.4	35.6	0.8	1.0	1.1	100.0	465	74.2	10.1	4.4	11.3	100.0	1,391	22.0	57.9	7.8	3.6	8.8	100.0	
25-29	75.4	20.9	2.0	0.2	1.5	100.0	900	74.9	6.8	2.9	15.4	100.0	901	41.7	43.9	4.4	1.6	8.4	100.0	
30-34	83.9	13.5	0.5	0.3	1.8	100.0	1,008	68.0	10.1	4.1	17.9	100.0	628	54.6	31.5	4.2	1.8	8.0	100.0	
35-39	85.5	11.2	0.0	0.6	2.6	100.0	1,114	61.2	10.9	3.5	24.5	100.0	511	61.5	24.0	3.4	1.5	9.5	100.0	
40-44	82.9	11.2	0.5	0.3	5.1	100.0	865	50.8	11.6	2.9	34.7	100.0	425	58.4	21.4	4.2	1.1	14.8	100.0	
45-49	83.7	9.2	0.2	0.1	6.7	100.0	652	39.3	4.6	3.7	52.4	100.0	313	59.6	15.9	1.6	1.3	21.6	100.0	
Residence																				
Urban	81.2	14.2	0.8	0.7	3.0	100.0	3,038	62.1	12.1	4.4	21.3	100.0	3,133	43.0	35.6	6.6	2.6	12.3	100.0	
Non-urban	78.2	18.3	0.3	0.0	3.2	100.0	2,039	76.2	6.5	3.0	14.3	100.0	1,980	45.4	41.1	3.4	1.5	8.6	100.0	
Education																				
No education	67.7	24.2	0.3	0.5	7.3	100.0	518	58.4	7.4	3.5	30.7	100.0	265	48.9	31.7	2.7	1.5	15.3	100.0	
Sub A - Std 3	74.9	21.1	1.1	0.2	2.8	100.0	739	60.4	10.8	3.1	25.8	100.0	486	48.5	33.4	4.9	1.3	11.9	100.0	
Std 4 - Std 5	81.1	14.9	0.7	0.3	2.9	100.0	762	65.2	8.8	4.3	21.7	100.0	651	46.9	34.9	4.4	2.2	11.6	100.0	
Std 6 - Std 9	79.4	17.1	0.8	0.5	2.3	100.0	1,876	69.3	11.0	3.7	16.0	100.0	2,365	39.5	41.8	6.5	2.3	10.0	100.0	
Std 10	87.2	8.9	0.3	0.6	3.0	100.0	748	70.4	8.5	4.8	16.1	100.0	968	42.4	39.2	5.0	3.0	10.4	100.0	
Higher	91.9	5.6	0.3	0.2	2.0	100.0	434	69.1	9.5	3.3	18.1	100.0	379	53.3	31.0	4.6	1.7	9.5	100.0	
Population group																				
African	76.8	18.8	0.8	0.5	3.1	100.0	3,628	68.7	10.7	3.8	16.9	100.0	4,480	39.0	41.7	6.3	2.3	10.7	100.0	
Afr. Urban	75.9	19.1	1.3	1.0	2.8	100.0	1,810	62.7	13.8	4.7	18.8	100.0	2,596	34.6	41.4	8.6	3.2	12.2	100.0	
Afr. Non-urban	77.7	18.4	0.3	0.0	3.5	100.0	1,818	76.8	6.4	2.5	14.2	100.0	1,884	44.2	42.1	3.4	1.3	8.9	100.0	
Coloured	81.2	15.0	0.7	0.1	3.0	100.0	553	58.8	5.7	3.9	31.6	100.0	427	47.2	32.7	2.8	1.8	15.5	100.0	
White	91.3	6.0	0.0	0.3	2.3	100.0	615	63.4	0.0	7.5	29.2	100.0	126	77.1	14.5	0.0	1.5	6.9	100.0	
Asian	95.5	0.8	0.0	0.0	3.7	100.0	250	50.5	8.9	5.1	35.4	100.0	56	81.3	6.6	1.6	0.9	9.5	100.0	
Total	80.0	15.9	0.6	0.4	3.1	100.0	5,077	67.6	9.9	3.9	18.6	100.0	5,113	43.9	37.8	5.3	2.2	10.9	100.0	

5.10 Condom Use

Women were asked whether a condom was used during their last sexual intercourse. This question was asked as proxy for the use of condom for disease prevention purposes. As shown in Table 5.10, among women who had sex with their spouses, only 6 percent report condom use during their last sexual intercourse. A higher figure of 16 percent was observed among women who had their last sex with unmarried partners. Only 8 percent of women who had last sex with casual partners reported condom use.

Irrespective of partner, condom use decreases with age. As such, teenage women report higher condom use during their last sexual intercourse than others. Condom use is also consistently higher in the urban areas (10 percent) than the non-urban areas (5 percent) regardless of the type of partner. Women in the Free State province report higher use of condoms during their last sex than other women irrespective of the type of partner. As many as 27 percent of the women in the Free State province who had their last sex with an unmarried partner report condom use. This figure is about 12 percent for those women who had their last sex with a spouse and 11 percent for those who had their last sex with a casual acquaintance. Women in the Western Cape province report the least use of condom during their last sex with their spouses (2 percent). Those in the Eastern Cape, Northern Cape and KwaZulu-Natal report the least use (less than 12 percent) during their last sex with unmarried partners. Similarly, women in these three provinces and Northern Province, report the least use of condom during their last sex with a casual acquaintance.

For all three types of sexual partners, the likelihood of condom use during the last sexual intercourse is positively associated with an increase in the level of education. African women are more likely to report condom use during their last sex with their spouses (7 percent) or casual partners (9 percent) than others while white women report the highest use of condom during last sex with unmarried partners (31 percent). Urban African women report higher condom use during their last sexual intercourse than non-urban African women.

Table 5.10 Use of Condom

Percentage of respondents who used condom during their last sexual intercourse by type of partner according to background characteristics, South Africa 1998.

	Last sex with spouse	Number	Last sex with unmarried Partner	Number	Last sex with casual acquaintance	Number
Age						
15-19	18.6	28	21.2	827	19.5	854
20-24	9.3	274	18.7	1,354	14.4	1,628
25-29	8.8	660	14.6	937	7.6	1,597
30-34	6.5	805	17.1	627	6.6	1,433
35-39	6.9	910	9.0	481	2.6	1,391
40-44	4.3	678	10.7	339	3.5	1,018
45-49	2.6	511	14.0	185	3.0	696
Current marital status						
Currently in union	6.4	3,866	8.1	849	0.0	4,716
Formerly in union	-	0	12.9	584	12.9	584
Had sex	-	0	19.1	3,317	19.1	3,317
Residence						
Urban	6.5	2,394	20.3	2,813	10.0	5,207
Non-urban	6.1	1,472	10.6	1,938	5.5	3,410
Province						
Western Cape	1.8	425	17.9	395	8.1	820
Eastern Cape	5.1	492	11.4	639	6.1	1,131
Northern Cape	4.1	77	10.8	76	5.0	153
Free State	11.8	290	26.9	238	10.9	528
KwaZulu-Natal	5.5	607	11.6	1,061	6.7	1,667
North West	9.0	277	16.9	391	9.0	668
Gauteng	6.3	950	22.1	1,077	10.4	2,028
Mpumalanga	9.5	272	16.8	397	9.5	670
Northern	6.8	475	14.3	477	6.4	952
Education						
No education	2.2	305	3.6	288	0.9	593
Sub A - Std 3	3.3	498	5.3	486	2.3	984
Std 4 - Std 5	5.6	586	11.9	571	5.1	1,157
Std 6 - Std 9	6.9	1,439	17.3	2,188	9.3	3,627
Std 10	9.0	642	20.2	884	11.3	1,526
Higher	8.5	396	35.1	333	15.5	729
Population group						
African	7.5	2,623	16.2	4,230	9.2	6,853
Afr. Urban	8.2	1,321	20.5	2,398	12.2	3,718
Afr. Non-urban	6.8	1,302	10.5	1,832	5.6	3,134
Coloured	2.9	434	14.6	343	5.6	777
White	4.7	551	30.7	122	4.3	673
Asian	5.1	232	14.2	33	1.8	266
Total	6.4	3,866	16.4	4,750	8.2	8,617

5.11 Treatment of Women

Economic abuse

It is normally expected that men who have some resources should contribute towards basic support of their spouse and/or children, including food, rent and payment of bills, before spending money on other items. A

failure to do so has been termed ‘economic’ abuse. It results in proportionately greater poverty being experienced by women and children than would be anticipated from total household income.

In the SADHS, a question was asked about whether in the past year the woman’s partner had regularly not provided money for food, rent or bills whilst having money for other things. The results are presented in Table 5.11. One in five currently married women reported such abuse. The pattern shows very little variation across the age-groups. It was more common in non-urban areas, among women residing in the Free State and KwaZulu-Natal, and much less common in the Western Cape and North West provinces. There was less economic abuse amongst more educated women and there were large ethnic differences. White women were six times less likely to report it than African women.

Physical violence against women

Women were asked if they had experienced physical violence in the year prior to the interview. The findings are presented in Table 5.11. In total one in ten women had been assaulted in the year prior to the study: six percent by current or ex- partner and four percent by someone who was not a partner. Assault by a partner was most common amongst younger women, especially those aged under 24 years and lowest in women over 40. It was more common in those living in urban areas and lowest in the Eastern Cape, KwaZulu-Natal, North West and Northern Province. It was more common among those who had attended school, but not completed Standard 10 and among coloured women and African women living in urban areas.

Most women reported more than a single episode of assault during the past year. The median was 2, range 1-94 and interquartile range 1-6. Twenty-eight percent of women abused by a current or ex-partner needed medical attention. Older women were very much more likely to need it than those in the youngest age group. It was most likely amongst women in Gauteng, Mpumalanga, KwaZulu-Natal, the Eastern Cape and Western Cape and much less likely in the Free State and Northern Cape. Having education beyond matric and being white were also protective.

The need for medical attention is an indicator of the severity of abuse, the proportion reporting this was very high. Whilst this obviously shows that many men are very brutal when they assault their partners, it may also point towards substantial under-reporting of less severe forms of assault e.g. slapping. It is notable that the incidence of abuse was quite low among women in the 45-49 age group, Asian women and those living in KwaZulu-Natal and yet reports of needing medical attention were particularly high in these groups. This may well suggest that less severe forms of assault are particularly under-reported in these groups. The high level of injury resulting from abuse is a pointer towards the considerable economic, social and health service costs which are associated with domestic violence. The substantial proportion of abused women who use health services also points towards a role for health providers in identifying women and referring them to places of shelter and other services.

Alcohol and drug use were more likely to be associated with the abuse of women who were older (over 35 years), living in the Eastern Cape and Northern Cape, less educated and who were coloured or Asian. The findings suggest that it was very common for assailants to be drunk or on drugs but this was by no means the rule.

In assaults by a non-partner, the perpetrator was a male relative in thirty per cent of cases (most commonly a cousin or uncle), a female relative in eleven per cent of cases (most commonly the mother), an unknown

assailant in seventeen percent of cases and in forty two per cent it was a range of other people, mostly neighbours or people known in the community or at school. It was most often reported amongst teenagers. It was more common in non-urban areas and amongst women living in the Northern Cape, Western Cape, Northern and Mpumalanga provinces. It was also most common among women with Standard 4-9 schooling and least often reported among women with no schooling. Coloured, white and (urban) African reported it more frequently. Only 31 respondents (0.3 percent of women interviewed) reported physical violence by both a partner and a non-partner in the previous year.

Assault by a non-partner had mostly occurred on one occasion. The median number of episodes was 1, the interquartile range was 1-2, but the range was 1-94. Assault by a non-partner was much less likely to result in injuries which required medical attention, although the proportion (eighteen percent) who reported this is still high. It was more common amongst older women (over 35), those living in non-urban areas, living in the North West and Free State, those without education and African or coloured women. Alcohol and drug use were also often reported to have been associated with episodes of assault by non-partners, but overall it was less common than with partner assault. Assailants always using substances were more likely to be in the Western Cape and Northern Cape, and assaulting women with no education.

These data show that adult women are more than twice as likely to be assaulted by a current or ex-partner than they are by anyone else. Furthermore assault by an intimate partner is likely to occur more frequently and to be more severe, as indicated by the greater likelihood of it resulting in injuries requiring medical attention. Abusive partners are more likely to be using drugs or alcohol at the time of the assault than other assailants.

Table 5.11 Mistreatment of women in last 12 months

The percentage of currently married women who reported that their partner regularly does not provide economic support while having money for other things, the percentage of women who reported that they had experienced physical abuse in the last 12 months and the percentage distribution of the reported use of drugs or alcohol by the assailant at the time of the abuse, according to partner type and background characteristics, South Africa 1998

Background characteristics	Economic abuse		Physical assault, most often by a current or ex- partner					Physical assault most often by non-partner					Number of women			
	Percentage partner not providing	Number CMW	Abuse by partner	Percentage assailants on drugs or alcohol at time of assault			Percentage abused women needing medical attention	Number ever had sex	Percentage abuse by non-partner	Percentage assailants on drugs or alcohol at time of assault				Percentage abused women needing medical attention		
				Always	Sometimes	Never				Missing/ No answer	Always	Sometimes			Never	Missing/ No answer
Age																
15-19	22.3	73	7.3	23.8	16.8	58.3	1.2	12.0	1,017	8.9	12.3	26.3	54.6	6.8	8.8	2,249
20-24	22.6	462	7.9	30.3	23.6	43.6	2.6	24.7	1,856	3.8	20.4	19.1	49.4	11.1	17.6	2,075
25-29	19.9	895	6.0	38.8	29.7	31.6	0	30.2	1,801	3.3	36.6	17.0	35.6	10.8	20.0	1,857
30-34	18.4	993	7.4	37.3	29.4	33.0	0.2	28.9	1,636	1.5	30.2	17.6	46.0	6.2	23.5	1,654
35-39	19.9	1,104	6.5	47.0	33.9	18.6	0.5	27.8	1,624	1.8	30.2	7.0	39.5	23.4	30.3	1,636
40-44	18.3	856	4.0	60.6	16.7	21.1	1.6	22.6	1,290	1.5	29.0	8.5	32.4	30.0	33.8	1,294
45-49	18.6	638	3.5	43.5	34.6	19.1	2.9	54.7	965	2.5	25.4	15.5	41.7	17.5	29.9	970
Residence																
Urban	17.6	2,997	7.0	40.1	25.9	33.4	0.7	26.9	6,171	3.6	22.3	17.9	45.0	14.9	15.0	7,095
Non-urban	22.1	2,024	5.3	34.4	28.1	35.5	2.1	26.7	4,019	3.9	18.7	24.2	51.8	5.3	18.4	4,640
Province																
Western Cape	13.7	539	8.0	53.5	16.3	30.2	0	24.9	1,014	5.0	36.6	15.6	43.3	4.5	16.6	1,193
Eastern Cape	18.2	579	5.4	31.5	46.9	21.0	0.7	27.1	1,367	2.7	19.4	26.6	46.1	7.9	12.3	1,566
Northern Cape	18.4	118	7.2	61.3	19.1	17.9	1.7	19.1	209	6.9	34.8	15.3	45.6	4.3	18.2	253
Free State	25.4	353	7.3	51.2	23.7	23.4	1.8	18.9	662	2.5	25.6	13.3	48.4	12.6	21.4	763
Kwazulu-Natal	25.6	945	5.4	32.4	23.4	41.3	2.9	27.2	1,969	3.6	21.2	21.1	45.4	12.3	17.1	2,364
North West	15.6	350	4.2	38.0	35.2	23.7	3.1	26.8	788	2.9	11.8	48.0	36.3	3.9	26.0	909
Gauteng	17.9	1,197	7.3	39.0	21.3	39.7	0	31.2	2,311	3.2	17.4	11.6	46.4	24.6	8.7	2,552
Mpumalanga	19.5	307	7.6	36.4	18.0	43.0	2.7	26.4	745	4.6	16.0	7.5	68.6	8.0	18.3	819
Northern	18.5	633	5.3	19.2	44.2	36.7	0	25.2	1,125	5.0	12.3	31.4	51.0	5.2	21.1	1,316
Education																
No education	22.7	511	4.6	59.0	26.8	14.3	0	21.9	783	1.4	36.4	32.9	20.1	10.6	29.3	804
Sub A-Std 3	25.5	734	6.5	43.5	27.5	25.8	3.2	28.2	1,225	3.0	32.1	13.5	49.4	5.0	17.1	1,291
Std 4-Std 5	23.8	753	7.5	52.7	22.0	24.5	0.8	30.3	1,412	4.3	20.3	16.9	51.8	10.9	21.4	1,625
Std 6-Std 9	17.1	1,851	7.2	34.0	28.8	36.7	0.6	26.8	4,241	4.6	20.7	22.9	46.5	9.9	13.6	5,181
Std 10	18.7	741	5.2	23.0	28.5	47.1	1.4	23.1	1,716	2.6	17.6	22.2	47.5	12.7	15.1	1,922
11+	9.2	431	2.9	35.9	9.9	51.4	2.7	29.1	812	3.3	7.6	11.9	57.8	22.8	24.2	912
Population group																
African	23.0	3,589	6.1	32.7	28.9	37.0	1.4	26.3	8,108	3.6	16.5	23.8	50.0	9.7	16.5	9,147
Afr. urban	23.0	1,784	7.0	34.7	28.1	36.3	0.9	26.0	4,406	3.3	16.2	21.0	46.9	15.9	16.3	4,873
Afr. non-urban	23.1	1,805	5.0	29.5	30.1	38.2	2.2	27.0	3,702	3.9	16.7	26.4	53.2	3.7	16.7	4,274
Coloured	16.5	548	10.3	57.3	19.4	23.1	0.3	29.8	979	5.3	49.8	14.0	36.2	0	22.4	1,201
White	4.4	604	3.8	49.8	20.9	29.3	0	29.3	741	3.9	12.6	6.3	47.9	33.2	5.1	916
Asian	10.1	250	4.3	56.8	14.4	28.8	0	28.0	305	2.4	9.7	9.7	43.6	37.0	9.7	406
Total	19.2	5,021	6.3	38.1	26.6	34.1	1.1	28.0	10,190	3.7	20.8	20.5	47.8	10.8	26.9	11,735

Lifetime experience of domestic violence

Table 5.12 shows the proportion of women who have ever been assaulted by a current or ex-partner- overall twelve per cent of women reported this. There was very little difference across age groups. Urban women were more likely to report abuse, as were women living in Gauteng, the Western Cape and Mpumalanga, those with some schooling but not post-school education, and coloured and white women.

Women who reported having ever been assaulted by a current or ex- partner were asked whether this had occurred during pregnancy. Four percent reported that it had. This was more common amongst women in urban areas, living in the Western Cape and Gauteng, and coloured and white women.

Ninety four percent of women who were in an abusive relationship, reported that they had ever ended a relationship because of physical abuse. Background characteristics made very little difference to the proportion reporting this, although there were some interprovincial differences. It was less likely in the Northern Cape, North West and Eastern Cape and more likely in the Northern Province. The number of women who reported having left abusive partners was quite high. There are some possible reasons for this. The question did not distinguish between women leaving forever and leaving and returning. The latter is very commonly reported in abusive relationships. Another possibility is that the women who disclosed abuse to the interviewers experienced more severe abuse and so were more likely to take action about this than women experiencing lesser degrees.

Sexual abuse

Sexual abuse was explored through questions which asked about whether women had ever been ‘forced to have sex against their will’ or ‘persuaded to have sex when they did not want to’. This second question was included as research indicates that sexual coercion is perceived to lie on a continuum of degrees of force used ranging from persuasion (which may include blackmail or threats) to physical forcing (Jewkes and Abrahams, In press). The word ‘rape’ was not used in the questionnaire because it is usually reserved only to refer to the actions of strangers or gangs (Wood *et al.*, 1998). Table 5.12 shows that four percent of all women had been forced and seven percent of women who had ever had sex had been either forced or persuaded to have sex at some time when they didn’t want to. Having been forced to have sex was most commonly reported by women under 35 years, in urban areas, in Mpumalanga, Gauteng and the Western Cape provinces and with higher education. It was much more commonly reported by white and coloured women than those of other population groups.

Table 5.12 shows the proportion of women who were forced to have sex who sought help from the police. Fifteen percent reported the rape to the police. Older women and urban women were less likely to report than younger women and those in non-urban areas, but there was not great variation with age and area of residence. Women in Mpumalanga, Northern Cape and Gauteng were more likely to report. There were very marked educational differences, having no education appears to be a major barrier to contacting the police after rape and women with post-school education were eight times more likely to report rape than uneducated women. White women were most likely to report rape and Asian women were nearly half as likely. These data suggest that certain groups in the population have considerably less access to police services after rape. The reasons for this very substantial inequity need further investigation and strategies need to be developed to improve access for all women.

Measuring violence against women

The inclusion of questions on the treatment of women represents a first attempt to get national indicators of the prevalence of abuse. The data are likely to under-represent the true magnitude of violence against women as under-reporting is a common problem in surveys. The main reasons for this are that women are afraid of recriminations, feel ashamed, see it as a private matter, do not wish to speak badly about their husband or do not see themselves as abused because they have been raised to believe men will discipline women (Heise *et al.*, 1994). Dedicated studies of violence against women normally find a higher prevalence of abuse when compared with surveys such as the SADHS, the difference is attributed to field work factors (Ellsberg *et al.*, 2001).

In order to gain an insight into possible under-reporting a study was conducted which would provide external validation of the SADHS findings in three provinces, the Eastern Cape, Mpumalanga and Northern Province (Jewkes *et al.*, In press). This validation study closely followed the SADHS methods, with interviews conducted in 1 in 6 EAs in the Eastern Cape and 1 in 2 in the Northern Province and Mpumalanga. There were some differences in the sampling strategy which mean that one would expect the findings of the two studies to be broadly similar but there could be minor differences. The validation study found substantial under-reporting in two of the three provinces. In the Eastern Cape the proportion of women physically abused by a partner in the previous year was twice that found here (10.9 percent vs 5.4 percent); in Mpumalanga it was one third higher (11.9 percent vs 7.6 percent), whilst in the Northern Province it was slightly lower (5.3 percent vs 4.5 percent). The proportion of women reporting having ever been assaulted by a partner was much higher in the validation study. In the Eastern Cape it was 26.8 percent compared with 8.7 percent in the SADHS; in Mpumalanga it was 28.4 percent compared with 15.2 percent in SADHS; and in the Northern Province it was 19.1 percent compared with 8.8 percent in SADHS.

Table 5.12 Mistreatment of women

Percentage of women who reported ever experiencing various types of mistreatment according to background characteristics, South Africa 1998

Background characteristics	Abuse in pregnancies		Abuse by sexual partner				Rape	All women	
	Percentage	Number ever pregnant	Ever abused by partner	Ever abused and left due to abuse	Ever forced or persuaded to have sex against will	No. Ever had sex	Ever forced to have sex (rape)		Ever forced and sought help from the police
Age									
15-19	4.7	308	11.9	91.2	9.7	1,017	4.9	13.2	2,249
20-24	4.3	1,246	14.2	96.7	8.1	1,856	4.9	18.8	2,075
25-29	4.2	1,542	12.0	87.3	7.4	1,801	5.1	17.2	1,857
30-34	3.5	1,564	14.9	94.9	7.9	1,636	5.3	12.4	1,654
35-39	3.5	1,576	12.8	94.1	5.4	1,624	3.6	16.4	1,636
40-44	2.2	1,250	10.3	99.4	5.3	1,290	2.8	15.2	1,294
45-49	4.3	932	9.7	96.7	5.1	965	3.2	9.6	970
Residence									
Urban	4.5	4,972	14.8	93.6	8.1	6,171	5.0	14.5	7,095
Non-urban	2.4	3,445	9.2	95.7	5.3	4,019	3.6	16.8	4,640
Province									
Western Cape	7.5	816	16.9	95.4	12.4	1,014	6.5	13.3	1,193
Eastern Cape	2.9	1,071	8.7	90.4	4.4	1,367	2.9	14.3	1,566
Northern Cape	3.1	190	13.2	82.3	4.7	209	3.8	17.2	253
Free State	2.5	550	12.4	96.8	4.1	662	2.6	12.1	763
Kwazulu Natal	3.0	1,708	10.3	94.9	6.4	1,969	3.3	12.5	2,364
North West	1.5	653	6.8	87.7	2.9	788	2.3	13.7	909
Gauteng	5.2	1,899	17.8	94.4	9.6	2,311	6.5	15.7	2,552
Mpumalanga	2.4	592	15.2	94.8	10.5	745	7.1	25.2	819
Northern	2.5	939	8.8	100.0	3.9	1,125	3.3	10.9	1,316
Education									
No education	2.5	755	9.4	98.5	3.7	783	2.6	3.1	804
Sub A-Std 3	3.3	1,136	13.5	96.7	6.1	1,225	3.8	11.5	1,291
Std 4-Std 5	3.7	1,241	15.2	94.6	6.8	1,412	4.0	15.5	1,625
Std 6-Std 9	4.2	3,374	12.9	93.1	7.5	4,241	4.9	15.5	5,181
Std 10	3.7	1,294	11.9	92.4	7.0	1,716	4.1	14.4	1,922
11+	2.5	617	9.5	95.8	9.6	812	5.5	23.3	912
Population group									
African	2.8	6,599	11.4	93.5	6.0	8,108	3.8	14.4	9,147
Afr. urban	3.5	3,480	13.9	92.6	6.9	4,406	4.4	14.5	4,873
Afr non-urban	2.0	3,119	8.3	95.6	4.9	3,702	3.2	14.3	4,274
Coloured	8.2	870	19.7	92.8	12.0	979	6.5	15.5	1,201
White	6.4	626	15.8	97.8	13.0	741	8.7	18.9	916
Asian	3.5	274	12.6	100.0	3.7	305	2.3	10.1	406
Total	3.7	8,417	12.5	94.1	7.0	10,190	4.4	15.2	11,735

Use of and need for services

Table 5.13 shows the proportion of women who had been physically abused in the past year or raped who used or would have liked to have been able to use various services. Only thirty percent of raped women had used any service, half of these women had been to the police. Only six percent of raped women had been to a health facility and very few had used other services. Forty three percent identified services which they would have liked to have had help from. Counselling, the police and social workers were the most commonly identified services. Twenty six percent of physically abused women had used any service, just under half of these had been to the police and small numbers had sought help from other sources. Thirty eight percent of women identified services which they would have liked to have had help from after physical abuse. Most commonly these were social workers, counsellors or the police. None of the physically abused women used a shelter, but five percent indicated that they would have liked to have been able to do so. Some women indicated that they had tried to access the police and found them unhelpful and thus expressed persisting unmet need for help from the police. This pattern of reporting was not found with other services.

Table 5.13 also shows the proportion of women reporting physical abuse by a current or ex-partner in the previous year who used or wanted services by province, and by type of service. For most provinces the proportion using any service was between twenty and twenty-six percent. The proportion of women in the Northern Province seeking help was twice this (forty nine percent). Much of this difference was due to a large number of 'other' sources of help being recorded. These included religious figures, indunas or headmen and family members. The proportion seeking help in the Northern Cape was only fourteen percent. There was much greater variability in the proportion reporting unmet need, this ranged from sixty-two per cent of women in KwaZulu-Natal to three percent in the Northern Cape. The large differences are likely to be influenced by the severity of the abuse reported, the extent to which it is regarded as 'normal' or something women must endure, the availability of services, reputation of services and perceived risks associated with help seeking. The large inter-provincial differences in services which are normally provided by the NGO sector, i.e. counselling, shelters and women's centres, may reflect the uneven distribution of these services in the country. The provinces with the greatest need for shelters, counselling and women's centres, were Gauteng, the Western Cape and KwaZulu-Natal. These are also the ones where there is greater provision, although very few women interviewed used these services.

Table 5.13 Service use and needs for abused women

Percentage of women reporting having used various types of services or wanting services which were not available according to type of abuse and province, South Africa 1998.

Type of abuse	Proportion of abused women using or wanting help from services by type of service																Total
	Shelter		Counselling		Women's centre		Social worker		Police		Clinic/hospital		Other		Any service		
	Used	Needed	Used	Needed	Used	Needed	Used	Needed	Used	Needed	Used	Needed	Used	Needed	Used	Needed	
Rape	0.2	1.9	3.9	14.5	1.0	4.2	3.6	11.9	15.2	12.6	6.0	6.7	6.4	6.0	29.7	43.1	520
Physical by partner in last yr	-	4.6	3.4	8.9	0.7	5.4	3.8	13.1	12.1	8.9	4.1	4.2	7.1	5.2	26.3	38.2	652
	Proportion of women abused by a current or ex-partner in last year who used or needed help by services type and province																
Province																	
Western Cape	-	9.8	6.5	24.0	-	9.5	6.5	12.6	17.4	4.9	1.4	2.8	4.7	-	27.0	49.5	81
Eastern Cape	-	-	2.3	4.4	0.9	3.8	4.7	6.0	9.8	10.2	6.0	7.5	1.6	1.9	24.2	31.6	74
Northern Cape	-	-	-	-	-	1.5	1.5	1.5	4.5	1.5	2.9	-	4.6	-	13.5	2.9	16
Free State	-	-	1.6	8.2	-	8.1	4.8	19.6	9.7	13.5	1.6	8.5	6.7	8.5	21.3	40.3	49
KwaZulu-Natal	-	8.4	0.9	13.6	-	11.6	5.4	28.9	8.1	10.3	6.6	5.7	9.1	10.5	22.9	62.0	107
North West	-	-	-	3.0	-	-	2.7	2.7	8.8	6.0	3.0	-	14.5	-	26.0	11.8	34
Gauteng	-	6.9	6.2	7.6	1.4	4.1	2.8	9.7	13.8	11.0	2.8	2.8	4.1	8.3	25.5	40.7	173
Mpumalanga	-	2.7	2.7	4.6	2.7	-	1.5	9.2	13.0	7.3	4.6	6.1	2.3	3.5	20.3	21.9	56
Northern	-	-	1.9	-	-	1.8	1.8	11.3	15.0	5.6	7.5	1.8	22.7	1.9	49.0	20.5	61

Childhood sexual abuse

The sexual abuse of children is a subject of growing concern amongst the general community. In order to investigate the prevalence of child rape and sexual abuse, women were asked questions about experiences of having been ‘touched against your will in a sexual way’ (discussed here as ‘fondling’) and ‘forced to touch a man’s private parts against your will’, in addition to the questions about ‘forced’ sexual intercourse or being ‘persuaded’ when you didn’t want to (both constitute statutory rape) if the girl/woman is under the age of 16 years). Respondents answering in the affirmative were asked the age at which the act first happened and who did it. Women who said they had been raped were not asked the other sexual abuse questions. The data are indicative of minimum levels of child abuse as other forms of sexual abuse, notably flashing or exposing children to pornography, physical abuse and sexual abuse of boy children are not included.

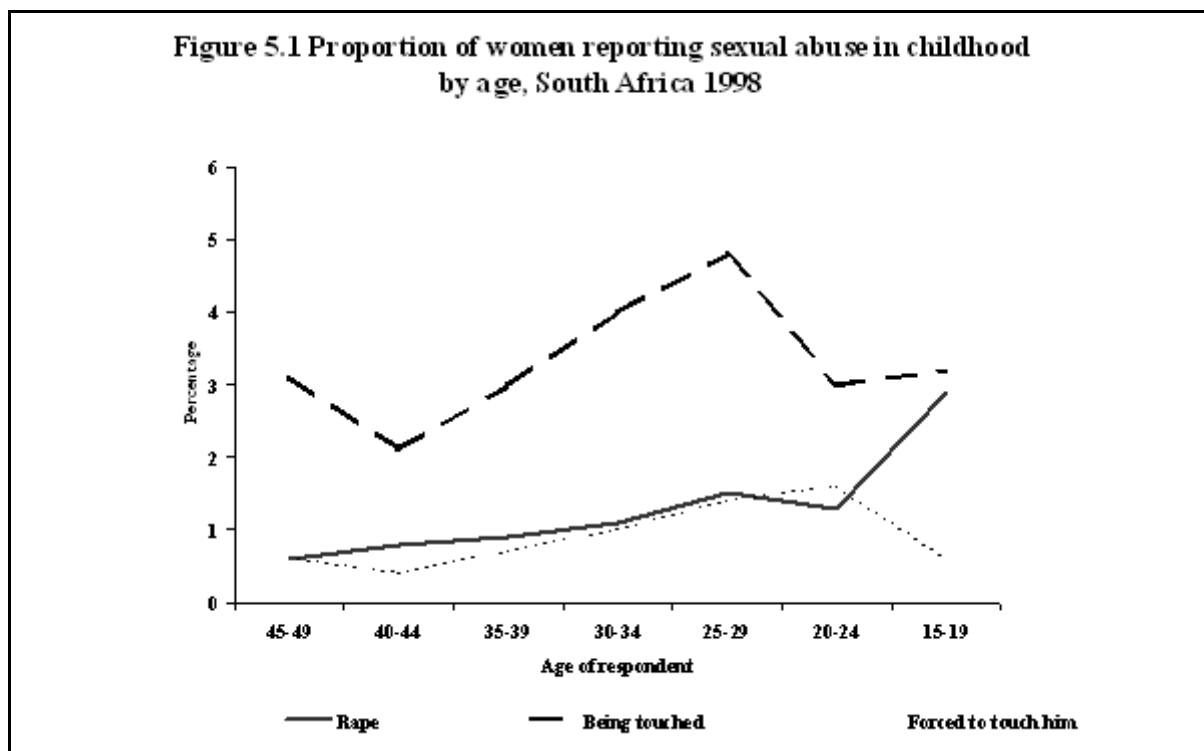


Figure 5.1 shows that there has been a steady increase in the proportion of women reporting having been raped before the age of 15 and women who were 15-19 years at the time of interview were almost twice as likely to report having been raped than those aged 20-24 years. One possible explanation for this is recall bias, but it is unlikely that this is present to a substantial degree as similar trends are not seen in the proportion of women reporting having been touched or made to touch a man. Table 5.14 shows the ages at which sexual abuse occurred and the identity of the perpetrator. The vast majority of child rape was perpetrated by men who were in positions of trust with respect to the child: school teachers, family members, family friends and lodgers. Teachers formed the single largest group of child rapists. Men who were not particularly in positions of trust, for example men or boys known from the neighbourhood, school or church, or strangers were much more likely to fondle girls than rape them. Twenty-one women reported having been raped by gangs of between three and ten men.

Table 5.14 Sexual abuse

Percentage distribution of age when first sexually abused and percentage distribution of the identity of perpetrator for rape, fondling and being forced to touch a man, South Africa 1998

	Rape	Fondling	Made to touch him
Age			
0-4 years	*	1.0	*
5-9 years	14.6	18.5	24.4
10-14	85.4	80.5	75.6
Identity of man			
Father	5.1	2.3	4.8
Brother	4.8	3.7	4.0
Other relative	11.3	18.7	20.0
Family friend/lodger	11.1	9.1	13.0
School teacher	32.8	2.5	3.4
Stranger/recent acquaintance	20.2	18.3	10.3
Stepfather/mother's boyfriend	3.6	0.8	0.8
Boyfriend	8.3	7.6	9.3
Man/boy from neighbourhood/ church/school	0.8	36.3	33.4
Landlord/farmer	0.7	*	*
Other	1.4	0.6	1.1

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 5.15 shows that all forms of child abuse were more commonly reported by women in urban areas and in the provinces of Gauteng, Mpumalanga and the Eastern Cape. The highest level of rape reported was among white and coloured women and the highest level of unwanted fondling was also amongst white women. It is very difficult to know whether these racial differences are real or result from different thresholds of reporting in the different groups.

The findings suggest that there may have been an increase in the prevalence of child rape, with the problem particularly occurring in urban areas. Research on adolescent sexuality has shown that forced sexual initiation is very common (e.g Buga 1996 found 28 percent of initiation to be 'forced'), the information on perpetrators indicates that the reports in this study were rarely of the actions of boyfriends. It is likely, therefore, that there has been substantial under-reporting of forcing by boyfriends.

Table 5.15 Child sexual abuse

Proportion of women reporting child sexual abuse by selected background characteristics, South Africa 1998

Background characteristics	Raped	Fondled	Made to touch him	Number of women
Age				
15-19	2.9	3.1	0.6	2,249
20-24	1.3	3.0	1.6	2,075
25-29	1.5	4.9	1.4	1,857
30-34	1.1	4.0	1.0	1,654
35-39	0.9	3.0	0.7	1,636
40-44	0.8	2.1	0.4	1,294
45-49	0.6	3.1	0.6	970
Residence				
Urban	1.7	3.7	1.1	7,095
Non-urban	1.0	3.0	0.7	4,640
Province				
Western Cape	2.3	3.2	1.1	1,193
Eastern Cape	0.8	1.4	0.6	1,566
Northern Cape	0.8	2.2	0.4	253
Free State	0.3	3.3	1.3	763
Kwazulu-Natal	1.2	3.1	0.6	2,364
North West	0.3	1.7	0.8	909
Gauteng	2.5	5.5	1.5	2,552
Mpumalanga	2.6	5.2	1.5	819
Northern	0.7	2.6	0.7	1,316
Education				
No education	1.0	2.8	0.4	804
Sub A-Std 3	1.2	2.8	1.1	1,291
Std 4-Std 5	1.6	2.6	0.9	1,625
Std 6-Std 9	1.6	3.0	0.8	5,181
Std 10	1.3	3.9	1.1	1,922
Higher	1.5	6.9	1.9	912
Population group				
African	1.2	2.8	0.8	9,147
Afr. urban	1.4	2.9	1.0	4,873
Afr. non-urban	0.9	2.6	0.6	4,274
Coloured	2.2	2.9	1.1	1,201
White	3.6	10.1	2.8	916
Asian	0.7	4.2	0.9	406
Total	1.4	3.4	1.0	11,735

CHAPTER 6

INFANT AND CHILD MORTALITY

6.1 Introduction

This section presents the estimates of levels and trends of child mortality in South Africa from 1983-1998. It will focus on socioeconomic factors related to the family and demographic factors related to the mother and child, because they are both important components of child survival. The data are disaggregated by province and by demographic and socioeconomic characteristics in order to identify geographic differences and groups with special needs.

The rates of child mortality presented in this chapter are defined as follows:

- Neonatal mortality (NN): the probability of dying within the first month of life
- Postneonatal mortality (PNN): the difference between infant and neonatal mortality
- Infant mortality (${}_1q_0$): the probability of dying in the first year of life
- Child mortality (${}_4q_1$): the probability of dying between exact age one and five
- Under-five mortality (${}_5q_0$): the probability of dying between birth and exact age five

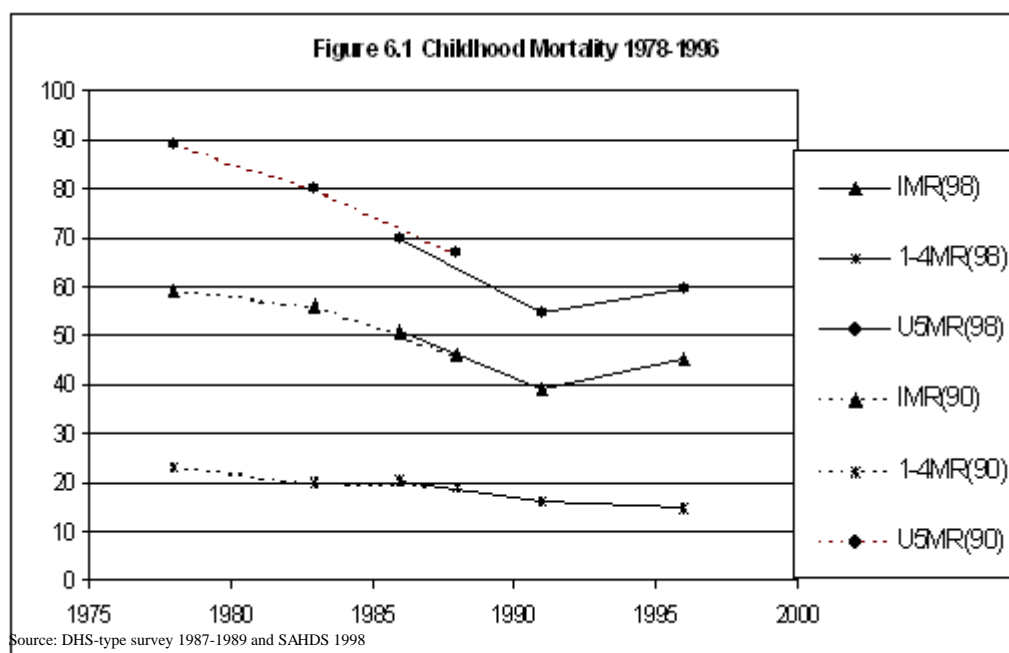
The mortality rates are calculated from information obtained in the pregnancy history section of the Women's Questionnaire. In the absence of a complete vital registration system, this information is regarded as giving the most robust estimates of child mortality. However, it has been noted that problems with this type of retrospective history may include omissions of births and deaths. This is especially common for infants who die shortly after birth. Other problems may include misreporting of date of birth and age at death which can distort both the level and trends in child mortality. A more detailed analysis is needed to determine the effects of reporting errors on infant and childhood mortality rates.

6.2 Levels and Trends in Infant and Child Mortality

Table 6.1 shows neonatal, post-neonatal, infant, child and under-five mortality rates for 3 five-year periods before the survey. The most recent estimates centre around 1996 and show that slightly more than three-quarters of all deaths under five occur in the first year of life and one-third occur in the first month of life.

<u>Table 6.1 Infant and child mortality</u>						
Neonatal, postneonatal, infant, child and under five mortality for five-year periods preceding the survey, South Africa 1998						
Years preceding survey	Approximate calendar period	Post-				
		Neonatal mortality (NN)	neonatal mortality (PNN)	Infant mortality (${}_1q_0$)	Child mortality (${}_4q_1$)	Under-five mortality (${}_5q_0$)
0-4	1993 - mid-1998	19.8	25.6	45.4	14.7	59.4
5-9	1988 - 1992	18.6	20.6	39.2	16.2	54.8
10-14	1983 - 1987	22.6	28.1	50.7	20.4	70.1

Figure 6.1 below shows trends in infant, child and under-five mortality between 1978 and 1996. It uses five-year retrospective estimates from surveys conducted by the HSRC (centred on 1990) and the 1998 SADHS. There is remarkable consistency between the two sets of estimates showing improvements in the level of child mortality until 1991.



6.3 Socioeconomic Differentials in Childhood Mortality

Differentials in the various mortality rates by selected socioeconomic characteristics are presented in Table 6.2. The table focuses on basic geographic and socioeconomic characteristics including residence, province, mother's education, population group, and medical maternal care. In order to reduce sampling error, a ten-year period (1986-1996) was used to calculate mortality estimates except for medical maternal care for which a five-year period is used.

Mortality is consistently higher in non-urban than urban areas. This is also true of African rural residents compared to their urban counterparts. There is confirmation of considerable variation in childhood mortality by province as has been reported in many studies (Rossouw and Jordaan, 1997:28). Level of education attained by the mother also shows the expected relationship of more schooling correlating with lower mortality rates for children. Women with a secondary education have substantially lower under-five mortality than women with less than secondary education.

There are also striking differences in mortality rates by population group, with infant and under-five mortality rates for Africans that are two and one half times that of coloured infants and four times higher than for white infants. Unfortunately, the sample of Indian births was too small to allow a reliable estimate of mortality rates.

Childhood mortality rates also vary depending on whether the mother received any antenatal or delivery care. The data clearly illustrate that mothers who receive neither antenatal or delivery care or only one type of care suffer higher neonatal and infant mortality than mothers who receive both antenatal and delivery care.

Table 6.2 Infant and child mortality by socioeconomic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality for the ten-year period preceding the survey by selected socioeconomic characteristics, South Africa 1998

Background characteristic	Neonatal mortality (NN)	Post-neonatal mortality (PNN)	Infant mortality (${}_1q_0$)	Child mortality (${}_4q_1$)	Under-five mortality (${}_4q_0$)
Residence					
Urban	16.4	16.2	32.6	11.0	43.2
Non-urban	22.0	30.1	52.2	20.1	71.2
Province					
Western Cape	4.0	4.4	8.4	4.8	13.2
Eastern Cape	24.7	36.5	61.2	20.5	80.5
Northern Cape	20.5	21.3	41.8	14.3	55.5
Free State	9.9	26.9	36.8	13.7	50.0
KwaZulu-Natal	23.2	28.9	52.1	23.6	74.5
North West	20.0	16.8	36.8	8.8	45.3
Gauteng	17.8	18.5	36.3	9.3	45.3
Mpumalanga	23.6	23.6	47.3	17.3	63.7
Northern	18.3	18.9	37.2	15.7	52.3
Education					
No education	19.7	39.1	58.8	26.5	83.8
Sub A - Std 3	25.1	28.6	53.7	26.4	78.7
Std 4 - Std 5	19.3	22.3	41.5	14.5	55.4
Std 6 - Std 9	16.5	22.9	39.3	13.8	52.6
Std 10	18.2	12.0	30.2	3.2	33.3
Higher	21.9	7.3	29.3	0.0	29.3
Population group					
African	20.6	26.5	47.0	17.4	63.6
Afr. urban	18.3	20.4	38.7	12.7	50.9
Afr. non-urban	22.3	31.3	53.6	21.2	73.7
Coloured	9.6	9.2	18.8	9.6	28.2
White	(11.4)	(0.0)	(11.4)	(3.9)	(15.3)
Asian	*	*	*	*	*
Medical maternity care¹					
No ANC or no DS	*	*	*	NA	NA
Neither ANC nor DS	27.9	15.0	42.9	NA	NA
Both ANC and DS	14.6	21.5	36.1	NA	NA
Total	19.2	23.0	42.2	15.4	56.9

¹ Refers to births in the five years before the survey

Note: Figures in parentheses are based on 250-500 cases, while an asterisk denotes a figure based fewer than 250 cases that has been suppressed.

ANC = Antenatal care

DS = Delivery services from medical personnel

NA = Not applicable

It is important to note that the levels of under-five mortality derived from the 1996 census were higher than those observed in SADHS (Udjo, 1998). This is likely to be the result of differences in the methodology—the census used indirect methods while SADHS used a detailed pregnancy history. The methodology used in SADHS is usually considered to be a more reliable approach but possibly resulted in an underestimate of the true rate. However, when comparing the provincial estimates of under-five mortality from the SADHS with those from the census, it was found that there was a good correlation between them except in the cases of the Western Cape, Free State and North West which clearly appear to be too low in SADHS. This suggested that an adjustment for the underestimates for these three provinces would be appropriate. Adjusted estimates of under-five mortality were made for these three provinces on the basis of the relationship between census and SADHS estimates for the other 6 provinces. Adjusted estimates of infant mortality were then made for the three provinces on the basis of the adjusted under-five estimates and the relationship between infant and under-five mortality observed in SADHS in the other six provinces. These adjusted national and provincial rates are shown in Table 6.3. Allowing for the underestimates in these three provinces the adjustment suggests that the national childhood mortality rates should be adjusted by a factor of 7.5 percent. Reasons for the underestimates in these three provinces need to be explored.

Table 6.3 Adjusted infant and under-five mortality

Adjusted provincial and national estimates of infant and under-five mortality rates for the ten-year period preceding the survey (1988-97), by province, South Africa

Province	Adjusted infant mortality rate (${}_1q_0$)	Adjusted under-five mortality rate (${}_4q_0$)
Western Cape ¹	30.0	39.0
Eastern Cape	61.2	80.5
Northern Cape	41.8	55.5
Free State ¹	53.0	72.0
KwaZulu-Natal	52.1	74.5
North West ¹	42.0	56.0
Gauteng	36.3	45.3
Mpumalanga	47.3	63.7
Northern	37.2	52.3
Total	45.0	61.0

¹ Rates for these provinces have been adjusted on the basis of the relationship between SADHS and the 1996 census data observed in the remaining provinces.

6.4 Demographic Differentials in Childhood Mortality

It is well established that bio-demographic factors of both the mother and child influence childhood mortality. Table 6.4 examines the relationship between childhood mortality and various bio-demographic variables for the ten-year period preceding the survey. The typical pattern of higher mortality in male children than female children at every age also holds true for South Africa. The relationship between age of mother at birth and child mortality shows the expected U-shape with women younger than twenty years old having slightly higher infant and under-five mortality rates than women between 20 and 40 years of age. However, children borne by women over the age of forty experience

sharply increased mortality rates. An exception to the U-shape is seen in the neonatal mortality which decreases with the age of the mother.

Mortality by birth order also shows a U-shaped pattern that is consistent with international findings. Generally, first-born children fare worse than children of birth orders 2-3, after which mortality increases as birth order increases. The exception to this pattern occurs for child mortality. This anomaly is most probably due to the relatively small number of deaths in this age group. The interval from one birth to the next can also have a dramatic effect on the child's survival chances. The data show that when this period is less than two years, under-five mortality (101 per 1000) is double what it is for a previous birth interval of 2-3 years (52 per 1000) or 4 years or more (47 per 1000). These findings are also consistent with other research and highlight the importance of birth spacing as a means of reducing child mortality.

Table 6.4 Infant and child mortality by demographic characteristics					
Neonatal, postneonatal, infant, child, and under-five mortality rates for the ten-year period preceding the survey by selected bio-demographic characteristics, South Africa 1998					
Background characteristic	Neonatal mortality (NN)	Post-neonatal mortality (PNN)	Infant mortality (₁ q ₀)	Child mortality (₄ q ₁)	Under-five mortality (₄ q ₀)
Sex of child					
Male	23.7	25.4	49.0	17.7	65.9
Female	14.6	20.7	35.3	13.0	47.9
Mother's age at birth					
Less than 20	20.3	22.3	42.5	19.2	60.9
20-29	19.3	20.9	40.2	14.9	54.5
30-39	18.4	24.1	42.5	13.3	55.2
40-49	(18.2)	(56.3)	(74.5)	(30.2)	(102.5)
Birth order					
1	19.2	21.4	40.6	15.0	55.0
2-3	15.3	17.7	32.9	14.1	46.6
4-6	23.3	26.8	50.1	19.6	68.7
7+	31.2	59.6	90.8	7.4	97.5
Previous birth interval					
< 2 years	35.0	42.0	76.9	25.9	100.8
2-3 years	18.1	20.4	38.5	13.9	51.8
4 years or more	13.7	20.2	33.9	13.1	46.5
Total	19.2	23.0	42.2	15.4	56.9
Note: Figures in parentheses are based on 250-500 births.					

6.5 Environmental factors and Childhood mortality

Environmental health refers to characteristics of environmental conditions, which affect the quality of life. Environmental health is concerned with those forms of life, substance forces and conditions in the surroundings of man that may exert an influence on human health and well-being. Man not only interacts with his environment but is shown to be a vital factor of his own environment (Purdam, 1980). Environmental factors are key variables in explaining differences in the levels of health.

This section focuses on the environmental factors, which influence health and more particularly, child health. Table 6.5 presents infant and child mortality for a ten-year period preceding the survey.

Environmental factors investigated are source of drinking water, sanitation, housing materials and source of energy.

Child mortality (4q1) rates, more than doubled where the source of drinking water was other than piped water. Where poor sanitation exists child mortality rates are higher e.g. where flush toilets are in use, the child mortality rates are 7.7 per 1000 compared to 34.9 per 1000 where other sanitation practices are in use.

Better flooring material (covered cement) and better toilet facilities (flush toilets) are associated with lower infant and child mortality. An association is also found where houses are block/brick built, and plastered and where electricity is the main source of energy, with lower child mortality. Child mortality increases more than three times where other materials for housing and other sources of energy are being used.

The findings of SADHS generally show that where poor environmental factors exist infant and child mortality rates are significantly higher.

<u>Table 6.5 Infant and child mortality by environmental factors</u>					
Neonatal, postneonatal, infant, child, and under-five mortality rates for the ten-year period preceding the survey by selected environmental factors, South Africa 1998					
Environmental factor	Neonatal mortality (NN)	Post-neonatal mortality (PNN)	Infant mortality (₁ q ₀)	Child mortality (₄ q ₁)	Under-five mortality (₄ q ₀)
Drinking water					
Piped	17.3	18.0	35.3	11.6	46.5
Other	25.0	39.0	64.0	27.7	89.9
Sanitation					
Flush	16.3	13.1	29.4	7.7	36.9
Latrine	20.2	25.2	45.4	15.0	59.7
Other	23.5	41.0	64.4	34.9	97.1
Floor type					
Sand/bare	23.2	39.3	62.5	28.0	88.8
Cement	20.2	25.6	45.9	16.8	61.9
Covered cement	15.9	11.9	27.8	7.2	34.8
Other	15.9	15.3	31.2	25.3	55.7
Wall type					
Mud/mud cement	21.7	41.3	63.0	24.5	85.9
Plastic/iron/prefab	18.2	26.6	44.8	21.9	65.8
Bare block/unfinished	17.6	19.8	37.4	8.2	45.3
Plastered	19.4	17.4	36.7	7.4	43.9
Other	22.5	12.2	34.7	24.8	58.6
Cooking fuel					
Electricity	16.2	11.3	27.4	4.4	31.7
Gas/paraffin	13.9	24.0	37.9	14.9	52.2
Wood/coal/dung/other	26.0	36.6	62.7	22.3	83.5
Total	19.2	23.0	42.2	15.4	56.9

6.6 High-Risk Fertility Behaviour

Numerous studies have demonstrated a strong relationship between a mother's pattern of fertility and her children's survival chances. The results presented in the previous section support this. Typically, infants and young children have a higher risk of dying if they are born to very young mothers or older mothers, if they are born after a short interval, or if their mothers have already had many children. In the following analysis, mothers are classified as "too young" if they are less than 18 years old at the time of birth and "too old" if they are age 35 years or more at the time of birth. A "short" birth interval is defined as one of less than 24 months, and a "high-order" birth is one occurring after three or more previous births (i.e., birth order 4 or higher). Births are also cross-classified by combinations of these characteristics. Thus, a birth may have from zero to three potentially high-risk characteristics. While first births are often considered high risk, they are not an *avoidable* risk in the same sense as the other factors and are thus treated separately in this analysis.

The first column of Table 6.6 shows the percentage of births occurring in the five years before the survey that fall into various risk categories. Forty-two percent of births are in at least one high-risk category, with about 15 percent having multiple high-risk characteristics. Risk ratios are presented in the second column; the risk ratio is the ratio of the proportion of children in a particular risk category who have died to the proportion in the specified reference category who have died. Births in the reference category are those who are not in any high-risk category. The results confirm that babies born to younger and older women and those born after a short interval suffer higher mortality than those not in any high-risk category. Babies of high birth order apparently are not subject to higher mortality risks unless they are also born after a short birth interval, in which case their risk of death is roughly 4 times higher than births in no high-risk category. Fortunately, only a small percentage of births in South Africa (3 percent) fall into this multiple risk category.

The third column in Table 6.6 shows the distribution of currently married women by the risk category into which a currently conceived birth would fall. A comparison of this percentage with the distribution of actual births in the last five years indicates that, without fertility control, the percentage of births falling into high-risk categories because the mother is too old (>34) would rise significantly. Further, the percentage of births with multiple high-risk characteristics would double from 15 to 31 percent.

Table 6.6 High-risk fertility behaviour

Percent distribution of children born in the five years preceding the survey by category of elevated risk of dying, and the percent distribution of currently married women at risk of conceiving a child with an elevated risk of dying, by category of increased risk, South Africa 1998

Risk category	Births in 5 years preceding the survey		Percentage of currently married women ^a
	Percentage of births	Risk ratio	
Not in any high-risk category	32.1	1.00	34.8
First births	26.1	1.06	5.2
Single high-risk category			
Mother's age <18	6.8	1.89	0.3
Mother's age >34	3.3	1.54	14.6
Birth interval <24 months	4.9	1.51	5.1
Birth order >3	12.3	0.98	9.0
Subtotal	27.2	1.37	29.0
Multiple high-risk category			
Age <18 & birth interval <24 ^b months			
Age >34 & birth interval <24 months	0.1	*	0.0
Age >34 & birth order >3	0.1	*	0.4
Age >34 & birth interval <24 months & birth order >3	10.3	1.29	23.6
Birth interval <24 months & birth order >3	1.4	1.64	3.0
Subtotal	2.7	4.08	4.0
In any high-risk category	14.6	1.86	31.0
Total	41.8	1.54	60.0
Number of births	100.0	-	100.0
	4,992	-	5,077

Note: Risk ratio is the ratio of the proportion dead of births in a specific high-risk category to the proportion dead of births *not in any high-risk category*.

^a Women were assigned to risk categories according to the status they would have at the birth of a child, if the child were conceived at the time of the survey: age less than 17 years and 3 months, age older than 34 years and 2 months, latest birth less than 15 months ago, and latest birth of order 3 or higher.

^b Includes the combined categories *Age <18 and birth order >3*.

An asterisks indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

CHAPTER 7

MATERNAL AND CHILD HEALTH

7.1 Antenatal Care

The results of the survey indicate very high utilisation of antenatal care for births in the preceding five years (94 percent), slightly higher than the 89 percent observed in the household survey on inequalities in health conducted in 1994 (Hirschowitz and Orkin, 1995). From Table 7.1 and Figure 7.1, it can be seen that only 3 percent of the births received no antenatal care. Compared with the results from the HSRC survey for the period 1988-1992 (Rossouw and Jordaan, 1997), there has been a marked improvement from the 12 percent of women who did not receive antenatal care. Furthermore, there has been a shift in the provider of antenatal care. SADHS data show that most women were seen by a nurse or midwife (66 percent) and fewer by doctors (29 percent). The HSRC survey showed that most women were seen by doctors (59 percent) and that fewer were seen by nurses (35 percent). A similarly low proportion of births were reported to have received care from a traditional birth attendant (less than 2 percent) in the 1988-1992 survey. These results suggest that antenatal care services have become more accessible in the last ten years.

A relatively high proportion of white women do not receive any antenatal care (11 percent). Overall, higher order births, those in the Western Cape and those whose mothers have no education, are more likely not to receive antenatal care.

The source of antenatal care varied slightly by women's age. Births to women in the 20-30 year age group were more likely to have had antenatal care provided by a doctor than women who were less than 20 years and those who were 35 and above. Considering the source of antenatal care by birth order, women with lower order births (1 child to 3 children) were more likely to receive antenatal care from a doctor than women with higher order births.

Doctors are more likely to provide antenatal care to women in urban areas than women in non-urban areas (41 percent vs 17 percent). The highest proportions of pregnancies that were cared for by a doctor occurred in Gauteng, Western Cape and Northern Cape. The lowest proportions occurred in the Eastern Cape and the Northern Province. The differences in antenatal care provision by population group show that the highest proportion of pregnancies cared for by a doctor was among white women (82 percent) and the lowest was amongst African women (23 percent). The percentage was even lower for African women living in non-urban areas (15 percent).

Table 7.1 Antenatal care

Percent distribution of births in the five years preceding the survey by source of antenatal care during pregnancy, according to selected background characteristics, South Africa 1998

Background characteristic	Antenatal care provider ¹					Total	Number of births
	Doctor	Nurse/ midwife	Traditional birth attendant	No one	Missing		
Mother's age at birth							
< 20	21.2	73.3	0.6	2.9	1.9	100.0	835
20-34	31.0	63.3	0.7	3.2	1.7	100.0	3,407
35+	26.5	66.7	1.4	3.0	2.4	100.0	751
Birth order							
1	31.6	63.1	0.6	3.1	1.7	100.0	1,652
2-3	33.2	61.2	0.9	3.1	1.6	100.0	2,008
4-5	20.4	74.3	0.7	2.4	2.2	100.0	847
6+	14.8	76.3	1.4	4.7	2.9	100.0	486
Residence							
Urban	40.9	53.9	1.0	2.9	1.4	100.0	2,470
Non-urban	16.8	76.9	0.7	3.4	2.3	100.0	2,522
Province							
Western Cape	43.5	48.2	1.0	6.7	0.7	100.0	401
Eastern Cape	12.0	82.7	0.5	4.0	0.9	100.0	741
Northern Cape	42.1	51.2	0.5	3.9	2.4	100.0	102
Free State	34.4	60.4	1.0	3.2	1.0	100.0	257
KwaZulu-Natal	28.3	66.1	0.6	2.3	2.7	100.0	1,094
North West	31.0	63.1	0.3	3.6	1.9	100.0	340
Gauteng	44.7	50.1	1.3	2.8	1.3	100.0	954
Mpumalanga	33.5	60.5	0.9	3.8	1.2	100.0	379
Northern	9.7	84.4	1.0	1.4	3.5	100.0	724
Mother's education							
No education	9.9	79.9	1.0	4.6	4.5	100.0	453
Sub A - Std 3	19.1	73.2	0.5	4.1	3.1	100.0	657
Std 4 - Std 5	21.9	75.0	0.4	1.4	1.3	100.0	747
Std 6 - Std 9	26.7	67.7	0.8	3.2	1.6	100.0	2,041
Std 10	45.0	49.3	1.5	3.1	1.0	100.0	759
Higher	63.3	33.0	0.7	3.0	0.0	100.0	336
Population group							
African	22.8	72.0	0.7	2.3	2.1	100.0	4,149
Afr. urban	33.6	62.1	0.8	1.8	1.7	100.0	1,783
Afr. non-urban	14.7	79.5	0.7	2.7	2.4	100.0	2,366
Coloured	45.1	46.7	1.0	6.8	0.4	100.0	445
White	82.1	6.3	0.9	10.7	0.0	100.0	250
Asian	65.2	28.2	2.5	2.4	1.7	100.0	114
Total	28.7	65.5	0.8	3.1	1.8	100.0	4,992

¹ If the respondent mentioned more than one provider, only the most qualified provider is considered.

Figure 7.1 Antenatal care by type of provider, South Africa 1998

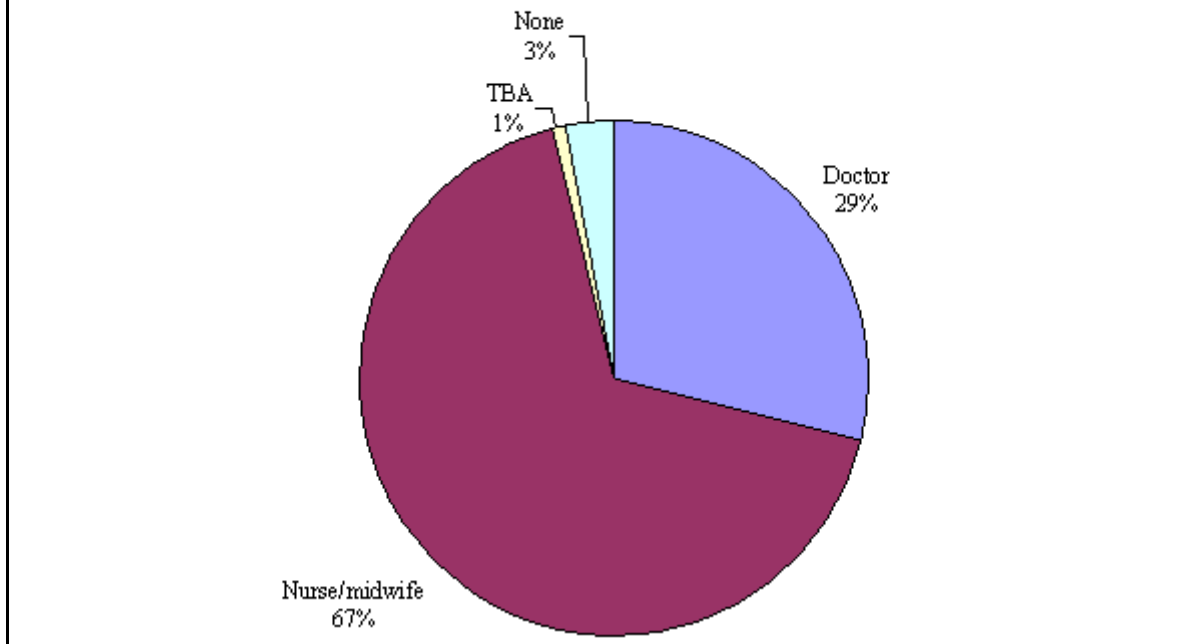


Table 7.2 Number of antenatal care visits and stage of pregnancy

Percent distribution of live births in the five years preceding the survey by number of antenatal care (ANC) visits, and by the stage of pregnancy at the time of the first visit, South Africa 1998

Number of visits and stage of pregnancy	Total
Antenatal visits during pregnancy	
None	3.1
1	1.8
2-3 visits	13.0
4+ visits	73.1
Don't know/missing	9.0
Total	100.0
Median	5.3
Number of months pregnant at time of first visit	
No antenatal care	3.1
Less than 6 months	62.8
6-7 months	28.1
8+ months	3.7
Don't know/missing	2.3
Total	100.0
Median	5.2
Total	4,992

Antenatal care was associated with levels of education. Table 7.1 shows that births to women with less education were more likely to receive antenatal care from a nurse or midwife than from a doctor. The proportion of births to women who obtained antenatal care from a doctor increased from 10 percent among women with no education to 63 percent among women with tertiary education. This finding is in contrast to the results of a previous survey (Rossouw and Jordaan, 1997) which found that most women were attended to by doctors irrespective of educational standard.

It can be seen in Table 7.2 that 73 percent of births in the past five years were to mothers who attended antenatal care four or more times. The median number of antenatal care visits was 5.3 similar to the 1992 survey with median of 5.4.

For the majority of births (63 percent), the first antenatal care visit was before six months of gestation. However, for more than a quarter of pregnancies, women did not receive antenatal care until six or seven months of gestation and 4 percent did not receive antenatal care until eight months of gestation. The median time at which mothers started antenatal visits was 5.2 months of gestation, an increase from median of 4.4 in 1992.

7.2 Tetanus Toxoid Vaccination

To estimate the extent of tetanus toxoid vaccination coverage during pregnancy, women were asked to report if they received injections against tetanus during pregnancy for all births in the five year period

Table 7.3 Tetanus toxoid vaccinations

Percent distribution of births in the five years preceding the survey by whether mother received a tetanus toxoid (TT) injection during pregnancy, according to selected background characteristics, South Africa 1998

Background characteristic	No TT injection	Received TT	Don't know/ Missing	Total	Number of births
Mother's age at birth					
< 20	31.1	63.4	5.4	100.0	835
20-34	35.8	57.3	6.9	100.0	3,407
35+	32.1	60.3	7.7	100.0	751
Birth order					
1	35.2	58.0	6.7	100.0	1,652
2-3	37.9	55.3	6.8	100.0	2,008
4-5	30.3	62.3	7.4	100.0	847
6+	24.8	69.6	5.6	100.0	486
Residence					
Urban	45.2	46.2	8.6	100.0	2,470
Non-urban	23.9	71.1	5.0	100.0	2,522
Province					
Western Cape	71.7	17.8	10.5	100.0	401
Eastern Cape	35.6	57.4	7.0	100.0	741
Northern Cape	37.3	53.4	9.3	100.0	102
Free State	20.7	75.8	3.5	100.0	257
KwaZulu-Natal	17.4	74.9	7.7	100.0	1,094
North West	37.9	56.3	5.7	100.0	340
Gauteng	54.9	37.6	7.5	100.0	954
Mpumalanga	34.3	61.8	3.9	100.0	379
Northern	14.3	80.8	5.0	100.0	724
Mother's education					
No education	23.9	70.0	6.1	100.0	453
Sub A - Std 3	23.9	69.4	6.7	100.0	657
Std 4 - Std 5	32.1	61.9	6.0	100.0	747
Std 6 - Std 9	34.4	59.3	6.3	100.0	2,041
Std 10	45.3	47.8	7.0	100.0	759
Higher	50.4	37.9	11.7	100.0	336
Population group					
African	28.3	65.3	6.4	100.0	4,149
Afr. urban	37.6	54.1	8.3	100.0	1,783
Afr. non-urban	21.3	73.7	5.0	100.0	2,366
Coloured	63.7	31.0	5.2	100.0	445
White	76.7	11.3	12.0	100.0	250
Asian	51.2	34.4	14.4	100.0	114
Total	34.4	58.8	6.8	100.0	4,992

preceding the survey. The results are presented in Table 7.3 and show that 59 percent of women received at least one dose of tetanus toxoid during pregnancy in the past five years. Higher parity was associated with increased chance of receiving the vaccine. The non-urban/urban variation shows higher tetanus toxoid vaccination in non-urban areas than urban areas (71 vs 46 percent). Among provinces, the Northern Province had the highest vaccination coverage followed by Free State, KwaZulu-Natal and Mpumalanga, Gauteng and Western Cape had the lowest in tetanus toxoid vaccination coverage for pregnant women. The proportion of women who received tetanus toxoid was highest among those with no education and lowest in those with higher education.

Low proportions of coloured and white women receive tetanus toxoid vaccinations during pregnancy.

7.3 Assistance and Medical Care at Delivery

An important element in reducing health risks for mothers and children is increasing the proportion of babies that are delivered with the assistance of a medically qualified person. Proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that can cause death or serious illness to either the mother or the baby. Table 7.4 and Figure 7.2 present the distribution of births in the five years preceding the survey by place of delivery. It shows that a very high proportion (83 percent) of babies are delivered in a health facility. The proportion of deliveries in a health facility has increased from the 78 percent observed in the 1988-1992 survey (Rossouw and Jordaan, 1997). Data from the 1995 October Household Survey also show that there has been an increase in the proportion of deliveries that occur in health facilities and a downward trend in the number of home deliveries (Bradshaw and Pieterse, 1998).

There was a strong urban/non-urban bias in the proportion of deliveries that occurred in a health facility. Ninety-three percent of urban births took place in a health facility, compared to 74 percent in the non-urban areas. Overall, 14 percent of deliveries occurred at home and Mpumalanga and Eastern Cape had much higher proportions (23 percent and 25 percent respectively). The proportion of women who delivered at home was related to the level of education with home deliveries for 36 percent of the women with no education compared to 3 percent of the women with higher education. The proportion of home deliveries was highest amongst the non-urban African women (23 percent) and lowest among the white and Asian women (less than 1 percent). Women who do not receive antenatal care are more likely to deliver at home than those who do.

The type of assistance a woman receives during childbirth has important health consequences for both mother and child. Table 7.5 shows the percentage distribution of live births in the five years before the survey by type of assistance received during delivery, according to background characteristics. A high proportion of deliveries were attended by a medically trained person (84 percent). More than half the deliveries were attended by a trained nurse or midwife and nearly a third of the deliveries were attended by a doctor. A very small proportion of deliveries were attended by a TBA or not attended at all.

There were strong urban/non-urban differences in the type of birth attendant. The proportion of deliveries assisted by a doctor was higher in the urban areas (42 percent) than in the non-urban areas (18 percent) and the proportion of deliveries that were not attended by a medically trained person was higher in the non-urban areas (23 percent) than in the urban areas (5 percent). Provincial variation shows that deliveries in the predominantly urban provinces of Gauteng and Western Cape had the highest proportion assisted by doctors, followed by Northern Cape and KwaZulu-Natal. The Eastern Cape and Northern provinces had the least deliveries assisted by doctors.

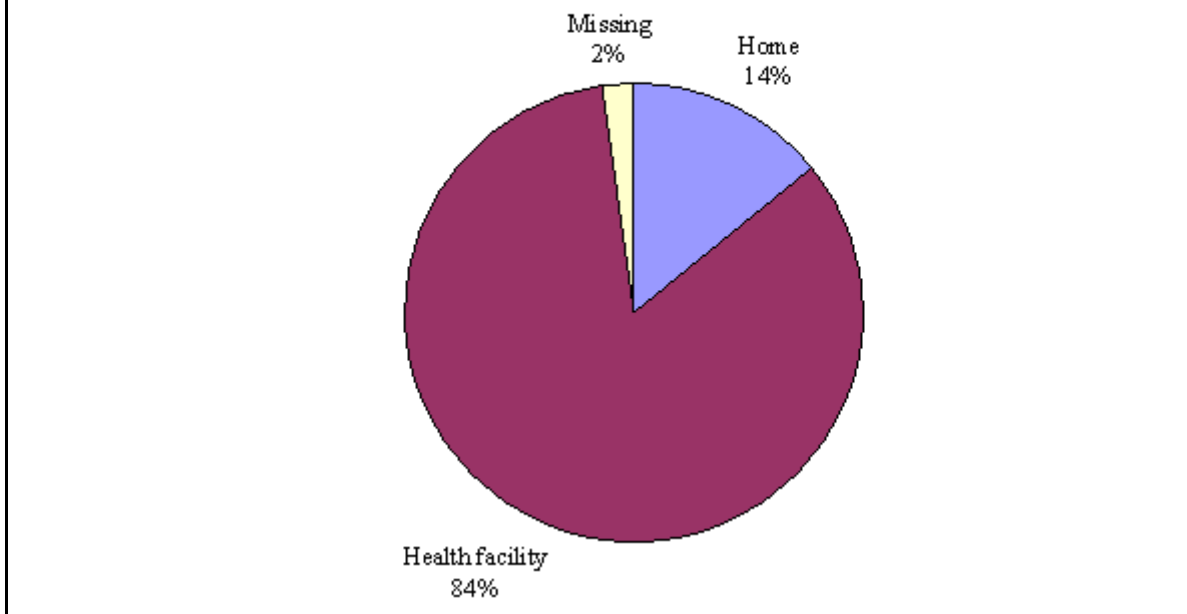
Table 7.4 Place of delivery

Percent distribution of births in the five years preceding the survey by place of delivery, according to selected background characteristics, South Africa 1998

Background characteristic	Place of delivery			Total	Number of births
	At a health facility	At home	Don't know/ Missing		
Mother's age at birth					
< 20	88.4	9.0	2.7	100.0	835
20-34	82.9	15.0	2.1	100.0	3,407
35+	80.5	16.8	2.7	100.0	751
Birth order					
1	91.4	6.6	2.0	100.0	1,652
2-3	83.7	14.2	2.1	100.0	2,008
4-5	76.2	20.6	3.2	100.0	847
6+	67.6	30.0	2.5	100.0	486
Residence					
Urban	92.6	5.8	1.5	100.0	2,470
Non-urban	74.4	22.6	3.0	100.0	2,522
Province					
Western Cape	95.8	3.2	1.0	100.0	401
Eastern Cape	73.9	25.3	0.8	100.0	741
Northern Cape	87.6	10.2	2.2	100.0	102
Free State	86.4	12.6	1.0	100.0	257
KwaZulu-Natal	83.6	13.7	2.8	100.0	1,094
North West	86.0	12.3	1.7	100.0	340
Gauteng	92.7	5.8	1.5	100.0	954
Mpumalanga	75.7	22.6	1.8	100.0	379
Northern	74.9	19.1	5.9	100.0	724
Mother's education					
No education	59.5	35.6	4.9	100.0	453
Sub A - Std 3	71.3	24.7	4.0	100.0	657
Std 4 - Std 5	79.0	18.6	2.4	100.0	747
Std 6 - Std 9	87.9	10.1	1.9	100.0	2,041
Std 10	94.4	4.6	1.0	100.0	759
Higher	96.9	2.9	0.1	100.0	336
Population group					
African	81.1	16.4	2.6	100.0	4,149
Afr. urban	91.0	7.2	1.8	100.0	1,783
Afr. non-urban	73.6	23.2	3.2	100.0	2,366
Coloured	93.7	5.3	1.0	100.0	445
White	99.0	1.0	0.0	100.0	250
Asian	99.0	0.0	1.0	100.0	114
Antenatal care visits					
None	62.9	36.5	0.6	100.0	157
1-3 visits	78.9	20.0	1.1	100.0	737
4 or more visits	86.8	12.3	0.9	100.0	3,647
Total	83.4	14.3	2.3	100.0	4,992

Note: Total includes 451 births on which data for antenatal visits are missing.

**Figure 7.2 Distribution of birth by place of delivery,
South Africa 1998**



Education is related to the type of assistance women receive during delivery. The higher the education, the more likely a woman is to be assisted by a doctor. Births of lower order are more likely to be assisted by medically qualified personnel than higher order births. White and Asian women were more likely to be assisted by a medically qualified person (99 percent) than coloured and urban African women (95 and 92 percent respectively) or non-urban African women (75 percent). A high proportion of African and coloured women were assisted by a nurse or midwife while most births to white women are assisted by doctors.

Women were more likely to be assisted by a medically trained person during labour if they attended antenatal care than if they did not. Women who attended antenatal care 1-3 times were less likely to be assisted by a doctor than those who did not attend or who had 4 or more visits.

Table 7.5 Assistance during delivery

Percent distribution of births in the five years preceding the survey by type of assistance during delivery, according to selected background characteristics, South Africa 1998

Background characteristic	Attendant assisting during delivery						Total	Number of births
	Doctor	Nurse/ midwife	TBA ¹	Relative/ Other	No one	Don't know/ Missing		
Mother's age at birth								
< 20	23.6	64.5	0.7	7.8	1.2	2.3	100.0	835
20-34	31.6	52.4	1.4	11.2	2.1	1.4	100.0	3,407
35+	30.0	52.0	2.2	10.6	3.1	2.1	100.0	751
Birth order								
1	31.9	60.2	0.9	4.9	0.4	1.7	100.0	1,652
2-3	33.7	51.0	1.3	10.9	1.6	1.5	100.0	2,008
4-5	25.1	52.7	2.0	15.6	2.9	1.7	100.0	847
6+	16.9	51.5	2.2	18.8	8.3	2.2	100.0	486
Residence								
Urban	42.2	51.2	0.8	3.8	0.7	1.3	100.0	2,470
Non-urban	18.0	57.5	2.0	17.1	3.4	2.0	100.0	2,522
Province								
Western Cape	44.4	51.7	0.3	1.9	0.9	0.7	100.0	401
Eastern Cape	17.8	56.8	2.2	18.4	4.2	0.6	100.0	741
Northern Cape	38.5	51.8	3.7	3.9	0.0	2.2	100.0	102
Free State	30.9	57.1	1.0	9.3	1.0	0.6	100.0	257
KwaZulu-Natal	34.1	48.5	0.3	12.6	2.4	2.2	100.0	1,094
North West	31.4	56.9	2.8	6.4	1.1	1.4	100.0	340
Gauteng	43.2	50.8	0.8	3.3	0.8	1.3	100.0	954
Mpumalanga	20.6	55.4	4.8	16.5	1.5	1.2	100.0	379
Northern	13.7	64.8	1.0	13.6	3.2	3.7	100.0	724
Mother's education								
No education	14.5	45.2	1.4	27.1	7.7	4.1	100.0	453
Sub A - Std 3	18.5	54.1	2.4	19.8	2.8	2.3	100.0	657
Std 4 - Std 5	19.9	60.0	2.3	13.3	3.3	1.1	100.0	747
Std 6 - Std 9	28.6	60.3	1.3	7.2	1.1	1.6	100.0	2,041
Std 10	45.1	50.2	0.4	3.0	0.3	1.1	100.0	759
Higher	70.3	28.7	0.1	0.9	0.0	0.0	100.0	336
Population group								
African	24.8	57.3	1.5	12.1	2.4	1.9	100.0	4,149
Afr. urban	36.0	55.8	0.9	4.7	0.8	1.7	100.0	1,783
Afr. non-urban	16.4	58.3	1.9	17.6	3.6	2.1	100.0	2,366
Coloured	40.3	54.5	1.4	2.7	0.6	0.5	100.0	445
White	89.0	10.0	0.0	1.0	0.0	0.0	100.0	250
Asian	52.7	46.4	0.0	0.8	0.0	0.0	100.0	114
Antenatal care visits								
None	29.3	33.0	9.3	22.3	6.1	0.0	100.0	157
1-3 visits	19.7	59.1	1.7	16.5	2.6	0.3	100.0	737
4 or more visits	32.4	55.6	1.1	8.8	1.7	0.3	100.0	3,647
Total	30.0	54.4	1.4	10.5	2.1	1.7	100.0	4,992

¹ TBA = Traditional birth attendant.

Note: Total includes 451 births for which data on antenatal visits are missing

7.4 Characteristics of Delivery

In addition to the information regarding place and type of assistance during delivery, SADHS collected information on several other aspects relating to the delivery of babies, such as whether the delivery was by caesarean section. Questions on birth weight and size of baby at birth were included to estimate the proportion of low birth weight infants. The data show that 16 percent of women in South Africa delivered by caesarean section. Eight percent of births weigh less than 2.5kg (Table 7.6).

Urban women had more caesarean sections than non-urban women (19 percent vs 12 percent). Women who delivered in the provinces of Gauteng, Western Cape and KwaZulu-Natal had more caesarean sections and those in Mpumalanga had the least. An extremely high rate of 41 percent was reported by white women. The proportion of caesarean sections increased with level of education from 11 percent of births to women with no education to 32 percent of women with post matric levels of education.

Information on birth weight was collected in the survey but was not known in one third of the deliveries. From the data that were reported, low birth weight was more common amongst the women who were under 20 while older women (20 years and above) had fewer low birth weight babies. A higher proportion of first births weigh less than 2.5 kg. Coloured and Asian women had higher proportions of low birth weight babies. There was a higher proportion of underweight babies born to women with high levels of education. The Northern Cape and Free State had more low birth weight babies followed by KwaZulu-Natal, North West and Western Cape. The Northern Province, Eastern Cape, Gauteng and Mpumalanga had the lowest proportions of babies born less than 2.5kg. Due to the high proportions of unknown birth weights, these trends should be interpreted with caution.

Table 7.6 Delivery characteristics: caesarean section, birth weight and size

Among births in the five years preceding the survey, the percentage of deliveries by caesarean section, and the percent distribution by birth weight, according to selected background characteristics, South Africa 1998

Background characteristic	Delivery by C-section	Birth weight			Total	Number of births
		Less than 2.5 kg	2.5 kg or more	Birth weight not provided		
Mother's age at birth						
<20	12.8	11.4	59.6	29.0	100.0	835
20-34	16.4	8.0	60.5	31.5	100.0	3,407
35+	14.8	6.4	56.4	37.2	100.0	751
Birth order						
1	17.4	9.7	65.4	24.8	100.0	1,652
2-3	16.9	8.1	60.7	31.2	100.0	2,008
4-5	11.8	7.8	52.6	39.6	100.0	847
6+	10.1	5.4	49.1	45.5	100.0	486
Residence						
Urban	19.4	9.5	64.8	25.7	100.0	2,470
Non-urban	11.7	7.2	54.8	38.0	100.0	2,522
Province						
Western Cape	21.5	9.1	71.4	19.4	100.0	401
Eastern Cape	13.1	6.4	53.9	39.6	100.0	741
Northern Cape	13.6	13.0	56.3	30.8	100.0	102
Free State	13.6	11.5	58.6	29.9	100.0	257
KwaZulu-Natal	18.0	9.5	64.8	25.6	100.0	1,094
North West	14.5	9.3	62.8	27.9	100.0	340
Gauteng	19.3	7.8	61.6	30.7	100.0	954
Mpumalanga	9.7	8.0	50.2	41.8	100.0	379
Northern	10.7	6.6	53.8	39.6	100.0	724
Mother's education						
No education	11.3	3.8	46.6	49.5	100.0	453
Sub A - Std 3	12.1	7.8	42.9	49.3	100.0	657
Std 4 - Std 5	13.0	8.2	53.7	38.1	100.0	747
Std 6 - Std 9	13.8	8.9	62.1	29.0	100.0	2,041
Std 10	20.9	8.3	74.7	17.0	100.0	759
Higher	32.0	11.8	76.2	11.9	100.0	336
Population group						
African	13.6	7.6	57.2	35.2	100.0	4,149
Afr. urban	16.6	8.5	60.7	30.8	100.0	1,783
Afr. non-urban	11.3	6.8	54.6	38.5	100.0	2,366
Coloured	18.1	14.3	65.7	20.1	100.0	445
White	41.0	6.2	85.3	8.5	100.0	250
Asian	22.5	15.6	77.8	6.6	100.0	114
Total	15.5	8.3	59.8	31.9	100.0	4,992

7.5 Maternal Mortality

Although maternal deaths are an important indicator of the health of women, data regarding maternal mortality rates and differentials have not been available. Routine statistics have been incomplete and problems with obtaining reliable estimates are that the methodologies have differed (hospital-based, population-based studies, surveillance and indirect techniques) and the inclusion criteria have not been clearly defined. The SADHS derives estimates of maternal mortality from reported survivorship of sisters. Respondents who reported that their sister had died were asked a series of questions about whether the death was due to maternal causes, i.e., if it occurred during pregnancy, childbirth or within two months after the birth or termination of a pregnancy and was due to complications of pregnancy or childbirth. Table 7.7 presents age-specific estimates of maternal mortality for the seven-year period before the survey.

Maternal mortality rates are calculated by dividing the number of maternal deaths by years of exposure. The overall rate for women aged 15-49 is standardized using the age distribution of the respondents. The estimates should be viewed with caution as they are based on few events. Most of these deaths are attributable to the 20-24 and the 25-29 age groups, probably because more pregnancies occur at these ages.

The maternal mortality ratio based on SADHS data is 150 maternal deaths per 100 000 live births for the approximate period 1992-1998. Table 7.7 also shows that maternal deaths account for about 5 percent of the total number of deaths in women of childbearing age; this proportion is substantially higher among 15-19 and 20-24 year-olds (8 and 11 percent, respectively). The maternal mortality ratio of 150 deaths per 100 000 births is much higher than the levels experienced in developed countries and highlights the importance of the Department of Health's initiatives to make care during pregnancy and delivery accessible.

SADHS does not provide information on the causes of the maternal deaths. The main causes reported in the *Saving Mothers* Report on Confidential Enquiries into Maternal Deaths (DOH, 1998b) include hypertensive diseases of pregnancy (20 percent), infections including AIDS (18 percent), obstetric haemorrhage (14 percent), early pregnancy loss (12 percent), pre-existing maternal disease (11 percent) and pregnancy-related sepsis (9 percent). There is a possibility that AIDS and related opportunistic infections will soon become the major cause.

Table 7.7 Direct estimates of maternal mortality

Maternal mortality rates for the period 0-6 years prior to the survey, based on the survivorship of sisters of survey respondents, South Africa 1998

Age	Maternal deaths	Exposure years	Mortality rates ¹	Mortality adj. by age	Proportion of maternal deaths to female deaths
15-19	1.6	18,169	0.091	0.017	0.082
20-24	5.7	22,442	0.254	0.045	0.105
25-29	4.8	23,115	0.208	0.033	0.075
30-34	4.2	21,850	0.192	0.027	0.072
35-39	2.0	17,795	0.113	0.016	0.031
40-44	0.8	11,846	0.067	0.007	0.018
45-49	0.0	7,484	0.000	0.000	0.000
15-49	19.2	122,701	0.156	0.146 ^a	0.055
General fertility rate					0.097
Maternal mortality ratio ^b					150

^a Standardised on the 1998 SADHS household age structure

^b Per 100,000 live births; calculated as the age-standardised maternal mortality rate (ages 15-49) divided by the general fertility rate.

¹ Expressed per 1,000 women-years of exposure

7.6 Stress Incontinence

Although the Demographic and Health Surveys usually contain a considerable number of questions about service use during pregnancy, aside from maternal mortality, there is a notable absence of indicators of short term or long term morbidity associated with pregnancy and child-birth. These are important for understanding the impact of reproduction on women's health and unmet need for services. In order to begin to redress this gap, the 1998 SADHS included questions about urinary and faecal incontinence. As an indicator of stress incontinence, one question was included which asked all women whether they wet themselves when they 'cough, sneeze or lift heavy weights'. As an indicator of a more severe lack of bladder control or urinary fistulae, women were asked if they were 'constantly wet' and similarly in order to get a prevalence of bowel fistulae they were asked if they were 'constantly soiled'. Observation of the fieldwork during the course of the survey, revealed a problem which had not emerged during the pilot, namely that women with abnormal vaginal discharges were responding in the affirmative to the latter two questions. Since these two questions were clearly not specific in identifying urinary or bowel fistulae, we have chosen just to present the data on stress incontinence.

The data in Table 7.8 show that 10 percent of women who have been pregnant report leakage of urine. The proportion is greater for older women and those of higher parity. This pattern is in keeping with international literature on stress incontinence. Less educated women were more likely to report it, but it seems likely that the association with education is confounded by parity. Stress incontinence was commoner among white and Asian women. It was more often reported in the Eastern Cape, Free State, and Gauteng and least often in the Northern Province, Western Cape and Mpumalanga.

Table 7.8 Stress Incontinence

The percentage of women who have ever been pregnant who reported that they wet themselves when they cough, sneeze or lift heavy weights, South Africa 1998

	Stress incontinence	Number of ever pregnant
Age		
15-19	6.0	296
20-24	6.0	1,205
25-29	5.4	1,510
30-34	9.2	1,532
35-39	9.1	1,550
40-44	12.3	1,227
45-49	13.2	918
Parity		
1	7.4	2,466
2	8.2	2,131
3	10.0	1,398
4+	10.3	2,243
Residence		
Urban	8.7	4,880
Non-urban	9.0	3,358
Province		
Western Cape	6.3	787
Eastern Cape	10.0	1,054
Northern Cape	9.1	186
Free State	11.9	537
KwaZulu-Natal	8.5	1,679
North West	8.3	646
Gauteng	11.4	1,841
Mpumalanga	7.0	583
Northern	4.9	925
Education		
No education	9.4	742
Sub A-Std 3	13.5	1,122
Std 4-Std 5	9.3	1,122
Std 6-Std 9	8.3	3,284
Std 10	6.2	1,267
Higher	6.6	600
Population group		
African	8.4	6,469
Afr.urban	8.4	3,389
Afr non-urban	8.4	3,080
Coloured	7.6	845
White	12.5	607
Asian	13.9	268
Total	9.7	8,237

7.7 Immunisation Coverage

Information on vaccination coverage is presented in Table 7.14. Data are presented for children age 12-23 months, thereby including only children who should be fully vaccinated. The source of information used to determine coverage, i.e, the child health card or mother's report, can be inferred from the proportion

of children for whom health cards were available. Overall, mothers were able to produce vaccination cards for 75 percent of these children.

The survey indicates that only 63 percent of children age 12-23 months were fully immunised against the basic childhood diseases, i.e., BCG, measles and three or more doses of DPT and polio¹ at any time before the survey. This low level of full immunisation coverage is affected by the dropout rate for the second and third doses of DPT and polio. While almost all children receive BCG vaccine (97 percent), and over 90 percent of children receive the first doses of DPT and polio, coverage for these latter two vaccines declines after the first dose, so that only 76 percent of children receive the third dose of DPT and only 72 percent receive the third dose of polio vaccine. The dropout rates² for DPT and polio are 18 and 21 percent, respectively.

An important finding is that although polio 0 (polio given at birth) has just recently been introduced in South Africa, 91 percent of children 12-23 months have received it. Similarly, although hepatitis B vaccination had not been adopted as a standard for the whole country at the time of the survey, almost three-quarters of young children had received all three doses. Just over four in five children have been vaccinated against measles (82 percent). Less than three percent of children 12-23 months have not been vaccinated at all.

Expanded Programme on Immunisation- SA (EPI SA) guidelines recommend that children receive the complete schedule of vaccinations before 12 months of age. Comparing the dates of vaccinations from children's health cards with the date of birth of the children, it is possible to calculate the proportion of children who received various vaccines before their first birthday.³ As shown on the penultimate row of Table 7.9, only slightly over half of children (55 percent) are fully immunised before their first birthdays.

7.8 Differentials in Vaccination Coverage

Table 7.9 also presents vaccination coverage (according to card information and mother's reports) at any time before the survey among children age 12-23 months by selected background characteristics. The differentials in coverage are very similar irrespective of vaccine type. Looking at the differentials in complete coverage (i.e., all vaccines received), there is virtually no difference between boys and girls. Children of high birth order (6+) tend to have lower coverage than children of lower birth orders. Children from urban areas have slightly higher coverage rate (67 percent) than non-urban children (60 percent). Full vaccination coverage among children age 12-23 months shows significant differentials by province. The highest coverage is in Northern Cape (81 percent) and the lowest coverage is in KwaZulu-Natal and Eastern Cape (50 and 53 percent, respectively). Complete coverage increases with increasing maternal education, from 54 percent among children of uneducated mothers to 73 percent among children of

¹ Although data on hepatitis B vaccinations were included in the questionnaire and tabulated in the tables, this vaccine was not included in the definition of fully immunised.

² The dropout rate is defined as the percentage of children receiving the first dose who do not subsequently receive the third dose of DPT or polio vaccine. Polio 0 (at birth) is not counted in this analysis.

³ For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life is assumed to be the same as for children with a written record of vaccination.

mothers with matric. Vaccination coverage is more or less identical for African and white children, but is somewhat higher for coloured children.

Comparison with other eastern and southern African countries shows that South Africa (with 63 percent) is intermediate in terms of vaccination coverage. The proportion of children age 12-23 months who are fully immunised are 36 percent in Madagascar (1997), 47 percent in Mozambique (1997), 65 percent in Kenya (1998), 71 percent in Tanzania, 78 percent in Zambia (1996) and 80 percent in Zimbabwe (1994).

Table 7.9 Vaccinations by background characteristics

Among children aged 12-23 months, percentage with health cards seen by interviewer and percentage who have received each vaccine by the time of the survey (according to the vaccination card or mother), by background characteristics, South Africa 1998

Background characteristic	BCG	DPT 1	DPT 2	DPT 3	Polio 0	Polio 1	Polio 2	Polio 3	Hep B1	Hep B2	Hep B3	Measles	All	None	Percent with card	No. of children
Sex of child																
Male	96.9	91.3	84.1	74.3	90.2	90.8	81.6	71.5	88.2	80.9	72.5	83.7	64.7	2.3	75.9	468
Female	96.7	95.1	88.1	78.3	92.1	91.3	83.7	72.7	88.2	83.2	75.2	80.8	62.2	2.0	73.3	505
Birth order																
1	96.7	94.4	86.6	78.5	92.7	91.0	83.0	73.8	87.7	82.8	76.9	84.9	66.7	2.3	74.6	336
2-3	97.5	93.8	89.0	79.0	92.9	90.8	83.1	73.0	89.6	85.0	74.5	81.5	64.3	1.5	77.3	370
4-5	97.9	94.2	85.2	74.1	86.3	93.6	85.3	73.5	88.7	79.8	73.9	85.3	66.2	0.4	73.5	165
6+	92.7	86.4	76.3	63.8	88.2	88.2	76.0	60.8	84.0	72.6	62.0	71.0	44.6	7.1	66.5	103
Residence																
Urban	98.0	95.8	89.5	81.7	94.4	92.0	85.3	75.5	90.1	84.5	78.3	85.1	67.1	1.6	75.3	491
Non-urban	95.6	90.8	82.8	71.0	87.9	90.0	80.0	68.6	86.2	79.6	69.5	79.3	59.6	2.7	73.8	483
Province																
Western Cape	98.3	95.3	85.8	74.2	95.7	91.7	77.3	72.5	84.1	75.8	72.5	83.7	64.2	0.0	75.8	80
Eastern Cape	95.6	90.8	81.1	68.1	89.3	86.9	76.5	61.3	80.4	70.9	61.7	75.4	52.6	3.1	68.1	127
Northern Cape	97.5	93.9	90.2	89.0	97.5	92.7	89.0	85.5	94.0	89.0	86.6	90.5	80.8	1.3	87.8	20
Free State	95.1	96.9	93.8	82.1	95.2	96.9	85.6	72.6	87.0	83.8	73.9	80.8	67.8	1.6	75.6	51
KwaZulu-Natal	97.0	90.6	80.9	62.3	87.3	87.7	77.5	59.6	85.4	78.2	62.0	82.5	49.5	2.0	62.2	208
North West	95.7	89.8	82.2	82.2	83.8	91.2	80.7	70.8	89.8	80.7	79.3	87.0	60.6	4.3	66.5	67
Gauteng	97.6	96.4	91.6	85.6	95.2	92.8	88.0	80.8	94.0	90.4	83.2	84.4	72.4	2.4	79.6	199
Mpumalanga	96.4	92.7	88.5	77.7	91.8	90.3	86.7	75.9	87.6	83.7	75.9	83.7	67.2	2.7	79.5	72
Northern	96.9	94.5	88.3	85.1	91.4	94.5	88.3	83.6	92.2	87.5	84.3	80.4	74.9	1.6	89.0	149
Education																
None	92.5	89.9	80.9	65.8	85.0	87.2	75.8	65.8	87.1	79.6	64.4	64.0	54.0	7.5	78.2	78
Sub A - Std 3	94.5	92.5	83.6	66.6	86.0	92.1	82.8	62.4	85.6	79.1	66.7	82.2	50.6	2.2	67.2	124
Std 4 - Std 5	96.4	92.8	86.8	75.3	88.7	92.1	84.5	73.4	90.6	81.4	72.6	78.0	61.6	1.7	78.2	153
Std 6 - Std 9	97.6	92.9	84.7	76.6	94.4	88.7	79.4	71.4	86.7	81.4	75.0	85.0	65.6	1.7	73.1	407
Std 10	98.1	96.2	90.6	86.3	92.4	94.0	87.2	80.0	90.6	85.1	79.9	88.4	72.5	1.9	76.4	156
Higher	100.0	96.0	96.0	87.4	91.8	100.0	99.1	82.0	93.0	90.2	82.8	82.0	68.3	0.0	81.6	55
Population group																
African	96.2	92.7	85.7	75.5	90.4	90.6	81.9	71.2	87.1	81.3	72.7	81.4	61.8	2.5	73.7	815
Afr. urban	97.2	95.4	89.5	81.9	93.4	92.0	84.5	75.2	88.2	83.5	77.7	85.3	66.0	2.2	73.8	362
Afr. non-urban	95.5	90.6	82.7	70.3	88.0	89.5	79.7	68.0	86.2	79.5	68.7	78.2	58.4	2.8	73.6	453
Coloured	99.4	93.7	85.1	80.7	94.9	89.4	86.3	79.0	91.9	84.1	80.4	85.8	74.6	0.3	82.4	91
White	(100.0)	100.0	(92.0)	(78.6)	(98.4)	100.0	(86.6)	(70.2)	(94.3)	(89.8)	(76.1)	(85.2)	(62.7)	(0.0)	(72.0)	42
Asian	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	21
Vaccinated by 12 months	96.4	92.8	85.4	74.2	90.9	90.5	82.0	70.1	87.8	81.4	71.6	72.2	55.3	2.6	-	973

7.9 Prevalence of Diarrhoeal Diseases

Thirteen percent of children under the age of 5 years included in the SADHS were reported to have had about of diarrhoea in the two weeks prior to the survey (Table 7.10). A very much higher prevalence (23 percent) occurred in children 6-23 months of age, a finding consistent with age-specific diarrhoea morbidity patterns elsewhere in the developing world. A substantial stepwise decrease in prevalence occurred in the third (12 percent), fourth (8 percent) and fifth (5 percent) years of life. The lower prevalence rate in infants under the age of 6 months (11 percent), compared with the second half of infancy, is likely to reflect the protective effect of breastfeeding.

There was no obvious differential in prevalence rates by child's gender or birth order. However, differentials were noted in urban versus non-urban households. Children in non-urban households had higher prevalence rates (16 percent) than children from urban households (11 percent).

Diarrhoeal prevalence rates were highest in KwaZulu-Natal (18 percent), Mpumalanga (16 percent) and Northern Provinces (15 percent). The Eastern Cape (13 percent) and North West province (12 percent) had moderate prevalence rates and, as expected, lower rates (9-10 percent) were recorded for Western Cape, Gauteng, Free State and Northern Cape. Since KwaZulu-Natal, Northern, Mpumalanga and Eastern Cape provinces have larger non-urban populations, higher prevalence rates in these provinces are expected. It is possible that the larger difference than expected between KwaZulu-Natal and the Eastern Cape is attributable to differences in HIV prevalence in the two provinces.

Maternal educational levels made less difference than might have been expected and diarrhoea prevalence rates remained stable for most education levels, decreasing somewhat thereafter for children whose mothers have matric and higher education. Not unexpectedly, given the socio-economic differences among the four population groups, the diarrhoea prevalence rate was highest in African children (14 percent), followed closely by coloured children (12 percent), with substantially lower and similar rates in Asians (7 percent) and whites (5 percent). No special comment has been made on prevalence of bloody diarrhoea, as the numbers are small and patterns are generally mirrored by overall diarrhoea morbidity trends.

Table 7.10 Prevalence of diarrhoea

Percentage of children under five years of age with diarrhoea and diarrhoea with blood during the two weeks preceding the survey, by selected background characteristics, South Africa 1998

Background characteristic	Diarrhoea in the preceding 2 weeks		Number of children
	All diarrhoea	Diarrhoea with blood	
Child's age			
< 6 months	11.1	1.8	505
6-11 months	22.1	4.1	500
12-23 months	24.0	3.2	973
24-35 months	11.6	1.4	933
36-47 months	8.2	1.5	886
48-59 months	5.0	1.0	942
Child's sex			
Male	14.1	2.0	2,370
Female	12.3	2.1	2,369
Birth order			
1	13.3	1.3	1,570
2-3	12.1	2.2	1,916
4-5	13.8	1.6	796
6+	16.7	4.8	458
Residence			
Urban	10.8	1.6	2,374
Non-urban	15.7	2.5	2,366
Province			
Western Cape	9.9	0.3	396
Eastern Cape	12.7	2.0	690
Northern Cape	10.4	1.3	97
Free State	9.1	1.3	244
KwaZulu-Natal	17.8	3.8	1,022
North West	12.2	1.5	327
Gauteng	9.4	1.6	911
Mpumalanga	16.2	1.6	361
Northern	14.6	2.0	691
Mother's education			
No education	13.5	4.7	418
Sub A - Std 3	17.8	3.0	605
Std 4 - Std 5	14.0	2.3	708
Std 6 - Std 9	13.3	1.5	1,950
Std 10	10.3	1.6	733
Higher	9.0	0.9	325
Population group			
African	14.2	2.4	3,920
Afr. urban	12.0	2.0	1,702
Afr. non-urban	15.9	2.6	2,218
Coloured	11.5	0.9	435
White	5.3	0.0	245
Asian	6.5	0.0	111
Total	13.2	2.0	4,740

7.10 Treatment of Diarrhoeal Diseases

Almost half (49 percent) of mothers interviewed in the survey have heard of oral rehydration as a modality of treatment in diarrhoeal disease (Table 7.11). This knowledge about ORS does not appear to be influenced by maternal age, urban/non-urban status of mother, or maternal educational status. Knowledge about ORS was significantly lower in Gauteng (28 percent) and Northern Province (27 percent) than in the other provinces. There is a low level of awareness of ORS in the white and Asian communities, which is considered to reflect the relatively low prevalence of life-threatening diarrhoeal disease in these communities and the low consequent priority given to promoting oral rehydration.

Only 52 percent of mothers who gave birth in the five years before the survey indicated that they would increase fluid intake during bouts of diarrhoea. This response was given independent of maternal age and province of origin, but a little more commonly by urban than non-urban respondents and by those with the highest levels of education. This response was given much more frequently by white (88 percent) and Asian women (81 percent) than by coloured (54 percent) and African women (50 percent). Just under half (48 percent) of mothers indicated that they would decrease food intake during bouts of diarrhoea, though as many as 30 percent said they would continue to give the same amount to eat. There was very little difference in these responses by maternal age, urban/non-urban residence or level of maternal education. Mothers in KwaZulu-Natal and the Eastern Cape are more likely to decrease food intake than mothers from other provinces; this was also much more common among Asian mothers (73 percent) than mothers of other ethnic groups (37-48 percent).

Overall, almost 60 percent of children under the age of five years who had bouts of diarrhoea in the two weeks prior to the survey were taken to a health facility for treatment of the diarrhoea (Table 7.10). This is largely independent of the child's age, sex, birth order, maternal education and province, but treatment at a health facility is slightly lower among non-urban children and those in Northern Province.

During this bout of diarrhoea, 81 percent of these children were given either packeted or home mixed oral rehydration solution. This was also largely independent of the child's age, sex, birth order, maternal education and province. Fifty-seven percent of the children received increased volume of oral fluids and only 11 percent were given no oral rehydration treatment at all during this episode. As many as 86 percent were given some other home or herbal remedy, suggesting considerable reliance on traditional healers for the treatment of diarrhoeal disease.

Table 7.13 shows that nearly one in five children with diarrhoea were given less to drink than normal during the illness and over half were given less to eat. These patterns reflect a gap in practical knowledge among some women regarding the nutritional requirements of children during episodes of diarrhoeal illness.

Overall, only approximately half of mothers know about ORS and about the need to increase fluid intake and to continue feeding their children during a bout of diarrhoea. Similar levels of knowledge were found in the African and coloured community sub-groups, where the greatest disease burden resides. The important practices noted in mothers and caregivers were that 81 percent instituted oral rehydration in one form or another, less than one percent did nothing at all for their ill children, 60 percent had taken children to health facilities and 86 percent made use of other home or herbal remedies.

Table 7.11 Knowledge of diarrhoea care

Percentage of women with births in the five years preceding the survey who know about oral rehydration packets (ORSOL or SOROL) for treatment of diarrhoea and the percent distribution by opinion on appropriate feeding practices during diarrhoea, according to selected background characteristics, South Africa 1998

Background characteristic	Know about oral rehydration packet for treatment of diarrhoea	Compared with usual feeding practices, appropriate feeding during diarrhoea:								Number of women
		Liquids				Solid foods				
		Less	Same	More	Don't know/ Missing	Less	Same	More	Don't know/ Missing	
Age										
15-19	49.1	27.7	17.5	46.2	8.7	42.7	27.0	17.7	12.6	280
20-24	50.0	23.5	22.7	48.0	5.8	43.1	33.8	17.1	6.1	759
25-29	44.9	21.6	18.9	53.5	6.0	48.5	31.0	12.2	8.3	729
30-34	48.5	25.1	16.4	54.3	4.2	49.7	29.6	14.8	5.8	550
35+	51.0	20.0	17.6	58.2	4.2	54.9	25.8	13.8	5.5	553
Residence										
Urban	44.8	18.2	18.2	57.3	6.3	46.0	32.6	13.1	8.3	1,408
Non-urban	52.1	27.8	19.8	47.6	4.8	49.8	27.7	16.4	6.0	1,463
Province										
Western Cape	62.2	17.7	20.2	57.8	4.3	47.5	39.2	8.0	5.2	245
Eastern Cape	62.9	23.9	16.7	52.0	7.5	65.2	19.5	7.4	8.0	411
Northern Cape	43.8	22.8	16.4	50.5	10.4	34.3	36.1	17.5	12.0	59
Free State	55.3	19.8	30.8	45.4	4.0	40.0	35.5	20.6	3.9	147
KwaZulu-Natal	58.0	26.8	18.1	50.7	4.4	57.3	26.3	10.7	5.7	637
North West	49.7	19.1	17.7	57.2	6.0	36.1	31.7	22.0	10.2	207
Gauteng	27.7	16.1	15.2	60.3	8.5	39.7	32.4	15.8	12.1	535
Mpumalanga	66.3	26.4	20.2	48.9	4.4	40.1	33.9	21.2	4.8	214
Northern	27.1	30.2	23.2	44.1	2.5	42.2	32.7	21.8	3.4	415
Education										
No education	53.4	25.0	18.6	50.5	5.8	56.7	22.5	14.9	5.8	240
Sub A - Std 3	47.2	27.5	18.9	47.0	6.6	50.2	26.9	16.8	6.1	363
Std 4 - Std 5	48.3	25.9	18.6	50.2	5.2	49.4	27.0	15.2	8.4	424
Std 6 - Std 9	50.6	23.9	21.5	48.8	5.9	45.1	32.7	15.3	6.8	1,206
Std 10	45.8	17.1	16.3	61.6	5.0	47.3	31.7	13.3	7.7	458
Higher	38.5	14.6	11.3	71.3	2.8	49.2	32.3	10.1	8.4	179
Population group										
African	49.5	24.6	19.8	49.9	5.7	48.7	29.2	14.7	7.4	2,401
Afr. urban	44.6	19.6	19.7	53.8	6.9	46.1	31.8	12.8	9.3	1,033
Afr. non-urban	53.2	28.3	19.9	46.9	4.9	50.6	27.2	16.2	6.0	1,368
Coloured	58.6	21.7	20.0	53.5	4.8	41.4	36.9	15.5	6.2	277
White	14.8	6.2	4.6	88.0	1.2	37.1	42.8	15.8	4.4	117
Asian	21.8	3.3	10.9	80.9	4.9	73.0	11.5	12.3	3.3	58
Total	48.5	23.1	19.0	52.4	5.5	48.0	30.1	14.8	7.1	2,871

Table 7.12 Treatment of diarrhoea

Among children under five years who had diarrhoea in the two weeks preceding the survey, the percentage taken for treatment to a health facility or provider, the percentage who received oral rehydration therapy (ORT) (either an oral rehydration solution (ORS) made from a packet, a home-made solution (HS), or increased fluids), the percentage who received no form of ORT and the percentage given other treatments, according to selected background characteristics, South Africa 1998

Background characteristic	Percentage taken to a health facility or provider ¹	Oral rehydration therapy				Other treatments					No.
		ORS packet	HS at home	Either ORS or HS	In-creased fluids	Did not receive ORT	Injec-tion	Home remedy/ Other	No treat-ment	Miss-ing	
Child's age											
< 6 months	58.7	47.6	73.7	86.5	55.0	9.3	7.6	89.8	0.9	0.4	56
6-11 months	62.9	57.1	67.0	85.5	52.0	9.9	7.1	91.2	0.5	0.8	110
12-23 months	60.1	54.5	73.9	85.0	58.4	7.1	5.0	86.7	0.2	0.2	233
24-35 months	60.8	47.1	65.6	74.9	58.1	15.6	1.7	84.6	1.3	2.8	108
36-47 months	49.9	39.1	53.9	65.9	55.1	15.6	3.8	80.5	0.0	4.4	72
48-59 months	(57.0)	(53.7)	(69.0)	(81.3)	(65.6)	(15.3)	(0.0)	(80.9)	(0.0)	(6.9)	47
Child's sex											
Male	57.6	50.2	70.0	83.4	56.9	11.3	4.8	86.6	0.6	1.6	335
Female	60.9	52.4	66.9	78.3	57.3	10.4	4.3	85.9	0.3	1.9	292
Birth order											
1	63.7	49.1	66.5	78.8	43.8	13.7	4.3	85.2	0.0	2.9	209
2-3	59.4	53.6	66.5	81.5	63.9	9.7	6.7	89.5	1.1	0.6	232
4-5	52.2	44.3	70.4	81.5	67.9	12.2	2.1	81.4	0.0	0.9	110
6+	56.3	59.5	77.8	84.9	57.4	4.9	2.2	86.3	0.7	3.4	76
Residence											
Urban	63.3	48.8	68.4	80.7	57.2	9.4	4.1	87.8	0.4	1.1	255
Non-urban	56.3	52.8	68.7	81.2	57.0	11.9	4.9	85.2	0.5	2.2	372
Province											
Western Cape	(58.0)	(44.5)	(48.8)	(60.9)	(51.7)	(29.5)	(3.4)	(90.3)	(0.0)	(2.9)	39
Eastern Cape	60.7	54.6	62.8	80.9	62.6	11.3	2.3	83.4	2.3	1.1	88
Northern Cape	(70.6)	(46.5)	(53.2)	(73.3)	(37.2)	(21.8)	(2.5)	(85.6)	(0.0)	(2.4)	10
Free State	(62.7)	(55.2)	(63.3)	(81.2)	(55.5)	(11.7)	(3.9)	(81.5)	(0.0)	(3.9)	22
KwaZulu-Natal	65.0	64.8	75.2	88.0	61.9	8.8	5.0	88.3	0.5	1.7	182
North West	(46.2)	(55.6)	(66.8)	(83.3)	(51.2)	(0.0)	(12.3)	(87.7)	(0.0)	(0.0)	40
Gauteng	66.7	47.2	69.4	83.3	63.9	2.8	2.8	86.1	0.0	0.0	86
Mpumalanga	62.8	45.1	81.6	87.8	50.6	6.3	5.1	84.9	0.0	4.0	59
Northern	42.5	31.0	64.3	70.1	48.2	19.6	4.6	85.1	0.0	2.3	101
Mother's education											
No education	54.8	55.2	76.9	88.5	69.4	3.8	3.7	87.6	0.9	0.0	56
Sub A - Std 3	60.8	44.6	68.7	81.7	45.7	12.0	3.9	94.4	0.0	1.5	108
Std 4 - Std 5	50.8	50.6	65.3	77.5	67.5	14.4	2.5	90.1	0.5	2.7	99
Std 6 - Std 9	60.7	53.4	69.7	80.9	58.3	10.5	4.1	77.8	0.2	2.3	259
Std 10	65.9	50.0	69.2	80.1	55.3	9.8	10.0	95.3	0.7	1.0	75
Higher	(59.1)	(53.2)	(51.6)	(78.8)	(33.6)	(14.4)	(5.0)	(92.9)	(3.3)	(0.0)	29
Population group											
African	59.1	52.1	71.0	83.2	57.2	9.7	4.7	86.3	0.5	1.6	556
Afr. urban	63.2	50.9	72.4	86.0	57.3	6.6	3.9	88.7	0.5	1.3	204
Afr. non-urban	56.7	52.7	70.2	81.6	57.1	11.6	5.1	84.9	0.6	1.8	352
Coloured	64.9	46.9	57.9	70.8	57.2	21.2	5.2	89.6	0.0	2.8	50
White	*	*	*	*	*	*	*	*	*	*	13
Asian	*	*	*	*	*	*	*	*	*	*	7
Total	59.2	51.2	68.6	81.0	57.1	10.9	4.5	86.3	0.5	1.7	627

Note: Figures in parentheses are based on 25 to 49 children who had diarrhoea. An asterisk indicates a figure based on fewer than 25 unweighted cases that has been suppressed.

¹ Includes health centre, hospital, clinic, and private doctor

Table 7.13 Feeding practices during diarrhoea

Percent distribution of children under five years who had diarrhoea in the two weeks preceding the survey by amount of fluids and solid foods given compared with normal practices, South Africa 1998

Feeding practice	Total
Increase or decrease fluids	
Same	20.9
Increase	57.1
Decrease	18.7
Missing	3.3
Increase or decrease in foods	
Same	29.9
Increase	14.1
Decrease	53.4
Don't know, missing	2.6
Total	100.0
Number	627

7.11 Prevalence of Acute Respiratory Infection (ARI)

Prevalence of ARI was estimated in the SADHS by asking mothers if their children under age five had been ill or feverish with coughing accompanied by short, rapid breathing during the two weeks preceding the survey. Mothers whose children had experienced these symptoms were asked what they had done to treat the illness. The results are presented in Table 7.14. Almost one in five (19 percent) children under five were ill with symptoms suggestive of an acute respiratory tract infection (ARI), i.e., cough, fever and rapid respiration, during the 2-week period prior to the survey. Three-quarters of these children were reported to have been taken to a health facility for advice or treatment.

The highest prevalence rates occurred in children under the age of two years (23 percent). This is followed by a much more gradual decrease in prevalence rates in the third (19 percent), fourth (16 percent) and fifth (15 percent) years of life than had been the case for diarrhoeal disease. There also appears to be a higher rate of presentation to health facilities in children under 2 years of age (81 percent) compared to older children (69 percent).

There were no striking differentials in ARI prevalence rates by sex, birth order, urban versus non-urban residence or population group. Interestingly, the highest prevalence rates occurred in KwaZulu-Natal (26 percent), followed by closely clustered rates (about 21 percent) in Free State, Gauteng and Mpumalanga. Considerably lower rates (about 15 percent) were reported for Western Cape, Eastern Cape, Northern Cape, North West and Northern Provinces.

Maternal educational status does not appear to be related to ARI prevalence rates. The lowest rates occurred in children of mothers with either no education or very high levels of education, while the highest rates, with very little evidence of differentiation, occurred in mothers right across the educational spectrum between these two extremes (Sub A to Standard 10).

Accepting that errors are likely to occur across all observations, it remains possible to comment on the differentials that occur between groups and over time. The most striking observations about the ARI prevalence rates, especially in relation to the diarrhoeal disease prevalence rates, are:

Table 7.14 Prevalence and treatment of acute respiratory infection

Percentage of children under five years who were ill with a cough accompanied by short, rapid breathing during the two weeks preceding the survey and the percentage of ill children taken to a health facility, according to socioeconomic and demographic characteristics, South Africa 1998

Characteristic	Respiratory infection		
	Percentage of children with cough accompanied by fast breathing (ARI)	Among children with ARI, percentage taken to a health facility or provider	Number of children
Child's age			
< 6 months	20.8	77.4	505
6-11 months	24.9	81.8	500
12-23 months	23.7	82.9	973
24-35 months	18.9	74.7	933
36-47 months	15.7	66.0	886
48-59 months	14.5	65.1	942
Child's sex			
Male	18.7	75.1	2,370
Female	19.8	75.4	2,369
Birth order			
1	19.1	76.4	1,570
2-3	20.3	75.8	1,916
4-5	17.4	72.6	796
6+	19.0	73.1	458
Residence			
Urban	18.9	77.7	2,374
Non-urban	19.6	72.9	2,366
Province			
Western Cape	15.0	(54.9)	396
Eastern Cape	15.6	73.2	690
Northern Cape	15.1	71.6	97
Free State	20.9	79.0	244
KwaZulu-Natal	25.9	77.5	1,022
North West	14.0	(70.7)	327
Gauteng	21.5	84.1	911
Mpumalanga	20.4	73.2	361
Northern	14.5	68.6	691
Education			
No education	16.8	72.8	418
Sub A - Std 3	20.5	76.5	605
Std 4 - Std 5	19.0	76.5	708
Std 6 - Std 9	20.0	73.1	1,950
Std 10	20.2	77.4	733
Higher	14.3	(83.6)	325
Population group			
African	18.9	76.1	3,920
Afr. urban	18.5	80.9	1,702
Afr. non-urban	19.2	72.6	2,218
Coloured	19.1	60.7	435
White	24.4	(78.7)	245
Asian	18.0	*	111
Total	19.3	75.3	4,740

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates a figure was based on fewer than 25 cases and has been

- the highest prevalence rates occur in the first two years of life, but, unlike diarrhoea, these prevalence rates continue, only modestly diminished, throughout the first five years of life;
- these rates are largely uninfluenced by population group, non-urban versus urban settings or maternal education, all of which significantly influence diarrhoeal disease prevalence;
- a provincial breakdown of ARI prevalence rates emphasises the wide variations in disease distribution that occur in different parts of the country and reveals somewhat unexpected geographical differentials for ARI;
- health facilities are frequently attended for bouts of ARI.

7.12 Serious Accidents and Injuries

Information about injuries experienced in the month preceding the survey was obtained in the household schedule for a total of just under 20,000 children under the age of 15. Table 7.15 shows that the overall injury rate per month was 522 per 100,000 children and that more than three-quarters of injuries were the result of accidents such as burns, falls, traffic collisions etc. Only 19 percent of injuries suffered by children were intentional injuries such as violence or other assaults.

Age group	Intentional injuries	Unintentional injuries	All injuries	Number of children
0-4	106	317	422	5,625
5-9	122	358	481	6,789
10-14	72	563	635	7,399
Total	99	423	522	19,813

CHAPTER 8

INFANT AND CHILD FEEDING PRACTICES

8.1 Initiation of Breastfeeding

As many as 87 percent of South African babies are breastfed for at least some time. Only 45 percent are breastfed within one hour of birth (Table 8.1). In eight of the nine provinces, more than 80 percent of infants are ever breastfed. The only province that deviates from this high frequency is North West Province where 62 percent are ever breastfed.

There is a wide range among provinces in the proportion of infants who are breastfed within one hour of birth. Newborns in Gauteng and KwaZulu-Natal are the least likely to be breastfed soon after birth (36 and 37 percent, respectively), while those in Western Cape are the most likely (66 percent). There are also differences among provinces in the proportion of infants who are breastfed within one day of birth (between 75 and 87 percent). Western Cape and Northern Cape have the highest percentages. This correlates positively with the percentages according to population groups, as these two provinces have the highest percentage of coloureds and whites.

The data according to population group show that white mothers are somewhat less likely to ever breastfeed their babies than the other groups. However, white and coloured mothers show the highest percentage breastfeeding within one hour of birth, namely 60 percent for both groups. For Asian mothers, the proportion is 48 percent and for African mothers 43 percent. The percentage of infants breastfed within one day of birth shows the same pattern as for within one hour of birth, but at higher levels, namely 92 percent for whites, 86 percent for coloureds, 79 percent for Asians and 77 percent for African mothers.

Differentials in breastfeeding initiation according to other variables are not strong; however, there is a tendency for better educated mothers not to ever breastfeed their children.

Table 8.1 Initial breastfeeding

Percentage of children born in the five years preceding the survey who were ever breastfed, and the percentage who started breastfeeding within one hour of birth and within one day of birth, by selected background characteristics, South Africa 1998

Background characteristic	Percentage ever breastfed	Of those ever breastfed, percentage who started:		Number of children
		Within one hour of birth	Within one day of birth ¹	
Child's sex				
Male	86.1	45.1	77.7	2,518
Female	87.2	45.5	79.7	2,474
Residence				
Urban	84.3	45.0	79.0	2,470
Non-urban	89.0	45.5	78.4	2,522
Province				
Western Cape	85.4	65.5	86.5	401
Eastern Cape	90.0	52.9	78.4	741
Northern Cape	86.3	64.1	84.8	102
Free State	89.5	53.3	80.5	257
KwaZulu-Natal	87.5	36.9	75.9	1,094
North West	61.5	38.2	78.9	340
Gauteng	83.1	36.1	75.6	954
Mpumalanga	91.8	47.7	83.3	379
Northern	95.5	45.8	78.7	724
Mother's education				
No education	91.1	41.3	76.3	453
Sub A - Std 3	92.1	49.8	80.4	657
Std 4 - Std 5	85.7	45.1	77.7	747
Std 6 - Std 9	86.1	45.9	78.5	2,041
Std 10	84.4	42.6	77.6	759
Higher	80.5	44.0	84.3	336
Population group				
African	87.2	42.9	77.2	4,149
Afr. urban	84.6	40.7	76.2	1,783
Afr. non-urban	89.2	44.4	77.9	2,366
Coloured	86.5	60.1	86.2	445
White	76.0	60.0	91.6	250
Asian	89.8	48.5	79.0	114
Assistance at delivery				
Health professional	85.9	46.0	81.0	4,212
Traditional midwife	92.0	48.2	70.0	69
Other or none	90.2	45.9	74.9	628
Place of delivery				
Health facility	85.7	45.7	80.7	4,164
At home	90.4	47.6	75.8	713
Other	97.9	17.0	32.0	114
Total	86.7	45.3	78.7	4,992

Note: Total includes 83 children for whom information on assistance at delivery was not stated and 114 children whose place of delivery was not stated.

¹ Includes children who started breast-feeding within one hour of birth

8.2 Duration of Breastfeeding

As shown in Table 8.2, supplementation of breast milk starts very early in South Africa. Only 7 percent of infants under 6 months are exclusively breastfed and 6 percent are fully breastfed (i.e., supplemented with water only). Seventy percent of all infants less than 6 months of age receive supplementary food with breastfeeding, while 17 percent are not breastfed at all.

Exclusive breastfeeding only features in the <2 month age group, 16 percent of whom are being exclusively breastfed and 13 percent of whom are receiving breast milk and water only. Three in five of these very young children are being given other liquids or foods in addition to breast milk, while 11 percent are not being breastfed at all.

Table 8.2 Breastfeeding status

Percent distribution of children under three years of age by current breastfeeding status, according to child's current age in months, South Africa 1998

Age in months	Not breast-feeding	Exclusively breastfed	Breastfeeding and:		Total	Number of living children
			Plain water only	Complementary foods		
< 2	11.1	15.8	12.6	60.5	100.0	121
2-3	20.0	7.0	6.7	66.3	100.0	191
4-5	18.3	1.4	2.0	78.4	100.0	193
6-7	30.3	0.3	2.3	67.0	100.0	169
8-9	32.6	1.3	0.0	66.0	100.0	177
10-11	30.3	0.0	0.0	69.7	100.0	155
12-13	27.1	2.9	0.5	69.6	100.0	156
14-15	39.4	0.0	0.0	60.6	100.0	161
16-17	50.1	0.6	0.0	49.3	100.0	167
18-19	62.0	0.0	0.0	38.0	100.0	175
20-21	65.7	1.7	0.0	32.6	100.0	142
22-23	72.8	0.5	0.0	26.8	100.0	172
24-25	81.0	0.0	0.0	19.0	100.0	181
26-27	86.3	0.0	0.0	13.7	100.0	166
28-29	87.2	0.0	0.0	12.8	100.0	156
30-31	95.0	0.0	0.0	5.0	100.0	137
32-33	96.0	0.0	0.8	3.2	100.0	142
34-35	92.0	0.0	0.0	8.0	100.0	151
0-3 months	16.6	10.4	8.9	64.0	100.0	312
4-6 months	20.1	1.2	2.2	76.5	100.0	268
7-9 months	33.3	0.9	0.7	65.1	100.0	271
0-5 months	17.2	7.0	6.3	69.5	100.0	505
6-11 months	31.1	0.6	0.7	67.5	100.0	501

Note: Breastfeeding status refers to 24 hours preceding the survey. Children classified as *breastfeeding and plain water only* receive no other complementary foods or liquids.

Figure 8.1 shows the prevalence of exclusive breastfeeding among infants aged 0-3 months, 4-6 months, 7-9 months, 10-12 months and the overall rate for infants under the age of 12 months.

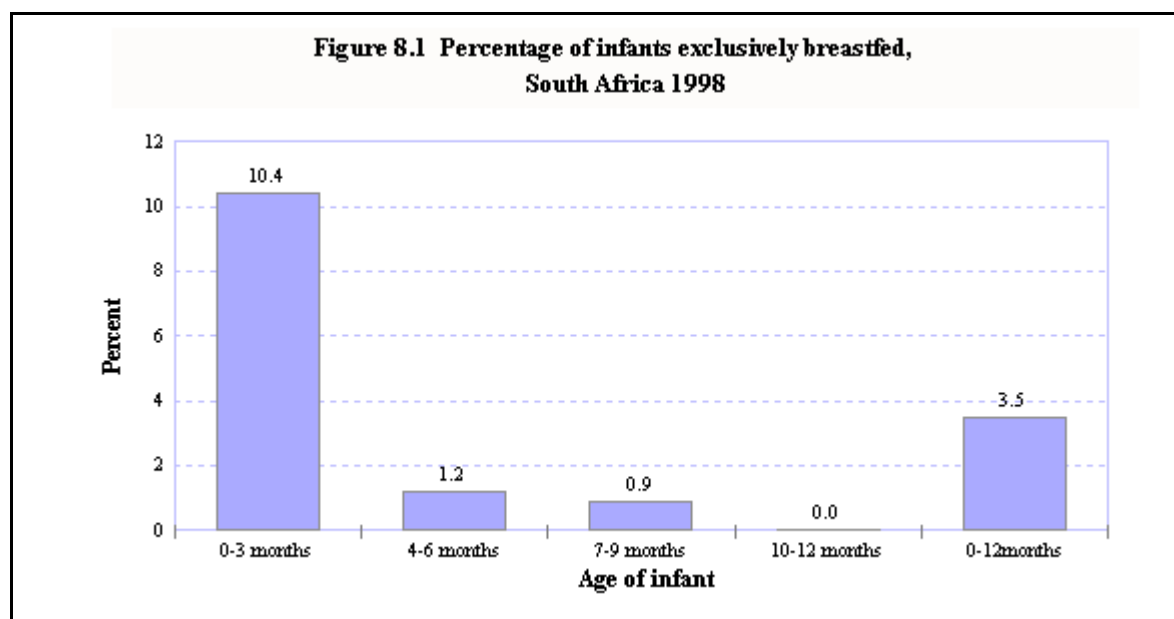


Table 8.3 shows that, at the national level, the median duration of breastfeeding is 16 months. The median duration of exclusive breastfeeding and full breastfeeding (i.e., supplemented with plain water only) are both less than one month.

Although median durations of exclusive and full breastfeeding do not show any substantial variation across background characteristics, there are some variations in the median duration of any breastfeeding. For example, female children are breastfed somewhat longer than male children and non-urban children are breastfed for several months longer than urban children. The median duration of breastfeeding varies between 10 and 20 months according to province. All provinces show a median duration of about 14-17 months, except the Western Cape with 10 months and Northern province with 20 months.

The median duration of breastfeeding does not vary consistently with education level of the mother, fluctuating around 15-17 months for all levels of education. The one exception occurs among children whose mothers have higher than Std.10 education. The median duration of breastfeeding among these children is considerably shorter (7 months).

The median durations of breastfeeding show a wide range according to population group. The longest durations occur for children whose mothers are African (17 months) or coloured (11 months). Children with Asian and white mothers have much shorter median durations of breastfeeding at 5 months and less than 1 month, respectively.

8.3 Frequency of Breastfeeding

Also shown in Table 8.3 is information about the frequency of breastfeeding. The data show that 72 percent of infants under six months of age were breastfed six or more times in the 24 hours preceding the survey. Frequent breastfeeding is more common for non-urban than for urban infants. Breastfeeding frequency varies according to province, with the percentage of children under six months being breastfed six or more times in the previous 24 hours ranging from just over half of young infants in Western Cape province to 90 percent of those in Northern Province. However, much of the variation by province may be due to the small numbers of children under age six months in the sample.

There is a negative correlation between breastfeeding frequency and educational level of the mother. Mothers with either no education or a low level of education breastfeed more frequently than mothers with higher education. Differentials in breastfeeding frequency by population group are inconclusive due to the small numbers of children under six months in the sample for all but the African group.

Table 8.3 Median duration and frequency of breast-feeding by background variables

Median duration of any breastfeeding, exclusive breastfeeding, and full breastfeeding among children under three years of age, and the percentage of children under six months of age who were breastfed six or more times in the 24 hours preceding the interview, according to background characteristics, South Africa 1998

Background characteristic	Children under 3 years of age			Children under six months		
	Median breastfeeding duration			Number of children	Breastfed 6 or more times in preceding 24 hours	Number of children
	Any breast-feeding	Exclusive breast-feeding	Full breast-feeding ²			
Child's sex						
Male	14.3	0.4	0.5	1,538	70.9	269
Female	16.7	0.5	0.5	1,533	72.3	236
Residence						
Urban	13.7	0.4	0.5	1,484	65.8	249
Non-urban	17.3	0.5	0.6	1,588	77.1	256
Province						
Western Cape	10.4	0.4	0.4	258	55.1	46
Eastern Cape	16.6	0.4	0.4	462	71.1	76
Northern Cape	15.0	0.6	1.8	61	*	8
Free State	15.0	0.4	0.5	155	77.6	30
KwaZulu-Natal	14.9	0.7	0.7	688	59.9	102
North West	14.1	0.4	0.6	211	78.1	36
Gauteng	14.3	0.4	0.5	561	73.8	100
Mpumalanga	16.5	0.4	0.5	229	72.2	38
Northern	19.5	0.5	0.6	447	89.9	69
Mother's education						
No education	16.1	1.1	1.1	265	80.0	53
Sub A - Std 3	14.7	0.4	0.4	396	80.9	55
Std 4 - Std 5	17.1	0.4	0.4	463	74.4	64
Std 6 - Std 9	17.4	0.4	0.5	1,277	69.0	196
Std 10	14.9	0.4	0.5	481	73.8	96
Higher	6.5	0.4	0.6	190	50.1	40
Population group						
African	16.7	0.4	0.5	2,570	75.0	426
Afr. urban	15.5	0.4	0.5	1,083	71.6	189
Afr. non-urban	17.3	0.5	0.6	1,488	77.6	237
Coloured	10.8	0.4	0.4	286	57.5	40
White	0.6	0.5	0.5	134	(37.4)	27
Asian	5.2	0.4	0.4	62	*	8
Assistance at delivery						
Health professional	16.0	0.5	0.5	2,625	71.1	441
Traditional midwife	(11.4)	(0.5)	(0.5)	44	*	9
Other or none	15.7	0.4	0.4	367	77.3	52
Total	16.0	0.4	0.5	3,072	71.5	505
Median	15.6	1.2	1.7	87.6	-	-
Prevalence/Incidence mean	15.3	0.5	1.0	-	-	-

Note: Total includes 9 children for whom data on assistance at delivery are missing. Figures in parentheses are based on 25 to 49 children.

¹ Medians and means are based on current status and durations are in months.

8.4 Weaning Foods

Among children under two months of age who are still being breastfed, almost one-third are also receiving infant formula, while just over half are being given other liquids (Table 8.4). Use of infant formula is even more common among non-breastfed babies. Meat, fish, and eggs are generally not widely given to babies until they are 4-6 months old, although they are introduced earlier to infants who are not being breastfed than to those who are. On the other hand, almost half of infants 2-3 months old are given other types of solid or mushy foods.

The use of bottles with nipples (teats) is very common in South Africa. Four-fifths of non-breastfed infants 0-3 months of age are given bottles with nipples. Fifty-eight percent of breastfed infants age 0-3 months also use a bottle with a nipple.

For infants under 5 months of age (n=701), only 5 percent are exclusively breastfed and 34 percent are supplemented with other liquids. Approximately 28 percent of all infants less than 5 months of age receive infant formula with breastfeeding. Of the infants aged less than 5 months, 28 percent also receive other foods, while 5 percent receive meat, fish and eggs. For infants under 5 months of age (n=177) who are not breastfed, 39 percent receive infant formula, while 29 percent are supplemented with other liquids. Approximately 23 percent of all infants less than 5 months of age receive other foods, while 9 percent receive meat, fish and eggs.

8.5 Termination of Breastfeeding

In the SADHS data, about ten different reasons were given by mothers as to why they stopped breastfeeding. Almost one-third of the mothers gave “weaning age” (32 percent) as the most important reason for stopping breastfeeding, while 18 percent said that the infant refused to breastfeed. Insufficient breast milk (10 percent) and the fact that the mothers had to go back to work (9 percent) were the other two most important reasons.

Table 8.4 Types of food received by children in preceding 24 hours

Percentage of children under three years of age who received specific types of food in the 24 hours before the interview, and the percentage using a bottle with a nipple, by breast-feeding status and child's age in months, South Africa 1998

Age (in months)	Breast milk only	Infant formula	Other liquids	Meat/ poultry/ fish/ eggs	Other	Use of bottle with a nipple	Number of children
BREASTFEEDING CHILDREN							
< 2	17.8	30.1	53.6	0.0	19.9	54.2	107
2-3	8.8	54.0	54.6	8.0	45.2	60.5	153
4-5	1.7	48.1	62.8	15.7	69.8	48.1	158
6-7	0.4	49.9	69.3	33.2	81.5	42.9	117
8-9	2.0	49.6	70.8	48.7	87.0	46.8	119
10-11	0.0	43.5	67.7	51.4	95.7	34.1	108
12-13	3.9	31.5	76.9	52.5	92.9	29.2	114
14-15	0.0	22.1	79.4	52.2	92.6	22.3	97
16-17	1.1	25.9	77.1	61.7	94.5	23.0	83
18-23	2.0	17.4	82.4	68.6	94.1	16.6	162
24-29	0.0	8.2	87.5	69.8	93.7	13.8	77
30-35	0.0	17.5	87.0	92.3	93.3	17.9	25
0-3 months	12.5	44.1	54.2	4.7	34.8	57.9	260
4-6 months	1.5	47.2	63.5	17.9	72.6	46.9	214
7-9 months	1.3	51.3	71.5	46.2	85.4	45.2	181
Total	3.5	35.8	70.5	40.8	77.7	36.8	1,321
NON-BREASTFEEDING CHILDREN							
0-3	0.0	77.7	49.6	14.2	36.8	79.9	52
4-6	0.0	85.3	76.9	31.4	64.0	91.7	54
7-9	0.0	77.5	80.4	50.2	88.6	88.0	90
10-11	0.0	67.1	70.2	69.7	83.4	85.9	47
12-13	0.0	62.6	85.2	55.0	83.6	63.3	42
14-15	0.0	28.8	90.7	68.7	92.5	56.4	63
16-17	0.0	36.4	82.9	63.7	92.5	67.3	84
18-23	0.0	30.4	81.8	65.2	88.8	43.3	327
24-29	0.0	13.7	81.4	67.2	86.4	23.7	427
30-35	0.0	10.8	80.3	65.9	85.0	13.1	404
Total	0.0	29.2	80.2	62.2	84.7	39.3	1,590

CHAPTER 9

ADOLESCENT HEALTH

9.1 Introduction

Adolescence constitutes a special phase of human development as it represents the transition between childhood and adulthood. It is a phase marked by substantial biological, physical and hormonal changes as well as social adjustments. These in turn have profound implications on one's emotional stability as they bring with them needs and urges that significantly impact on behaviour. Adolescence is also often marked by a crisis of identity as teenagers seek acceptance in the adult world and try to prove both to peers and to themselves that they are old enough "to do certain things". Such "things" can range from dating and driving, to taking alcohol, drugs and experimenting with sex and guns, putting not only their health in danger but their very life and future. Adolescence is not only a time of experimentation with high risk behaviours but also a time when life-long habits that have a bearing on health are started. Demographically, this section of the population is important as it is one of the largest 5-year age cohorts as a result of the demographic transition and the decline in fertility. Furthermore, it is facing one of the most devastating epidemics that, at this stage, can only be prevented by avoiding risky sexual behaviour.

There are grave health risks associated with early sexual activity like early pregnancy with its associated problems and complications such as increased maternal mortality and increased infant morbidity, social, psychological and economical effects. Moreover, sexually transmitted diseases including HIV/AIDS are a serious risk to adolescents. This risk is increased by their early sexual activity, as they are more likely to change sexual partners. In addition, they lack information and reproductive and sexual health services. This is compounded by their low socio-economic status, with lowers their negotiation abilities for safer sex.

It is therefore important to measure the health and risk-taking behaviours among adolescents including the magnitude of problems such as unprotected sex, teenage pregnancy and substance abuse. For the purpose of this chapter, adolescents are people aged between 15 and 19 years and include the 2,373 young women interviewed with the women questionnaire and the 1,058 men and 1,069 women interviewed with the adult questionnaire. Some researchers use the age range 10-19 to define adolescence (Bongaarts and Cohen, 1998) but this survey has limited information regarding the young adolescents.

Particularly relevant questions include the areas of reproductive health, knowledge of HIV/AIDS, intentional and unintentional injuries, smoking and alcohol use. In addition, the anthropometric profile and the extent of hypertension and lung disease are included. Questions on drug abuse did not form part of the survey questionnaire.

9.2 Sexual Behaviour

Information on the sexual behavior of the adolescent is important in formulating appropriate interventions on adolescent reproductive and sexual health services. The age at which sex is initiated, the number of partners and teenage pregnancy are all important aspects that need to be monitored.

Sexual Relations

The survey found that most adolescent women have never been married (96 percent) and that the majority of the unmarried adolescents (63 percent) did not have a sexual partner in the 12 months preceding the survey. Twenty-nine percent of the unmarried adolescents reported that they had a regular sexual partner while 7 percent reported an occasional partner. Thirteen percent of unmarried adolescents, reported that the last person with whom they had sexual intercourse was a casual acquaintance - the highest percentage of sexual intercourse with a casual partner of all age groups. This indicates risky sexual behaviour, which makes adolescents more vulnerable to sexually transmitted diseases.

Only a few adolescents reported having had sex with two or more partners in the preceding 12 months and the mean number of partners is 0.4. Fewer than one in five adolescents reported being sexually active in the month preceding the survey. This low reporting of multiple partners is similar to the findings of the 1996 Demographic and Health Survey of Tanzania and there may be under-reporting due to the sensitive nature of the question. This low reporting is however in contrast with world trends where more sexually active female adolescents report having more than one partner.

Age at first intercourse

Table 5.5 in Chapter 5 shows the percentage of women ever having sexual intercourse by exact specified ages and median age at first sexual intercourse. In this survey 9 percent of adolescents surveyed commenced sexual intercourse before age 15. Table 5.5 also shows that the median age for sexual debut for ages 20-49 is 18.2 years. This means that half of the women had their sexual debut while they were adolescents, making it a critical time for reproductive and sexual health interventions. The median age at first sex has gone down slightly. The median age in the 20-24 year age group was the lowest at 17.8 years as compared to older women whose age at first sexual intercourse is at a slightly older age i.e. 18.4 years.

Age at first sexual intercourse for urban women was a slightly older age than rural women (see Table 5.6). Age at first sexual intercourse for women in the Northern Province was earlier (17.7) than in any other province. Age at first sexual intercourse for women aged 20-49 in the Western Cape was later (19.0) than in the other provinces. Women with the highest educational level had their first sexual intercourse at the latest age across all age groups. Interestingly, women with no education at all, had sexual intercourse at a later age than those who had education of Sub A to standard 5. For all age groups, African women had their first sexual intercourse at a younger age than the other population groups.

Findings from other local and international studies suggest that age at first sexual intercourse is younger than that documented in this survey. A study in the Northern Province (Health Systems Development Unit, 1997) reported that sexual debut appeared to peak between 14 and 16 years for males and females. In Swaziland, documented age of first sexual intercourse is 15-17 years while 52 percent of adolescent females are sexually active and 80 percent of teenagers have multiple sexual partners. Fifty-five percent of adolescents interviewed had never had sexual intercourse. This differs from what has been documented in Sub-Saharan Africa where 50 percent of women give birth before age 20 which is similar to global trends where most adolescents become sexually active before their 20s.

Teenage pregnancy

Table 9.1 shows the percentage of women aged 15-19 who have given birth and who have ever been pregnant, according to selected background characteristics. The proportion of adolescents who have ever been pregnant rises rapidly with age, from 2 percent at age 15 to 35 percent at age 19. The data show considerable variation in adolescent fertility by region, education and population group. Rural adolescents tend to start childbearing earlier than urban adolescents (21 percent compared to 13 percent). Gauteng has the lowest proportion (10 percent) of women aged 15-19 who had ever been pregnant, while Mpumalanga has the highest proportion (25 percent). Other provinces with high levels of early pregnancy are Northern Province, Eastern Cape, and the Northern Cape. There is a strong negative association between education and teenage pregnancy. Coloured teenagers have the highest levels of adolescent pregnancy (19 percent) while whites and Asians had the lowest levels (2 percent and 4 percent respectively). It should be noted, however, that the sample sizes for Asians and whites are small.

Table 9.1 Adolescent pregnancy and motherhood

Percentage of women 15-19 who are mothers or have ever been pregnant, by selected background characteristics, South Africa 1998

Background characteristics	Percentage who:		Number of women
	Are mothers	Have ever been pregnant	
Age			
15	2.0	2.4	468
16	5.2	7.9	458
17	10.7	14.2	444
18	19.8	24.6	474
19	30.2	35.1	406
Residence			
Urban	10.5	12.5	1,197
Non-urban	16.3	20.9	1,052
Province			
Western Cape	13.7	16.4	195
Eastern Cape	14.8	18.2	369
Northern Cape	15.2	18.0	44
Free State	8.4	12.6	136
KwaZulu-Natal	13.8	16.7	457
North West	11.0	13.4	164
Gauteng	8.9	9.5	377
Mpumalanga	18.8	25.2	190
Northern	14.9	20.0	318
Education			
No education	*	*	19
Sub A - Std 3	24.7	29.2	114
Std 4 - Std 5	13.8	17.4	336
Std 6 - Std 9	12.9	16.3	1,542
Std 10	7.9	10.1	177
Higher	4.0	4.0	60
Population group			
African	14.2	17.8	1,802
Afr. urban	11.6	13.7	812
Afr. non-urban	16.4	21.1	990
Coloured	15.7	19.3	208
White	2.2	2.2	162
Asian	2.9	4.3	66
Total	13.2	16.4	2,249

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

9.3 Contraception and Use of Condoms

Contraceptive use is quite high among sexually active women aged 15-19 (66 percent). The injectable contraceptive is by far the most commonly used form of contraception (51 percent) followed by the pill (9 percent). Only 4 percent of sexually active adolescents use condoms as a form of family planning. However, it can be seen from Table 5.7 that almost 20 percent of adolescent women used a condom at their last sexual encounter. Although condom use in this age group is higher than in all the other age groups, it is still not high enough for the purpose of preventing the spread of sexually transmitted diseases.

Adolescent women who have ever used a contraceptive obtained their information largely from their mothers (39 percent), a nurse (20 percent) or a friend (17 percent). The median age of starting to use contraceptives in this group was 16.5 years and 40 percent of the adolescents did so with the help of their parents.

9.4 Incidence of Intentional and Unintentional Injury

The trauma profiles of children under the age of 15 and adolescents aged 15 to 19 years are notably different. Adolescent trauma usually has a profile of injuries similar to that of adults, while children under 15 years old usually have much lower rates of intentional injuries. In Cape Town in 1990, one in 13 children and one in nine adolescents required medical attention for the treatment of injuries (Steenkamp, 1996).

Information about injuries experienced in the month prior to the survey, was obtained in the household schedule from a total of 5,164 adolescents aged between 15 and 19 years old. It is reported that 47 adolescents sustained an injury severe enough to require medical attention in the month preceding the study. From Figure 9.1 it can be clearly seen that the adolescent injury profile is more like that of the adult. The overall injury rate for the month preceding the survey for adolescents is 911 per 100,000 compared with 468 per 100,000 for children and 1,292 per 100,000 for adults. This can be extrapolated to 8,384 per 100,000 adolescents or one in 12 requiring medical attention for an injury annually.

Seventy percent of the adolescent injuries were the result of accidents such as burns, falls, motor vehicle collisions or sports injuries. However, nearly one-third were due to assaults or were self-inflicted. Table 9.2 shows that the injury rate among male adolescents is almost twice that of adolescent girls. In younger children the distribution of injuries between boys and girls is much less pronounced but as children reach puberty there is an increase in injuries among boys, particularly intentional injuries. The profiles of injuries among adolescents are similar to those of adults suggesting that behavioural patterns strongly influence trauma causation.

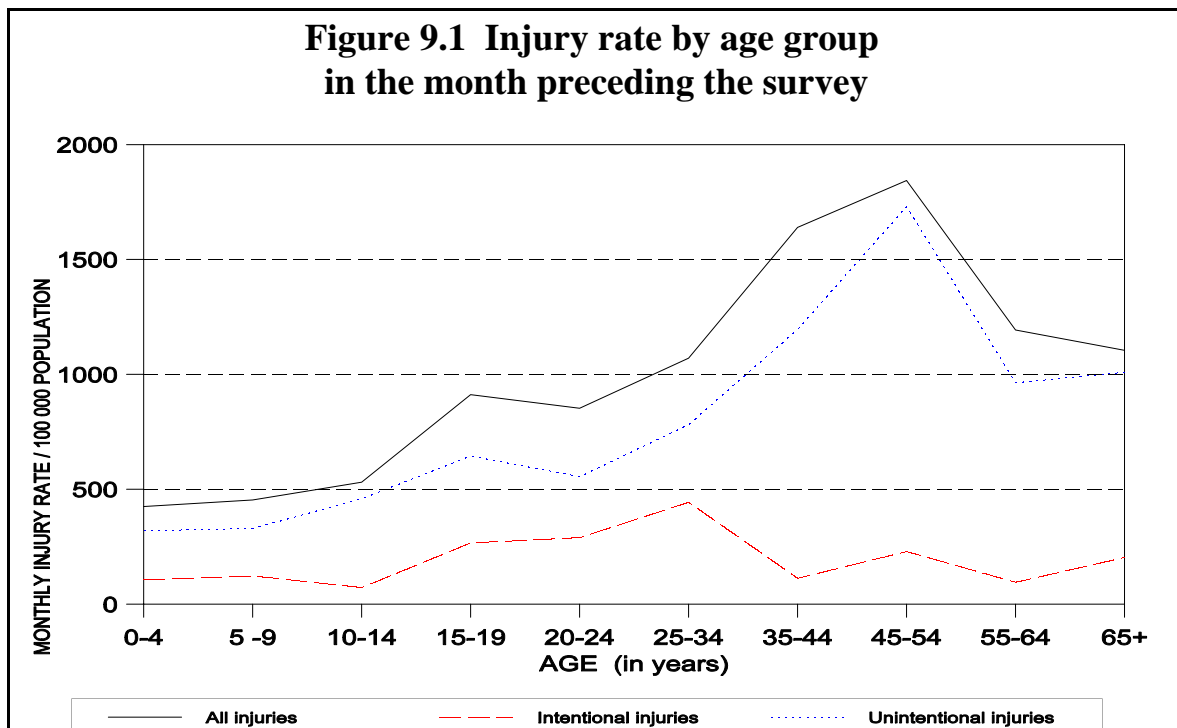
Table 9.2 Adolescent injury rates

The incidence of intentional and unintentional injuries reported to have occurred in the month preceding the survey among household residents aged 15-19 years by sex and residence, South Africa 1998

Sex/Residence	Injury rate per 100,000 adolescents			Number
	All injuries	Intentional injuries	Unintentional	
Sex				
Male	1,109	311	798	2,765
Female	683	216	467	2,397
Residence				
Urban	1,316	221	1,096	2,696
Non-urban	469	317	151	2,468
Total	911	267	644	5,164

Table 9.2 also shows that the injury rate in urban areas is three times higher than in non-urban areas and that the majority of these injuries are unintentional, i.e. the result of traffic collisions, falls, burns, etc. It is disturbing to note that the rate of intentional injuries is higher in non-urban than in urban areas.

Furthermore, the Northern Province has disturbingly high levels of intentional injuries among adolescents. No injuries were reported for adolescents in KwaZulu-Natal which may reflect a systematic bias in the way the interviewers in that province operationalised the injury questions. The prevention and control of child and adolescent injuries should be a national priority since injuries are a leading cause of mortality and morbidity among South African children aged four to 19 years. These injuries result in significant costs not only to the individual but to their families, the community, the health services and ultimately society as a whole.



The aetiology of childhood injuries is complex and its prevalence is a symptom of poor standards of health, informal housing, poor adult supervision and economic status (Butchart and Peden, 1997) The long-term improvement in injury in South Africa lies with primary prevention. Although young children cannot be expected to take responsibility for their own safety, adolescents should be taught, alongside their parents or supervisors, about injury prevention and conflict management so that they can become responsible young adults.

9.5 Patterns of Exposure to Tobacco

Introduction

The use of tobacco products during adolescence usually leads to a lifelong addiction. Once children start smoking, nicotine dependence will ensure that they continue for the next 30 or 40 years. Tobacco will kill up to half of all smokers who start young and continue throughout their lives, and half of these will die before the age of 69 years (Peto *et al.*, 1994).

Children begin smoking for many reasons but peer pressure and the desire to look “grown-up” are important reasons for starting smoking. Internal US tobacco industry documents obtained during litigation, reveal the industry’s attitude towards children. They show how important the youth market is to the industry and how the industry studied child psychology so that advertising may use peer pressure and “symbols of adulthood” to influence youngsters to smoke. One such document from R.J.Reynolds Tobacco Company states: “They represent tomorrow’s cigarette business. As this 14-24 age group matures, they will account for a key share of the total cigarette volume for at least the next 25 years.” It goes on to recommend that if the company is to retain market share it must: “Direct advertising appeal to the younger smokers.” (R.J. Reynolds Tobacco Co. 1974). Such advertising must “create the perception that Camel smokers . . . project a cool attitude, which is admired by their peers. . .” (R.J. Reynolds Tobacco Co. 1986).

In South Africa, as in many parts of the world, cigarette advertising associates tobacco with success, adventure and sexual attractiveness. Such images ensure that adolescents whose developmental stage is driven by a need to belong and find acceptance in their peer group and with members of the opposite sex will be attracted to experimentation with cigarettes. This is all that is required to establish a pattern of nicotine addiction and decades of using tobacco products.

This section reports on tobacco use among adolescents aged 15-19 years; on their perceptions of the harms of smoking; their attempts to stop smoking and of their passive exposure to other people’s smoking.

Tobacco use among adolescents aged 15-19 years

Tables 9.3 and 9.4 show the prevalence of tobacco use among boys and girls and the age of initiation of the habit by age, residence and other background characteristics. About twice as many boys as girls have ever used tobacco products (17 percent of boys vs 9 percent of girls), although, among the 15 year-olds, almost as many girls (5 percent) as boys (6 percent) have experimented with tobacco products.

About 14 percent of boys and 6 percent of girls are current smokers. Current smoking in those aged 15, was 4 percent in boys and 2 percent in girls and increased with age to a peak among 19-year-olds of 22 percent for boys and 10 percent for girls – a five-fold and four-fold increase among boys and girls respectively. There was a marked difference in smoking prevalence between urban and non-urban adolescents, which is much larger for girls (8 percent of urban and 3 percent of non-urban girls currently smoke) than boys (17 percent of urban and 11 percent of non-urban boys currently smoke). Girls in

standard 10 or in higher education were three times more likely to smoke than other girls and their current smoking prevalence was similar to that of boys in standard 10 (17 percent for boys and 16 percent for girls). Current smoking prevalence for African boys was less than half that of the other Asian, coloured or white boys. Smoking is extremely rare among African girls, unlike their age mates of other population groups. One in three white adolescent girls smokes, as does one in five coloured girls and one in 10 Asian girls.

Table 9.3 Tobacco use by adolescent men

Percentage of males aged 15 - 19 years who ever used tobacco products, who ever smoked daily and who currently smoke daily or occasionally, and of those who ever smoked daily, the percentage who smoke manufactured cigarettes and the mean starting age, according to background characteristics, South Africa 1998

Background characteristic	Among men 15 - 19, percentage who:					Number	Among those who ever smoked daily*			
	Ever used tobacco products	Ever smoked tobacco daily*	Currently smoke daily	Currently smoke occasionally	Smoke daily or occasionally		Percentage who smoke manufactured cigarettes	Mean age when starting smoking	STD Error	Number
Age										
15	6.3	6.3	2.8	1.3	4.1	199	*	*	*	13
16	15.0	13.4	8.9	1.3	10.2	223	97.8	13.8	0.28	30
17	17.0	16.5	10.3	4.3	14.6	243	84.7	14.9	0.17	40
18	21.8	21.8	17.0	3.0	20.0	221	91.3	15.1	0.37	48
19	25.0	24.4	17.4	5.0	22.4	173	87.0	15.2	0.37	42
Residence										
Urban	20.4	19.6	12.9	3.7	16.6	574	93.1	14.6	0.22	112
Non-urban	12.7	12.5	9.1	2.0	11.1	485	84.9	15.1	0.22	61
Province										
Western Cape	23.0	21.8	16.9	3.7	20.5	109	*	*	*	24
Eastern Cape	26.2	26.2	15.6	8.5	24.1	134	92.4	15.0	0.27	35
Northern Cape	28.7	28.7	23.0	4.5	27.5	21	*	*	*	6
Free State	9.5	8.4	4.3	2.1	6.4	77	*	*	*	6
KwaZulu-Natal	8.5	7.9	4.0	0.6	4.6	178	*	*	*	14
North West	15.2	15.2	12.6	1.7	14.3	108	*	*	*	16
Gauteng	24.0	22.6	15.5	2.8	18.3	187	(87.5)	(14.5)	(0.50)	42
Mpumalanga	14.6	14.6	12.1	1.7	13.8	86	*	*	*	13
Northern	10.1	10.1	6.6	2.1	8.7	158	*	*	*	16
Education										
No education	*	*	*	*	*	14	*	*	*	1
Sub A - Std 3	16.1	15.1	11.3	1.4	12.7	83	*	*	*	12
Std 4 - Std 5	14.5	14.5	9.4	2.6	12.0	194	(100.0)	(14.7)	(0.33)	28
Std 6 - Std 9	16.6	16.0	11.2	2.7	13.9	673	89.3	15.0	0.18	108
Std 10	21.4	20.2	13.7	3.1	16.8	78	*	*	*	16
Higher	*	*	*	*	*	16	*	*	*	7
Population group										
African	12.6	12.3	8.3	2.4	10.7	856	86.9	15.2	0.17	105
Afr. urban	13.5	13.1	8.5	2.8	11.3	389	89.9	15.2	0.26	51
Afr. non-urban	11.8	11.6	8.1	2.1	10.2	467	84.1	15.1	0.23	54
Coloured	28.8	28.8	25.9	2.7	28.6	104	(89.4)	(14.5)	(0.42)	30
White	42.8	37.8	19.0	8.6	27.6	73	(100.0)	(13.7)	(0.46)	27
Asian	(36.0)	(36.0)	(21.5)	(6.6)	(28.1)	25	*	*	*	9
Total	16.8	16.3	11.1	2.9	14.0	1,058	90.2	14.8	0.16	173

Note: STD Error = Standard deviation of the mean

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 9.4 Tobacco use by adolescent women

Percentage of females aged 15 - 19 years who ever used tobacco products, who ever smoked daily and who currently smoke daily or occasionally, and of those who currently smoke daily or occasionally, the percentage who smoke manufactured cigarettes and the mean starting age, according to background characteristics, South Africa 1998

Background characteristic	Among females 15 - 19, percentage who:						Among those who ever smoked daily*			
	Ever used tobacco products	Ever smoked tobacco daily*	Currently smoke daily	Currently smoke occasionally	Smoke daily or occasionally	Number	Percentage who smoke manufactured cigarettes	Mean age when starting smoking	STD Error	Number
Age										
15	5.4	4.6	1.6	0.8	2.4	233	*	*	*	11
16	5.4	5.4	2.7	0.5	3.2	210	*	*	*	11
17	7.8	6.9	2.8	2.2	5.0	212	*	*	*	15
18	12.9	10.6	8.5	0.7	9.2	213	*	*	*	23
19	15.3	12.2	6.9	2.6	9.5	198	*	*	*	24
Residence										
Urban	13.4	11.9	6.3	2.0	8.3	598	90.7	14.9	0.29	71
Non-urban	3.9	2.7	2.1	0.6	2.6	469	*	*	*	13
Province										
Western Cape	25.3	25.3	20.9	2.9	23.8	87	*	*	*	22
Eastern Cape	3.2	3.2	2.0	1.2	3.2	160	*	*	*	5
Northern Cape	18.7	15.0	10.0	2.0	12.0	22	*	*	*	3
Free State	8.7	2.5	1.2	1.2	2.4	64	*	*	*	2
KwaZulu-Natal	2.9	2.9	1.0	1.0	2.0	209	*	*	*	6
North West	3.5	1.2	0.0	1.2	1.2	80	*	*	*	1
Gauteng	20.8	18.3	9.7	1.2	10.9	214	(93.7)	(15.0)	(0.47)	39
Mpumalanga	1.7	1.0	0.0	0.0	0.0	87	*	*	*	1
Northern	4.7	3.0	0.0	2.3	2.3	143	*	*	*	4
Education										
No education	*	*	*	*	*	20	*	*	*	0
Sub A - Std 3	9.2	3.8	2.7	1.1	3.8	45	*	*	*	2
Std 4 - Std 5	4.2	3.7	3.1	0.4	3.5	166	*	*	*	6
Std 6 - Std 9	8.7	7.2	3.6	1.4	5.0	733	87.5	14.7	0.30	53
Std 10	15.7	15.7	12.6	3.1	15.7	70	*	*	*	11
Higher	(35.7)	(35.7)	(16.5)	(3.1)	(19.6)	33	*	*	*	12
Population Group										
African	2.3	1.0	0.4	0.3	0.7	832	*	*	*	8
Afr. urban	3.3	1.7	0.7	0.6	1.3	388	*	*	*	7
Afr. non-urban	1.6	0.3	0.2	0.1	0.3	444	*	*	*	1
Coloured	27.2	24.2	16.9	2.6	19.5	96	*	*	*	23
White	47.6	47.3	27.3	6.2	33.5	97	(100)	(14.8)	(0.41)	46
Asian	(15.3)	(15.3)	(2.4)	(7.8)	(10.3)	42	*	*	*	6
Total	9.2	7.9	4.4	1.3	5.7	1,069	85.2	14.9	0.24	83

Note: STD Error = Standard deviation of the mean

Parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Perceptions about tobacco and cessation patterns of adolescents

About 95 percent of adolescents believe that smoking is deleterious to health and this belief remains uniformly high and does not vary with any of the background characteristics. Of those who had smoked every day, 65 percent of adolescent males and 72 percent of adolescent females had attempted to stop smoking. Only 14 percent of boys and 39 percent of the girls actually managed to do so. This highlights a finding, also observed in adults, that most smokers have tried to quit, but that only a small proportion succeed.

Adolescents' exposure to environmental tobacco smoke (ETS)

Of those adolescents who have never experimented with tobacco products, 37 percent of boys and 34 percent of girls live with smokers in their homes, while 40 percent of all boys and 37 percent of all girls live with smokers in the home. This occurs markedly more frequently in urban settings compared to non-urban settings (45 percent vs 29 percent, urban vs non-urban). There are also marked differences among provinces, with more children being exposed to ETS in the Western and Northern Cape (where over 60 percent of the youngsters live in homes with smokers) and the lowest rate of exposure was in KwaZulu-Natal (25 percent). Remarkably high rates of exposure (over 70 percent for both boys and girls) are found in the coloured community and the lowest rates in the non-urban African community, although even in this community about a quarter of the non-smoking adolescents are exposed to ETS.

9.6 Alcohol Use/Misuse by Adolescents

Introduction

By the time young people reach mid-adolescence many have begun to use alcohol, often irresponsibly. Alcohol misuse by adolescents has been linked to several negative consequences, including absenteeism from school, school failure, road-related injuries and fatalities, and teenage pregnancy. A recent review of epidemiological research on risky drinking in South Africa (Parry and Bennetts, 1998) suggested that levels of risky drinking for young persons are only slightly lower than for adults. The SADHS included eight questions to assess lifetime and current use of alcohol, weekend and weekday consumption, and a four-item measure of alcohol dependence. The findings based on the latter measure are not reported as this instrument was designed for adult respondents.

Drinking patterns

Fifteen percent of male adolescents (15-19 years old) and 7 percent of female adolescents acknowledge that they currently consume alcohol (Table 9.5). For both sexes, the rate is 11 percent, which translates to almost 406,000 persons in South Africa 15-19 years old who acknowledge currently consuming alcohol. Rates of current drinking differ substantially by population group and sex, with the highest levels reported by white males (53 percent), followed by white females (38 percent), and coloured males (19 percent). The lowest rates were reported by African females (3 percent). The numbers were too low to accurately assess current drinking rates among either Asian males or females. Current drinking levels also appear to be positively associated with age for both males and females.

For male adolescents aged 15-19, the highest current drinking levels were reported in the Western Cape and Northern Cape (21 percent to 24 percent), and the lowest levels were reported in the Northern Province (7 percent). No statistics on current drinking were reported for the North West and for the Free State

provinces because of the small numbers in the 15-19-year age group for these provinces included in the SADHS. Rates of lifetime consumption of alcohol (“Ever drunk alcohol?”) were 25 percent for males and 15 percent for females aged 15-19 years (Table 9.5). The age, population group, and urban/non-urban differences described above for current drinking rates are very similar for lifetime consumption of alcohol.

The current drinking rates are less than were reported in previous research. Research conducted in 1997, for example, among a representative sample of high school students in Std 9 in the Cape Peninsula reported last month use of alcohol of 41 percent to 58 percent for white, coloured and African males, and 9 percent to 61 percent for white, coloured and African females (Flisher, Parry, Evans, Lombard, and Müller, 1997). Comparing national or even provincial statistics with an urban area such as Cape Town may, however, not be entirely appropriate. The relative differences between the various population and sex groupings appear to be very similar in both the Flisher *et al.* study and this survey, with the highest rates of current drinking reported among white and coloured males and females, and with substantially lower usage acknowledged by African females. An HSRC study conducted in 1994 reported current drinking levels of 39 percent to 40 percent among African males 10-21 years of age, 23 percent among rural African females 10-21 years of age, and 32 percent among urban African females of the same age (Rocha-Silva, de Miranda, & Erasmus, 1996). Similar to the findings of the HSRC survey (Rocha-Silva *et al.*, 1996), current drinking levels in the African subgroup appear to be higher in the urban sample than in the non-urban group. The lower reported rates observed in the SADHS are likely to reflect different methods used rather than any reduction in drinking rates over the past few years. In particular, the HSRC surveys defined “current drinking” as “drinking in the past 12 months” which is a larger reference period than epidemiologists typically use.

Risky drinking

Risky drinking was defined as drinking five or more standard drinks per day for males and three or more drinks per day for females. These levels were defined as “hazardous/harmful” by the Australian National Health and Medical Research Council (1992).

Rates of risky drinking were substantially greater at weekends than on weekdays, with 1-3 percent of current drinkers 15-19 years of age reporting risky drinking on weekdays and roughly one-quarter (24-27 percent) of current drinkers 15-19 years of age drinking at risky levels over weekends (Table 9.5). While drinking rates (lifetime and current) are higher for males in urban than non-urban populations, risky drinking appears to be higher among non-urban populations. Recent comparative data from national surveys are only available for Africans. The rates of risky drinking reported by African males (3 percent on weekdays and 21 percent over weekends) is somewhat higher than that reported by Rocha-Silva *et al.* (1996) in their 1994 study of persons 10-21 years of age (4 percent in urban areas and 8 percent in rural areas). Rocha-Silva *et al.* also found rates of risky drinking substantially higher in rural (non-urban) areas. Rocha-Silva *et al.* (1996) reported risky drinking for African females (10-21 years of age) at 3 percent for both urban and rural populations. The rates of risky drinking for females in the SADHS are higher, but this is likely to be partly due to the differential levels of risky drinking used for males and females.

Table 9.5 Risky drinking and alcohol dependency among adolescents

Percentage of males and females aged 15-19 years reporting lifetime use of alcohol and current use of alcohol, and the percentage of current drinkers engaging in risky drinking on weekdays and on weekends by background characteristics, South Africa 1998

Background characteristic	Adolescents aged 15-19						Current drinkers					
	Ever drank alcohol		Drink now		Number		Risky drinking: weekdays ¹		Risky drinking: weekends ¹		Number	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Age												
15	12.4	8.2	(5.5)	*	199	232	*	*	*	*	24	19
16	21.1	10.2	(12.0)	*	223	210	(0.0)	*	(17.2)	*	47	21
17	23.5	16.8	(13.2)	(7.6)	243	207	(7.4)	*	(29.8)	*	57	35
18	28.6	18.9	(15.1)	(8.0)	219	212	(0.0)	*	(32.7)	*	63	40
19	43.8	21.9	29.2	(9.8)	173	198	5.2	*	22.2	*	76	43
Residence												
Urban	28.8	21.2	18.6	10.6	574	593	2.5	2.2	20.5	23.4	165	126
Non-urban	21.2	7.1	(9.6)	(2.7)	483	466	(5.1)	*	(32.2)	*	102	33
Province												
Western Cape	33.1	36.4	(20.7)	*	110	86	*	*	*	*	36	32
Eastern Cape	28.9	7.1	17.8	*	134	159	*	*	*	*	39	11
Northern Cape	28.4	18.1	(21.6)	*	21	23	*	*	*	*	6	4
Free State	20.0	11.3	*	*	77	64	*	*	*	*	15	7
KwaZulu-Natal	21.7	8.7	(9.1)	*	178	208	*	*	*	*	39	18
North West	19.8	9.7	*	*	108	80	*	*	*	*	21	7
Gauteng	30.8	28.6	*	*	187	211	(7.1)	(0.0)	(28.6)	(18.2)	58	60
Mpumalanga	30.3	10.6	16.1	*	85	87	*	*	*	*	26	9
Northern	17.6	6.5	*	*	157	140	*	*	*	*	28	9
Population group												
African	20.0	6.9	10.6	2.9	854	825	2.6	*	21.4	*	171	57
Afr. urban	20.0	8.8	12.2	(3.4)	389	385	(0.0)	*	(12.7)	*	78	34
Afr. non-urban	20.1	5.3	9.2	(2.5)	465	440	(5.5)	*	(31.0)	*	93	23
Coloured	32.9	33.8	(19.7)	(13.0)	104	95	*	*	*	*	34	32
White	70.1	65.1	(52.9)	(37.5)	73	97	(0.0)	(0.0)	(21.7)	(25.3)	51	63
Asian	(39.8)	(14.8)	*	*	25	42	*	*	*	*	10	6
Total	25.3	15.0	14.5	7.1	1,057	1,060	3.3	1.8	24.1	27.3	267	159

1 – defined for males as drinking ≥5 drinks per day, and for females as drinking ≥3 drinks per day

Note: Parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

9.7 Anthropometry of Adolescents

Weight, height and mid-upper arm circumference

Tables 9.6 and 9.7 show the mean weight, height and upper arm circumference (MUAC) for male and female adolescents, respectively according to background characteristics. Although men are on average about 7cm taller than women, there are generally few differences in mean height by age, residence and province for either men and women. However, there are differences among men in weight and height by province and by educational attainment and in MUAC by education. The tallest and heaviest men are from Gauteng and Western Cape provinces and are those with the highest education. The tallest women are from North West, Gauteng and Free State provinces, while the biggest are from Western Cape, KwaZulu-Natal, and Gauteng. Differences in weight and height are more pronounced by population group for both men and women. White men and women are the tallest and heaviest compared to other groups.

The MUAC of women is higher than for men, which means that women generally carry more fat tissue than men. Among women, Asian women have the lowest MUAC, while among men, urban Africans have the lowest.

Table 9.6 Anthropometric measurements for adolescent men

The mean and standard error of weight in kg, height in m and mid-upper arm circumference (MUAC) in cm of males aged 15-19 by background characteristics, South Africa 1998

Background characteristic	Weight (kg)			Height (m)			Mid-upper arm circumference (cm) MUAC		
	Mean	STD Error	Number	Mean	STD Error	Number	Mean	STD Error	Number
Age									
15	50.9	0.97	199	1.60	0.88	199	23.8	0.25	199
16	55.7	0.82	222	1.66	0.77	222	25.0	0.24	222
17	56.9	0.63	238	1.68	0.62	239	25.2	0.23	237
18	59.3	0.75	220	1.69	0.56	220	25.9	0.24	220
19	60.9	1.28	173	1.69	0.77	171	26.5	0.29	171
Residence									
Urban	58.9	0.66	572	1.68	0.51	572	25.9	0.19	569
Non-urban	54.1	0.45	481	1.65	0.46	481	24.5	0.15	480
Province									
Western Cape	61.0	1.78	110	1.68	1.27	108	26.4	0.39	108
Eastern Cape	56.1	0.64	134	1.65	0.59	134	25.4	0.25	134
Northern Cape	52.7	1.04	21	1.66	0.78	2	24.0	0.38	21
Free State	54.0	1.11	78	1.65	0.88	77	24.3	0.28	77
KwaZulu-Natal	56.0	1.03	175	1.65	0.88	176	25.2	0.39	176
North West	56.3	1.67	108	1.63	1.43	108	25.7	0.38	107
Gauteng	59.3	1.23	187	1.69	1.04	187	25.7	0.38	185
Mpumalanga	55.1	0.87	84	1.67	0.80	84	24.8	0.28	84
Northern	55.0	0.88	157	1.67	0.88	157	24.3	0.28	157
Education									
No education	*	*	12	*	*	*	12	*	12
Sub A - Std 3	50.0	0.91	82	1.61	0.88	82	23.6	0.35	82
Std 4 - Std 5	55.0	0.89	193	1.64	0.84	193	24.7	0.19	191
Std 6 - Std 9	57.0	0.49	669	1.67	0.44	669	25.3	0.16	668
Std 10	63.0	2.3	77	1.7	1.07	77	27.0	0.43	77
Higher	*	*	15	*	*	15	*	*	15
Population Group									
African	55.4	0.39	852	1.65	0.36	852	25.0	0.13	848
Afr. urban	57.4	0.66	387	1.66	0.57	387	24.4	0.22	462
Afr. non-urban	54.0	0.42	463	1.64	0.45	463	25.6	0.15	386
Coloured	60.0	1.85	104	1.68	0.98	102	25.7	0.33	102
White	66.8	2.15	73	1.76	1.32	72	27.2	0.60	73
Asian	(58.0)	(3.34)	25	(1.72)	(1.73)	25	(27.0)	(1.03)	25
Total	57.0	0.43	1,053	1.66	0.36	1,052	25.2	0.13	1,049

Note: STD Error = Standard deviation of the mean

Parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed

Table 9.7 Anthropometric measurements for adolescent women

The mean weight, height, and mid-upper arm circumference (MUAC) of females aged 15-19 according to the background characteristics in South Africa, 1998

Background characteristic	Weight (kg)			Height (m)			Mid-upper arm circumference (cm) MUAC		
	Mean	STD Error	Number	Mean	STD Error	Number	Mean	STD Error	Number
Age									
15	54.8	0.81	231	1.58	0.50	232	25.5	0.24	232
16	55.6	0.89	209	1.58	0.65	208	25.7	0.25	208
17	58.3	1.35	209	1.58	0.55	210	26.2	0.27	208
18	59.4	0.84	208	1.59	0.61	209	27.0	0.31	207
19	60.4	1.11	194	1.60	0.63	194	27.4	0.33	194
Residence									
Urban	58.4	0.65	592	1.60	0.32	592	26.5	0.2	588
Non-urban	56.6	0.68	459	1.57	0.42	461	26.1	0.18	461
Province									
Western Cape	60.6	1.91	86	1.58	0.93	86	27.2	0.64	84
Eastern Cape	58.3	0.73	155	1.57	0.51	158	26.8	0.22	158
Northern Cape	52.3	1.36	22	1.56	0.70	22	24.6	0.47	22
Free State	57.4	1.49	63	1.59	0.85	63	25.3	0.35	63
KwaZulu-Natal	59.0	1.46	208	1.57	0.65	207	26.6	0.33	207
North West	55.3	0.93	80	1.60	0.87	80	26.3	0.4	79
Gauteng	58.8	1.19	214	1.60	0.67	214	26.6	0.42	211
Mpumalanga	55.7	1.02	87	1.58	0.79	86	25.5	0.31	87
Northern	54.3	1	136	1.58	0.73	137	25.5	0.3	137
Education									
No education	*	*	14	*	*	15	*	*	15
Sub A - Std 3	55.4	1.93	44	1.56	1.38	43	25.8	0.62	43
Std 4 - Std 5	58.0	1.44	164	1.57	0.65	164	26.2	0.3	164
Std 6 - Std 9	58.0	0.55	723	1.59	0.30	725	26.4	0.17	723
Std 10	60.3	1.49	70	1.61	0.89	70	27.0	0.48	68
Higher	(57.3)	(2.37)	31	(1.60)	(1.40)	31	(26.0)	(0.57)	31
Population Group									
African	57.3	0.48	817	1.58	0.29	820	26.3	0.15	818
African urban	58.1	0.68	384	1.60	0.38	385	26.5	0.25	382
African non-urban	57.0	0.70	433	1.57	0.41	436	26.1	0.18	435
Coloured	57.3	1.62	96	1.57	0.65	96	26.4	0.53	95
White	62.0	1.82	97	1.65	0.76	97	27.1	0.51	97
Asian	(53.0)	(4.08)	41	(1.58)	(0.89)	39	(24.3)	(0.92)	39
Total	58.0	0.47	1,051	1.59	0.26	1,053	26.3	0.14	1,049

Note: STD Error = Standard deviation of the mean

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed

Body mass index (BMI) and prevalence of obesity

Tables 9.8 and 9.9 show the distribution of adolescent men and women by BMI according to background characteristics. BMI is a useful measure of nutritional status. It is calculated as the weight in kilograms divided by the square of the height in metres. From the tables it can be seen that the mean body mass index for women is higher than that for men (23.0 vs 21.0). The percentage of underweight males (28 percent) is markedly higher than that for women (12 percent). Conversely, more women than men are overweight. African non-urban men and Asian women are the least overweight groups. Nearly 50 percent of Asian females are underweight.

Waist and hip circumference and waist/hip ratio (WHR)

Tables 9.10 and 9.11 show the mean waist and hip circumferences and the waist/hip ratios for adolescent men and women, respectively. They also show the prevalence of men and women with a WHR equal to or greater than 1.0 for men and equal to or greater than 0.85 for women. In addition they also show the percentage of men and women whose waists measure 102 cm or more for men and 88 cm or more for women.

For both adolescent men and women the mean waist and hip circumference increase with age, and women have higher mean waist and hip circumferences compared to men (73.2 cm and 96.0 cm respectively vs 72.1 cm and 88.5 cm for men). The lowest levels for both measurements were recorded in the Free State for men and in the Northern Province for women. For men, the mean waist and hip circumferences tend to increase with education, while for women the highest waist and lowest hip measurements were recorded for women with the lowest education. Differences by population group are more pronounced among men than among women. White men tend to have the highest measures for both waist and hip circumferences, while among women the differences are less pronounced, although the small number of Asian women have the lowest measures and differ significantly from other women.

A waist circumference higher than the cut-off point is often associated with Type-two diabetes, other cardiovascular risks and shortness of breath. More women than men have waist circumferences higher than the cut-off point (8 percent vs less than 1 percent for men). In terms of the waist/hip ratio, again more women (12 percent) than men (3 percent) have measurements above the cut-off points. A higher proportion of men in the North West and women in the Western Cape have WHRs higher than the cut-off points. More non-urban African men and women have the highest proportion of being above the cut-off points.

Table 9.8 Body mass index (BMI) of adolescent men

Mean and standard error of the BMI (kg/m²) and the percentage of males aged 15-19 by body mass index categories according to background characteristics, South Africa 1998

Background characteristic	Body mass index		BMI categories				Number
	Mean BMI	STD Error	Under-weight <18.5	Normal weight 18.5 - 24.9	Over-weight 25 - 29.9	Obese 30+	
Age							
15	20.0	0.27	42.9	50.1	4.8	1.7	199
16	20.3	0.24	28.3	64.1	6.6	0.9	222
17	20.3	0.20	26.6	67.2	4.5	1.7	238
18	20.9	0.27	22.5	68.3	5.6	3.6	220
19	21.0	0.31	20.0	73.0	5.0	2.1	171
Residence							
Urban	21.0	0.18	23.7	65.6	7.5	3.0	571
Non-urban	20.0	0.15	33.4	63.1	2.7	0.8	481
Province							
Western Cape	21.2	0.35	14.8	72.7	7.5	5.0	108
Eastern Cape	21.0	0.20	24.8	64.7	9.7	0.7	134
Northern Cape	19.1	0.28	43.7	56.3	0	0	21
Free State	20.0	0.33	41.8	53.1	4.1	1.0	77
KwaZulu-Natal	20.4	0.36	30.9	58.8	6.9	3.4	175
North West	22.0	0.50	31.2	59.8	3.5	4.6	108
Gauteng	21.0	0.34	15.5	77.4	7.1	0.0	187
Mpumalanga	20.0	0.35	31.4	64.9	1.8	2.0	84
Northern	20.0	0.28	39.6	59.0	0.7	0.7	157
Education							
No education	*	*	*	*	*	*	13
Sub A - Std 3	19.4	0.33	44.9	48.2	5.2	1.7	82
Std 4 - Std 5	21.0	0.22	31.3	63.2	4.7	0.3	193
Std 6 - Std 9	20.4	0.15	27.1	65.9	5.0	2.0	669
Std 10	21.2	0.42	12.5	74.5	8.6	4.4	76
Higher	*	*	*	*	*	*	16
Population Group							
African	20.4	0.14	29.7	63.3	4.8	2.1	852
African urban	21.0	0.23	24.7	64.3	7.2	3.5	389
African non-urban	20.0	0.16	33.8	62.5	2.8	0.9	463
Coloured	21.0	0.27	21.0	70.7	6.9	1.3	102
White	21.4	0.53	14.7	73.4	9.2	2.8	73
Asian	*	*	*	*	*	*	*
Total	21.0	0.12	28.1	64.5	5.3	2.0	1,051

Note: STD Error = Standard deviation of the mean

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed

Table 9.9 Body mass index (BMI) of adolescent women

Mean and standard error of the BMI (kg/m²) and the percentage of females aged 15-19 by body mass index categories according to background characteristics, South Africa 1998

Background characteristic	Body mass index		BMI categories				Number
	Mean BMI	STD Error	Under-weight <18.5	Normal weight 18.5 - 24.9	Over-weight 25 - 29.9	Obese 30+	
Age							
15	22.1	0.29	16.8	65.6	14.5	2.7	231
16	22.1	0.29	14.8	65.6	17.0	2.6	208
17	23.6	0.34	13.3	63.0	15.9	6.9	209
18	23.8	0.32	5.2	66.0	21.4	7.2	207
19	23.7	0.41	8.0	61.5	19.9	10.6	194
Residence							
Urban	23.0	0.23	11.8	62.6	19.2	6.2	591
Non-urban	23.1	0.21	11.8	66.7	15.6	5.4	458
Province							
Western Cape	24.1	0.71	7.9	58.0	21.8	12.3	86
Eastern Cape	24.0	0.31	9.9	60.4	20.4	9.3	155
Northern Cape	21.3	0.41	22.7	62.2	12.9	2.1	22
Free State	23.0	0.52	11.3	64.7	19.0	5.1	63
KwaZulu-Natal	24.2	0.40	14.1	58.0	20.7	5.9	207
North West	22.0	0.32	17.8	65.5	13.1	3.6	80
Gauteng	23.0	0.42	6.2	67.8	22.3	3.7	214
Mpumalanga	23.0	0.38	12.4	69.6	12.6	4.7	86
Northern	22.0	0.39	16.2	73.7	6.0	4.1	136
Education							
No education	*	*	*	*	*	*	19
Sub A - Std 3	(23.0)	(0.64)	(9.5)	(71.6)	(11.7)	(7.2)	43
Std 4 - Std 5	24.1	0.35	10.4	65.6	17.4	4.9	163
Std 6 - Std 9	23.0	0.19	12.2	64.3	17.5	6.0	722
Std 10	23.2	0.61	13.2	53.4	26.0	7.4	70
Higher	(22.2)	(0.78)	(7.5)	(72.4)	(15.8)	(4.3)	31
Population Group							
African	23.2	0.16	10.4	65.7	17.8	5.7	817
African urban	23.1	0.25	9.0	65.1	20.0	5.7	384
African non-urban	23.2	0.22	11.6	66.3	15.8	5.7	433
Coloured	23.1	0.58	13.3	60.1	20.0	6.6	96
White	23.0	0.61	7.6	65.6	21.4	5.4	97
Asian	(20.0)	(1.24)	(47.7)	(44.1)	(0.0)	(8.2)	40
Total	23.0	0.16	11.8	64.4	17.6	5.9	1,050

Note: STD Error = Standard deviation of the mean

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 9.10 Waist and hip circumference of adolescent men

Mean and standard error of the waist (cm), hip circumference (cm) and the waist/hip ratios (WHR) for men aged 15-19; as well as the prevalence of men with WHR ≥ 1.0 and waist circumference ≥ 102 cm by background characteristics, South Africa 1998

Background characteristic	Waist circumference (cm)				Hip circumference (cm)			Waist hip ratio (WHR)			
	Mean	STD Error	Percentage with waist ≥ 102 cm	Number	Mean	STD Error	Number	Mean	STD Error	Percentage with WHR ≥ 1.0	Number
Age											
15	69.2	0.59	0.0	199	84.4	0.77	199	0.82	0.0	3.3	199
16	72.0	0.74	1.5	221	88.1	0.82	222	0.82	0.0	2.9	221
17	72.1	0.56	0.0	239	89.1	0.61	239	0.81	0.0	1.9	239
18	73.1	0.60	0.4	220	90.2	0.64	220	0.81	0.0	2.7	220
19	74.1	0.79	1.5	173	91.0	0.83	173	0.82	0.0	2.7	173
Residence											
Urban	72.4	0.47	0.8	573	90.2	0.52	573	0.80	0.0	1.9	573
Non-urban	72.0	0.40	0.5	480	87.0	0.41	481	0.83	0.0	3.5	480
Province											
Western Cape	73.0	1.22	0.0	110	90.0	1.64	110	0.81	0.0	2.5	110
Eastern Cape	73.0	0.48	0.0	134	90.0	0.54	134	0.81	0.0	3.1	134
Northern Cape	70.3	0.82	0.0	21	87.8	0.80	21	0.80	0.0	1.1	21
Free State	70.4	0.86	1.1	77	88.1	1.11	77	0.80	0.0	1.1	77
KwaZulu-Natal	72.0	0.74	0.6	176	88.3	0.73	176	0.82	0.0	2.3	176
North West	72.4	1.17	1.8	108	86.4	1.01	108	0.84	0.01	5.5	108
Gauteng	73.0	0.96	1.4	187	92.0	0.97	187	0.80	0.0	1.4	187
Mpumalanga	71.0	0.88	0.8	84	88.1	0.92	84	0.80	0.0	0.8	84
Northern	72.0	0.68	0.0	156	85.2	0.74	157	0.85	0.0	4.5	156
Education											
No education	*	*	*	13	*	*	13	*	*	*	13
Sub A - Std 3	70.2	1.0	0.0	82	85.3	0.84	82	0.83	0.01	3.1	82
Std 4 - Std 5	71.3	0.54	0.4	193	88.0	0.62	193	0.82	0.0	2.7	193
Std 6 - Std 9	72.2	0.40	0.4	668	89.0	0.44	669	0.82	0.0	2.7	668
Std 10	74.0	0.87	0.0	78	93.0	1.10	78	0.80	0.0	0.8	78
Higher	*	*	*	16	*	*	16	*	*	*	16
Population group											
African	71.4	0.31	0.4	851	87.4	0.35	852	0.82	0.0	2.8	851
Afr. urban	71.4	0.48	0.3	389	90.0	0.59	389	0.81	0.0	1.9	389
Afr. non-urban	72.0	0.40	0.5	462	86.3	0.39	463	0.83	0.0	3.6	462
Coloured	73.2	1.09	0.0	104	92.0	1.08	104	0.80	0.01	2.6	104
White	78.0	1.66	5.1	73	97.2	1.26	73	0.80	0.0	0.3	73
Asian	(71.3)	(2.17)	(0.0)	25	(90.0)	(2.58)	25	(0.8)	(0.01)	(2.8)	25
Total	72.1	0.31	0.7	1,053	88.5	0.35	1,054	0.82	0.0	2.7	1,053

Note: STD Error = standard deviation of the mean

Parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 9.11 Waist and hip circumference of adolescent women

Mean and standard error of the waist (cm), hip circumference (cm) and the waist/hip ratios (WHR) for men aged 15-19; as well as the prevalence of men with WHR ≥ 0.85 and waist circumference ≥ 88 cm by background characteristics, South Africa 1998

Background characteristic	Waist circumference (cm)				Hip circumference (cm)			Waist hip ratio (WHR)			
	Mean	STD Error	Percentage with waist ≥ 88 cm	Number	Mean	STD Error	Number	Mean	STD Error	Percentage with WHR ≥ 0.85	Number
Age											
15	71.1	0.93	3.4	231	94.0	0.81	232	0.80	0.0	9.9	231
16	72.1	0.72	4.7	208	94.4	0.76	208	0.80	0.0	9.8	208
17	72.1	0.76	7.4	207	96.0	0.87	208	0.80	0.0	11.3	207
18	75.4	0.76	11.9	209	98.1	0.83	208	0.80	0.0	13.6	208
19	76.0	0.98	13.3	192	99.0	1.04	191	0.80	0.0	13.1	191
Residence											
Urban	73.0	0.59	7.3	591	97.2	0.52	592	0.75	0.0	7.4	590
Non-urban	74.0	0.53	8.8	457	94.4	0.56	456	0.78	0.0	16.7	455
Province											
Western Cape	76.0	1.74	18.1	86	98.0	1.71	86	0.80	0.01	24.1	86
Eastern Cape	75.3	0.63	10.3	155	97.0	0.70	156	0.80	0.0	12.6	155
Northern Cape	70.6	1.15	5.4	22	92.6	0.85	22	0.76	0.0	9.7	22
Free State	72.0	1.45	12.6	63	94.1	0.85	63	0.80	0.02	12.5	63
KwaZulu-Natal	73.0	0.82	8.4	207	97.0	1.59	207	0.80	0.0	11.9	206
North West	75.2	1.83	11.7	80	95.0	0.84	80	0.80	0.01	23.5	80
Gauteng	73.0	0.93	2.5	214	99.0	1.70	214	0.74	0.0	0	214
Mpumalanga	72.2	2.06	3.3	85	95.0	0.91	85	0.80	0.02	8.3	85
Northern	71.4	1.00	5.9	136	91.2	1.05	135	0.80	0.0	14.6	135
Education											
No education	*	*	*	19	*	*	19	*	*	*	19
Sub A - Std 3	(78.0)	(4.1)	(10.5)	43	(94.0)	(1.74)	43	(0.83)	(0.03)	(15.6)	43
Std 4 - Std 5	73.0	0.76	7.0	163	95.0	0.96	163	0.80	0.0	14.1	163
Std 6 - Std 9	73.0	0.45	7.5	720	96.4	0.46	723	0.80	0.0	10.3	720
Std 10	75.0	1.25	12.2	70	99.0	1.27	70	0.80	0.0	12.1	70
Higher	(69.0)	(1.97)	(4.3)	31	(94.4)	(2.57)	30	(0.73)	(0.01)	(4.4)	30
Population group											
African	73.2	0.45	7.9	814	96.0	0.42	814	0.80	0.0	13.1	811
Afr. urban	73.0	0.73	2.6	383	97.1	0.63	384	0.80	0.0	9.1	382
Afr. non-urban	74.0	0.55	3.5	431	94.2	0.58	430	0.80	0.0	16.7	430
Coloured	75.0	1.32	10.2	96	98.0	1.24	96	0.80	0.0	11.4	96
White	74.4	1.36	7.8	97	99.1	1.26	97	0.80	0.0	1.6	97
Asian	(67.0)	(2.86)	(5.4)	41	(93.0)	(2.50)	41	0.80	(0.01)	(2.6)	41
Total	73.2	0.41	8.0	1,048	96.0	0.39	1,048	0.80	0.0	11.5	1,045

Note: STD Error = standard deviation of the mean

Parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed

9.8 Abnormalities in Blood Pressure

Tables 9.12 and 9.13 describe the mean systolic and diastolic blood pressure of men and women aged 15-19 years who participated in the Demographic and Health survey.

For men there is a tendency for the blood pressure to increase between the ages of 15 and 19 years, while for women no such tendency was observed. Of interest is the finding that the young men's systolic BP was consistently higher than that of the women while this was not the case for the diastolic BP. There were no differences between the BPs recorded in the urban and non-urban areas while the highest BPs were recorded in the Free State for both the young men and women, while the lowest rates were recorded in Mpumalanga for both groups. There were no trends in BP across the different levels of education, neither for the young women across the different population groups, however for the young men the BP of the white group was markedly higher than that of the black young men.

The overall prevalence of being hypertensive in the young men was 8 percent while it was lower for the young women at 5 percent. For the young women the rates were higher in the rural areas compared to the urban areas, while for the young men there was a tendency in the opposite direction. Mpumalanga had the lowest rates of hypertension for both men and women while the North West had the highest rates. For the men, the white group had the highest rates of hypertension and the non-urban group the lowest rates, while for women the opposite was found. The mean pulse rate of the women was 79 beats per minute and that of the young men lower at 72 beats per minute. This could suggest that the young men are more physically fit than the young women. No other specific trends were observed across the descriptive variables.

Table 9.12 Blood pressure and pulse rate in adolescent men

Mean and standard error of diastolic and systolic blood pressure (mmHg) and pulse rate (beats per minute) and the percentage of males aged 15-19 with BP \geq 140/90 or taking appropriate drugs for hypertension by background characteristics, South Africa 1998

Background characteristic	Systolic blood pressure (mmHg)		Diastolic blood pressure (mmHg)		Pulse rate (beats per min)		Hypertension	
	Mean	STD Error	Mean	STD Error	Mean	STD Error	Percentage BP \geq 140/90 and taking drugs	Number
Age								
15	109	0.97	66	0.84	72	0.81	2.4	199
16	113	1.31	67	0.92	72	1.03	7.0	223
17	114	1.08	66	0.76	71	0.83	10.8	244
18	115	1.01	68	0.70	71	0.89	7.8	220
19	117	1.24	70	0.98	72	1.08	10.0	173
Residence								
Urban	114	0.73	68	0.53	72	0.64	8.3	575
Non-urban	113	0.76	67	0.59	71	0.54	7.1	485
Province								
Western Cape	115	1.43	69	0.94	71	1.23	8.4	111
Eastern Cape	114	1.07	67	0.76	71	0.81	9.2	134
Northern Cape	116	1.73	67	1.14	74	1.33	7.9	21
Free State	116	1.22	69	1.14	69	1.41	5.2	77
KwaZulu-Natal	112	1.53	67	1.27	73	1.12	7.1	178
North West	112	2.12	69	1.41	72	1.05	14.2	108
Gauteng	114	1.62	67	1.21	72	1.51	7.1	187
Mpumalanga	112	1.23	66	0.80	71	1.07	4.0	86
Northern	114	1.05	66	0.85	71	0.92	5.1	158
Education								
No education	*	*	*	*	*	*	*	13
Sub A - Std 3	114	1.67	68	1.28	73	1.50	8.1	82
Std 4 - Std 5	113	1.18	67	0.88	71	0.90	6.9	194
Std 6 - Std 9	113	0.70	67	0.51	71	0.51	7.3	674
Std 10	116	1.46	72	1.37	74	1.79	7.0	78
Higher	*	*	*	*	*	*	*	16
Population Group								
African	113	0.57	67	0.44	71	0.43	7.7	856
Afr. urban	113	0.99	67	0.64	71	0.68	8.6	389
Afr. non-urban	112	0.76	66	0.60	71	0.55	6.9	467
Coloured	117	1.21	69	0.96	71	1.52	7.8	104
White	121	2.64	72	1.82	75	2.31	14.0	73
Asian	*	*	*	*	*	*	*	25
Total	114	0.53	67	0.40	71	0.43	7.7	1,060

Note: STD Error = standard deviation of the mean

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 9.13 Blood pressure and pulse rate in adolescent women

Mean and standard error of diastolic and systolic blood pressure and pulse rate and the percentage of females aged 15-19 with BP BP \geq 140/90 or taking appropriate drugs for hypertension by background characteristics, South Africa 1998

Background characteristic	Systolic blood pressure (mmHg)		Diastolic blood pressure (mmHg)		Pulse rate (beats per min)		Hypertension	
	Mean	STD Error	Mean	STD Error	Mean	STD Error	Percentage BP \geq 140/90 and taking drugs	Number
Age								
15	105	0.97	65	0.71	78	0.85	3.9	233
16	106	1.31	66	0.95	79	1.12	4.3	211
17	106	0.81	67	0.89	77	0.89	4.1	212
18	108	1.06	68	0.93	80	0.86	7.1	213
19	106	1.00	68	0.77	78	0.99	4.0	198
Residence								
Urban	106	0.66	66	0.56	78	0.61	3.8	470
Non-urban	107	0.63	67	0.55	78	0.57	5.6	597
Province								
Western Cape	107	2.07	69	1.47	77	1.49	4.5	87
Eastern Cape	108	0.83	68	0.66	78	0.73	5.2	159
Northern Cape	106	1.21	66	0.87	79	1.54	2.1	23
Free State	112	1.52	70	1.13	77	1.55	8.7	64
KwaZulu-Natal	103	1.06	66	0.78	77	0.89	2.5	209
North West	107	1.38	69	1.57	77	1.86	13.1	80
Gauteng	107	1.41	66	1.25	78	1.28	2.5	214
Mpumalanga	101	1.98	64	0.93	80	1.11	1.6	87
Northern	107	0.95	65	1.03	80	1.03	4.8	144
Education								
No education	*	*	*	*	*	*	*	20
Sub A - Std 3	107	1.36	67	1.74	82	1.47	1.6	45
Std 4 - Std 5	108	1.07	67	0.87	77	1.00	4.5	167
Std 6 - Std 9	106	0.57	67	0.49	78	0.53	5.0	733
Std 10	106	2.03	65	1.43	77	1.33	4.6	70
Higher	(103)	(2.40)	(66)	(2.15)	(77)	(1.88)	*	33
Population Group								
African	106	0.47	66	0.43	78	0.46	4.1	833
Afr. urban	106	0.73	66	0.67	78	0.73	4.7	388
Afr. non-urban	106	0.63	67	0.56	78	0.59	5.6	445
Coloured	109	2.02	70	1.54	79	1.24	3.9	96
White	106	1.97	68	1.53	76	1.93	1.5	97
Asian	(99)	(1.60)	(64)	(1.23)	(79)	(2.06)	(0.0)	42
Total	106	0.45	67	0.39	78	0.42	4.7	1,067

Note: STD Error = standard deviation of the mean

Parenthesis indicate that a figure is based on 25-49 respondents.

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

9.9 Chronic Obstructive Pulmonary Disease and Asthma in Adolescents

Table 9.14 provides data on the symptoms and signs of chronic lung diseases suffered by young men and women aged 15 to 19 years. The determination of the conditions of chronic bronchitis and airflow limitation (popularly referred to as 'asthma') is based on participants reporting typical symptoms of these conditions. Chronic bronchitis was measured from respondents who reported a productive cough for at least three months a year during the two years prior to the survey. Airflow limitation refers to respondents who reported wheezing and shortness of breath in the year prior to the survey and who also had their sleep interrupted by coughing, wheezing or tight chest. Further details can be found in the introduction in Chapter 13 and Appendix D.

Overall, the adolescent women reported symptoms of airflow limitation and chronic bronchitis more frequently than the males, however an abnormal peak expiratory flow rate (PEFR) was found almost equally often in men and women. Of the young men 3 percent and of the young women 5 percent reported symptoms of airflow limitation. No specific trend with age was observed, but urban youth reported these symptoms more frequently than non-urban youth. The youth of KwaZulu-Natal province reported this symptom complex far more frequently than those in any other province. Level of education was not related to the rate of airflow limitation but the white youth reported these symptoms more frequently than any other group. Chronic bronchitis was reported by 0.7 percent and 2 percent of young men and women respectively. No particular trends in relation to the descriptive variables emerged from the data.

The peak expiratory flow rate is defined as abnormal according to the method set out in Appendix D. An abnormal peak flow measurement was recorded in 2 percent of young men and 3 percent of young women. For both men and women abnormal rates were found more frequently in the urban youth than in the rural youth. The province of Gauteng, the most urbanised province had about double the rate of abnormal findings compared to the national rate with 4 percent of adolescent men and women having abnormal rates.

Table 9.14 Lung disease in adolescents

Percentage of males and females aged 15-19 who reported symptoms of airflow limitation or chronic bronchitis or who have abnormal peak flow rates, according to background characteristics, South Africa 1998

Background characteristic	Adolescent males 15-19				Adolescent females 15-19			
	Percentage with airflow limitations	Percentage with chronic bronchitis	Percentage with abnormal peak flow rates	Number	Percentage with airflow limitations	Percentage with chronic bronchitis	Percentage with abnormal peak flow rates	Number
Age								
15	2.5	0.8	1.4	199	4.9	3.0	1.8	233
16	2.8	0.8	1.5	223	6.5	0.9	2.6	211
17	2.6	1.7	4.2	244	7.3	1.9	3.4	212
18	2.8	0.0	1.1	220	4.8	3.1	1.7	213
19	3.1	0.2	1.8	173	1.9	2.2	4.9	198
Residence								
Urban	3.2	1.1	2.3	575	5.2	1.9	3.4	598
Non-urban	2.2	3.0	1.8	485	5.0	2.6	2.1	471
Province								
Western Cape	1.2	0.0	1.2	111	3.1	1.3	5.7	87
Eastern Cape	3.4	1.3	1.6	134	3.5	3.5	2.4	160
Northern Cape	5.8	1.2	5.6	21	5.4	1.1	4.2	23
Free State	0.0	0.0	2.1	77	1.3	0.0	0.0	64
KwaZulu-Natal	6.3	1.7	1.7	178	8.3	2.0	4.8	209
North West	1.8	0.0	0.0	108	2.3	0.0	1.3	80
Gauteng	2.8	1.4	4.2	187	7.4	5.0	3.7	214
Mpumalanga	2.5	0.0	2.3	86	3.9	2.2	0.0	87
Northern	0.7	0.0	1.5	158	3.9	0.0	0.8	144
Education								
No education	*	*	*	13	*	*	*	20
Sub A - Std 3	6.5	2.4	0.8	83	(2.2)	(1.1)	(9.2)	45
Std 4 - Std 5	2.7	0.5	2.2	194	2.9	3.7	3.9	167
Std 6 - Std 9	1.9	0.7	2.3	674	5.1	2.2	2.1	733
Std 10	3.4	*	0.3	78	9.7	0.7	5.2	70
Higher	*	*	*	16	7.2	0.0	0.0	33
Population group								
African	2.7	0.9	1.9	856	4.4	2.4	2.9	833
Afr. urban	3.2	1.6	1.9	389	3.8	2.2	4.2	388
Afr. non-urban	2.3	0.2	1.9	467	4.8	2.5	1.8	445
Coloured	1.2	0.2	1.3	104	4.2	1.2	4.0	96
White	4.0	0.0	5.5	73	8.3	2.7	0.0	97
Asian	(6.6)	(0.0)	(0.0)	25	(14.6)	(0.0)	(4.8)	42
Total	2.7	0.7	2.0	1,060	5.1	2.2	2.8	1,068

Note: Parenthesis indicate that a figure is based on 25-49 respondents.

Parenthesis indicate that a figure is based on 25-49 respondents.

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CHAPTER 10

MORTALITY AND MORBIDITY IN ADULTS

10.1 Introduction

The paucity of information on the health of adults, particularly chronic diseases, was recognised in the planning of the SADHS and a module was developed to fill this gap. While it was not possible to do a clinical examination of the respondents, hypertension and lung disease were identified as sentinel conditions which could be measured by lay interviewers. The adult health module was designed to obtain information related to these conditions including risk behaviours, self-reported history of the conditions, utilisation of services and long-term medication use. In addition, the module included information regarding occupational illness and injuries and a section on oral health. The extent of adult mortality and self-reported morbidity are presented in this chapter, combining information obtained from the Household, Women's and Adult Health questionnaires.

10.2 Adult Mortality

Direct estimates of adult mortality have been obtained from the sibling history information. This approach uses the reported ages at death and dates of birth of respondents' brothers and sisters. Age-specific death rates were computed by dividing the number of deaths in each age group by the total person-months of exposure for the same reference period. They are presented for men and women in Table 10.1 for the periods 0-2 years, 3-6 years and 7-9 years prior to the survey. The age-specific death rates are also shown for men in Figure 10.1 and for women in Figure 10.2. The death rates for men are considerably higher than those for women. Each series of rates is a little erratic, which is probably due to misreporting of ages or dates by some respondents and to random fluctuations in the sample. The rates clearly indicate, however, that young adult mortality was fairly constant during 3-9 years before the survey (1989-1995) but substantially higher in the three years before the survey. This rise in the mortality of young adults is consistent with the growing HIV epidemic in South Africa that has been documented by the antenatal surveillance (Department of Health, 1998).

Figure 10.1 and 10.2 also show a West model life-table selected to match the level of child mortality observed in the SADHS (West level 20). The death rates for women are more or less consistent with the model rates except in the last 3 years when observed mortality rose substantially. In the case of adult men, however, the observed death rates are consistently higher than the model rates, even for the period before the HIV/AIDS epidemic began to have an impact on adult mortality. In addition, the death rates for the earlier periods exhibit a rather more marked "accident/violence" hump among men in their twenties than those in the model.

The probability of a 15-year old person dying before the age of 60, $45q_{15}$, is a summary measure of premature adult mortality that is often used as an adult health status indicator. Sibling history data collected from women aged 15-49 are not suited to estimation of the mortality of individuals aged 50-59 years. However, the probability of a 15 year old person dying before the age of 50, $35q_{15}$, can be calculated directly from the data and is included in Table 10.1. This shows that the probability of dying in this age range rose in just three years by at least half from about 8 percent to 13 percent for women and from somewhere in the range of 15-18 percent to nearly 25 percent for men.

Although sibling history data display good internal consistency, it will be useful to establish the reliability of the estimates of adult mortality based on them by comparing them with other sources of data. In addition, it will be useful to model the data to derive estimates of adult mortality, $45q_{15}$, that incorporate the extent of premature mortality between ages 50 and 60.

Table 10.1 Adult mortality rates by age

Age-specific death rates and probabilities of dying between age 15 and 60 per 1000 adults, by sex for 0-2, 3-4 and 7-9 years prior to survey, SADHS 1998

Age	Years before survey									
	0-2 years			3-6 years			7-9 years			
	Deaths	Exposure (years)	Death rates	Deaths	Exposure (years)	Death rates	Deaths	Exposure (years)	Death rates	
MEN										
15-19	16	6,900	2.32	25	11,136	2.27	16	9,430	1.73	
20-24	50	8,734	5.74	46	12,848	3.58	23	9,660	2.40	
25-29	56	9,586	5.88	57	12,390	4.64	41	9,117	4.53	
30-34	86	8,955	9.63	46	11,534	3.99	35	7,377	4.81	
35-39	58	8,074	7.21	41	8,489	4.89	19	4,636	4.07	
40-44	57	5,293	10.70	49	5,505	8.82	15	3,307	4.55	
45-49	56	3,649	15.25	42	3,497	11.9	13	1,424	8.84	
$35q_{15}$			247			182				150
WOMEN										
15-19	10	6,789	1.43	10	11,380	0.90	14	9,743	1.48	
20-24	30	9,104	3.29	24	13,337	1.83	3	10,037	0.30	
25-29	39	10,087	3.91	25	13,027	1.93	14	9,589	1.41	
30-34	39	9,558	4.12	19	12,292	1.56	15	7,829	1.89	
35-39	39	8,668	4.45	27	9,127	2.96	14	5,056	2.75	
40-44	24	5,863	4.10	21	5,983	3.45	4	3,324	1.30	
45-49	26	3,945	6.50	14	3,589	3.89	6	1,483	3.77	
$35q_{15}$			130			79				78

Note: Data are based on reports of the survivorship of siblings of survey respondents

Figure 10.1 Age specific death rates for men for the periods 0-2 years, 3-6 years and 7-9 years preceding the survey, South Africa 1998

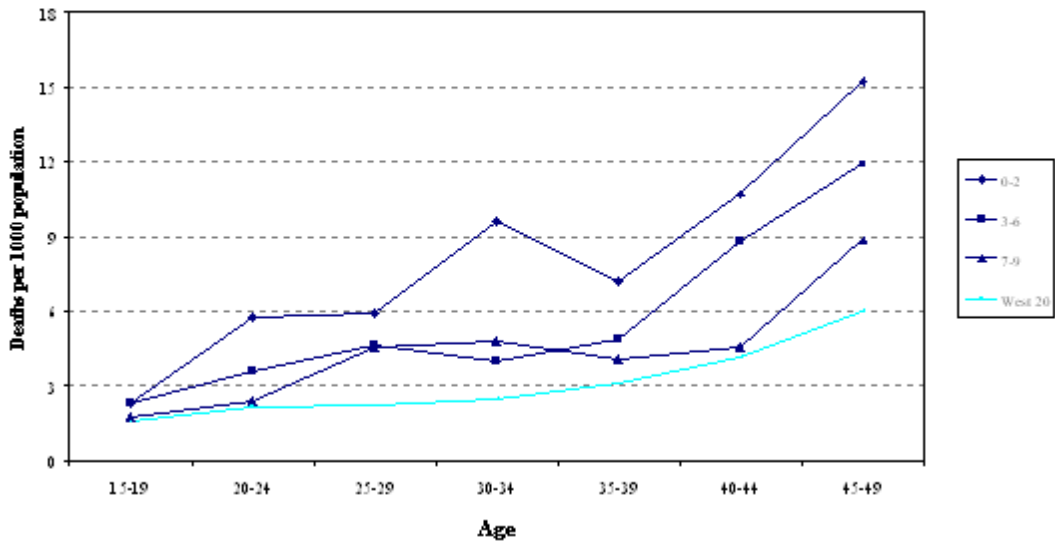
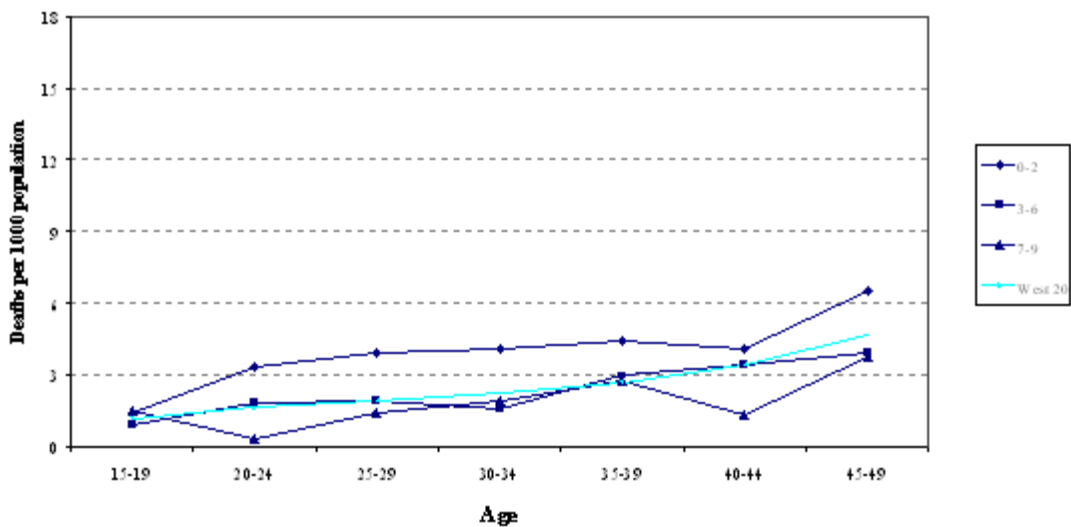


Figure 10.2 Age specific death rates for women for the periods 0-2 years, 3-6 years and 7-9 years preceding the survey, South Africa 1998



10.3 Chronic Diseases

The participants were asked if a doctor or a member of the health profession had informed them that they suffered from common chronic conditions, and if so whether any episodes of illness had occurred during the last year. From these data it is possible to calculate self-reported prevalence and incidence rates. However, chronic conditions are frequently under-reported or incorrectly reported by patients, therefore self-reported prevalence and incidence rate should be interpreted with caution. Many of the chronic diseases tend to have a familial pattern. A positive family history for specific chronic diseases can potentially be put to good use in cost-effectively identifying persons with a higher risk than the general population.

Family history of chronic diseases

The data in Table 10.2 show the reported prevalence of family history of a number of common chronic diseases that have been shown to have a familial pattern, by background characteristics. A family history for hypertension of 27 percent for men and 32 percent for women was reported. This was reported more frequently in the urban than non-urban areas and at a very low rate in the Northern Province. The finding that the more educated participants reported such a family history more frequently might suggest a lack of knowledge of hypertension and its occurrence in the families of the less educated. Family history of hypertension was recorded most frequently by Asians and whites and least frequently by non-urban Africans.

For ischaemic heart disease (IHD), commonly known as a heart attack or having angina, a family history was reported by 13 percent of men and 16 percent of women, and far more frequently in the urban than non-urban areas. This was reported most frequently in Gauteng, and the Northern and Western Cape provinces and least in the Northern Province. Another feature is that the more educated participants reported such a family history most frequently as did the white and Asian participants. Participants who reported a family history of stroke were about half of those who reported having IHD, and mostly from an urban setting and in the Western Cape. Only 4 percent of respondents reported a family history of hyperlipidaemia, which occurred most frequently in the white community and the highly educated groups.

Family history of diabetes was reported in 12 percent of men and 13 percent of women. The rates were much higher in the urban than the non-urban areas and the highest in the Western Cape and KwaZulu-Natal. There was a strong association between level of education and such history of diabetes, and as expected, Asian participants reported the highest rates.

Only 5 percent of men and 6 percent of women reported a family history of cancer, again markedly more frequently by urban participants than by non-urban ones. The highest rates were reported in the Western Cape, the highest educated group and white participants.

Table 10.2 Family history of chronic diseases

Percentage of adult men and women who reported a family history of hypertension, ischaemic heart disease (IHD), stroke, hyperlipidaemia, diabetes and cancer, according to background characteristics, South Africa 1998

Background characteristic	Hypertension	IHD	IHD*		Hyperlipidaemia	Diabetes	Cancer	Number
			Before 50 yrs	Stroke				
Age of respondent								
15-24	24.9	9.0	59.6	3.0	3.7	8.9	1.8	3,892
25-34	35.0	15.3	49.1	7.3	3.4	13.3	4.0	2,836
35-44	33.7	17.0	43.5	9.6	5.0	15.6	6.7	2,457
45-54	32.4	20.1	42.3	12.1	6.3	16.7	7.7	1,813
55-64	27.9	17.3	34.8	10.4	3.8	12.4	9.2	1,428
65+	23.8	15.4	38.4	8.1	3.3	11.5	8.1	1,364
Sex								
Men	26.6	12.9	39.5	6.9	3.7	11.5	4.6	5,671
Women	31.8	15.8	49.2	8.0	4.5	13.4	5.8	8,156
Residence								
Urban	34.8	17.4	44.5	9.3	5.6	16.3	7.3	8,569
Non-urban	21.5	10.2	49.0	4.6	1.8	6.6	2.0	5,258
Province								
Western Cape	36.9	17.8	33.9	13.3	8.0	20.5	10.6	1,519
Eastern Cape	28.8	12.9	46.2	6.1	2.1	12.1	4.2	1,920
Northern Cape	39.4	18.1	42.5	9.4	4.3	8.8	7.8	303
Free State	32.3	14.6	40.9	6.0	2.8	8.1	3.6	963
KwaZulu-Natal	32.7	14.4	47.0	8.6	3.4	17.5	5.1	2,672
North West	24.2	10.9	42.3	3.1	1.8	3.8	2.0	1,199
Gauteng	32.4	19.3	50.5	9.4	7.1	14.4	7.5	2,986
Mpumalanga	29.1	16.0	51.2	6.1	3.1	10.1	4.9	885
Northern	12.8	5.7	49.4	2.7	1.5	4.4	0.6	1,381
Education								
No education	18.5	9.8	39.4	4.4	1.0	6.4	2.5	1,748
Sub A - Std 3	25.2	13.5	44.7	7.4	1.5	9.1	2.5	1,864
Std 4 - Std 5	28.2	13.3	45.3	8.3	2.5	13.0	4.3	1,890
Std 6 - Std 9	30.5	14.3	49.6	7.2	3.8	13.1	4.9	5,390
Std 10	36.7	18.3	43.7	7.7	7.2	16.6	8.7	1,922
Higher	43.5	23.1	44.5	13.0	14.8	19.8	12.5	935
Population group								
African	26.1	10.4	49.3	5.2	1.3	10.0	1.9	10,526
Afr. urban	31.1	11.7	50.4	6.4	1.5	13.3	2.5	5,723
Afr. non-urban	20.2	8.9	47.7	3.8	1.1	6.1	1.1	4,803
Coloured	39.8	16.9	33.4	12.3	6.4	18.2	8.7	1,444
White	40.1	37.8	41.4	17.6	20.6	16.6	26.5	1,331
Asian	46.9	36.2	53.7	15.4	13.6	41.3	11.3	495
Total	29.7	14.6	45.7	7.5	4.1	12.6	5.3	13,827

Note: Family history refers to a close blood relative (father, mother, brother, sister or child) who ever had the condition.

*Expressed as percentage of those who reported family history of IHD

Self-reported prevalence of chronic conditions

Tables 10.3 and 10.4 show the self-reported prevalence of some commonly occurring chronic conditions, according to the background characteristics. More than twice as many women than men reported suffering from hypertension. This finding clearly illustrates the inaccuracy of self-reported prevalence when compared with the actual hypertension rates of men and women.

The self-reported rates for hypertension were higher in urban than non-urban areas. For both men and women these rates were reported more often in the Northern Cape and least in the Northern Province. Interestingly, for women the lower the education level, the higher the reported hypertension rate is, while this is not the case for men. The highest hypertension rates were reported by white male participants and the lowest in non-urban Africans, while white and coloured women reported the highest rates. The lowest hypertension rates were reported by non-urban African females.

IHD was reported by 3 percent of men and 6 percent of women, giving another example of the inaccuracy of self-reported conditions, since it is well known that more men than women suffer from IHD. The reported rate increases with age, and women with the lowest education level reported the highest IHD rates, with little difference among participants in the various population groups. In the case of men, whites and Asians reported the highest rates.

Very low rates of stroke and hyperlipidaemia were reported. As expected, for hyperlipidaemia the highest rates for both men and women were reported by whites, followed by the Asian participants. The reported diabetes rate was 2 percent for men and 4 percent for women. These rates increased with age and were higher in urban than non-urban settings for both genders. As expected, diabetes was most frequently reported in the Asian participants, especially among the Asian women.

About 4 percent of men and women reported emphysema or chronic bronchitis and asthma. These conditions were reported more frequently in the urban than non-urban areas. In the Free State and Northern provinces the lowest rates were reported for both genders. These conditions, particularly chronic bronchitis and emphysema, were reported most often by white participants followed by coloureds and Asians. Less than one percent of respondents reported that they had been told they had cancer.

Self-reported incidence of chronic conditions

The incidence of a condition refers to the number of people newly diagnosed with that condition during the previous year. Self-reported incidence of chronic conditions, like self-reported prevalence, is likely to be inaccurate, and therefore should be interpreted with caution. Nonetheless, these data are the only incidence data available in South Africa. Tables 10.5 and 10.6 show the self-reported incidence rates of a number of common chronic conditions.

The self-reported incidence rate for hypertension is more than double in women than in men. Again, the pattern of incidence rates corresponds to that of the prevalence of hypertension. The highest incidence rate was recorded in the Northern Cape for men and in Gauteng for women. It is highest among urban African women, three times higher than for urban African men. The lowest rate was recorded for non-urban African men.

For IHD and stroke the reported rates were again higher in women than in men and reflect how inaccurate self-reported disease rates are, as it is known that more men than women die of heart attacks in South Africa. More men reported suffering from hyperlipidaemia, asthma and cancer than women. The highest reported rates for hyperlipidaemia were in those participants with the highest education level and in the white and Asian communities.

Table 10.3 Chronic disease prevalence among men

Percentage of men aged 15 and over who reported that they had ever been told by a doctor or nurse or staff member at a hospital or clinic that they had various chronic health conditions, according to background characteristics, South Africa 1998

Background characteristic	Hypertension	Ischaemic heart disease	Stroke	Hyperlipidaemia	Diabetes	Emphysema/ Chronic bronchitis	Asthma	Cancer	Number
Age									
15-24	0.2	0.3	0	0.2	0.1	2.3	2.9	0.0	1,812
25-34	2.7	1.9	0.7	1.2	0.8	2.8	1.9	0.2	1,120
35-44	7.5	2.9	0.5	1.8	2.5	3.0	4.0	0.0	1,003
45-54	18.0	4.6	2.0	4.3	5.4	8.7	4.7	0.6	700
55-64	16.9	6.6	2.0	3.8	7.9	6.7	5.4	0.1	514
65+	25.0	7.8	2.3	3.7	4.8	8.6	7.3	1.6	502
Residence									
Urban	9.4	3.1	0.7	2.2	2.9	4.9	4.1	0.3	3,569
Non-urban	5.5	2.4	1.2	1.2	1.7	3.2	3.2	0.2	2,102
Province									
Western Cape	9.2	2.8	0.9	1.7	3.2	9.4	4.6	0.4	721
Eastern Cape	9.0	3.5	0.9	1.3	2.7	5.2	4.7	0.3	758
Northern Cape	13.2	4.1	1.3	1.8	2.1	5.6	3.2	0.2	135
Free State	7.2	2.6	0.4	1.4	1.3	0.7	1.3	0.4	444
KwaZulu-Natal	7.5	3.2	1.6	1.7	3.1	3.4	4.9	0.2	1,064
North West	4.8	2.4	0.3	1.1	0.9	1.4	2.4	0.0	551
Gauteng	10.7	3.1	0.7	4.0	3.3	5.7	4.5	0.5	1,099
Mpumalanga	4.9	1.8	1.1	0.9	2.0	2.9	2.9	0.2	378
Northern	4.4	2.0	0.5	0.2	0.9	1.1	1.3	0.2	521
Education									
No education	11.6	4.8	2.8	0.3	2.9	4.3	5.4	0.2	562
Sub A - Std 3	7.2	2.6	0.9	0.4	2.8	4.5	5.7	0.0	777
Std 4 - Std 5	7.0	2.7	0.4	0.9	1.3	3.2	3.7	0.2	755
Std 6 - Std 9	6.4	2.1	0.6	1.0	2.3	3.9	2.6	0.2	2,297
Std 10	8.7	3.0	1.1	3.7	2.7	5.0	4.0	0.2	801
Higher	10.9	3.5	0.5	8.3	4.0	6.5	3.6	1.4	440
Population group									
African	5.8	1.9	0.8	0.2	1.6	1.8	3.0	0.1	4,257
Afr. urban	6.9	1.7	0.5	0.2	1.6	1.5	3.0	0.2	2,375
Afr. non-urban	4.3	2.0	1.0	0.2	1.5	2.2	3.1	0.1	1,882
Coloured	9.0	2.9	0.9	1.3	3.1	8.6	4.5	0.3	637
White	21.1	8.6	1.6	12.4	6.0	16.5	7.7	1.4	564
Asian	11.9	8.0	1.5	8.5	8.5	6.4	5.5	0.0	195
Total	7.9	2.9	0.9	1.8	2.4	4.2	3.7	0.3	5,671

Table 10.4 Chronic disease prevalence among women

Percentage of women aged 15 and over who reported that they had ever been told by a doctor or nurse or staff member at a hospital or clinic that they had various chronic health conditions, according to background characteristics, South Africa 1998

Background characteristic	Hypertension	Ischaemic heart disease	Stroke	Hyperlipidaemia	Diabetes	Emphysema/Chronic bronchitis	Asthma	Cancer	Number
Age									
15-24	3.8	1.7	0.2	0.5	0.5	3.4	2.6	0.0	2,080
25-34	8.0	4.2	0.6	0.8	1.6	3.7	3.2	0.4	1,716
35-44	15.1	4.3	1.0	0.3	2.7	4.4	3.4	0.7	1,454
45-54	30.5	7.2	1.0	3.0	7.2	6.4	5.6	0.9	1,113
55-64	40.9	11.7	1.9	2.5	7.6	6.0	5.2	1.3	914
65+	42.2	14.7	2.6	2.8	8.9	7.6	5.1	1.7	862
Residence									
Urban	20.6	5.3	1.1	1.6	4.4	5.8	4.3	1.0	4,999
Non-urban	15.4	6.9	0.7	0.8	2.7	3.3	3.1	0.1	3,157
Province									
Western Cape	19.3	5.2	2.4	3.0	4.9	11.4	6.2	2.0	799
Eastern Cape	18.9	6.5	1.2	1.1	3.5	4.9	4.9	0.6	1,161
Northern Cape	22.8	5.2	0.9	1.2	2.9	5.5	3.3	0.4	168
Free State	20.4	7.7	0.8	0.0	2.3	0.3	2.7	0.3	519
KwaZulu-Natal	20.7	7.0	1.1	1.0	5.9	3.1	4.5	0.4	1,608
North West	14.9	5.4	0.9	0.5	1.1	2.0	3.2	0.0	647
Gauteng	21.7	5.0	0.4	2.2	4.3	7.9	3.5	0.8	1,887
Mpumalanga	16.7	8.2	1.2	1.1	2.8	3.9	4.0	1.1	507
Northern	8.7	4.0	0.5	0.4	1.2	0.7	0.8	0.0	859
Education									
No education	27.0	11.1	1.6	0.7	6.8	3.1	4.1	0.3	1,186
Sub A - Std 3	25.6	9.1	1.5	0.5	3.5	4.0	4.9	0.4	1,088
Std 4 - Std 5	22.5	5.5	0.8	0.7	4.0	2.8	3.9	0.5	1,136
Std 6 - Std 9	15.6	4.8	0.6	1.6	3.2	4.4	3.3	0.6	3,094
Std 10	10.1	2.8	0.7	1.9	2.1	8.1	2.8	1.1	1,120
Higher	11.7	2.2	1.4	3.1	2.5	10.6	6.6	1.7	495
Population group									
African	17.4	6.1	0.9	0.4	3.0	2.3	2.9	0.2	6,269
Afr. urban	19.9	5.4	0.9	0.3	3.7	2.6	3.1	0.3	3,349
Afr. non-urban	14.6	6.9	0.8	0.4	2.2	1.9	2.7	0.1	2,921
Coloured	22.3	5.5	1.5	1.9	5.8	7.3	5.0	0.7	806
White	21.4	5.1	1.4	7.6	4.8	23.5	9.2	4.0	767
Asian	23.8	5.4	1.0	3.9	11.5	3.8	6.2	0.7	300
Total	18.6	5.9	1.0	1.3	3.7	4.8	3.8	0.6	8,156

Table 10.5 Chronic disease incidence among men

Self-reported annual incidence rate (per 100,000) of hypertension, ischaemic heart disease, stroke, hyperlipidaemia, diabetes, bronchitis, asthma and cancer in men, according to background characteristics, South Africa 1998

Background characteristic	Hypertension	Ischaemic heart disease	Stroke	Hyperlipidaemia	Diabetes	Emphysema/ Chronic bronchitis	Asthma	Cancer
Age								
15-24	76	250	0	112	13	493	371	43
25-34	1,080	699	253	556	65	1,057	421	120
35-44	2,607	1,492	84	275	1,001	353	351	0
45-54	4,418	743	0	1,139	2,020	2,399	1,349	377
55-64	4,520	1,646	193	1,441	1,896	1,622	918	0
65+	5,055	785	587	46	376	2,201	1,371	949
Residence								
Urban	2,423	958	100	521	772	1,191	598	236
Non-urban	1,582	519	194	387	445	869	705	55
Province								
Western Cape	2,594	749	187	374	562	2,031	562	187
Eastern Cape	1,810	507	65	787	867	1,309	1,474	0
Northern Cape	4,299	1,425	175	910	526	1,623	0	0
Free State	1,605	1,115	190	176	176	353	367	176
KwaZulu-Natal	2,195	659	188	476	382	864	964	94
North West	1,251	914	168	186	186	373	354	0
Gauteng	2,166	962	0	679	1,642	1,642	481	481
Mpumalanga	2,083	783	171	660	440	832	171	0
Northern	2,397	655	223	0	0	0	223	223
Education								
No education	2,564	1,025	488	44	236	799	1,898	207
Sub A - Std 3	2,265	930	172	265	822	1,714	550	0
Std 4 - Std 5	2,542	962	31	132	381	734	515	178
Std 6 - Std 9	1,910	522	146	307	523	716	552	115
Std 10	1,456	486	0	829	1,456	2,368	293	0
Higher	1,748	1,952	0	2,106	574	713	501	962
Population group								
African	1,819	535	143	134	419	595	682	121
Afr. urban	2,084	592	84	153	648	569	598	168
Afr. non-urban	1,485	463	216	109	131	627	787	61
Coloured	3,231	1,184	248	367	784	1,105	476	0
White	2,531	1,976	0	3,135	1,847	3,676	260	786
Asian	3,124	1,869	0	513	513	3,234	1,355	0
Total	2,122	795	135	471	651	1,071	638	169

Note: Incidence rates are based on the 12 months preceding the survey and are per 100,000 population.

Table 10.6 Chronic disease incidence among women

Self-reported annual incidence rate (per 100,000) of hypertension, ischaemic heart disease, strokes, hyperlipidaemia, diabetes, bronchitis, asthma and cancer in women according to background characteristics, South Africa 1998

Background characteristic	Hypertension	Ischaemic heart disease	Stroke	Hyperlipidaemia	Diabetes	Emphysema/ Chronic bronchitis	Asthma	Cancer
Age								
15-24	1,989	500	150	64	238	1,147	238	0
25-34	3,553	1,869	0	171	900	690	527	0
35-44	5,533	1,613	274	148	590	1,927	322	181
45-54	7,819	2,449	218	978	1,453	1,383	1,090	281
55-64	10,364	2,691	526	412	1,562	1,503	1,025	100
65+	6,743	2,807	550	336	1,750	929	817	413
Residence								
Urban	5,468	1,522	297	420	1,085	1,465	651	195
Non-urban	4,755	2,095	134	96	645	882	468	15
Province								
Western Cape	2,821	1,156	507	507	676	2,767	507	0
Eastern Cape	5,141	1,853	219	245	1,144	1,341	1,137	160
Northern Cape	6,435	1,456	280	569	728	877	999	280
Free State	5,854	2,187	302	0	605	314	476	0
KwaZulu-Natal	5,824	2,156	187	249	1,324	568	374	0
North West	4,361	1,798	0	158	635	1,112	937	0
Gauteng	6,591	1,542	140	420	981	2,078	560	420
Mpumalanga	4,686	2,353	511	419	838	711	639	0
Northern	3,489	1,202	262	126	397	135	0	0
Education								
No education	6,139	2,880	525	84	1,908	980	1,221	242
Sub A - Std 3	7,710	3,176	310	173	828	880	815	0
Std 4 - Std 5	7,295	1,932	88	139	658	741	525	0
Std 6 - Std 9	4,623	1,142	166	399	932	1,163	421	123
Std 10	2,922	1,152	241	199	360	2,270	178	318
Higher	1,502	655	134	786	383	1,684	583	0
Population group								
African	5,565	1,822	238	90	905	646	618	92
Afr. urban	6,139	1,561	320	85	1,123	688	724	158
Afr. non-urban	4,907	2,122	145	95	654	599	497	16
Coloured	4,325	1,823	264	509	1,017	2,231	452	29
White	3,223	779	265	1,431	610	5,332	639	554
Asian	4,110	1,550	0	1,109	1,671	562	0	0
Total	5,192	1,744	234	294	915	1,239	580	125

Note: Incidence rates are based on the 12 months preceding the survey and are per 100,000 population.

10.4 Reported Cancer Pattern

In Tables 10.3 and 10.4 it is noted that less than one percent of men and women reported having cancer. Levels are higher among those with the highest level of education, white participants and by women in the Western Cape. The self-reported incidence rates for cancer shown in Tables 10.5 and Table 10.6 and they were 169/100 000 and 125/100 000 for men and women, respectively. These data suggest that the types of cancer suffered by men have a shorter prognosis than those for women.

Table 10.7 shows the pattern of cancers reported by the respondents. Despite the small number of cancer cases (13 men and 48 women), it is important to consider the data alongside other sources. Eighty-four percent of the men and 96 percent of the women were told what type of cancer they were suffering from.

For men, the most common cancer was prostate cancer followed by lung and skin cancers, while for women it was breast cancer followed by cervical cancers.

The self-reported incidence rates are compared with the most recently reported rates published by the South African Cancer Registry in 1992 (Sitas *et al.*, 1997) in Table 10.8. It can be seen that the SADHS rate for men is considerably higher than the minimal rate reported to the Registry, but similar to the estimated rate that has been corrected for under-reporting. For women, the SADHS rate lies between the minimal rate and the corrected one.

	Men N = 13	Women N = 48
Percentage who were told of which cancer they suffered	84	96
Lung cancer	17	1
Cervical cancer	0	27
Skin cancer	17	12
Breast cancer	0	34
Prostate cancer	28	0
Esophageal	7	0
Other cancers	14	18

Population group	Men			Women		
	Cancer Registry 1992		SADHS 1998	Cancer Registry 1992		SADHS 1998
	Minimal incidence rate	Corrected for under-reporting ¹	Self-reported	Minimal incidence rate	Corrected for under-reporting ¹	Self-reported
African	59.5	91.5	121	67.1	103	92
Coloured	85.3	106.0	0	86.4	108	29
White	258.0	322.5	786	264.6	330	554
Asian	82.4	103.0	0	120.0	150	0
Total ²	97.1	163.0	169	105.3	162	125

¹ Level of reporting to the South African Cancer Registry is estimated to be 65 percent for the African population and 80 percent for the other groups (Sitas, *et al.*, 1997)

² Registry rates age-standardised against the South African population

10.5 Self-reported Prevalence and Incidence of Tuberculosis

Despite a major effort to control tuberculosis, it remains the most commonly reported notifiable disease in South Africa. Respondents were asked whether they had ever been told by a doctor or nurse that they had TB, whether this had occurred in the last 12 months, and on how many occasions they had been treated for the disease. The other important infectious diseases, with the exception of sexually transmitted diseases (STDs), are generally not sufficiently common to include in a sample survey.

Table 10.9 shows the self-reported prevalence and incidence of tuberculosis in adult South Africans along with the number of attacks suffered. Three percent of the men and 2 percent of the women reported having had the condition. Tuberculosis is reported more frequently in persons over the age of 34 years, in non-urban areas and most commonly in the Eastern Cape. The distribution across the educational levels of the participants illustrates clearly that tuberculosis is a condition suffered predominantly by those with low education levels and probably from a lower socio-economic standing. It is most frequently reported by coloured men and women and least frequently by white men and Asian women. The mean number of attacks reported for men was 3.5 and for women 2.6. The overall self-reported incidence rate of tuberculosis for men was 477/100,000 population and for women it was 362/100,000.

The incidence data in Table 10.9 provides us with a unique opportunity to evaluate the incidence rate based on notification of tuberculosis to the Department of Health, as required by the Health Act. In such a comparison it could be expected that the survey rate would be somewhat higher, since tuberculosis is more commonly reported in adults than in children and children form part of the denominator of the Department of Health notification data. A comparison of the incidence rates is given in Table 10.10. Where no incident cases were reported for a particular sex in a particular province, it has been assumed that this is a result of random sampling and the rate for that sex group has been estimated on the basis of the general female to male ratio of 1:1.47.

For many years the Western Cape province has had the country's highest notification rates, but this survey indicates that KwaZulu Natal has a higher incidence and that the incidence of tuberculosis in the Eastern Cape is more than double that of the Western Cape. In the Western Cape the notified and survey tuberculosis incidence rates are similar, suggesting that the notification system works well in this province. In other provinces such as the Northern Cape and Gauteng there is a moderate discrepancy in these two rates. In the Eastern Cape, KwaZulu-Natal, Mpumalanga and Northern Province a third or less of incident cases appear to be notified, a very serious discrepancy. Overall, it appears that only about 35 percent of incident cases of tuberculosis are notified to the Department of Health as is required by statute.

In 1998, the reported TB notification rate from the Department of Health suggests that 71,779 cases of TB were notified. Based on SADHS incidence rates and the estimated population over the age of 15, it is estimated that there were 127,798 cases of tuberculosis among persons over age 15. In its Global Report on the Tuberculosis Epidemic, the World Health Organisation estimated that 105,983 tuberculosis cases occurred in South Africa in 1996, compared to 91,578 officially reported cases. Tuberculosis rates have been clearly increased substantially in the last two years. This must at least be partially related to the rapid increase in the HIV/AIDS epidemic in the country. It is apparent that the statutory notification system operating is not reflecting this change.

Table 10.9 Prevalence and incidence of TB among adults

Percentage of participants who reported that they had been told by a doctor or nurse or staff member at a hospital or clinic that they had tuberculosis, the annual incidence rate (/100,000) and the average number of attacks according to background characteristics, South Africa 1998.

Background characteristic	Men		Men with TB				Women			Women with TB		
	Prevalence	Incidence	Number	Mean number of attacks	SD	Total number of attacks	Prevalence	Incidence	Number	Mean number of attacks	SD	Total number of attacks
Age												
15 - 24	0.8	386	1,812	*	*	14	1.1	312	2,080	(2.8)	(2.0)	25
25 - 34	2.1	565	1,120	*	*	23	1.8	429	1,716	(1.6)	(1.2)	28
35 - 44	4.1	747	1,003	(4.9)	(4.9)	34	2.0	149	1,454	(4.3)	(5.1)	28
45 - 54	5.2	420	700	(2.6)	(2.1)	28	2.6	400	1,113	(1.6)	(1.6)	28
55 - 64	4.1	227	514	*	*	20	2.2	342	914	*	*	18
65+	4.4	407	502	*	*	22	3.1	684	861	*	*	24
Residence												
Urban	2.6	408	3,569	3.7	3.9	81	1.6	294	4,999	2.4	2.6	73
Non-urban	3.3	594	2,102	3.3	3.0	59	2.6	469	3,157	2.7	3.1	76
Province												
Western Cape	3.2	562	721	*	*	16	2.3	311	799	*	*	16
Eastern Cape	5.8	1113	758	(2.3)	(1.5)	39	4.3	1026	1,161	(2.0)	(1.6)	49
Northern Cape	3.2	350	135	*	*	4	2.9	429	168	*	*	5
Free State	2.6	544	444	*	*	11	1.9	314	519	*	*	10
KwaZulu Natal	3.7	670	1,064	(5.8)	(6.2)	34	1.9	377	1,608	(4.2)	(6.7)	28
North West	1.2	168	551	*	*	6	1.3	430	647	*	*	9
Gauteng	1.7	0	1,099	*	*	16	1.1	140	1,887	*	*	19
Mpumalanga	2.1	343	378	*	*	8	1.9	255	507	*	*	8
Northern	1.8	446	521	*	*	6	1.1	0	857	*	*	7
Education												
No education	5.8	542	562	(3.7)	(3.0)	27	2.8	418	1,186	(2.8)	(2.6)	30
Sub A - Std 3	5.0	867	777	(3.6)	(3.4)	36	3.5	933	1,088	(3.1)	(4.1)	34
Std 4 - Std 5	3.5	995	755	*	*	21	2.2	693	1,136	*	*	24
Std 6 - Std 9	2.2	316	2,297	(3.7)	(4.3)	42	1.6	179	3,094	(2.5)	(2.5)	46
Std 10	1.5	313	801	*	*	10	1.0	89	1,120	*	*	10
Higher	0.4	0	440	*	*	2	0.7	0	495	*	*	4
Population Group												
African	3.0	549	4,257	3.8	3.7	110	2.0	408	6,269	2.7	3.0	116
Afr. urban	2.8	480	2,375	4.1	4.1	60	1.5	362	3,349	2.7	2.4	50
Afr. non-urban	3.3	637	1,882	3.5	3.1	50	2.5	459	2,921	2.8	3.3	67
Coloured	4.5	575	637	*	*	21	3.3	368	806	*	*	22
White	0.7	0	564	*	*	4	1.3	0	767	*	*	10
Asian	2.4	0	195	*	*	5	0.3	334	300	*	*	1
Total	2.9	477	5,671	3.5	3.5	140	2.0	362	8,156	2.6	2.9	149

Note: Parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 10.10 Comparative TB incidence rates					
Annual incidence rate (per 100,000) according to the Department of Health TB notification data for 1998 and for adults from SADHS, 1998 by sex					
Province	TB notification rates 1998	Incidence of TB, SADHS 1998			Ratio of notification to SADHS
		All adults	Men	Women	
Western Cape	464	430	562	311	108%
Eastern Cape	201	1,060	1,113	1,026	19%
Northern Cape	300	394	350	429	76%
Free State	245	421	544	314	58%
KwaZulu Natal	110	493	670	377	22%
North West	160	314	168	430	51%
Gauteng	123	(180)*	(205)*	140	(68%)*
Mpumalanga	106	292	343	255	36%
Northern	40	(357)*	446	(303)*	(11%)*
Total	169	477	593	404	35%

*Estimated value because of missing data - based on a female : male ratio for the occurrence of TB of 1 : 1.47

10.6 Injuries

The SADHS is the first survey to provide national level information about non-fatal injuries occurring in the community. Information gathered from 32,199 adults, via the Household Questionnaire, about the injuries they had experienced in the month prior to the survey, revealed that 372 adults (15 years and older) had sustained an injury severe enough to warrant medical attention. Table 10.11 presents the results, taking the sample weights into account. It can be seen that the overall *injury rate per month* for adults was 1,233 per 100,000 compared to 468 per 100,000 for children under the age of 15 years. The *annual injury rate* for adults in South Africa is thus estimated to be 14,796 per 100,000, i.e. 1 in 7 adults require medical attention for an injury every year. Previous estimates from local studies have shown that 1 in 10 people require medical attention for an injury annually (van der Spuy J, 1996).

Unintentional injuries accounted for 78 percent of all the reported non-fatal injuries (Figure 10.3). This is consistent with the pattern observed in the Cape Metropole in 1990 where it was found that unintentional injuries accounted for two-thirds of all non-fatal injuries which required medical attention (Van der Spuy J, 1996). However, the proportion of adults injured as a result of 'accidents at work' was much higher than the 9 percent previously recorded in South Africa (van der Spuy J, 1996). The difference is possibly because injuries that occurred during casual work or among the self-employed were included in this category in SADHS but are not usually included when assessing occupational injuries. The annual non-fatal unintentional injury rate was calculated to be 11,592 per 100,000 adults (1 in 9).

Less than 25 percent of adults reported an intentional injury. The majority of these intentional injuries were due to assaults outside the home, while just under 25 percent of intentional injuries were the result of violence in the home (including domestic violence). Very few people reported that they had been injured as a result of political violence (Figure 10.3). The annual non-fatal violence rate was 3,204 per 100,000 adults (1 in 31). The annual attempted suicide rate was 492 per 100,000 adults.

The data in Table 10.11 show that injured adults were predominantly male (64 percent). The overall injury rate for women was found to be 805 per 100,000 with a median age of 42 years while for men the rate was

1,754 per 100,000 population. The data showed an unusually high rate of unintentional injuries among males aged 45 to 54 years. This trend spans all types of unintentional injuries, i.e. traffic collisions, occupational injuries and other 'accidents' and has not been documented in South Africa before.

The injury rate in urban areas was almost twice as high as in the non-urban areas. The rate of adult injuries was highest in the Western Cape followed by Gauteng and Mpumalanga (Figure 10.4). The Western Cape, Mpumalanga and the Northern Province had the highest levels of intentional injuries. KwaZulu-Natal reported unusually low levels of violence which may reflect a systematic bias in the collection of this data in the province.

These data on injuries show that one in seven adults require medical attention annually for an injury and that although the majority of these injuries are unintentional in nature, nearly one quarter are the result of interpersonal violence or self-inflicted injuries. Most injuries occur among males aged 45-54 years, particularly in urban areas. The Western Cape, Gauteng and Mpumalanga record the highest injury rates.

Table 10.11 Injury rates

Monthly injury rates per 100,000 adult men and women, according to whether injury was intentional or unintentional and by background characteristics, South Africa 1998

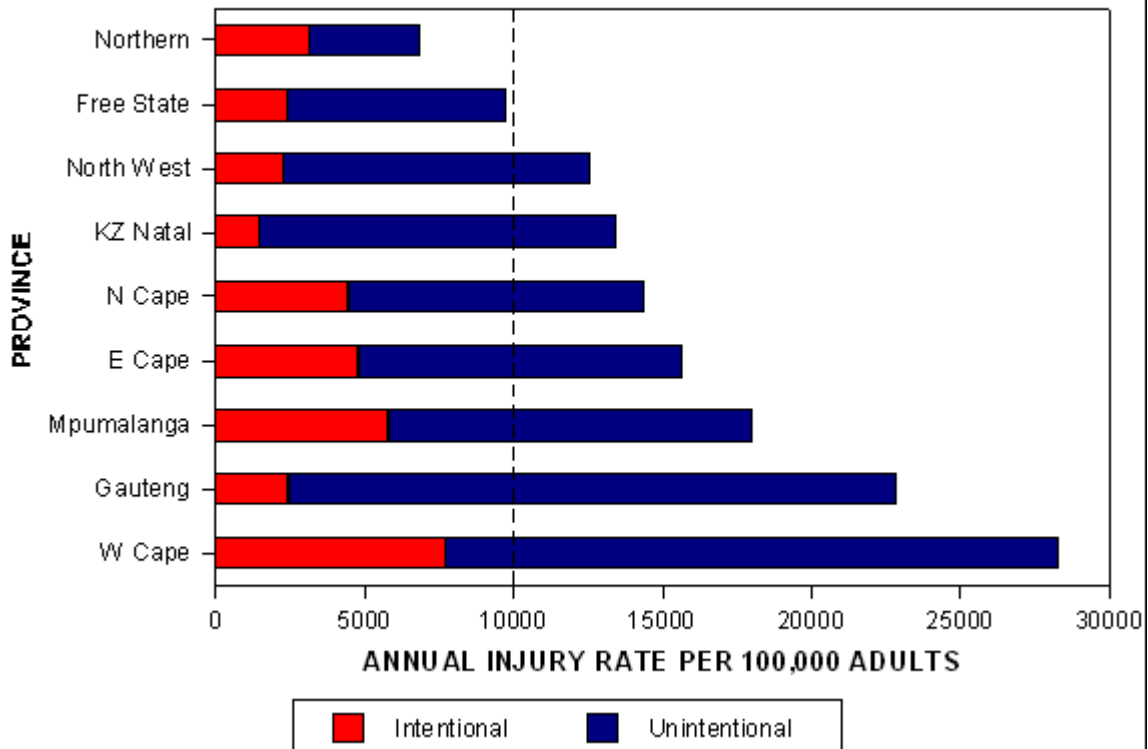
Characteristic	Intentional injury		Unintentional injury		All injuries		Number	
	Male	Female	Male	Female	Male	Female	Male	Female
Age								
15-24	406.5	150.8	757.3	443.3	1,163.8	5,94.1	4,827	4,640
25-34	396.8	205.1	1,251.4	408.6	1,648.2	6,13.7	2,977	3,756
35-44	774.3	174.4	1,673.3	807.6	2,447.6	9,82.0	2,531	3,122
45-54	79.8	138.2	2,987.0	830.5	3,066.8	9,68.7	1,740	2,431
55-64	216.0	239.1	1,260.5	776.1	1,476.5	10,15.2	1,223	1,920
65+	0.0	155.6	1,290.6	836.2	1,290.6	991.8	1,160	1,871
Residence								
Urban	443.8	161.6	1,578.3	844.6	2,022.1	1,006.2	8,888	10,382
Non-urban	280.4	193.4	1,045.8	328.5	1,326.2	521.9	5,571	7,358
Province								
Western Cape	977.2	137.6	2,352.1	862.4	3,329.3	1,000.0	1,725	1,790
Eastern Cape	430.8	264.6	1,095.1	476.0	1,525.9	740.6	1,992	2,641
Northern Cape	241.8	399.6	1,292.9	330.1	1,534.7	729.7	318	384
Free State	170.5	217.8	687.0	298.8	857.5	516.6	997	1,138
KwaZulu-Natal	109.1	87.1	1,327.1	332.9	1,436.2	420.0	2,905	3,639
North West	235.8	138.0	630.2	778.1	866.0	916.1	1,263	1,412
Gauteng	287.2	120.0	1,962.7	1,400.6	2,249.9	1,520.6	3,020	3,613
Mpumalanga	530.4	274.3	1,555.1	154.9	2,085.5	429.2	930	1,149
Northern	565.5	250.0	377.0	187.5	942.5	437.5	1,309	1,974
Education								
No education	205.3	193.8	1,302.6	264.4	1,507.9	458.2	1,376	2,629
Sub A - Std 3	415.7	198.4	1,655.2	788.8	2,070.9	987.2	1,969	2,364
Std 4 - Std 5	356.6	350.5	1,416.9	508.9	1,773.5	859.4	1,963	2,402
Std 6 - Std 9	404.7	141.0	1,190.6	639.3	1,595.3	780.3	5,628	6,601
Std 10	429.4	146.3	1,842.0	761.2	2,271.4	907.5	2,208	2,387
Higher	433.5	0.0	889.8	933.4	1,323.3	933.4	1,108	1,175
Total	380.8	174.8	1,373.1	630.6	1,753.9	805.4	14,459	17,740

Note: The number of injuries in some cells is very small; consequently the rates are subject to high levels of sampling error and should be interpreted cautiously.

Figure 10.3 Types of injury, South Africa 1998



Figure 10.4 Annual unintentional and intentional injury rates per province, South Africa 1998



10.7 Occupational Health: Disease and Injury in Working Adults

Working adult respondents (i.e. those who were 15 years and older and who had earned money in the 12 months prior to interview) were asked whether they had a disease or injury related to or aggravated by work, and whether they had had to take time off work as a consequence. As shown in Table 10.12, 35 percent of respondents had worked for payment in the previous 12 months. More men (45 percent) than women (29 percent) had earned money. Nearly 8 percent of the workers reported an injury or disease related to work, and almost 6 percent reported disease or injury aggravated by work. Thus 13 percent of adult working respondents reported that their health had been affected by work. Not unexpectedly, injuries were more frequently reported than disease, in both related and aggravated categories. Injuries are more easily recognised and attributed to work than occupational diseases, which are difficult to diagnose and often have a long latent period between first exposure and disease.

Work-related diseases and injuries (i.e. related and aggravated) resulted in absenteeism from work in 9 percent of working respondents. If this rate is projected to the estimated 8 - 9 million South African workers then 712,000 to 801,000 workers may be absent from work in a year due to a condition which may be largely preventable. These data do not provide information on severity of illness or injury, or duration of absenteeism, so precise estimates of the impact on the economy cannot be derived but the costs are likely to be substantial.

The data in Tables 10.13-10.15 show the incidence of illness or injuries “related to”, “aggravated by”, and “related to or aggravated by” work, respectively. These have been calculated from the total reported cases and are grouped by the background characteristics of age, residence (urban/non-urban), province, education level, and population group, for each gender. The data are stratified by gender since there are marked differences in pattern of disease and employment between women and men.

Table 10.13 shows that work-related health problems increased with age in women and men and the highest proportion was observed in 45-54 age-group. This trend was expected as age and duration of work are closely associated. Thereafter the proportion of workers with work-related health problems decreased. This does not mean that older people are at lower risk of contracting work-related illnesses, but reflects limitations of the data. Chronic occupational diseases have long latencies, for example, usually at least 10 years of silica exposure is needed for clinical manifestation of silicosis, and disease may progress despite cessation of exposure. In contrast, work-related injuries are independent of time and duration of exposure. The pattern of work-related injuries varied with characteristics. Women were less likely to sustain injuries than men, and men were less susceptible to injuries between 35 and 54 years of age and over 65, than when younger. Both working men and women in non-urban areas had higher proportions with health problems than urban workers. For men the highest injury rate, 9 percent, occurred in the Northern Cape, and the lowest, 2 percent, in the North West province. The incidence of diseases related to work was highest for men in the Northern Province and KwaZulu-Natal (4 percent), but highest for women in the Western Cape (5 percent). The level of education was inversely associated with injuries in men, but not for women, although lack of formal education carried the highest risk for both genders. Rates varied among population groups; work-related illness was highest in white males and white females, in contrast to injuries, where the incidence was highest among coloured men (9 percent), and non-urban African women (2 percent).

Table 10.12 Work-related illness

Frequency of self-reported conditions related to or aggravated by work in the last 12 months, South Africa 1998

Respondents by work status and conditions	Number	%
Work status of respondents		
Worked ¹	4,761	35.1
Had not worked	8,791	64.1
Total	13,552	100.1
Conditions related to work:		
Disease	121	2.6
Injury	214	4.5
Unknown conditions ²	37	0.8
Total	372	7.8
Conditions aggravated by work:		
Disease		
Injury	118	2.5
Total	147	3.1
	265	5.6
Work absence due to condition:		
Related to work		
Aggravated by work	230	4.8
Total	173	4.1
	403	8.9
^{1.} Respondents who had earned money in the 12 months prior to survey. ^{2.} Unknown conditions are unspecified diseases or injuries or missing data.		

Table 10.13 Incidence of health problems and injuries related to work

Among adult men and women who work for pay, percentage who report having a health problem or injury related to work in the 12 months before the survey, according to background characteristics, South Africa 1998

Background characteristic	MALE				FEMALE			
	Health problem	Injury	Health problem and injury	Number of working adults	Health problem	Injury	Health problem and injury	Number of working adults
Age								
15-24	1.3	7.5	8.8	422	3.0	2.1	5.1	354
25-34	3.0	7.3	10.3	686	3.4	1.5	4.9	668
35-44	2.3	5.7	8.0	690	1.3	1.5	2.8	700
45-54	4.5	6.4	10.9	462	4.9	3.6	8.5	421
55-64	1.3	7.8	9.1	223	4.7	2.1	6.8	193
65+	2.0	3.1	5.1	64	0.0	6.0	6.0	35
Residence								
Urban	1.9	5.8	7.7	1,780	2.8	2.0	4.8	1,776
Non-urban	4.7	8.3	13.0	766	3.4	2.5	5.9	594
Province								
Western Cape	2.6	7.3	9.9	439	5.1	1.2	6.3	381
Eastern Cape	3.0	4.6	7.6	241	2.7	1.6	4.3	208
Northern Cape	1.2	8.8	10.0	71	0.0	3.6	3.6	47
Free State	1.2	5.5	6.7	206	0.0	2.7	2.7	181
KwaZulu-Natal	4.2	7.6	11.8	486	3.6	2.3	5.9	403
North West	1.5	1.5	3.0	254	0.5	1.1	1.6	185
Gauteng	3.1	7.8	10.9	507	3.5	2.5	6.0	698
Mpumalanga	1.6	5.4	7.0	193	2.2	3.7	5.9	121
Northern	4.2	8.4	12.6	150	2.7	1.3	4.0	145
Education								
No education	2.0	11.4	13.4	198	0.9	3.5	4.4	191
Sub A - Std 3	3.2	7.6	10.8	328	4.4	1.0	5.4	257
Std 4 - Std 5	3.5	8.4	11.9	294	4.4	2.3	6.7	296
Std 6 - Std 9	2.6	7.1	9.7	914	2.6	2.3	4.9	794
Std 10	3.8	3.7	7.5	479	1.9	2.6	4.5	537
Higher	0.0	4.0	4.0	319	4.3	1.1	5.4	276
Population group								
African	2.1	6.4	8.5	1,627	2.2	2.1	4.3	1,498
Afr. urban	1.2	5.5	6.7	1,003	1.6	1.9	3.5	1,014
Afr. non-urban	3.5	7.9	11.4	624	3.4	2.4	5.8	483
Coloured	2.6	9.3	11.9	381	3.7	1.5	5.2	362
White	6.3	3.5	9.8	399	6.3	1.8	8.1	398
Asian	4.1	5.5	9.6	138	2.0	0.0	2.0	102
Total	2.8	6.4	9.4	2,547	3.0	2.1	5.1	2,371

Table 10.14 shows the incidence of health problems aggravated by work to be similar to that related to work, but fewer injuries to men are described as work-aggravated. There are similar patterns (in this table and in Table 10.15) for age, residence, province, education level and population group and in the overall picture of disease and injuries reportedly affected by work.

Health problems related to or aggravated by work reported by respondents who had worked are presented in Table 10.16 and 10.17 according to the major disease categories (using the ICD-10 codes). In addition, some diseases of special interest are listed as sub-categories in the table. Musculo-skeletal disorders related to or aggravated by work were most frequently reported, accounting for 30 percent of all health problems. Back pain (classified as dorsalgia) predominated. The next largest category was respiratory disease at 23 percent. Asthma was prominent at 8 percent, followed by bronchitis (5 percent) and pneumoconiosis (0.4 percent). Not shown in the table are non-specific symptoms, which accounted for 5 percent of the respiratory category. Thirteen percent of diseases were classified as general symptoms and signs, the third largest category. Mental disorders were quite common at 6 percent, and the majority are assumed to be stress-related.

As shown in Table 10.17, the majority of work-related injuries were in category A: sprains, dislocations, fractures and lacerations, (73 percent), with injuries to limbs prominent. Other injuries (category B) made up 24 percent of the reported injuries with transport accidents (6 percent), machinery accidents (5 percent), burns (4 percent) and falls (4 percent) most common. Of the 361 injuries reported as related to or aggravated by work 10 (3 percent) were not specified.

Self-reported work-related health problems and injury patterns are presented in Figure 10.5. This bar chart shows incident cases related to or aggravated by work per 10,000 workers in order of magnitude. The most frequently reported condition was back pain, with about 126 combined work-related and aggravated cases per 10,000 workers in a year. Extrapolating the back pain rate to the estimated 9 million South African workers would result in about 113,400 cases per year. Skin conditions were less commonly reported than expected, less than 10 cases/10,000 workers, and not even one case of noise-induced hearing loss (NIHL) was reported. One case of aggravated disease of other ear disorders was reported.

Work absenteeism was usually associated with the commonly reported conditions. For example, 92 percent of respondents with respiratory complaints related to or aggravated by work missed at least one work day, as did 73 percent of workers with back pain related to work. Work absence was reported by 100 percent of asthma cases related to work and 71 percent of those aggravated by work.

Table 10.14 Incidence of health problems and injuries aggravated by work

Among adult men and women who work for pay, percentage who report having a health problem or injury aggravated by work in the 12 months before the survey, according to background characteristics, South Africa 1998

Background characteristic	MALE				FEMALE			
	Health problem	Injury	Health problem and injury	Number of working adults	Health problem	Injury	Health problem and injury	Number of working adults
Age								
15-24	0.8	3.9	4.7	422	2.7	1.1	3.8	354
25-34	2.0	3.3	5.3	686	2.0	1.7	3.7	668
35-44	3.7	3.3	7.0	690	2.2	0.9	3.1	700
45-54	5.1	3.0	8.1	462	5.5	2.9	8.4	421
55-64	1.8	7.1	8.9	223	3.3	14.0	17.3	193
65+	4.9	0.0	4.9	64	0.0	0.0	0.0	35
Residence								
Urban	2.4	2.6	5.0	1,780	3.1	1.9	5.0	1,776
Non-urban	4.0	5.2	9.2	766	2.1	2.1	4.2	594
Province								
Western Cape	3.1	0.9	4.0	439	2.1	1.4	3.5	381
Eastern Cape	2.1	1.4	3.5	241	2.1	1.3	3.4	208
Northern Cape	2.4	6.3	8.7	71	1.5	1.6	3.1	47
Free State	2.8	0.0	2.8	206	1.2	2.5	3.7	181
KwaZulu-Natal	4.4	5.3	9.7	486	3.4	2.2	5.6	403
North West	1.5	1.5	3.0	254	1.5	0.0	1.5	185
Gauteng	3.2	7.4	10.6	507	4.3	3.1	7.4	698
Mpumalanga	2.8	1.8	4.6	193	2.1	1.0	3.1	121
Northern	2.6	3.7	6.3	150	1.6	0.8	2.4	145
Education								
No education	1.6	4.8	6.4	198	4.1	3.5	7.6	191
Sub A - Std 3	2.9	3.0	5.9	328	2.5	1.0	3.5	257
Std 4 - Std 5	2.9	5.3	8.2	294	3.2	1.0	4.2	296
Std 6 - Std 9	3.0	3.3	6.3	914	2.2	1.9	4.1	794
Std 10	2.7	2.9	5.6	479	1.8	2.6	4.4	537
Higher	2.6	4.5	7.1	319	6.0	1.5	7.5	276
Population group								
African	2.0	3.2	5.2	1,627	2.5	2.0	4.5	1,498
Afr. urban	1.5	2.3	3.8	1,003	2.5	2.2	4.7	1,014
Afr. non-urban	2.9	4.5	7.4	624	2.7	1.4	4.1	483
Coloured	3.4	1.6	5.0	381	2.3	1.3	3.6	362
White	7.0	5.6	12.6	399	5.2	3.0	8.2	398
Asian	2.5	5.3	7.8	138	0.0	0.0	0.0	102
Total	2.9	3.7	6.7	2,547	2.8	2.0	5.0	2,371

Table 10.15 Incidence of health problems or injury related to or aggravated by work

Among adults who work for pay, percentage who report having a health problem or injury related to or aggravated by their work in the 12 months before the survey, according to sex and background characteristics, South Africa 1998

Background characteristic	MALE		FEMALE		TOTAL	
	Health problem or injury	Number of working adults	Health problem or injury	Number of working adults	Health problem or injury	Number of working adults
Age						
15-24	12.4	422	8.0	354	10.4	776
25-34	12.5	686	6.4	668	9.5	1,354
35-44	12.6	690	5.1	700	8.8	1,390
45-54	13.9	462	13.7	421	13.8	883
55-64	14.0	223	14.1	193	14.1	416
65+	9.9	64	5.9	35	8.5	99
Residence						
Urban	10.9	1,780	8.2	1,776	9.5	3,557
Non-urban	17.4	766	8.2	594	13.4	1,361
Province						
Western Cape	12.5	439	8.7	381	10.7	820
Eastern Cape	10.4	241	5.8	208	8.4	449
Northern Cape	16.2	71	6.1	47	12.2	118
Free State	9.3	206	5.9	181	7.7	387
KwaZulu-Natal	14.7	486	8.8	403	12.0	889
North West	6.4	254	2.6	185	4.8	439
Gauteng	18.0	507	10.9	698	13.9	1,205
Mpumalanga	9.4	193	8.4	121	9.0	314
Northern	13.0	150	5.6	145	9.4	295
Education						
No education	17.1	198	10.9	191	14.0	389
Sub A - Std 3	15.2	328	6.6	257	11.4	586
Std 4 - Std 5	15.6	294	8.5	296	12.1	590
Std 6 - Std 9	12.5	914	8.2	794	10.5	1,708
Std 10	10.0	479	6.8	537	8.4	1,016
Higher	10.4	319	10.0	276	10.2	595
Population group						
African	11.0	1,627	7.2	1,498	9.2	3,124
Afr. urban	9.0	1,003	6.5	1,014	7.7	2,017
Afr. non-urban	14.4	624	8.5	483	11.9	1,107
Coloured	15.5	381	8.0	362	11.8	742
White	17.5	399	12.7	398	15.1	797
Asian	13.5	138	2.0	102	8.6	240
Total	12.9	2,547	8.2	2,371	10.6	4,918

Table 10.16 Type of work-related health problems

Among adults who worked in the 12 months preceding the survey and had a work-related health problem, percent distribution by specific problem, according to whether problem was related to or aggravated by work, South Africa 1998

Health problem	ICD Code	Related to work	Aggravated by work	Related and aggravated
Infectious and parasitic	A00-B99	5.7	4.2	5.0
Metabolic	D50-D89, E00-90	0.0	2.5	1.2
Mental disorders	F00-F99	6.6	5.9	6.3
Nervous system	G00-G99	2.5	1.7	2.1
Eye and adnexa	H00-H59	1.6	5.1	3.3
Ear and mastoid process	H60-H95	0.0	0.0	0.0
Circulatory	I00-I99	5.7	5.1	5.4
Respiratory	J00-J99	21.5	24.6	23.0
Bronchitis	J40, J42	5.0	4.2	4.6
Asthma	J45	9.1	5.9	7.5
Pneumoconiosis	J78	0.8	0.0	0.4
Digestive System	K00-93	5.7	8.5	7.1
Skin and subcutaneous tissue	L00-L99	1.6	1.7	1.7
Musculo-skeletal	M00-99	31.4	28.0	29.7
Dorsalgia	M54	24.8	25.4	25.1
Genito-urinary system	N00-99	1.6	1.7	1.7
Pregnancy and related	O00-O99	0.0	0.8	0.4
Symptoms and signs	R00-99	15.7	10.2	13.0
Total		100.0	100.0	100.0
Percentage missing		23.4	14.5	19.2
Number		158	138	296

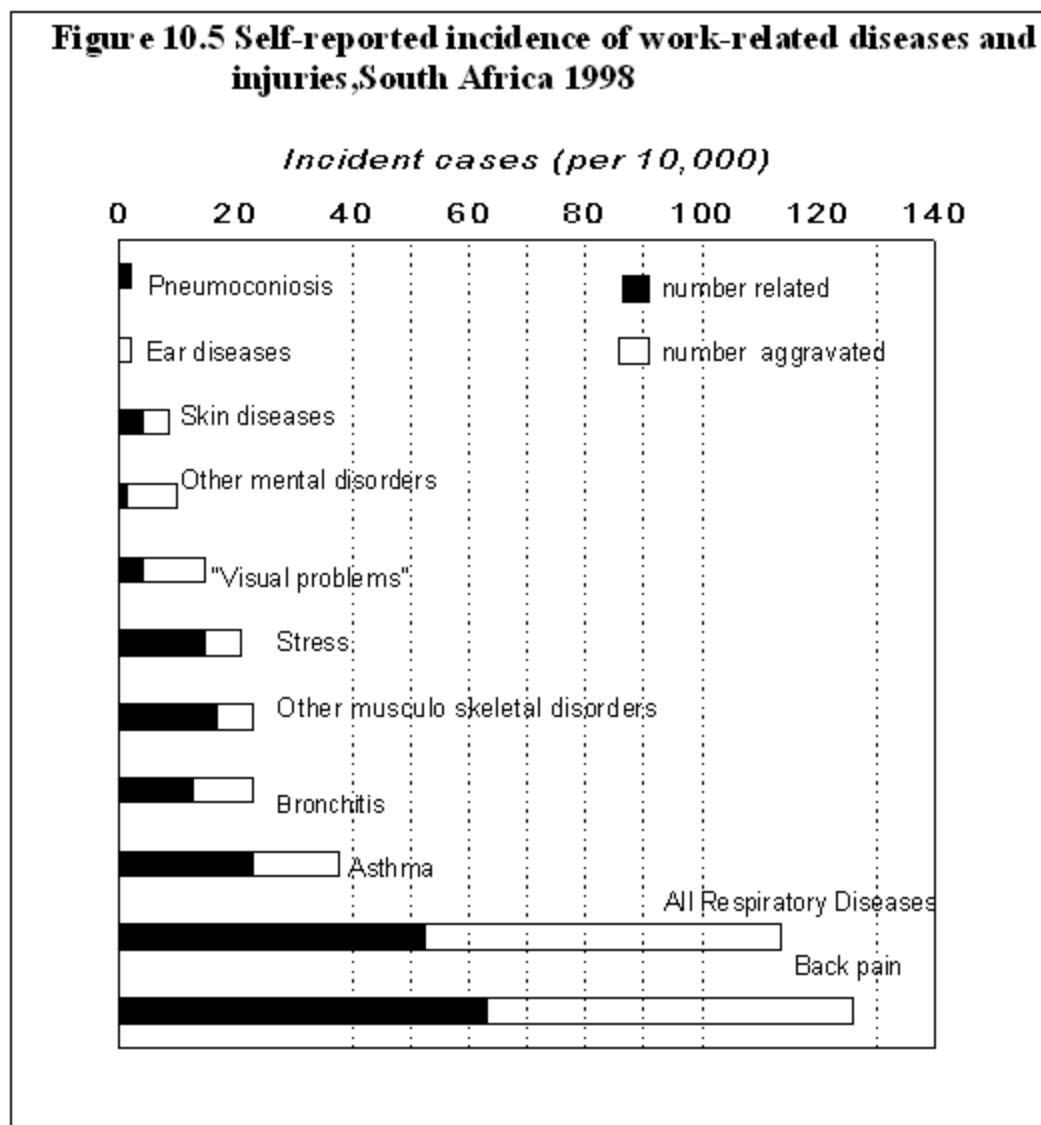
Table 10.17 Type of work-related injuries

Among adults who worked in the 12 months preceding the survey and had a work-related injury, percent distribution by specific injuries, according to whether injury was related to or aggravated by work, South Africa 1998

Injury	ICD Code	Related to work	Aggravated by work	Related and aggravated by work
Sprains, dislocation, fractures, lacerations				
Head	S00-S09	3.3	2.7	3.0
Neck	S10-S19	2.9	0.0	1.7
Thorax	S20-29	0.0	2.0	0.8
Abdomen, spine and pelvis	S30-39	3.9	19.0	10.0
Upper limbs:	S40-69	16.0	15.6	15.5
Shoulder, arm		2.4	4.1	3.0
Elbow, forearm		1.4	2.0	1.7
Wrist, hand		12.1	9.5	10.8
Lower limbs	S70-99	32.0	29.2	41.1
Hip, thigh		1.0	2.7	1.7
Ankle and foot		9.8	11.6	10.5
Multiple body parts affected	T00-07	3.9	2.0	3.0
Unspecified injury	T08-14	10.2	8.1	9.1
Total sprains, dislocations, etc.		72.3	78.9	73.4
Number		149	116	265
Other injuries				
Accidents	T15-X84			
Foreign object through orifice	T15-19	0.5	0.0	0.2
Burns	T20-32	6.8	0.0	3.9
Transport	V01-99	5.8	6.8	6.1
Falls	W00-19	5.8	2.0	4.1
Machinery	W 20-31,36-53, 56-74	5.3	5.4	5.3
Firearm discharge	W32-34	0.5	1.4	0.8
Bitten by animals	W34-55	1.0	0.7	0.8
Assaults	X85-Y09	1.5	0.7	1.1
Other	Y10-Z99	0.5	2.7	1.4
Total other injuries		27.6	19.7	23.8
Number		57	29	86
Total		100.0	100.0	100.0
Percentage missing		3.7	1.3	2.8
Number		214	147	361

In conclusion, over 13 percent of adult respondents who had earned money in the past year thought that their health had been affected by their work. Bias introduced by the household survey methodology may have contributed to this high rate, however the survey has provided the most broadly based indication of work-related health concerns available to date for South Africa. These data on diseases and injuries related to work obviously depend on workers' perceptions of medical matters. Whatever the limitations, it is clear that health services at all levels can expect a substantial proportion of their adult working patients to present with complaints that require a consideration of workplace conditions.

Figure 10.5 Self-reported incidence of work-related diseases and injuries, South Africa 1998



10.8 Prevalence of Symptoms of Sexually-transmitted Diseases among Men

The prevalence of sexually-transmitted diseases (STDs) is very high in South Africa. In order to obtain a very rough proxy measure of the prevalence of these disease, all adult men interviewed were asked if they had symptoms of STDs in the three months prior to the survey. Because STDs are likely to be asymptomatic in women, the questions were only asked of men. The symptoms asked about were painful urination or penile discharge (associated with gonorrhoea) and sores in the genital area (symptoms similar to those of syphilis).

Table 10.18 shows that 12 percent of adult men in South Africa report having recently had symptoms associated with STDs. Ten percent report having had painful urination or a discharge from the penis, while five percent have had genital sores in the three months before the survey. Levels are higher among non-urban men, those in KwaZulu-Natal and Mpumalanga, and among African men. STD-type symptoms are also more prevalent among less well-educated men than among those with matric or higher level of education.

Table 10.18 Symptoms of sexually transmitted diseases in men

Percentage of men aged 15 and over who report having had painful urination or penile discharge, genital sores or either in the three months preceding the survey, according to background characteristics, South Africa 1998

Background characteristics	Percent with painful urination/ discharge	Percent with genital sores	Percent with either	Number of men
Age				
15-24	10.4	5.6	12.1	1,816
25-34	11.7	6.0	13.9	1,123
35-44	10.4	5.3	12.0	1,005
45-54	9.2	5.0	10.6	701
55-64	10.1	2.6	10.3	518
65+	9.2	3.2	10.1	507
Residence				
Urban	8.1	3.4	9.1	3,569
Non-urban	14.3	7.9	16.6	2,102
Province				
Western Cape	4.8	1.4	5.6	721
Eastern Cape	13.8	3.6	15.1	758
Northern Cape	6.1	1.1	6.7	135
Free State	13.4	6.0	15.2	444
KwaZulu-Natal	16.6	10.5	18.9	1,064
North West	6.6	5.0	8.4	551
Gauteng	4.8	1.9	5.5	1,099
Mpumalanga	17.1	8.6	20.1	377
Northern	9.5	5.3	11.5	521
Education				
No education	12.8	6.3	13.5	562
Sub A . Std 3	16.3	7.7	18.5	777
Std4-Std5	11.1	6.3	13.0	755
Std 6- Std 9	10.3	4.6	11.9	2,297
Std 10	5.9	3.4	7.0	801
Higher	4.0	2.2	5.0	440
Population Group				
African	12.6	6.5	14.6	4,257
Afr. urban	10.6	4.8	12.1	2,375
Afr. non-urban	15.2	8.6	17.7	1,882
Coloured	4.8	1.3	5.6	637
White	1.7	0.1	1.7	564
Asian	3.4	0.4	3.8	195
Total	10.4	5.0	11.9	5,671

Total includes cases with education and ethnic group not stated

CHAPTER 11

UTILISATION OF HEALTH SERVICES AND CHRONIC MEDICATION

11.1 Introduction

The survey asked adult respondents about their use of health services in the last month and whether they had been satisfied. In addition, respondents were asked whether they are covered by a medical aid or medical benefit scheme. Respondents were asked about prescribed medication that they take regularly and what condition the medication is for. They were asked to present any regular prescribed medication and details were noted by the interviewers. These respondents were asked who covers the cost for the medication.

The drug utilisation patterns of adult South Africans for chronic conditions are reported in this chapter. These patterns have identified a number of problems that will have to be addressed in order to establish a cost-effective prescription drug policy for chronic diseases in South Africa

11.2 Health Services Attended

The proportions of males and females using public as opposed to private sector health facilities are similar (Table 11.1). Slightly more females use public sector services than do males. After the public and private health sectors, pharmacists and dentists respectively, were most used. The use of the total private health care sector is even more significant when one adds use of private sector pharmacists and dentists in private practice. A sizeable proportion of adults also use traditional and faith healers with slightly more females (3 percent) compared to males (2 percent) using faith healers.

For almost every age group, more men and women use public sector than private sector health sources; however, among those in the more economically active age groups, the differences are smaller. This suggests that those who can afford to pay prefer to use the private rather than the public health sector. Interestingly there does not appear to be an age pattern in the use of traditional and faith healers. Utilisation of these services appears to be similar for all age groups.

The patterns of utilisation of health services by type of place of residence (urban/non-urban), province, education level and race is shown in Table 11.2. Adults living in urban areas are more likely to use the private health sector than those living in non-urban areas. In urban areas, 16 percent of the sample report using the private sector compared to 9 percent of those in non-urban areas. Urban respondents also report higher utilisation of pharmacists and dentists.

Adults in the more rural provinces utilise the public sector more often than the private sector. Table 11.2 indicates that residents of the Eastern Cape, Northern Cape, KwaZulu-Natal, and the North West province use the public sector more often than their counterparts in the Western Cape and Gauteng. The more rural provinces also show lower utilisation of pharmacist and dental services, presumably because these private sector services are not very accessible in these provinces.

While more Africans use the public sector than the private sector (20 percent compared to 10 percent), more whites and Asians more often use the private sector compared to the public sector. Only 9 percent of whites use the public sector. There is an association between educational level and utilisation of the public sector. People with lower educational levels are more likely to use the public sector. Only 7 percent of those with an educational attainment greater than matric use the public sector, while 11 percent use the private health sector. Those with an education of matric or higher are less likely to report use of traditional or faith healers.

Table 11.1 Health services attended, by age and sex

Percentage of adults who sought care in last 30 days at facilities/providers in the public sector, the private sector, chemists, traditional healers, faith healers and dentists, by age and sex, South Africa 1998

Age group	Public sector		Private sector		Chemist		Traditional healer		Faith healer		Dentist		Number	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
15-24	8.7	16.7	5.2	11.3	3.3	5.2	1.2	1.1	1.8	2.4	2.4	2.3	1,815	2,084
25-34	11.6	20.6	10.9	14.8	6.3	7.1	2.2	1.2	1.7	3.0	3.0	2.8	1,123	1,721
35-44	13.1	16.5	13.9	15.1	7.2	8.0	2.0	2.0	2.4	3.4	3.4	1.9	1,004	1,460
45-54	16.8	26.6	14.8	18.3	10.8	12.6	1.5	1.0	2.8	2.6	2.6	2.3	701	1,116
55-64	22.4	29.9	14.3	18.1	8.8	9.4	1.9	1.5	3.3	2.5	2.5	3.0	518	914
65+	27.9	30.5	15.3	16.9	8.3	8.5	1.4	1.2	1.8	1.8	1.8	1.5	507	861
Total	14.0	21.8	10.8	15.1	6.5	7.9	1.7	1.3	2.1	3.0	2.7	2.3	5,671	8,156

Table 11.2 Health services attended

Percentage of adults who sought care in last 30 days at facilities/providers in the public sector, the private sector, chemist, traditional healers, faith healers and dentists by background characteristics, South Africa 1998

Background characteristic	Public sector	Private sector	Chemist	Traditional healer	Faith healer	Dentist	Number
Age group							
15-24	13.0	8.5	4.3	1.1	2.1	2.4	3,900
25-34	17.1	13.3	6.7	1.6	2.7	2.9	2,844
35-44	15.1	14.6	7.7	2.0	3.0	2.5	2,466
45-54	22.8	19.6	11.9	1.2	2.7	2.4	1,817
55-64	27.2	16.9	9.2	1.7	3.6	2.8	1,432
65+	29.6	16.6	8.4	1.3	2.6	1.6	1,369
Sex							
Male	14.0	10.8	6.5	1.7	2.1	2.7	5,671
Female	21.8	15.1	7.9	1.3	3.0	2.3	8,156
Residence							
Urban	17.9	15.8	9.8	1.4	2.4	3.3	8,569
Non-urban	19.8	9.3	3.3	1.5	3.2	1.1	5,259
Province							
Western Cape	19.1	14.3	11.0	0.8	1.3	2.8	1,519
Eastern Cape	22.8	11.2	4.7	1.9	2.6	2.2	1,920
Northern Cape	21.8	12.7	3.8	0.0	0.2	1.1	303
Free State	16.1	10.6	7.1	1.3	0.8	2.5	963
KwaZulu-Natal	21.3	15.0	6.2	1.4	3.2	2.0	2,672
North West	21.5	6.7	2.7	1.0	1.9	2.1	1,199
Gauteng	13.5	18.9	13.5	1.9	2.9	3.9	2,986
Mpumalanga	18.2	15.1	6.4	2.8	6.2	2.5	885
Northern	16.9	6.2	1.3	0.9	2.9	0.8	1,381
Education							
No education	25.1	10.1	1.6	1.8	3.5	0.9	1,748
SubA-Std3	24.8	11.0	2.6	2.0	4.3	1.3	1,864
Std4-Std5	22.2	10.0	3.1	1.6	2.5	1.9	1,890
Std6-Std9	16.8	12.4	7.0	1.3	2.8	2.4	5,390
Std 10	13.7	18.8	14.9	1.4	1.0	4.6	1,922
Higher	6.9	11.0	22.8	0.3	0.8	5.0	935
Population group							
African	19.6	10.2	3.2	1.9	3.2	1.7	10,526
Afr. urban	19.3	11.9	4.3	2.1	3.1	2.5	5,723
Afr. non-urban	19.9	8.2	1.9	1.7	3.4	0.8	4,803
Coloured	19.9	14.7	4.4	0.1	0.7	2.1	1,444
White	9.2	31.6	40.4	0.2	0.8	8.9	1,331
Asian	20.6	25.1	14.4	0.2	1.0	2.4	495
Total	18.6	13.3	7.3	2.7	1.5	2.5	13,795

11.3 Satisfaction with Services

Users of public sector health services appear more dissatisfied with the service than those using private facilities and services (Table 11.3). This is clearly seen by the fact that 12 percent of those who visited day hospitals, government clinics and government hospitals said they were dissatisfied, compared with only 7 percent of those using private hospitals. An exception in Mpumalanga where more respondents using the services of private doctors expressed dissatisfaction with services than those using day hospital services. However, more respondents using public sector clinics or hospitals in Mpumalanga were unhappy with service quality than those using private doctors (10 percent and 7 percent respectively).

More males were dissatisfied with the services of district surgeons and private doctors than females. In addition, more urban respondents were dissatisfied than their non-urban counterparts using a range of services viz., day hospitals (15 percent versus 7 percent), district surgeons (6 percent versus 2 percent), hospitals (7 percent versus 5 percent) and chemists (4 percent versus 2 percent). However, non-urban respondents were more unhappy with services rendered by private doctors compared to urban dwellers (7 percent versus 5 percent).

Provincial comparisons suggest that respondents using day hospitals in the Western Cape were the least satisfied of all respondents using such services nationally (21 percent). Of those using public sector clinics, respondents in the following provinces appear to be least dissatisfied: North West (4 percent) and Northern Province (6 percent). Public sector clinic users in the following provinces expressed more dissatisfaction (more than 10 percent dissatisfied respondents): KwaZulu-Natal (16 percent), Free State (14 percent), Gauteng (13 percent), and Western Cape (13 percent). The least dissatisfied users of private hospital services were respondents from the Eastern Cape (4 percent) compared to their counterparts in Gauteng (7 percent), KwaZulu-Natal (8 percent) and the Western Cape (11 percent). With respect to race, more coloured users of day hospitals expressed dissatisfaction with these services (17 percent) followed by urban Africans (14 percent). A large percentage of Asian public sector clinic users expressed dissatisfaction with these services (26 percent) compared to other race groups. More African (7 percent) and coloured (8 percent) respondents complained about services rendered by private doctors than either Asians (2 percent) or whites (4 percent).

From Table 11.4, it can be seen that the major problems in the public sector appear to be long waiting times and staff attitudes. The lack of access to doctors at public sector clinics also appears to result in dissatisfaction as does the short consultation time. However, the attitude of private sector health personnel and long waiting times are also cited as reasons for dissatisfaction.

Table 11.3 Satisfaction with health services

Percentage of care-seekers who were dissatisfied by background characteristics, South Africa 1998.

Background characteristic	PUBLIC SECTOR										PRIVATE SECTOR							
	Day hospital		Clinic/Hospital		District surgeon		Private doctor		Hospital		Chemist		Traditional-healer		Faith healer		Dentist	
	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Age																		
15-24	11.2	149	10.2	373	*	16	3.6	269	6.3	80	4.8	164	12.6	41	5.0	76	1.9	82
25-34	12.7	139	11.2	241	1.9	36	7.3	301	4.0	76	4.1	191	7.9	45	4.7	69	7.5	79
35-44	14.1	98	9.7	268	0.7	32	6.6	303	7.9	62	4.9	190	8.8	49	2.0	75	2.1	57
45-54	12.9	117	16.4	287	16.2	34	7.4	254	9.4	48	2.8	209	*	*	14.3	44	0.0	41
55-64	11.7	108	11.2	268	0.7	33	4.4	215	5.2	28	2.0	131	*	*	3.4	50	0.0	40
65+	10.4	130	11.8	269	3.9	40	5.5	187	8.9	42	3.7	115	*	*	2.8	35	9.3	22
Sex																		
Male	12.6	253	12.6	523	6.6	69	7.9	501	7.8	124	4.5	365	15.3	91	3.9	113	2.8	141
Female	11.8	488	11.3	1283	3.1	122	4.9	1029	6.1	212	3.4	635	12.5	105	5.6	235	3.8	181
Residence																		
Urban	14.9	480	13.5	1049	5.6	125	5.2	1128	7.2	253	4.3	830	13.6	118	5.1	187	1.3	269
Non-urban	6.9	260	9.1	757	2.0	66	7.9	401	5.3	82	1.5	170	14.1	78	5.0	161	13.7	54
Province																		
Western Cape	20.5	197	12.7	105	*	17	7.3	191	10.5	26	4.1	167	*	*	*	*	6.9	39
Eastern Cape	14.8	117	11.8	336	4.3	28	5.9	182	4.1	41	5.7	89	17.1	35	8.7	50	1.6	42
Northern Cape	3.9	6	8.2	53	9.1	8	2.9	33	8.0	6	0.0	12	*	*	*	*	*	*
Free State	9.3	25	14.3	118	3.4	25	4.5	89	*	*	1.2	69	*	*	*	*	3.5	24
KwaZulu-Natal	14.1	122	15.5	476	*	21	8.5	336	7.5	81	2.5	163	11.1	37	7.4	83	7.6	54
North West	5.0	76	3.6	159	2.5	41	0.0	68	*	*	9.5	33	*	*	*	*	*	*
Gauteng	0.0	58	12.7	313	*	19	4.7	454	7.0	114	4.0	394	*	*	7.1	74	0.0	105
Mpumalanga	5.9	76	10.2	85	*	18	7.4	118	15.7	19	4.1	57	0.0	23	1.5	54	0.0	21
Northern	5.6	61	5.7	162	*	15	3.9	58	*	*	*	*	*	*	0.0	36	*	*
Education																		
No education	4.1	105	8.3	312	5.1	38	7.2	139	1.7	38	4.1	28	17.6	30	2.0	60	*	*
SubA-Std3	16.3	148	13.5	323	1.7	29	10.7	165	14.3	32	4.3	48	11.6	38	5.9	77	*	*
Std4-Std5	12.1	128	12.7	298	1.8	27	10.2	151	16.6	32	0.9	59	*	*	4.3	47	3.3	34
Std6-Std9	13.1	273	12.8	622	5.9	57	5.0	545	4.0	124	1.8	369	14.5	71	7.1	139	6.9	119
Std 10	10.3	68	9.8	198	0.0	21	2.2	307	9.8	69	6.1	285	*	*	*	*	1.6	87
Higher	*	*	13.4	40	*	1	6.2	215	0.6	40	4.9	213	*	*	*	*	0.0	44
Population group																		
African	11.2	564	11.5	1474	3.3	137	6.8	828	9.5	223	4.5	328	14.1	191	5.2	318	2.6	165
Afr. urban	14.4	317	13.3	780	4.0	80	6.2	516	11.6	146	5.1	238	14.0	114	5.3	161	0.0	127
Afr. non-urban	7.0	247	9.4	694	2.3	58	7.8	312	5.6	78	2.8	90	14.3	77	5.1	158	11.5	37
Coloured	17.3	138	8.9	157	9.4	22	7.7	181	0.9	26	5.3	64	*	*	*	*	7.6	30
White	*	*	7.4	90	6.2	27	4.1	402	1.6	65	2.9	535	*	*	*	*	3.0	16
Asian	*	*	25.9	84	*	22	1.6	115	*	*	6.6	70	*	*	*	*	*	*
Total	12.1	740	11.7	1,006	4.3	191	5.9	1,529	6.7	335	3.8	1,000	13.8	195	5.0	347	3.3	322

Note: An asterisks indicates a figure is based on fewer than 25 respondents and has been suppressed.

Table 11.4 Reasons for dissatisfaction

Percent distribution of recent health seekers by reported reasons for dissatisfaction with health service, according to health care facility/provider, South Africa 1998

	Long wait	Staff rude	Short consultation	Did not see Doctor	Other	Total	Number
Public sector							
Day hospital		41.0		7.6	9.4	19.3	89
Clinic/hospital		26.1		12.3	14.7	30.3	211
Private sector							
Doctor		8.2		9.3	22.3	4.0	90
Chemist		14.9		9.8	4.4	NA	38
Traditional healer		27.4		16.0	29.9	NA	27

Note: Private hospital, faith healer and dentist had fewer than 25 respondents and have been omitted from the table
NA = Not applicable

11.4 Access to Medical Aid

Only 17 percent of the adult population of South Africa have access to some form of medical aid or benefit scheme (Table 11.5). Access to medical aid is highest among people aged 35-44 but lowest among the elderly and young adults. Slightly more adult men have access to medical aid than women. Urban and non-urban areas have a high disparity in access (24 percent and just 6 percent respectively). The proportion of adults with access to medical aid is lowest in Northern Province (7 percent). Eastern Cape, KwaZulu-Natal and North West also have comparatively low levels of access to medical aid. In contrast, the Western Cape and Gauteng have relatively high levels of access (26 percent and 30 percent respectively). Access to medical aid is positively associated with educational level. The biggest disparity in access to medical aid is observed among the population groups. Whereas 75 percent of whites have access to medical aid, only 8 percent of Africans have access.

11.5 Self-reported Chronic Disease Drugs Used

Tables 11.6 and 11.7 show the self-reported pattern of medication for chronic diseases used by men and women, as well as the pattern of drugs that could be listed by the field workers from the drug containers presented by participants in the homes.

Overall, 13 percent of men and 18 percent of women reported that they are taking prescribed medication regularly. For every age group fewer men than women report using these drugs and as anticipated, the older the participants, the more drugs they use. More urban than non-urban people use drugs and for urban women the number is double that of non-urban women.

Prescription drug use for men is most frequently reported by respondents from Northern Cape followed by Gauteng and least frequently reported by those from the Northern Province. For women the most frequent reporting occurred in the Western Cape.

Approximately two thirds of the people who are taking regular medication report they are taking more than one drug. Of the men who report taking drugs, 37 percent use only one drug, while about 18 percent use four or more drugs regularly. For women, about 32 percent report using one drug, while 21 percent report using four or more drugs regularly. It is noteworthy that the least educated and the most educated groups, particularly among men, are most likely to report using prescribed drugs on a regular basis. This could possibly be related to the fact that the least educated receive their drugs from the public health services and also tend to be older people, while the most educated are more frequently employed and, thus, have access through their employers to medical aid support for buying chronic medications. It is particularly those men who have between Std 4 and Std 9 schooling who reported using chronic diseases

Table 11.5 Access to medical aid

Percentage of adults who reported that they have medical aid by background characteristics, South Africa 1998

Background characteristic	Percentage with medical aid
Age	
15-24	12.9
25-34	17.9
35-44	22.5
45-54	20.2
55-64	17.5
65+	12.6
Sex	
Male	18.1
Female	16.3
Residence	
Urban	23.8
Non-urban	6.1
Province	
Western Cape	26.2
Eastern Cape	10.1
Northern Cape	20.1
Free State	16.8
KwaZulu-Natal	11.2
North West	12.0
Gauteng	29.5
Mpumalanga	13.9
Northern	6.8
Education	
No education	3.4
Sub A-Std 3	6.2
Std 4-Std 5	17.5
Std 6-Std 9	33.0
Std 10	59.0
Higher	
Population group	
African	8.3
Afr. urban	12.3
Afr. non-urban	3.5
Coloured	22.7
White	75.3
Asian	27.4
Total	17.1

drugs less frequently. This finding is verified when looking at the pattern of listed drugs for men against their level of education.

By far, the highest rate of drug use is reported by white participants, followed by Asians, while African participants, particularly from non-urban areas reported using prescribed drugs least frequently. This finding is again supported when looking at the pattern of listed drug use. It is not surprising to find that the older people report using multiple drugs, while younger people predominantly report using one drug only. For the whole group an unexpectedly high number, at least 94 percent, report that they know for what condition the medication was prescribed.

Of the 2,210 respondents who reported regular use of prescribed medication, 91 percent were able to provide containers of medications for the field workers to examine. Among men, 12 percent had at least one drug listed, while 17 percent of women had at least one drug listed. These listed drug use patterns were very similar to those of the self-reported chronic diseases drug use patterns.

Table 11.6 Medication for chronic conditions for men

Percentage of adult men who report taking prescribed medication and whose medication could be listed by interviewers and of these, percent distribution by number of medications listed, South Africa 1998

Background characteristic	% Who reported taking prescribed medication	Number of men	% Who have listed drugs	Among those with medicine listed:				
				Number of men	% Who had 1 listed drug	% Who had 2 or 3 listed drugs	% Who had 4 or more listed drugs	Number with listed drugs
Age								
15 - 24	2.2	1,813	2.1	1,816	80.3	15.3	4.4	37
25 - 34	6.5	1,120	5.7	1,123	46.4	42.2	11.4	64
35 - 44	12.4	1,004	11.5	1,005	50.6	41.3	8.0	115
45 - 54	23.6	701	22.0	701	36.0	44.5	19.5	154
55 - 64	27.2	518	25.2	518	27.3	52.1	20.2	131
65+	32.4	507	30.4	507	21.5	50.2	28.3	154
Residence								
Urban	14.2	3,566	13.3	3,569	38.5	45.8	15.7	474
Non-urban	9.6	2,097	8.6	2,102	33.3	42.6	24.1	181
Province								
Western Cape	14.5	719	13.8	721	33.9	51.8	14.3	99
Eastern Cape	12.3	758	11.7	758	31.7	55.0	13.2	89
Northern Cape	16.6	135	15.0	135	42.3	45.7	12.0	20
Free State	8.9	444	8.5	444	40.5	38.1	21.4	38
KwaZulu-Natal	13.6	1,062	12.6	1,062	37.9	43.2	19.0	134
North West	8.7	549	7.6	551	35.0	43.9	21.1	42
Gauteng	16.4	1,099	14.7	1,099	40.6	40.3	19.1	162
Mpumalanga	9.3	378	8.5	378	47.7	39.1	13.2	32
Northern	7.9	519	7.7	521	29.0	42.6	28.4	40
Education								
No education	16.9	562	14.5	562	24.3	47.7	28.1	82
Sub A - Std 3	13.8	773	13.1	777	31.1	41.9	27.9	102
Std 4 - Std 5	9.9	755	9.0	655	21.6	66.8	11.6	68
Std 6 - Std 9	9.7	2,295	9.4	2,297	42.3	46.7	12.0	215
Std 10	16.1	780	14.4	801	40.9	38.7	20.4	115
Higher	15.5	439	14.3	440	58.2	29.6	12.3	63
Population Group								
African	8.7	4,254	7.8	4,257	33.7	48.3	18.0	332
Afr. urban	9.3	2,373	8.4	2,375	34.1	50.6	21.9	199
Afr. non-urban	7.9	1,881	7.1	1,882	33.2	44.9	22.0	134
Coloured	15.7	637	14.5	637	39.8	41.3	19.0	92
White	34.1	564	32.7	564	45.2	38.0	16.8	184
Asian	22.4	195	22.4	195	24.0	53.1	22.9	44
Total	12.5	5,663	11.6	5,671	37.2	44.7	18.1	655

Table 11.7 Medication for chronic conditions for women

Percentage of adult women who report taking prescribed medication and whose medication could be listed by interviewers and of these, percent distribution by number of medications listed, South Africa 1998

Background characteristic	% Who reported taking prescribed medication	Number of women	% Who have listed drugs	Among those with medicine listed:				
				Number of women	% Who had 1 listed drug	% Who had 2 or 3 listed drugs	% Who had 4 or more listed drugs	Number with listed drugs
Age								
15 - 24	5.5	2,082	5.1	2,084	45.2	49.7	5.2	107
25 - 34	8.0	1,720	7.3	1,7210	49.0	39.2	11.9	126
35 - 44	14.8	1,460	14.0	1,460	47.7	42.7	9.6	204
45 - 54	32.3	1,115	30.4	1,116	31.9	46.3	21.7	339
55 - 64	38.4	914	37.5	914	23.2	54.3	22.5	342
65+	37.4	861	34.6	861	18.5	44.4	37.1	298
Residence								
Urban	22.6	4,998	21.4	4,999	31.6	46.8	21.6	1,070
Non-urban	11.8	3,154	11.0	3,156	32.5	47.4	20.2	347
Province								
Western Cape	24.6	799	24.8	799	30.3	47.2	22.5	198
Eastern Cape	15.8	1,161	14.3	1,161	32.0	51.9	16.1	166
Northern Cape	22.6	168	20.6	168	35.6	51.2	13.1	35
Free State	18.1	519	17.2	519	27.0	44.0	29.0	89
KwaZulu-Natal	18.2	1,606	17.5	1,608	32.0	48.6	19.4	281
North West	15.0	646	12.7	646	28.6	46.1	25.3	82
Gauteng	24.1	1,887	22.9	1,887	32.3	46.4	21.3	431
Mpumalanga	12.7	507	11.4	507	26.8	44.3	29.0	58
Northern	9.3	859	9.1	859	42.7	36.9	20.4	78
Education								
No education	19.3	1,186	17.9	1,186	20.8	47.5	32.8	212
Sub A - Std 3	20.9	1,087	19.1	1,088	28.1	50.1	21.8	208
Std 4 - Std 5	18.4	1,134	16.7	1,136	34.9	45.7	19.5	189
Std 6 - Std 9	17.1	3,093	16.0	3,093	30.1	48.7	21.2	496
Std 10	16.9	1,120	17.1	1,120	44.3	41.4	14.3	191
Higher	22.4	495	22.9	495	40.3	42.7	17.0	113
Population Group								
African	13.6	6,266	12.3	6,268	30.3	49.8	19.9	774
Afr. urban	16.3	3,348	14.7	3,349	29.4	50.3	20.3	493
Afr. non-urban	10.5	2,918	9.6	2,921	31.8	49.1	19.1	280
Coloured	22.4	806	22.0	806	28.0	46.6	25.4	177
White	48.2	766	48.2	767	34.5	43.3	22.2	369
Asian	31.8	300	31.5	300	39.1	39.4	21.6	94
Total	18.4	8,152	17.4	8,155	31.7	47.0	21.3	1,417

11.6 Payment for Prescribed Medication for Chronic Diseases

The respondents were asked about the payment for the medication used. The results are presented in Table 11.8. Drugs are provided to 34 percent of men and 39 percent of women by the public health care clinics and hospitals. For 29 percent of men and 26 percent of women, their medication is paid for by medical aids, while 31 percent of men and 28 percent of women pay out of their pocket for their medicine. When all the reported payments made in the private sector are added up, the medication for 66 percent of men and 61 percent of women are provided for outside the public health care sector. There is a tendency for the oldest age group to have the lowest level of medical aid cover and most frequently their medications are paid for by the public sector. Only about 1 percent of the participants report that their employers paid for their medication.

Table 11.8 Payment for medication for chronic conditions

Percentage of men and women taking regular prescription medication according to source, of payment by background characteristics, South Africa 1998

Background characteristic	MEN							WOMEN						
	Respon- dent	Family	Medical aid	Public health care sector	Em- ployer	Other	Number	Respon- dent	Family	Medical aid	Public health care sector	Em- ployer	Other	Number
Age														
15 - 24	20.1	19.8	32.5	25.9	1.8	0.0	37	17.9	23.2	27.3	22.3	1.0	8.4	104
25 - 34	20.7	10.7	35.9	30.0	1.6	1.1	62	28.9	4.8	24.9	36.1	2.1	3.2	126
35 - 44	35.1	1.9	24.8	34.3	4.0	0.0	114	24.3	2.1	31.3	40.7	0.5	1.1	194
45 - 54	38.3	0.0	30.9	26.3	2.5	2.1	150	31.3	3.2	30.7	32.7	1.7	0.6	328
55 - 64	34.0	2.1	29.5	34.1	0.4	0.0	128	29.3	3.1	23.6	43.8	0.0	0.2	332
65+	25.9	0.3	26.8	46.4	0.0	0.7	151	26.5	7.5	19.4	44.4	0.0	2.2	295
Residence														
Urban	27.1	2.9	34.5	33.0	1.5	0.8	462	26.0	5.6	30.5	35.8	0.8	1.4	1,040
Non-urban	41.9	3.1	14.6	37.7	2.1	0.6	180	32.2	5.7	11.7	46.9	0.5	2.9	339
Province														
Western Cape	19.6	1.4	25.0	54.0	0.0	0.0	96	18.1	3.5	26.9	48.8	0.0	2.7	194
Eastern Cape	30.1	3.7	20.0	45.7	0.6	0.6	87	31.1	5.4	16.7	46.3	0.0	0.4	160
Northern Cape	21.6	0.0	24.1	54.3	0.0	0.0	20	28.4	2.1	19.5	54.0	0.0	0.0	34
Free State	21.4	6.6	35.9	31.7	4.5	0.0	38	30.3	2.8	21.6	42.6	1.0	1.8	88
KwaZulu-Natal	46.4	1.5	19.9	29.2	2.3	0.8	132	37.8	6.2	15.3	36.7	1.1	3.0	276
North West	36.8	4.4	16.7	37.5	4.7	0.0	42	32.3	4.9	18.7	36.9	1.2	6.1	81
Gauteng	26.8	5.1	49.9	14.9	1.7	1.7	156	24.2	6.4	42.1	25.4	1.3	0.6	415
Mpumalanga	34.3	2.8	33.9	24.8	2.1	2.1	30	30.0	7.2	20.8	40.9	0.0	1.1	58
Northern	34.8	0.0	13.6	51.6	0.0	0.0	40	15.7	9.4	10.9	64.1	0.0	0.0	72
Education														
No education	36.7	4.5	4.9	52.6	0.6	0.6	80	29.0	4.4	0.8	63.8	1.4	0.7	209
Sub A - Std 3	39.1	0.0	0.7	59.3	1.0	0.0	96	36.3	5.9	3.7	52.2	0.0	1.8	204
Std 4 - Std 5	35.4	1.0	4.4	56.4	2.7	0.0	67	33.1	3.2	10.3	51.8	0.5	1.2	186
Std 6 - Std 9	33.4	5.7	30.5	27.0	2.9	0.5	211	23.7	7.0	31.5	34.0	1.3	2.7	479
Std 10	17.9	2.4	64.1	11.9	0.9	2.9	62	25.0	4.7	57.1	11.6	0.0	1.5	185
Higher	24.0	0.0	65.6	10.4	0.0	0.0	7	21.5	7.0	63.2	7.4	0.0	0.8	112
Population Group														
African	43.0	4.2	10.4	39.9	2.2	0.4	319	35.6	7.5	8.0	45.8	1.2	2.0	742
African urban	39.4	4.6	15.3	38.6	2.2	0.0	187	35.4	8.5	10.6	42.7	1.6	1.3	470
Afr. non-urban	48.1	3.6	3.6	41.8	2.2	0.9	132	36.0	5.7	3.4	51.1	0.7	3.2	272
Coloured	19.5	2.6	18.5	59.5	0.0	0.0	92	14.2	2.9	18.8	62.3	0.0	1.8	174
White	19.7	1.9	67.1	8.0	1.9	1.4	184	18.0	3.0	67.8	9.5	0.0	1.7	366
Asian	20.4	0.0	23.6	53.7	0.0	2.3	44	26.5	6.0	14.9	51.6	1.1	0.0	94
Total	31.2	3.0	29.1	34.3	1.6	0.7	642	27.5	5.6	25.9	38.5	0.7	1.7	1,379

11.7 Patterns of Prescribed Medication for Common Chronic Diseases

The results of the coded medications for eight common chronic diseases including tuberculosis, asthma and chronic bronchitis, diabetes, hyperlipidaemia, hypertension and atherosclerosis- or stroke-related conditions are shown in Table 11.9. The Therapeutic Chemical Classification (ATC) Codes were used and the detailed coding list can be obtained on request.

A total of 1,382 respondents provided containers for medication for the eight conditions which accounted for 10 percent of all adults and 68 percent of all the respondents who presented containers of regular medication. It should be noted that the total number of drugs taken for the different conditions sums to more than the total number of people who had drugs coded, as some people used medications for more than one condition.

Table 11.9 Use of prescribed medication for eight common chronic conditions

The number and percentage of men and women using prescribed medication regularly and the number and percentage of all regularly used prescribed medications for tuberculosis, asthma, chronic bronchitis, diabetes, hyperlipidaemia, hypertension and atherosclerosis or stroke-related conditions using the Anatomical Therapeutic Chemical Classification (ATC) codes, South Africa 1998

Chronic conditions	ATC Code	People taking chronic medication						Medication taken					
		Men		Women		Total		Men		Women		Total	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Tuberculosis	J04A	12	0.2	9	0.1	21	0.2	23	2.7	17	1.0	40	1.6
Asthma and chronic bronchitis	R03	110	2.0	131	1.6	242	1.8	193	22.8	186	10.9	379	14.9
Diabetes	A10	76	1.4	163	2.0	239	1.7	98	11.6	215	12.6	313	12.3
Hyperlipidaemia	C10A	17	0.3	20	0.3	37	0.3	16	1.8	20	1.2	36	1.4
Hypertension	C02/3, C07/8/9	230	4.1	558	6.8	788	5.7	426	50.5	1,132	66.4	1,558	61.0
Atherosclerosis and stroke-related	BOIAC/COIA/B/DA	53	1.0	84	1.0	137	1.0	89	10.5	135	7.9	224	8.8
Any condition		452	8	930	11.4	1,382	10.7	845	100.0	1,705	100.0	2,550	100.0

A higher proportion of women regularly use a prescribed medication for these eight conditions than men (11 percent compared with 8 percent). However, in the case of tuberculosis, asthma and chronic bronchitis there were higher proportions of men than women using the drugs.

From Table 11.9 it can be seen that a total of 2,550 different drug items were presented by the participants for the eight chronic conditions. The least commonly prescribed drugs for adults are for hyperlipidaemia (1.4 percent), followed by tuberculosis (1.6 percent), then atherosclerosis- and stroke-related conditions (9 percent), diabetes (12 percent) and most frequently hypertension (61 percent). The details of the prescribed medication for the eight conditions are presented in Table 11.10 and the source of the medication in terms of public and private sector is presented in Table 11.11.

Tuberculosis

The low level of drugs being taken for tuberculosis (TB) that was provided at the interviews in participants' homes could in part be explained by the fact that many TB patients take their medication under direct supervision of the health care team or other treatment supporter within the community. Of the TB drug names provided, more were used by patients who receive them from the public sector than from the private sector (Table 11.11). However, with such low rates of reported use it is suggested that very few TB patients are actually taking the necessary medication. This is of particular concern in the face of the marked increase in TB cases, caseloads and mortality in the country. Of the drugs taken for TB, about 35 percent is rifampicin, 22 percent isoniazid, 20 percent pyrazinamide and 18 percent ethambutol.

Table 11.10 Prescribed medication for eight common chronic conditions

The percentage of people taking regular prescribed medications for tuberculosis, asthma and chronic bronchitis, diabetes, hyperlipidaemia, hypertension and atherosclerosis or stroke-related conditions, the total number of drugs used for each condition and the percent distribution of common subclasses of prescribed medication for each condition using the Anatomical Therapeutic Chemical Classification (ATC) codes, South Africa 1998

	Men	Women	Total
Number of persons taking prescribed medication (Denominator)	452	930	1382
TUBERCULOSIS Code J04A			
% Of persons taking drugs for tuberculosis	2.7	1	1.5
Number of tuberculosis drugs used	23	17	40
Antibiotics (J04AB) as % of tuberculosis drugs	33.0	40.1	36.1
Hydrazides (J04AC) as % of tuberculosis drugs	24.5	18.9	22.1
Thiocarbamides (J04AD) as % of tuberculosis drugs	0.0	4.6	2.0
Others (J04AK) as % of tuberculosis drugs	41.2	33.9	38.1
ASTHMA AND CHRONIC BRONCHITIS Code R03			
% Of persons taking drugs for asthma and chronic bronchitis	24.3	14.1	17.5
Number of asthma drugs used	193	186	379
Adrenergic inhalers (R03A) as % of asthma drugs	13.3	18.6	15.9
Glucocorticoids for inhalation (R03BA) as % of asthma drugs	17.3	13.3	15.4
Anticholinergics for inhalation (R03BB) as % of asthma drugs	0.6	0.2	0.1
Adrenergics for systemic use as (R03C) % of asthma drugs	29.3	27.4	28.4
Xanthines (R03DA) as % of asthma drugs	39.3	38.8	39.1
Combination preparations (R03DA54 / R03DA55) as % of asthma drugs	9.6	6.9	8.3
DIABETES Code A10			
% Of persons taking drugs for diabetes	16.8	17.5	17.3
Number of diabetic drugs used	98	215	313
Insulin (A10A) as % of diabetic drugs	23.7	18.3	20.0
Oral agents (A10B) as % of diabetic drugs	75.8	81.5	79.7
Biguanides (A10BA) as % of diabetic drugs	27.4	28.3	28.0
Sulphonamides, urea derivatives (A10BB) as % of diabetic drugs	47.1	52.0	50.4
HYPERLIPIDAEMIA Code C10A			
% Of persons taking drugs for hyperlipidaemia	3.8	2.2	2.7
Number of hyperlipidaemic drugs used	16	20	36
HYPERTENSION Codes C02, C03, C07, C08, C09*			
% Of persons taking drugs for hypertension	50.9	59.9	57
Number of hypertensive drugs used	426	1,132	1,558
Diuretics as % of hypertension drugs	35.9	45.9	43.2
Diuretics on their own as % of hypertension drugs	29.0	41.1	37.8
Low-ceiling diuretics (thiazide, others) (C03A/B) as % of hypertension drugs	14.4	18.2	17.2
High-ceiling diuretics (C03C) as % of hypertension drugs	7.8	6.0	6.5
Potassium-sparing agents (C03D) as % of hypertension drugs	1.9	4.8	4.0
Diuretics and potassium sparing agents (C03E) as % of hypertension drugs	4.9	12.1	10.1
Diuretics in combination (C02AA52/53) as % of hypertension drugs	6.9	4.8	5.4
Reserpine/diuretic and/or vasodilator	1.8	2.2	2.1
ACE inhibitors with diuretics (C09BA) as % of hypertension drugs	3.9	1.5	2.2
Beta blocking agents & diuretics (C07B/C/D) as % of hypertension drugs	1.2	1.1	1.1
Beta blocking agents (C07A/B/D) as % of hypertension drugs	16.9	7.0	4.7
Calcium-channel blockers (C08)	13.6	7.7	9.3
Agents acting on renin-angiotensin system (C09) as % of hypertension drugs	24.4	16.6	18.7
Plain ACE inhibitors (C09AA) as % of hypertension drugs	20.5	15.1	16.6
ACE inhibitors with diuretics (C09BA) as % of hypertension drugs	3.9	1.5	2.2
Antiadrenergic and other agents as % of hypertension drugs	16.3	27.7	24.4
Antiadrenergic agents - central acting (C02A) as % of hypertension drugs	14.8	25.2	22.3
Reserpine (C02AA02) as % of hypertension drugs	4.1	6.1	5.5
Reserpine / diuretic and/or vasodilator (C02AA52/53) as % of hypertension drug	1.8	2.2	2.1
Methyldopa (C02AB01) as % of hypertension drug	8.9	17.0	14.8
Antiadrenergic agents - peripherally acting (C02C) as % of hypertension drugs	0.9	1.8	1.5
Agents acting on arteriolar smooth muscle (C02D) as % of hypertension drugs	0.6	0.7	0.6
DRUGS FOR OTHER ATHEROSCLEROSIS OR STROKE RELATED CONDITIONS Codes: B01AC, C01DA, C01A, C01B			
% Of persons taking chronic drugs	11.7	9	9.9
Number of atherosclerosis drugs used	89	135	224
Vasodilators - nitrates (C01DA) as % of atherosclerosis drugs	36.2	28.4	31.5
Platelet aggregation inhibitors (excluding heparin) (B01AC) as % of atherosclerosis drugs	46.6	50.5	49.0
Aspirin (B01AC06) as % of atherosclerosis drugs	45.9	49.9	48.3
Cardiac glycosides (C01A) as % of atherosclerosis drugs	15.5	20.9	18.8
Antiarrhythmics (C01B) as % of atherosclerosis drugs	1.4	0.5	0.9

*Beta blockers and calcium-channel blockers used, reported under hypertension drugs

Asthma and Chronic Bronchitis

Of all the participants taking chronic medication, 1.8 percent had regular prescribed medication for asthma and/or chronic bronchitis recorded. This accounted for 17.5 percent of the people taking prescribed medication regularly. As seen from Table 11.11 more asthma drugs were paid for by the private sector than by the public sector. It is particularly the inhalants that were more frequently used by the private sector. For men and women a larger proportion of the asthma drugs were used in the non-urban than the urban setting. For men, 37 percent of the coloureds had the highest proportion of recorded drug use. A higher proportion of drug use was recorded by non-urban Africans (35 percent) compared to urban Africans (22 percent). For women the distribution between the groups was more equal with the exception that urban African women had the lowest rate, 10 percent, of asthma drug use.

Additional analysis of the asthma and chronic Bronchitis medication showed that a most frequently used drug is systemic salbutamol (27 percent of asthma drugs used) while only 10.9 percent is Salbutamol inhalers. The second most frequent drug recorded is theophylline (20 percent) followed by aminophylline (10 percent) and beclomethasone (10 percent of drugs used for asthma and chronic bronchitis). The first line drug suggested for asthma is the anti-inflammatory inhalant such as beclomethasone. This ensures that the underlying pathology is best controlled. From these data it is clear a large proportion of drugs that are prescribed for asthma are not according to the guidelines recommended by the Department of Health or the expert guideline recommendations for asthma management.

Diabetes

Diabetes medication was taken by 1.7 percent of all adult participants in the study and accounted for 17.3 percent of all chronic disease drugs taken. A larger proportion of men than women using diabetic drugs live in an urban setting. As expected diabetes medication was taken by a larger proportion of Asian participants than by any other group. In fact of the men and women taking chronic disease drugs, 40 percent and 31 percent, respectively, were taking diabetes medication. The lowest proportion of people taking diabetic medication were non-urban African men and white participants. From Table 11.11 it is seen that only a few more diabetes drugs were used in the private sector than in the public sector.

Of the men who used diabetic drugs, about 24 percent were on insulin, while this proportion was only 18 percent for diabetic women. In contrast, a larger proportion of women than men used oral antidiabetic agents. The most commonly used oral agents were metformin (28 percent of all diabetic drugs), glibenclamide (26 percent) and gliclazide (19 percent).

Hyperlipidaemia

Only 37 persons participating in the study recorded using drugs for hyperlipidaemia and in terms of the number of drugs used only 1 percent of the chronic diseases drugs were for hyperlipidaemia. This is a remarkably low rate of treatment as it has been estimated that there are about 4.5 million South Africans who have hyperlipidaemia that imparts risk for atherosclerosis-related conditions such as angina and heart attacks. The HMGCoA inhibitors accounted for 64 percent of such drugs, 21 percent was fibric acid derivatives and 16 percent nicotinic acid.

Hypertension

The most frequently recorded chronic disease medication was for hypertension and accounted for 59 percent of all chronic diseases' drugs. Overall 6 percent of all participants in the study used anti-hypertension medication with a larger proportion of women than men using these drugs. A higher proportion of urban chronic diseases drug users consumed hypertension medication than their counterparts living in non-urban settings. These figures are 46 percent and 61 percent for urban men and women respectively and 38 percent and 57 percent for non-urban men and women, respectively. For men the

highest rates were recorded in the North West, followed by Gauteng and the Northern Cape, while women in the Northern Cape had the highest rate of hypertension drug use followed by Gauteng, Free State and the North West provinces. Of the men the highest proportion of hypertensive medications was used in the white (65 percent) and Asian (63 percent) groups and the lowest proportion (30 percent) in non-urban African hypertensive males. In the case of women the highest proportion, 71 percent, was also found in white hypertensives followed by urban African hypertensive women, 61 percent, while the lowest proportion for women was found in the Asian women, 42 percent.

For men the most frequently used hypertensive drug class was diuretics (36 percent of hypertensive drugs used by men) followed by ACE inhibitors (24 percent), beta blocking agents (17 percent) and calcium-channel blockers (14 percent). These percentages include compounds in combination formulations. For women the most frequently used class was also diuretics (46 percent) followed by methyldopa (17 percent), then ACE-inhibitors (17 percent) and the fourth reserpine (8 percent). Overall for all hypertensive patients the most frequently used drug class was diuretics (43 percent), then ACE-inhibitors (19 percent) and methyldopa (15 percent) and fourth calcium-channel blockers (9 percent).

As stated above, the centrally acting antiadrenergic agents, methyldopa and reserpine were used most frequently and predominantly by women with hypertension. Of the peripherally acting antiadrenergic agents, prazosin (1 percent of all hypertensive drugs used) was recorded most frequently. The ACE inhibitors were the second most frequently used drugs and of this class of drugs enalapril and captopril accounted for 7 percent and 4 percent, respectively, of all hypertensive drugs recorded. Of the diuretics, the most commonly used agents, hydrochlorothiazide accounted for 13 percent of all hypertensive drugs, furosemide for 6 percent and indapamide for 4 percent of all hypertensive drugs. Beta blockers were 5 percent of all hypertensive drugs and atenolol and propranolol accounted for 6 percent and 2 percent, respectively, of all hypertensive drugs. Of the calcium-channel blockers nifedipine and amlodipine, respectively, made up 5 percent and 2 percent of all hypertensive drugs recorded by participants.

Atherosclerosis and Stroke-related Conditions

Included under this heading are drugs used for angina, after a heart attack, a stroke or for any other heart condition. Beta blocking agents and calcium antagonists can be used for both angina and hypertension. The data set does not distinguish between angina and hypertension for the use of these two drug classes, therefore, their use is reported for hypertension.

About 1 percent of all participants had prescribed drugs reported for these conditions and these drugs account for about 8.5 percent of all drugs used for chronic conditions. It is not surprising to find that more men than women used these classes of drugs as men more frequently suffer from atherosclerosis-related conditions than women. People whose medicines are paid for by the private sector used these groups of drugs more frequently than those whose medicines are paid by the public sector. Particularly striking is the more frequent use of aspirin in the private compared to the public sector. Aspirin accounts for 48 percent of drugs used for atherosclerosis-related conditions followed by isosorbide dinitrate (19 percent) and isosorbide mononitrate (7 percent) and digoxin (18 percent).

Table 11.11 Public and private sector provision of medication for chronic conditions

Comparison between public and private sector, on number of respondents, number of drugs and proportion of type of chronic medication, South Africa 1998

	Private sector	Public sector	Ratio of private to public
Number of people taking drug	790	563	
Number of drugs taken	1451	1145	
Mean number per respondent	1.8	2.0	
SD	1.3	1.1	
% Taking 1 drug	52.4	39.9	
% Taking 2 - 3 drugs	38.0	48.7	
% Taking ≥ 4 drugs	9.6	11.5	
DRUGS FOR CONDITIONS (% of number of drugs used)*			
TUBERCULOSIS (J04A)	0.7	2.5	0.26
ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE MEDICATION (R03)	16.0	12.3	1.31
Adrenergic inhalers (R03A)	3.0	1.5	1.98
Steroid inhalers (R03BA)	2.8	1.4	2.03
Anticholinergic inhalers (R03BB)	0.1	0.3	0.32
Systemic anticholinergics (R03C)	4.3	3.7	1.14
Xanthines (R03DA)	5.9	5.4	1.10
Combinations (R03DA54, R03DA55)	1.9	0.4	5.22
DIABETES TOTAL (A10)	12.3	11.5	1.07
Insulin (A10A)	3.1	1.5	2.01
Oral agents (A10B)	9.2	10.0	0.92
Biguanides (A10BA)	3.3	3.4	0.97
Sulphonamides (A10BB)	5.6	6.6	0.85
HYPERLIPIDAEMIA (C10A)	2.3	0.2	12.21
HYPERTENSION TOTAL (C02, C03, C07, C08, C09)	56.1	62.0	0.90
Antiadrenergic agents, centrally acting (C02A)	10.7	16.5	0.65
Reserpine containing agents (C02AA02, C02AA52)	4.1	5.1	0.80
Methyldopa (C02AB01)	6.6	11.5	0.57
Antiadrenergic agents - peripherally acting (C02C)	1.0	0.8	1.19
Arteriolar smooth muscle agents (C02D)	0.4	0.2	1.46
Diuretics (C03A, C03B, C03C, C03D, C03E)▲	18.0	26.6	0.68
Diuretics in combination (C02AA52, C02AA53, C09BA, C07B, C07C, C07D)●	4.7	1.3	3.62
Total Diuretics (▲ + ●)	22.7	27.9	0.81
ACE inhibitors (C09)	11.7	10.3	1.13
Beta blocking agents (C07A, C07B, C07C, C07D)	6.8	4.4	1.54
Calcium-channel blockers (C08)	7.6	3.0	2.53
DRUGS FOR OTHER ATHEROSCLEROSIS-RELATED CONDITIONS (B01AC, C01DA, C01A, C01B)	8.8	8.1	1.09
Vasodilators - nitrates (C01DA)	2.8	2.6	1.07
Antiarrhythmics (C01B)	0.1	0.0	-
Cardiac glycosides (C01A)	1.1	2.0	0.54
Aspirin (B01AC06)	4.7	3.4	1.40

* The denominator for private sector is 1451 and for public sector it is 1145

11.8 Chronic Diseases Drug Utilisation Patterns between Private and Public Sector Patients

Table 11.11 shows the distribution of the chronic diseases drug classes recorded for those patients who received their drugs from the public sector clinics and hospitals and those who paid for their drugs through private health services, which included drugs that were paid for by the participants, their family, their employer or their medical aid fund.

Of the chronic disease drugs used, 58 percent are paid for in the private health care sector and 42 percent of respondents on chronic medication receive their drugs from the public sector health services. The mean number of chronic diseases drugs used is 1.8 in the private sector and 2.0 in the public sector. The bulk of the private patients only use one drug for chronic diseases, while the majority of the public sector patients use 2 or more drugs per patient.

In the third column of Table 11.11 the relative ratio of the proportion of drugs used in the private sector to that in the public sector is presented for each subclass of medication. Thus for each drug subclass where the relative ratio is less than 1 it would mean that more of this drug subclass is used in the public sector compared to the private sector, while if the relative ratio is more than 1 then more of that subclass of drugs is used in the private sector compared to public sector.

From these data it can be seen that tuberculosis drugs are more frequently used in the public sector than in the private sector and insulin more frequently in the private than public sectors. Hyperlipidaemic drugs are almost exclusively used in the private sector. In the case of antihypertensive medication, centrally acting antiadrenergic agents, methyldopa, and diuretics on their own are used more frequently in the public than in the private sector, while diuretics in combination, beta blocking agents and calcium-channel blockers are used more in the private than public sector. A surprising finding is that ACE inhibitors are equally used in the public and private sector. Cardiac glycosides are used more frequently in the public sector and aspirin more frequently in the private sector.

The use of medication for asthma and chronic bronchitis occurs more frequently in the private sector compared to the public sector. Inhaled steroids and adrenergic inhalers are more often used in the private sector, while the inappropriate use of systemic anticholinergics occurs equally between public and private sectors. Again combination medication for asthma and chronic bronchitis was used more frequently in the private compared to the public sector.

11.9 Patients' Knowledge of their Chronic Diseases Drugs

Table 11.12 shows the patients' knowledge of the chronic diseases drugs that they take. Only data of patients for whom diabetes, hypertension or asthma and chronic obstructive pulmonary disease drugs were recorded are shown, as the number of patients taking these drugs is sufficient to allow this analysis.

About equal percentages of men and women knew what their medication was for, with roughly half saying that they could name the drug that they were taking and most of these patients identifying at least one drug for their condition that was later recorded by the fieldworker. Of the men who were receiving diabetes medication only 49 percent could correctly name at least one drug and of the women 55 percent could similarly name an appropriate drug. Of the men and women who were receiving hypertension drugs 55 percent and 53 percent, respectively, correctly named at least one hypertension drug. For asthma and chronic obstructive lung disease drugs recorded, 43 percent of men and 53 percent of women could correctly identify at least one appropriate drug.

Table 11.12 Knowledge about prescribed medication

Proportion of participants taking medication for selected diseases who know the condition and can correctly name the medication, South Africa 1998

Condition		Percentage who know what condition medication was taken for	Percentage who said they could name the drug	Percentage who named at least one appropriate drug that they were taking	Number
Diabetes (A10)	Men	90.3	56.8	55.0	76
	Women	89.6	54.8	48.8	163
	Total	89.8	55.3	50.8	239
Hypertension (C02, C03, C07, C08, C09)	Men	81.4	56.9	54.6	23
	Women	89.3	54.9	52.8	558
	Total	87.0	55.1	53.7	788
Asthma and Chronic Obstructive Pulmonary Disease (R03)	Men	75.2	48.4	43.3	110
	Women	75.1	55.2	53.0	131
	Total	75.1	51.9	48.5	241

For all three conditions shown in Table 11.12 the patients need to take the drugs daily, probably for the rest of their lives. It is difficult to contemplate the possibility of these patients taking their drugs daily if they do not know the name of the drugs. However, between 75 percent and 90 percent of the patients reported that they knew what the drugs were for. With the poor hypertension control reported in this report it is possible that these patients' lack of knowledge of the drugs they were taking could contribute to poor compliance with their drug regimen. In addition, many of these patients visit a variety of health services during the duration of their illness. Quite frequently the doctors at secondary level hospitals, to whom patients are referred for expert consultations, experience that these patients do not have referral notes and have a total lack of knowledge of the drugs they are taking. This would lead to a situation where most of the benefit that these chronic patients could glean from specialist physicians' opinions would be lost as the specialist does not have the background information required for an informed opinion. This not only is outrageously inefficient, but wastes both the doctor's and patients' time and occurs at a high cost to the health-care services.

CHAPTER 12

HYPERTENSION, CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ASTHMA IN ADULTS

12.1 Introduction

It would be ideal to have a full clinical assessment of the health of a sample of the population but this was not considered to be feasible. Instead, two indicator conditions, hypertension and lung disease, which can be measured reliably by lay interviewers, were selected for measurement and investigation. This chapter outlines the findings related to the blood pressure measurements and the peak flow measurements reflecting lung function.

12.2 Hypertension

The impact of untreated hypertension on the health of people is a major contributor to the overall burden of adult diseases in any population that does not actively work towards improving the early detection and cost-effective management of the condition. The major hypertension outcomes that contribute to this burden of diseases include strokes (cerebrovascular diseases), heart attack (myocardial infarction), kidney disease or failure as well as heart enlargement due to left ventricular hypertrophy, which could predispose to congestive heart failure (Guidelines Subcommittee, 1999). In the United States of America in 1972, high levels of these conditions prompted the creation of a National High Blood Pressure Education Programme by the National Heart Lung and Blood Institute of the National Institutes of Health (Joint National Committee, 1997). Since then and by 1995 the age-adjusted mortality rates for strokes have declined by about 60 percent and for coronary heart diseases by about 40 percent.

The data from developing countries suggest that in the next millennium the pattern of health and disease in developing countries will become more closely aligned to that of the developed countries. (Chockalingam and Balaguer, 1999). In 1997 the World Health Report showed that cardiovascular diseases accounted for 15 million deaths worldwide. The bulk of these, (9 million) occurred in developing countries and another 2 million in countries in economic transition. The prevention of such conditions includes the timely diagnosis and cost-effective management of hypertension in the population as a whole. Community-based surveys in South Africa (Steyn, *et al.*, 1996; Steyn *et al.*, 1986; Steyn, *et al.*, 1993; Metcalf *et al.*, 1996) found that hypertension is usually inadequately diagnosed and poorly treated. Similar findings of inadequate care hold for most of the risk factors for chronic diseases in adults. These include the care provided for conditions such as diabetes, hyperlipidaemia and chronic lung diseases (Levitt, *et al.*, 1997; Steyn, *et al.*, 1998).

In large community surveys it is easier to determine hypertension and its treatment status than most other chronic conditions or risk factors that require the collection of blood samples or other technically difficult and costly measures. Blood pressure measurements were taken after the participant was seated for 5 minutes using an Omron M1 electronic blood pressure manometer. Systolic and diastolic blood pressure and pulse were taken 3 times with the patient seated and the left arm at the level of the heart. The measurement of blood pressure (BP) has indeed become much easier since good quality, accurate, electronic tools have become available. This development led to the decision to include electronically measured BPs in the adult section of the Demographic and Health Survey as a means to identify hypertension in South Africa. In addition, it was decided to study hypertension, its determinants and

treatment status in detail in order to use it as a proxy measure for the overall quality of care provided for adult chronic diseases.

This chapter reports on the distribution of blood pressure and pulse rate in South Africa, along with the treatment status of hypertensive South Africans and the distribution of the related risk factors for hypertension in the community.

12.3 Mean Blood Pressure, Pulse Rates and Pulse Pressure of Adults

The BP used for the analyses was determined in the following way. In accordance with accepted definitions (Joint National Committee 1997) if the second systolic or diastolic BP differed by more than 5 mmHg, the first BP reading was excluded. A BP reading was retained in the data set if the systolic BP was 80 mmHg or larger and if the systolic BP was at least 15mmHg larger than the diastolic BP level. Thereafter a mean systolic and diastolic BP was calculated the remaining BPs. The pulse pressure of each patient was calculated as the difference between these mean systolic and diastolic BPs.

Tables 12.1 and 12.2 show the mean systolic and diastolic blood pressure as well as the mean pulse rate and pulse pressures of men and women according to the descriptive variables of study participants 15 years and older. For both men and women the systolic and diastolic BP increases with age. This needs to be kept in mind when considering the distribution of these variables according to other descriptive characteristics reported in the tables, as these have not been corrected for the influence age might have on these descriptors. (For example, men and women with no education have the highest systolic and diastolic BPs, this could be a true finding or due to the fact that as a group they are older than those with more education and will therefore have higher BPs.)

The mean systolic BP for men is higher than that for women while the diastolic level is similar. For men the highest mean systolic BP level is recorded in the Province of the Northern Cape and the mean diastolic BP level in the provinces of the Northern Cape and the Free State. Coloured and white men have higher BPs than the other groups of men, while the lowest rates are recorded for non-urban African men. The coloured and white women have the highest BPs and the Asian women the lowest.

The mean pulse rate of women is higher (77 vs. 73) than that of men with relatively little variation between the different groups of people. The mean pulse pressure also increased with age for both men and women and the mean pulse pressure is higher in men than in women. Similarly to the pulse rate, there is little variation between the groups of people considered.

Table 12.1 Mean blood pressure - men

Mean levels of systolic and diastolic blood pressure (BP) and pulse rates and standard error (SE) of men age 15 and over, according to background characteristics, South Africa 1998

Background characteristic	Mean systolic BP	SE	Mean diastolic BP	SE	Mean pulse rate	SE	Mean pulse pressure	SE	Number
Age									
15-24	115	0.41	69	0.33	71	0.33	47	0.30	1,781
25-34	120	0.58	75	0.46	72	0.46	45	0.35	1,058
35-44	123	0.69	79	0.47	74	0.47	44	0.41	978
45-54	130	1.08	83	0.62	75	0.60	47	0.66	676
55-64	134	1.19	82	0.66	75	0.63	51	0.82	512
65+	140	1.49	82	0.75	73	0.70	58	0.95	523
Residence									
Urban	124	0.46	76	0.29	73	0.28	48	0.29	3,224
Non-urban	122	0.65	75	0.45	73	0.39	47	0.39	2,304
Province									
Western Cape	126	1.12	78	0.72	74	0.66	48	0.69	518
Eastern Cape	124	0.74	76	0.51	73	0.42	48	0.44	1,275
Northern Cape	127	1.10	79	0.59	75	0.62	48	0.77	549
Free State	126	1.10	79	0.72	72	0.57	48	0.67	531
KwaZulu-Natal	122	0.73	76	0.57	74	0.58	46	0.47	799
North West	119	1.26	75	0.69	74	0.66	44	0.96	521
Gauteng	126	1.15	76	0.77	72	0.66	50	0.61	390
Mpumalanga	119	0.99	73	0.68	73	0.58	46	0.69	504
Northern	120	0.99	72	0.68	72	0.75	47	0.59	441
Education									
No education	129	1.15	80	0.71	75	0.66	50	0.72	630
Sub A - Std 3	125	0.90	77	0.58	74	0.51	48	0.57	787
Std 4 - Std 5	122	0.74	75	0.49	73	0.53	47	0.52	818
Std 6 - Std 9	121	0.58	74	0.40	72	0.33	47	0.34	2,175
Std 10	123	1.00	76	0.60	73	0.50	47	0.61	712
Higher	124	0.87	77	0.73	71	0.66	47	0.49	390
Population group									
African	121	0.38	75	0.27	73	0.26	46	0.26	4,116
Afr. urban	122	0.53	75	0.35	72	0.34	47	0.35	2,087
Afr non-urban	120	0.57	74	0.41	73	0.39	46	0.39	2,029
Coloured	128	0.91	79	0.61	74	0.67	49	0.54	762
White	132	1.44	80	0.86	73	0.71	52	0.84	475
Asian	122	1.41	76	0.97	79	1.14	46	1.00	175
Total	123	0.37	76	0.25	73	0.23	47	0.23	5,528

Table 12.2 Mean blood pressure - women

Mean levels of systolic and diastolic blood pressure (BP) and pulse rates and standard error (SE) of women age 15 and over, according to background characteristics, South Africa 1998

Background characteristic	Mean systolic BP	SE	Mean diastolic BP	SE	Mean pulse rate	SE	Mean pulse pressure	SE	Number
Age									
15-24	106	0.38	67	0.29	78	0.34	39	0.25	2,025
25-34	111	0.48	73	0.35	76	0.38	38	0.28	1,575
35-44	118	0.66	77	0.39	76	0.39	41	0.40	1,340
45-54	126	0.72	81	0.43	77	0.47	45	0.48	1,029
55-64	134	1.05	82	0.53	76	0.44	52	0.70	892
65+	141	1.12	82	0.54	76	0.56	59	0.86	860
Residence									
Urban	119	0.49	75	0.27	76	0.25	43	0.31	4,228
Non-urban	119	0.51	75	0.28	77	0.29	44	0.33	3,493
Province									
Western Cape	120	1.15	76	0.68	76	0.56	44	0.71	575
Eastern Cape	121	0.65	77	0.36	77	0.36	45	0.42	2,001
Northern Cape	122	1.28	77	0.67	79	0.66	45	0.75	688
Free State	122	1.19	78	0.68	77	0.63	45	0.76	621
KwaZulu-Natal	119	0.73	76	0.37	76	0.42	43	0.51	1,171
North West	118	1.13	76	0.69	78	0.65	42	0.74	603
Gauteng	118	1.05	75	0.55	77	0.53	43	0.65	664
Mpumalanga	114	0.84	73	0.58	78	0.47	41	0.50	688
Northern	115	0.82	72	0.45	77	0.62	43	0.58	710
Education									
No education	130	0.86	80	0.44	78	0.41	49	0.60	1,232
Sub A - Std 3	124	0.82	78	0.46	77	0.46	46	0.57	1,104
Std 4 - Std 5	121	0.84	77	0.47	76	0.48	44	0.55	1,165
Std 6 - Std 9	115	0.54	73	0.30	77	0.27	42	0.34	2,862
Std 10	111	0.73	72	0.47	76	0.52	39	0.45	913
Higher	113	1.03	72	0.66	75	0.54	40	0.67	434
Population group									
African	118	0.41	75	0.23	77	0.22	43	0.25	5,901
Afr. urban	118	0.63	75	0.35	77	0.31	43	0.38	2,728
Afr non-urban	118	0.50	75	0.28	77	0.30	43	0.34	3,173
Coloured	122	0.91	77	0.56	77	0.58	45	0.59	993
White	121	1.32	76	0.59	74	0.58	45	0.96	566
Asian	114	1.54	73	0.77	79	0.78	41	1.01	261
Total	119	0.36	75	0.20	77	0.19	43	0.23	7,721

12.4 Prevalence of Hypertension and Treatment Status of Hypertensive Participants

The prevalence of hypertension is described in different ways according to the different guidelines published internationally and nationally (Hypertension Society of Southern Africa, 1995). The first published South African guidelines classified a person as being hypertensive with a BP equal or above 160/90 mmHg or taking anti-hypertensive medication (Hypertension Society of Southern Africa, 1995). The later published JNC VI (Joint National Committee, 1997) and World Health Organisation - International Society of Hypertension Guidelines for the management of Hypertension (Guidelines Subcommittee, 1999) suggested that a person be considered as hypertensive with a BP of equal or above 140/90 mmHg or taking anti-hypertensive medication. It is likely that the South African guidelines may also change to the cut-off point of 140/90 mmHg as indicative of hypertension. In order to accommodate the different cut-off points, the prevalence for hypertension reported here will be classified as follow:

Moderate and severe hypertension: BP equal to or above 160/95 mmHg or taking hypertension medication

Any hypertension: BP equal to or above 140/90 mmHg or taking hypertension medication

In all cases the name of the medication was recorded by the fieldworker and verified as a medication for hypertension using the Anatomical Therapeutic Chemical Classification (ATC) Index for hypertension medication (WHO Collaborating Centre for Drugs, 1998).

Tables 12.3 and 12.4 show the prevalence of hypertension and the treatment status achieved for hypertensive men and women respectively. Of all the participants 19 percent of men and 8 percent of women report having been told by a health professional that they are hypertensive. For men and women identified as having any hypertension (BP equal or above 140/90 mmHg) this figure goes up to 26 percent and 51 percent, respectively. When moderate and severe hypertension (BP \geq 160/90 mmHg) is used, 41 percent and 67 percent of hypertensive men and women, respectively, report that they are hypertensive. This difference between men and women again highlights that only about two thirds the number of hypertensive men than women know they suffer from the condition. This figure for men is considerably lower than the international 'rule of halves' described by Bannan, *et al.*, (1981). This rule predicts that in most community surveys half of all hypertensive patients are not known to health services (50 percent), half of those who are known are not treated (25 percent), and half of those treated are treated inadequately, with the result of only about 13 percent of hypertensives being well-controlled. This figure of control applies to a definition of being hypertensive at a level of 160/95 mmHg. Thus, the South African hypertensive men are far less aware of being hypertensive than those in other settings. Fewer hypertensive men in the non-urban areas know that they suffer from the condition than their urban counterparts. Furthermore, hypertensive men in the Northern Province are the least aware of being hypertensive. These data identify men as having the most undiagnosed hypertension in the country, particularly if they are younger than 45 years and live in certain areas. These groups need to be targeted specifically to improve the rate of hypertension diagnoses.

Of the men, 13 percent are found to have a blood pressure above 160/95 mmHg or are taking appropriate medication (moderate or severe hypertension). About 23 percent of South African men are hypertensive according to the WHO definition of hypertension (BP equal or above 140/90 mmHg). For women the equivalent prevalence is 16 percent (moderate or severe hypertension) and overall, 25 percent have hypertension as defined by the WHO. A calculation, based on the prevalence rates of the two levels of hypertension and the census figures published for the South African population aged 15 years and older, leads to the estimation of about 3.3 million hypertensive people with a BP equal or above 160/95 mmHg and 6.1 million with a BP equal or above 140/90 mmHg, respectively in the country.

As expected, older South Africans are more hypertensive than younger ones. The urban/non-urban differences are marked when considering moderate and severe hypertension and much smaller when

considering any hypertension with a cut off point of 140/90 mmHg. For men the urban/non-urban differences are quite similar to findings published between 10 and 20 years ago that found non-urban South Africans had much lower rates of hypertension (then identified with a cut-off point of 160/95 mmHg) than their urban counterparts (Seedat *et al.*, 1982). However the proposed WHO cut-off points find much less difference between urban and non-urban South Africans. The highest rates for moderate and severe hypertension are found in Gauteng and in the Northern Cape men have the highest rate of any hypertension for men and women. Mpumalanga and the Northern Province have markedly lower rates of hypertension than the other provinces. Although both tables show lower rates of hypertension in more educated people, this could be incorrect as it might well be that the least educated sector of the South African population could also be the oldest section of the population. For men the highest rate is found in the white group, followed by the Asian and coloured group while for women the highest rates are found in the white and coloured groups.

In South Africa the cut off point for hypertension is still 160/95 mmHg, although the previous guidelines are currently being reconsidered. Therefore this cut off point needs to be considered when assessing the level of drug use and BP control that has been achieved. Of the men and women with moderate or severe hypertension 39 percent and 55 percent respectively are taking an appropriate anti-hypertensive medication. Of the men with hypertension 26 percent, and of the women 39 percent have BP below 160/95 mmHg. In addition 18 percent of men and 27 percent of women have BP below 140/90 mmHg.

In this survey strict criteria were used to identify those participants who were using anti-hypertensive medication. For most surveys in the past self-reported anti-hypertensive medication use was used to identify those hypertensive participants who had controlled BP but were identified as being hypertensive by virtue of the fact that they reported using medication. In this survey patients had to produce their medication containers from which the name of the medication was coded according to the Anatomical Chemical Therapeutic Index.

However, this is still a low level of BP control and highlights the need to improve hypertension control in the country if premature death and disability are to be prevented. That such a move, if successfully implemented, will have a major impact on hypertension-related mortality and morbidity is well illustrated by the major reduction in stroke and heart attacks that occurred in the USA since the inception of their National High Blood Pressure Education Programme in 1972 (Joint National Committee, 1997).

One of the more disturbing findings reported here is the poor level of hypertension control in young patients with hypertension compared to older patients. These are the hypertensive patients who have the longest working life ahead of them as members of the labour force of the country and who require even better control than older patients in order to prevent target organ damage. For men the worst level of control is reported in the young men as well as the African and coloured group, while for women it is found in young women and the non-urban African women.

Table 12.3 Hypertension prevalence and treatment status of men

Percentage of men aged 15 and older who report having hypertension, percentage who are measured as being hypertensive using the two cut-off points of 140/90 mmHg and 160/95 mmHg and of those with hypertension, the percentage who report being hypertensive, who use medication, who have controlled their hypertension, according to background characteristics, South Africa 1998

Background characteristic	Prevalence of hypertension				Among those with any hypertension, using cut-off of 140/90 mmHg (percentage)					Among those with moderate or severe hypertension, using cut-off of 160/95 mmHg (percentage)				
	Self-reported hypertension	Moderate and severe hypertensives with BP $\geq 160/95$ mmHg	Any hypertensives with BP $\geq 140/90$ mmHg	Number of men	Who reported hypertension	Who use medication	With controlled BP $<140/90$ mmHg	With controlled BP $<160/95$ mmHg	Number	Who reported hypertension	Who use medication	With controlled BP $<140/90$ mmHg	With controlled BP $<160/95$ mmHg	Number
		Number of men	Number of men				Number of men	Number of men						
Age														
15-24	3.8	1.7	7.4	1,816	0.2	0.2	0.2	76.8	135	(0.8)	(0.8)	(0.8)	(0.8)	32
25-34	8.0	4.8	14.6	1,123	9.3	4.5	2.2	69.4	164	17.4	13.6	6.8	6.8	54
35-44	15.1	12.1	24.0	1,005	19.4	11.1	6.5	57.4	241	30.5	22.0	12.9	15.8	122
45-54	30.5	25.9	38.2	701	37.2	32.2	17.6	55.0	268	52.7	47.5	25.9	33.7	182
55-64	40.9	27.9	44.0	518	32.9	31.0	10.9	55.9	228	43.7	49.0	17.2	30.3	144
65+	42.2	36.2	52.0	507	38.4	31.9	13.9	53.3	265	46.7	45.9	20.1	32.6	184
Residence														
Urban	20.6	13.7	24.1	3,569	29.5	24.6	10.8	59.4	861	45.6	43.1	19.0	28.8	490
Non-urban	15.4	4.0	20.9	2,102	19.3	14.6	8.0	59.1	440	29.9	28.4	15.6	20.6	226
Province														
Western Cape	19.3	12.1	25.7	721	25.8	22.2	10.8	68.1	185	48.7	47.1	23.0	32.1	87
Eastern Cape	18.9	13.8	24.1	758	28.4	18.7	4.7	54.3	183	42.2	32.6	8.3	20.2	105
Northern Cape	22.8	15.7	28.7	135	29.2	20.5	8.1	58.1	39	46.4	37.4	14.8	23.7	21
Free State	20.4	12.0	25.9	444	18.1	10.6	2.8	58.6	115	28.5	22.8	6.1	10.6	53
KwaZulu-Natal	20.7	12.6	21.8	1,064	27.5	23.0	11.7	58.5	232	37.7	40.0	20.3	27.9	134
North West	14.9	11.3	23.0	551	13.1	11.8	7.1	61.0	127	25.1	23.9	14.4	20.6	62
Gauteng	21.7	16.4	24.9	1,099	36.3	31.4	15.2	54.8	273	50.5	47.5	22.9	31.7	181
Mpumalanga	16.7	7.1	14.8	378	18.5	18.5	5.8	64.8	56	(33.2)	(38.7)	(12.1)	(26.3)	27
Northern	8.7	9.0	17.4	521	18.7	17.3	13.7	63.2	90	28.9	33.5	26.5	28.9	47
Education														
No education	27.0	20.2	33.0	562	23.4	14.9	9.0	50.1	187	31.4	24.5	14.8	17.9	114
Sub A - Std 3	25.6	15.8	26.3	777	20.7	22.8	12.1	57.4	205	31.6	38.0	20.1	29.0	123
Std 4 - Std 5	22.5	9.1	21.2	755	20.5	17.0	6.9	71.6	160	39.5	39.5	16.1	33.8	69
Std 6 - Std 9	15.6	10.6	19.7	2,297	25.8	18.9	7.4	56.9	452	39.3	35.0	13.7	20.3	244
Std 10	10.1	12.8	22.5	801	34.2	29.1	13.8	62.5	180	55.3	51.2	24.2	33.9	102
Higher	11.7	12.3	22.4	440	33.7	34.3	17.7	68.3	99	57.4	62.3	32.1	42.4	54
Population group														
African	17.4	7.9	20.2	4,257	20.3	14.4	7.3	58.2	860	31.8	27.6	14.1	19.8	449
Afr. urban	19.9	11.7	21.5	2,375	23.7	17.5	8.2	57.2	510	37.1	32.1	15.1	21.5	278
Afr. non-urban	14.6	9.1	18.6	1,882	15.3	10.0	6.1	59.6	350	23.2	20.4	12.5	17.1	171
Coloured	22.3	13.6	25.9	637	24.1	19.4	6.6	58.7	165	42.2	36.9	12.5	21.4	87
White	21.4	24.6	38.0	564	46.9	42.9	17.1	62.6	214	64.1	66.2	26.4	42.2	139
Asian	23.8	18.7	29.9	195	37.0	46.2	27.7	68.2	54	52.5	68.9	41.4	52.4	36
Total	18.6	12.6	22.9	5671	26.0	21.2	9.9	59.3	1300	40.6	38.5	17.9	26.2	717

Table 12.4 Hypertension prevalence and treatment status of women

Percentage of women aged 15 and older who report having hypertension, percentage who are measured as being hypertensive using the two cut-off points of 140/90 and 160/95 mmHg and of those with hypertension, the percentage who report being hypertensive, who use medication, who have controlled their hypertension, according to background characteristics, South Africa 1998

Background characteristic	Prevalence of hypertension				Among those with any hypertension, using cut-off of 140/90 mmHg (percentage)					Among those with moderate or severe hypertension, using cut-off of 160/95 mmHg (percentage)				
	Self-reported hypertension	Moderate and severe hypertension		Number of women	Who reported hypertension	Who use medication	With controlled BP		Number	Who reported hypertension	Who use medication	With controlled BP		Number
		with BP \geq 160/95 mmHg	Any hypertensives with BP \geq 140/90 mmHg				BP $<$ 140/90 mmHg	Controlled BP $<$ 160/95 mmHg				BP $<$ 140/90 mmHg	Controlled BP $<$ 160/95 mmHg	
Age														
15-24	0.2	1.6	4.1	2,084	6.3	1.2	1.2	61.3	85	(7.8)	(3.1)	(3.1)	(3.1)	34
25-34	2.7	5.2	10.2	1,720	31.7	15.9	11.0	62.6	176	55.7	33.3	21.6	26.4	89
35-44	7.5	12.8	21.8	1,460	40.2	27.4	13.4	59.8	319	56.3	46.8	22.9	31.3	187
45-54	18.0	27.2	38.7	1,116	56.1	43.5	25.4	61.6	432	71.8	61.9	36.0	45.4	304
55-64	16.9	38.5	51.6	914	64.2	45.3	22.5	57.4	471	75.6	60.7	30.1	43.0	352
65+	25.0	42.5	60.4	861	55.2	40.9	15.6	56.4	521	68.8	58.1	22.1	38.1	366
Residence														
Urban	9.4	18.5	26.0	4,998	57.6	43.9	21.1	59.4	1299	72.3	61.7	29.8	42.9	924
Non-urban	5.5	12.9	22.3	3,157	38.8	22.7	11.9	58.4	704	55.2	39.2	20.6	28.2	408
Province														
Western Cape	9.2	18.8	27.2	799	57.5	51.1	23.5	69.1	217	76.4	74.0	34.0	55.3	150
Eastern Cape	9.0	16.4	26.4	1,161	46.0	28.1	12.6	57.9	306	63.2	45.3	20.3	32.2	190
Northern Cape	13.2	21.1	29.7	168	53.5	38.0	19.3	58.7	50	65.0	53.5	27.1	42.0	36
Free State	7.2	15.6	28.6	519	51.1	31.3	11.4	62.1	148	67.0	57.3	20.9	30.8	81
KwaZulu-Natal	7.5	17.7	24.5	1,608	54.1	34.4	18.5	51.8	394	64.6	47.7	25.7	33.2	284
North West	4.8	15.7	26.1	646	38.3	24.3	15.1	59.1	169	53.2	40.4	25.1	31.9	101
Gauteng	10.7	19.8	25.7	1,887	61.4	50.0	24.9	57.1	485	76.8	64.7	32.3	44.3	374
Mpumalanga	4.9	10.2	18.6	507	49.2	29.7	14.0	64.7	94	61.3	54.3	25.6	35.5	52
Northern	4.4	7.5	16.3	859	22.8	15.3	8.0	66.4	140	39.2	33.4	17.4	26.4	64
Education														
No education	11.6	25.4	40.0	1,186	46.7	28.3	14.0	55.1	475	61.4	44.7	22.1	29.2	301
Sub A - Std 3	7.2	21.7	33.7	1,088	50.8	33.3	15.8	58.5	367	66.7	51.7	24.5	35.6	236
Std 4 - Std 5	7.0	18.3	26.5	1,136	55.5	33.3	15.0	54.7	301	69.5	48.1	21.7	34.6	208
Std 6 - Std 9	6.4	13.8	20.3	3,093	52.4	42.7	21.8	63.0	626	69.9	62.9	32.1	45.5	425
Std 10	8.7	9.6	14.2	1,120	47.3	44.4	22.7	64.6	159	64.5	65.2	33.3	47.9	108
Higher	10.9	9.3	13.2	495	59.3	52.0	25.0	62.2	65	79.9	73.8	35.5	46.3	46
Population group														
African	5.8	14.6	23.5	6,269	47.0	28.9	15.2	57.9	1470	63.7	46.5	24.4	32.2	914
Afr. urban	6.9	17.0	25.4	3,348	54.3	35.6	18.7	57.6	852	70.2	53.2	28.0	36.5	569
Afr. non-urban	4.4	11.8	21.2	2,921	36.9	19.8	10.3	58.2	618	53.1	35.4	18.4	25.2	245
Coloured	9.0	22.4	29.5	806	56.7	47.6	21.8	61.0	238	69.2	62.7	28.7	48.6	180
White	21.1	23.4	29.1	767	63.3	64.1	30.1	64.1	223	76.7	79.8	37.5	55.4	179
Asian	11.9	18.0	22.1	300	75.3	70.6	26.7	63.8	66	84.7	86.6	32.8	55.7	54
Total	7.9	16.3	24.6	8,155	51.0	36.5	17.9	59.1	2004	67.1	54.8	27.0	38.4	1,332

Figure 12.1 Prevalence of hypertension in men, South Africa 1998

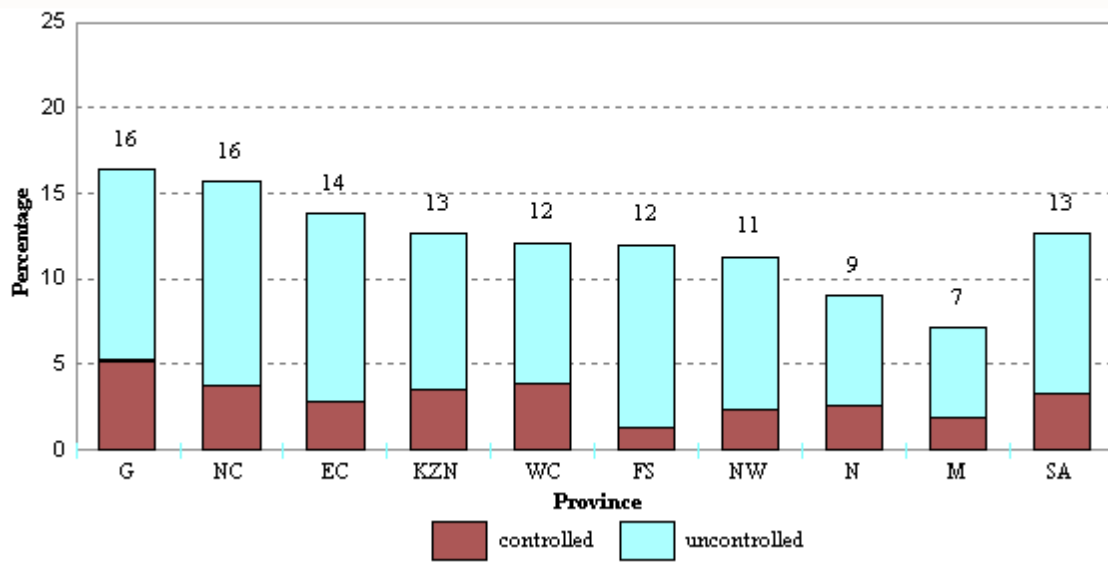


Figure 12.2 Prevalence of hypertension in women, South Africa 1998



12.5 Hypertension Risk Factors

Tables 12.5 and 12.6 show the salt-seeking behaviour of all participants and the participants with any hypertension (BP equal or above 140/90 mmHg), along with other hypertension-related risk factors.

Salt-seeking behaviour is reported more frequently in men than women including the hypertensive participants. The most common features of the salt-seeking behaviour include the fact that younger participants report consuming more salt than older participants, as do urban participants compared to non-urban participants. In fact, the urban African participants report markedly high salt-seeking behaviour as do those with more education. It has been suggested that the African people in South Africa are more salt-sensitive than other groups of South Africans (Worthington, *et al.*, 1993). Should this be the case it is of great concern that the younger urban Africans are consuming so much more salt than other groups, as they may be more prone to develop hypertension when they grow older. Already this group has a significant level of hypertension and they suffer the consequences of high stroke rates.

When the pattern of alcohol consumption of the hypertensive men and women is compared with that of all participants (Table 13.6 in Chapter 13) it is clear that more hypertensive participants consume alcohol at present than is the case for other participants. The differences for men are larger than for women, in fact 53 percent of hypertensive men consume alcohol compared to 45 percent of all men, whereas 20 percent of hypertensive women compared to 17 percent of all women consume alcohol. The young hypertensive males consume alcohol more frequently compared to all young men. The CAGE questionnaire identifies people who may have a pattern of excess alcohol use. When the prevalence of CAGE positive hypertensive patients is compared to the same prevalence in all the participants (Table 13.6) the hypertensive men have a prevalence of 29 percent compared to 23 percent in all men and for hypertensive women the prevalence is 12 percent compared to 10 percent of all women who participated. This clearly suggests that heavy alcohol use is associated with being hypertensive, particularly in men in South Africa.

The association between high levels of alcohol use and hypertension as well as an increased risk for stroke is well described in the literature (Chockalingam & Balaguer, 1999; Guidelines Subcommittee, 1999; Wannamethee & Shaper, 1996). The finding is an issue that needs consideration when South Africa formulates a policy related to alcohol consumption and the management of hypertension.

The prevalence of obesity ($BMI \geq 30$) in the hypertensive men and women, respectively is 19 percent and 45 percent. When comparing this to the data presented in Table 13.4, it is clear that this obesity prevalence in hypertensives is much higher than in the general study population, where it is for men 9 percent and for women 26 percent. This association has also been established for a long time (Guidelines Subcommittee, 1999) and identifies the need to look at the ever increasing rates of obesity in South Africans and, in particular, in African women.

Table 12.5 Hypertension risk factors - men

Percentage of all men and men with hypertension age 15 or over who eat salty foods, who add salt before tasting food and who eat salty snacks more than three times a week and, among those with hypertension, percentage who drink alcohol, who abuse alcohol, who are obese, who had their blood pressure (BP) measured in the previous year, who say they know their BP and who know it is high, according to background characteristics, South Africa 1998

Background characteristic	Among all men, percentage				Among those with any hypertension, percentage ¹									Number
	Who eat food very salty	Who add salt before tasting food	Who eat salty snacks > 3 times/week	Number	Who eat food very salty	Who add salt before tasting food	Who eat salty snacks > 3 times/week	Who drink alcohol	Who abuse alcohol ²	Who are obese ³	Who had their BP measured during last year	Who say they know their BP	Who know their BP is high	
Age														
15-24	16.9	7.8	54.8	1,816	18.3	8.5	47.7	32.5	22.5	8.8	13.0	13.0	0.0	135
25-34	19.5	7.7	45.9	1,123	23.2	8.3	45.7	55.0	36.9	13.1	31.6	28.7	5.4	164
35-44	21.5	6.9	33.2	1,005	17.6	9.6	27.6	63.0	35.2	22.0	39.8	29.3	8.5	241
45-54	18.9	5.5	27.2	701	17.8	5.3	22.6	65.6	32.9	22.3	52.9	42.3	20.7	268
55-64	16.2	4.2	19.1	518	14.7	3.8	15.2	52.3	26.8	22.0	46.3	36.7	14.4	228
65+	12.6	5.2	12.9	507	12.0	4.9	9.0	46.8	21.8	18.1	50.6	35.1	12.2	265
Residence														
Urban	19.0	7.4	41.6	3,569	18.2	7.5	26.8	53.9	28.1	21.4	47.9	36.8	11.9	861
Non-urban	16.4	5.8	33.9	2,102	13.9	4.5	21.3	54.8	32.0	13.6	30.5	24.1	10.7	440
Province														
Western Cape	16.9	5.7	26.9	721	18.5	5.1	10.2	48.3	34.8	20.5	45.5	37.9	8.5	185
Eastern Cape	14.2	8.7	26.2	759	14.4	6.6	15.0	48.8	31.9	22.2	32.5	19.7	8.1	183
Northern Cape	22.9	2.6	31.0	135	21.9	3.1	22.9	54.4	42.1	13.1	45.4	27.5	12.5	39
Free State	25.7	7.3	38.4	444	18.2	7.8	29.2	67.2	37.9	20.4	40.0	24.5	7.0	115
KwaZulu-Natal	15.6	8.2	33.4	1,064	15.8	8.3	23.2	51.6	24.0	16.0	38.7	40.1	10.9	232
North West	21.3	5.9	51.5	551	22.4	5.4	39.9	57.7	27.1	13.3	33.0	24.7	6.1	127
Gauteng	21.9	6.5	51.4	1,099	18.4	6.8	32.9	59.5	21.3	21.9	57.4	42.1	22.7	273
Mpumalanga	14.9	8.6	43.6	378	8.8	12.1	28.8	61.8	41.3	17.0	42.3	31.7	9.4	56
Northern	13.0	3.5	43.0	522	8.6	1.3	27.6	41.4	31.6	15.0	30.0	22.4	6.4	90
Education														
No education	12.3	4.8	20.8	562	8.1	4.6	13.6	58.4	32.6	12.9	30.8	18.7	8.2	187
Sub A - Std 3	20.9	5.8	28.6	777	19.2	3.6	20.2	54.4	38.2	14.1	32.5	23.7	7.2	205
Std 4 - Std 5	18.9	6.9	40.0	755	16.5	6.6	24.6	47.0	38.8	16.0	32.5	25.1	9.1	160
Std 6 - Std 9	18.6	6.3	45.2	2,297	18.3	6.7	31.5	50.5	26.7	20.1	42.4	32.8	10.9	452
Std 10	19.0	8.7	44.4	801	19.3	7.1	27.6	61.2	20.7	21.3	56.8	50.8	23.2	180
Higher	13.1	9.7	35.4	440	14.5	12.0	25.4	64.9	15.5	33.7	65.9	56.3	13.7	99
Population group														
African	18.4	6.1	42.8	4,257	16.8	5.8	29.5	51.4	32.7	16.0	30.3	22.2	7.3	860
Afr. urban	20.2	6.3	48.3	2,375	19.3	7.1	32.8	52.0	33.0	7.9	35.1	24.1	7.6	510
Afr. non-urban	16.2	5.9	35.9	1,882	13.2	3.9	24.6	50.5	32.2	2.6	23.3	19.3	6.8	350
Coloured	17.2	4.0	23.2	637	18.4	4.3	13.9	49.4	42.4	16.2	48.2	40.7	9.9	165
White	20.8	14.5	29.5	564	18.6	10.3	18.2	70.5	8.6	32.4	74.7	59.5	28.4	214
Asian	5.9	9.1	31.6	195	5.7	8.8	15.7	49.6	23.5	9.8	75.5	58.3	11.0	54
Total	18.0	6.8	38.8	5,671	16.8	6.5	24.9	54.2	29.4	18.8	42.0	32.5	11.5	1,300

¹ Any hypertension is BP 140/90 mmHg or higher

² Alcohol abuse is determined through the CAGE questions (see Table 13.6)

³ Obese is defined as having a body mass index (BMI) of 30 or over (see Table 13.8)

Table 12.6 Hypertension risk factors - women

Percentage of all women and women with hypertension age 15 or over who eat salty foods, who add salt before tasting food and who eat salty snacks more than three times a week and, among those with hypertension, percentage who drink alcohol, who abuse alcohol, who are obese, who had their blood pressure (BP) measured in the previous year, who say they know their BP and who know it is high, according to background characteristics, South Africa 1998

Background characteristic	Among all women, percentage				Among those with any hypertension, percentage ¹									
	Who eat food very salty	Who add salt before tasting food	Who eat salty snacks > 3 times/week	Number	Who eat food very salty	Who add salt before tasting food	Who eat salty snacks > 3 times/week	Who drink alcohol	Who abuse alcohol ²	Who are obese ³	Who had their BP measured during last year	Who say they know their BP	Who know their BP is high	Number
Age														
15-24	13.2	6.3	54.0	2,084	8.3	2.2	59.7	3.4	1.4	17.9	16.1	16.8	6.3	85
25-34	11.7	6.2	42.3	1,721	16.3	3.3	39.2	20.8	11.0	33.8	43.6	36.1	17.0	176
35-44	9.2	4.9	33.7	1,460	8.8	2.6	33.4	23.3	18.3	48.1	49.5	45.1	22.5	319
45-54	9.4	4.7	24.0	1,116	9.3	3.5	18.8	26.9	15.3	52.9	58.2	49.5	24.0	432
55-64	8.8	4.4	19.5	914	7.4	4.6	17.1	19.7	9.6	53.1	62.2	52.1	25.8	471
65+	7.1	3.1	12.9	861	6.8	3.4	11.8	19.0	11.3	37.7	54.9	41.0	20.4	521
Residence														
Urban	11.9	6.2	37.3	4,999	9.0	3.4	23.3	22.2	12.5	48.7	63.5	52.8	25.5	1,299
Non-urban	8.3	3.8	32.9	3,157	8.1	3.8	20.8	18.9	12.2	38.4	35.9	29.6	15.3	704
Province														
Western Cape	14.9	5.4	26.8	799	10.5	3.1	17.0	22.4	13.5	47.1	66.0	58.8	20.8	217
Eastern Cape	9.6	5.2	29.0	1,161	8.1	4.0	17.2	21.6	12.7	42.1	37.1	20.9	12.2	306
Northern Cape	17.8	1.3	27.6	168	13.4	1.0	18.1	23.7	20.8	36.9	73.1	51.1	23.2	50
Free State	12.9	4.1	29.1	519	13.6	3.3	20.6	33.3	15.8	43.3	54.1	44.9	25.4	148
KwaZulu-Natal	7.8	5.9	30.3	1,608	7.8	4.6	18.1	13.4	8.8	51.6	52.9	49.9	20.1	394
North West	9.8	3.8	45.7	647	5.8	2.3	31.8	23.2	15.1	27.2	43.7	35.4	16.1	169
Gauteng	12.7	7.4	44.1	1,887	8.2	3.3	26.8	22.9	12.6	54.4	68.3	60.1	34.7	485
Mpumalanga	8.0	2.6	37.5	507	8.2	2.3	25.4	24.7	15.1	39.8	56.2	43.0	22.2	94
Northern	7.1	3.4	40.9	859	8.2	4.2	29.6	13.8	8.1	27.5	27.5	16.1	8.2	140
Education														
No education	8.5	3.5	20.5	1,186	8.6	4.5	17.8	23.2	17.4	40.1	42.7	30.7	17.3	475
Sub A - Std 3	10.8	2.7	28.2	1,088	8.3	2.3	19.8	19.5	15.3	48.9	48.4	39.1	16.5	367
Std 4 - Std 5	10.6	5.1	31.4	1,136	8.2	3.2	19.8	15.1	14.2	46.1	53.6	45.7	26.5	301
Std 6 - Std 9	11.2	4.9	41.4	3,094	9.0	3.2	24.7	18.0	9.2	48.5	59.7	50.7	23.9	626
Std 10	11.2	9.1	45.9	1,120	9.9	6.0	35.4	32.7	3.2	35.7	71.3	65.1	28.3	159
Higher	8.2	8.5	38.7	495	7.3	1.3	28.8	40.1	3.2	46.9	73.6	68.6	32.5	65
Population group														
African	9.4	4.1	39.1	6,269	8.5	3.2	26.0	17.7	13.0	46.6	44.5	36.2	18.2	1,470
Afr. urban	10.7	4.7	43.1	3,348	8.4	2.7	29.1	17.2	14.1	52.2	54.7	44.8	22.1	852
Afr non-urban	7.9	3.4	33.5	2,921	8.5	3.9	21.7	18.4	11.5	38.8	30.6	24.3	12.9	618
Coloured	16.7	3.2	22.4	806	11.3	0.7	14.2	23.9	20.9	44.4	67.4	61.3	25.5	238
White	15.9	13.7	23.9	767	9.3	6.9	11.8	46.1	3.0	39.8	89.3	76.9	37.4	223
Asian	4.0	13.0	28.9	300	2.9	9.1	11.1	3.0	1.5	28.9	87.3	58.4	31.8	66
Total	10.5	5.2	35.6	8,155	8.7	3.5	22.4	21.1	12.4	45.1	53.8	44.6	21.9	2,004

¹ Any Hypertension is BP 140/90 mmHg or higher

² Alcohol abuse is determined through the CAGE questions (see Table 13.6)

³ Obese is defined as having a body mass index (BMI) of 30 or over (see Table 13.9)

12.6 Patient's Reported Frequency of BP Measurements and Knowledge of Their Measured BPs

Tables 12.5 and 12.6 also show how frequently hypertensive patients reported their BP had been measured during the previous year, whether they knew what their BP reading was and if it was high or not. Of the hypertensive men 42 percent had their BP measured the previous year, compared to 54 percent of women, which again points to the need to improve the care provided, particularly for hypertensive men in South Africa.

Forty-four percent of hypertensive women reported that they knew what their BP was and 22 percent said their BP was high. Only 33 percent of the hypertensive men said that they knew what their BP was and 12 percent knew that it was high. It is the younger hypertensive persons, particularly the males, whose BPs had been measured least frequently during the last year, who did not know what their BPs were and whether it was high. Similarly, it is the non-urban hypertensive patients, and particularly the non-urban African hypertensive patients, who least frequently had their BP measured. The provinces with the lowest rates of reported BP measurements during the last year are the Eastern Cape, the North West and Northern Provinces. Those with the lowest levels of education reported having their BP measured least frequently during the last year. The hypertensive patients in Gauteng reported most frequently that their BP was measured, that they knew what their BP was and most frequently reported that their BP was controlled, however, the hypertensive patients of this province did not have better control than other provinces.

Effective hypertension control requires that the patient becomes an active participant in their own care and that they have an understanding of what level of BP control has been achieved. The South African Hypertension guidelines for primary level care recommend that patients should not only know that they are hypertensive, but also if their BP is controlled. Clearly, these data show that this aspect of the guidelines has not been implemented, an issue that needs to be addressed.

12.7 Comparison of BP Control Between Public and Private Health Care Services

From the preceding data and the different patterns of prescribed drug use for hypertension between the private and public health care sector (see Chapter 11, Table 11.11) the question arises, as to which of these sectors are achieving the best hypertension control. The data presented in Table 12.7 attempt to answer this question by comparing hypertension control between the private and public health care sector in a number of ways.

As stated earlier the current guidelines for hypertension definition and control are based on a BP level of 160/95 mmHg. It is, therefore, realistic to evaluate BP control in South Africa as control below this cut-off point. However, this level may change in the future and, therefore, the level of 140/90 mmHg is also shown in this table. The table shows the prevalence of "any BP control", which is defined as hypertensive patients with a BP below 160/95 mmHg. In addition, the table shows "true BP control", which is defined as a hypertensive patient with a BP below 140/90 mmHg and moderate BP control which is the difference between the two figures calculated above.

When hypertensive patients from the private or public sector who are taking appropriate medication are compared, it is found that those from the private sector are marginally less controlled than those found in the public sector for both cut-off points used. Making this comparison by defining being hypertensive as having a BP above 160/95 mmHg or taking medication (the current definition in South Africa) we find that for both cut-off points under consideration the private sector fared better than the public sector. This would suggest that fewer hypertensive patients in the public sector were receiving medication and that the private

sector may also fare better by improved non-drug management of hypertension compared to the public sector as well as by better BP control provided by the medication used in the private sector.

Table 12.7 Public vs. private sector source of hypertension medication

Percentage of hypertensive patients who received their medication from either the public or private sector, according to level of control of blood pressure (BP), South Africa 1998

Percentage of hypertensives who received drugs from	True control BP \leq 140/90 mmHg	Moderate control BP \geq 140/90 but < 160/95mmHg	Any BP controlled BP < 160/95 mmHg	Uncontrolled BP \geq 160 /95 mmHg	Number
Among all taking medications					
Public sector	49.6	21.2	70.9	25.3	424
Private sector	47.7	20.9	68.5	24.9	582
Among those with moderate or severe hypertension ¹					
Public sector	16.3	7.0	23.3	75.5	1,292
Private sector	36.7	16.1	52.8	42.2	756
Among those with any hypertension ²					
Public sector	9.1	47.8	56.9	42.3	2,303
Private sector	27.9	36.2	64.1	32.0	995

¹ Moderate or severe hypertension is 160/95 mmHg or higher

² Any hypertension is 140/90 mmHg or higher

12.8 Chronic Obstructive Pulmonary Disease And Asthma

Chronic obstructive pulmonary disease (COPD) and asthma make up a large part of chronic lung disease in developed countries. In developing countries there is a changing pattern of disease and it is expected that these conditions will increase in developing countries. This survey describes the extent and distribution of COPD and asthma in the population aged 15 years and above in South Africa.

Chronic obstructive pulmonary disease (COPD) includes chronic bronchitis, a condition characterised by excessive mucus production in the airways (bronchi), and emphysema, in which there is damage to the gas exchange part of the lung. Asthma is a condition which overlaps with COPD, but in which the limitation of airflow is reversible. COPD and asthma result in episodic or persistent symptoms including wheezing, coughing, phlegm and/or breathlessness. Emphysema and, to a lesser extent, chronic bronchitis are associated with loss of lung function and reduced life expectancy.

In industrial countries, about 4 percent of all deaths are due to the complications of COPD (Lopez, 1993). However, the long symptomatic period of the disease and the associated episodes of respiratory infection create an enormous burden in symptom and disability days, doctor visits, medication and hospitalisation. It has been estimated that the resulting illness and death due to COPD cost the United States \$23.9 billion in 1993, of which 61 percent were direct medical costs, particularly hospitalisations. The equivalent costs for asthma were \$12.6 billion, of which 77 percent were direct medical costs (Sullivan *et al*, 2000).

The most important risk factor for COPD in developed countries is tobacco smoking, although genetic predisposition, early childhood respiratory infections, TB, occupational exposures and outdoor air pollution play contributory roles (The National Lung Health Education Program Executive Committee, 1998; Coultas, 1993). In developed countries, there is an association between COPD and lower socioeconomic class (Prescott, 1999). While asthma prevalence is not necessarily associated with poverty, the complications of asthma are.

The burden of COPD and asthma in developing countries such as South Africa is not well documented, but can be assumed to be on the increase due to ageing of the population and the increase in tobacco smoking

(Bumgarner and Speizer,1993). In addition, there are risk factors relatively uncommon in developed countries, such as indoor smoke pollution, the chronic effects of lung infection such as tuberculosis and the combination of sub-optimal nutrition and respiratory infection in early life (Bumgarner and Speizer,1993; Barker *et al.*,1991).

South African mortality data indicate that during the 1980s the contribution to total mortality from chronic lung disease rose while that from acute respiratory infection fell, so that by 1990 both were in the region of 4 percent of all deaths (Louw,1995). There were strong social differences in the burden of mortality from chronic lung disease, with white and coloured South Africans showing considerably higher death rates than Africans.

In the current survey, three types of respiratory outcome data are collected: (1) self-reporting of specific diagnoses, in this case “emphysema/bronchitis” and “asthma”, (2) self-reporting of symptom complexes, one describing airflow limitation and the other chronic bronchitis and (3) peak expiratory flow rates (PEFR) measured on a mini-peak flow meter by the interviewer during the survey.

12.9 Self Reporting of Respiratory Diagnoses

These diagnoses formed part of a list of chronic conditions in the questionnaire prefaced by the words “Has a doctor or nurse or staff member at a clinic or at a hospital told you that you had or have any of the following conditions?”

“*Emphysema/bronchitis*”

Self-reporting of these conditions can be used only as a very rough guide to the prevalence of chronic lung diseases for a variety of reasons. First, use of diagnostic terms reflects health service access, which in South Africa varies considerably by socio-economic status and geography. A term such as emphysema is likely to be used inconsistently by medical practitioners based on varying clinical criteria. Lung function testing, which contributes important information to diagnosis, is uncommon at primary care level.

Bronchitis also is a non-specific term that would elicit reports of acute bronchitis as well as chronic bronchitis. Acute bronchitis is a common ailment, often a mild and self-limiting viral infection, which may occur without underlying chronic disease. Finally, asthma in adults is probably frequently misdiagnosed as bronchitis.

The self-reported rates of emphysema/bronchitis (Tables 10.3 and 10.4 in Chapter 10) are of the order of 2 to 3 percent in men aged less than 44 years with a sharp increase (7 to 9 percent) in men over 44 years. Younger women reported these conditions more commonly than men of the same age, and showed a more even increase from one age category to the next. These figures (averaged across the age groups) are comparable to the overall estimate of 6 percent of the United States population with self-reported chronic bronchitis and/or emphysema (The National Lung Health Education Program Executive Committee, 1998).

Urban rates of reported emphysema/bronchitis are higher than non-urban rates. The association with education is complex. Among men, rates among respondents with the least and most education are somewhat higher than those with intermediate education. Among women, the trend is for those with the highest education to report the highest prevalence of emphysema/bronchitis (11 percent among women with greater than standard ten education).

In parallel with the education findings, rates are much higher among white men and women than among other population groups, with Africans reporting the lowest rates.

Among the provinces, the highest rate of emphysema/bronchitis for men and women are reported in the Western Cape and the lowest in the Free State. The range (highest to lowest) is very wide.

“Asthma”

On the one hand, self-reporting of asthma is likely to reflect some degree of under-diagnosis. On the other hand, asthma rates may be inflated by confusion with emphysema and chronic bronchitis, particularly in older age groups.

Reported asthma prevalence rates (Tables 10.3 and 10.4 in Chapter 10) are similar in men and women, and increase with age, particularly in men. Although not an age-standardised comparison, the whole range of age-specific prevalences in this survey is lower (except for men aged 75 years and over) than the prevalence of self-reported asthma from national surveys in the USA in which 6 percent of men and 6 percent of women reported asthma in 1994 (Hurd, 2000).

Urban prevalences exceed non-urban. The association of reported asthma with education is complex, with a tendency for those with intermediate education to report less asthma than those with the lowest and highest educational levels. Population group comparisons reveal the highest rates among whites and the lowest among Africans.

For reported asthma, rates among women are highest in the Western Cape and lowest in the Northern Province. Among men, similar rates (above 4 percent) are reported in the Western Cape, Eastern Cape, KwaZulu-Natal and Gauteng, with somewhat lower rates in the other provinces.

12.10 Reporting of Symptoms

Airflow limitation

This symptom complex is made up by wheezing/tight chest with breathlessness in the past year associated with sleep interruption by wheezing/tight chest or by coughing.¹ This syndrome is characteristic of airflow limitation. If this airflow limitation is reversible, spontaneously or by therapy, it should be diagnosed as asthma. However, patients with emphysema or chronic bronchitis may have similar symptoms to those of asthma and show partial reversibility of airflow limitation. Lung function testing is essential for proper evaluation of these conditions.

Women show a moderate excess in prevalence over men at most ages, with the prevalence rising from 6 percent among women aged 15 to 24 years (3 percent in men) to 14 percent in women 65 years and over (11 percent in men) (Table 12.8). It should be noted that the definition used in this survey was somewhat stricter than those used in other surveys in which individual rather than composite symptoms of airflow limitation tend to be reported. As with chronic bronchitis, non-urban rates are unexpectedly higher than urban rates.

Across educational strata, the rate of airflow limitation is highest in the group with lowest education, declining sharply with increased education. Rates among population groups show some variation, with white and Asian men showing somewhat higher rates than men in other groups, and Asian and non-urban African women reporting the higher rates among women.

Across the provinces, the Northern Cape and KwaZulu-Natal stand out as having the highest prevalences of airflow limitation.

¹ Questions and responses making up definition: During the last year have you had wheezing or tightness of your chest? If yes, were you also short of breath? Is your sleep ever interrupted by you coughing? OR Is your sleep every interrupted by a wheezing or a tight chest?

Chronic bronchitis

Reporting of symptoms is less likely to be influenced by contact with health services than is reporting of diagnoses. The chronic bronchitis symptom complex is defined by chronic cough with phlegm every day for at least 3 months a year, for at least 2 successive years.² It was one of the earliest symptom complexes to be defined by standard respiratory questionnaires, and has entered into common usage as both a clinical and epidemiological definition.

Rates of chronic bronchitis symptoms range from 0.9 percent among men and 2 percent among women aged 15 to 24 years, to 4 percent among men and 6 percent among women aged 65 years and over (Table 12.8). Rates in men are considerably lower than those reported in working populations and in some general populations in Africa including South Africa (Becklake,1995), which range from 10 to 45 percent.

Surprisingly, non-urban rates of chronic bronchitis are higher than urban rates among both men and women. There is a sharp decline in prevalence with increasing education, with those with lowest education having 5 times the prevalence of those with higher education. This is correlated with current rather than past smoking prevalences (Table 13.1 and Table 13.2 in Chapter 13). Of interest, however, in the population group comparison is that non-urban African women, who have the lowest current smoking rates (Table 13.2 in Chapter 13) report the highest prevalence of chronic bronchitis symptoms.

Among the provinces, the Northern Cape has the highest rate of chronic bronchitis among men, and the Eastern Cape the highest rate among women.

Abnormal Peak Expiratory Flow Rates

Peak expiratory flow rate (PEFR) is the maximum rate of flow of air expelled during a forced expiration. It is less sensitive and more variable than lung function measured by more sophisticated equipment, and is strongly dependent on how hard the subject tries. However, PEFR can be measured with a simple portable meter suitable for field studies, and can be regarded as a crude measure of airways function.

Besides effort, PEFR is strongly dependent on age, body size and sex. Thus, in order to examine its relationship to environmental and other variables of interest, it is necessary to control for these intrinsic sources of variation. The most common method of doing this is to express PEFR as a percentage of a predicted or reference value drawn from a study of a population suitable for this purpose.

In order to use a population as close as possible to the one studied, the total sample recruited in the survey was chosen as the reference population. Smokers were excluded from the reference group, as were people who reported asthma, emphysema/bronchitis, lung cancer or tuberculosis, those who met the definition for chronic bronchitis or airflow limitation, and women who reported pregnancy. The final reference group comprised 2,373 men and 5,080 women.

A statistical prediction model was developed as a function of age, sex and height and weight (Appendix D). From this a mean or "expected" PEFR value could be calculated for any group of interest as well as the "lower limit of normal" for PEFR (in this case 2 standard deviations below the prediction mean).

The proportions of the survey population falling below this abnormal threshold value are reported for each stratum of interest (Table 12.8).

The prevalence of abnormal PEFR increases with age for men and women. The highest prevalence of abnormal PEFR in both men and women is reported in the Northern Cape, a finding which parallels the prevalence of airflow limitation.

² Questions and responses used for definition: Do you usually cough? When you cough, do you usually bring up phlegm from your chest? If yes, have you brought up phlegm every day for at least three months during the last year? If yes, for how many years have you brought up phlegm in this way? (> 2).

As with the symptom complexes, there is a sharp increase in the prevalence of abnormal PEFR with decreasing educational attainment. Men with no education show a five times higher prevalence of abnormal PEFR than men with greater than standard 10 education. The corresponding ratio for women is fourfold.

When prevalence of abnormal PEFR is compared by population group, white men have the lowest prevalence and Asian men the highest. Among women, coloured women have the highest prevalence of abnormal PEFR, and Asian women the lowest.

Table 12.8 Symptoms of lung disease

Percentage of men and women aged 15 years and over who report symptoms of airflow limitation or chronic bronchitis or who have abnormal peak flow rates, according to background characteristics, South Africa, 1998

Background characteristic	MEN				WOMEN			
	Airflow limitation	Chronic bronchitis	Abnormal peak flow rates	Number of men	Airflow limitation	Chronic bronchitis	Abnormal peak flow rates	Number of women
Age								
15 - 24	3.1	0.9	1.8	1,816	5.6	1.9	2.3	2,084
25 - 34	4.6	1.7	2.3	1,123	6.4	1.4	2.2	1,721
35 - 44	7.3	2.4	4.5	1,005	8.3	2.5	3.9	1,460
45 - 54	11.1	4.8	6.4	701	10.3	3.7	5.6	1,116
55 - 64	12.2	3.6	9.3	518	12.7	4.1	7.2	914
65+	11.1	4.3	5.8	507	14.2	5.6	7.8	861
Residence								
Urban	5.9	2.2	3.9	3,569	8.0	2.2	4.5	4,999
Non-urban	8.1	2.6	4.1	2,102	9.6	3.7	3.5	3,157
Province								
Western Cape	4.4	2.4	2.9	721	7.1	3.0	5.5	799
Eastern Cape	6.9	3.0	3.7	758	8.0	4.9	4.1	1,161
Northern Cape	10.3	5.1	9.4	135	9.1	2.5	11.8	168
Free State	6.4	1.6	3.8	444	6.8	2.1	2.2	519
KwaZulu-Natal	10.0	2.8	4.2	1,064	13.5	3.6	3.2	1,608
North West	4.7	1.9	2.3	551	7.4	0.9	4.7	647
Gauteng	7.3	2.4	5.5	1,099	8.3	2.4	5.6	1,887
Mpumalanga	5.4	1.4	3.7	378	7.1	1.6	1.9	507
Northern	3.8	1.3	3.1	521	5.4	1.5	2.0	859
Education								
No education	13.9	5.1	8.2	562	15.7	5.6	7.0	1,186
Sub A - Std 3	11.6	3.7	7.0	777	13.0	4.5	6.4	1,088
Std 4 - Std 5	7.5	2.8	4.9	755	7.7	2.4	3.4	1,136
Std 6 - Std 9	4.3	1.4	2.7	2,297	6.3	2.1	3.5	3,094
Std 10	5.3	1.6	1.6	801	6.2	1.0	2.6	1,120
Higher	2.1	1.1	1.7	440	4.6	0.9	1.8	495
Population group								
African	6.5	2.1	4.2	4,257	8.5	2.8	4.1	6,269
Afr. urban	5.7	1.8	4.4	2,375	7.5	2.1	5.1	3,349
Afr. non-urban	7.4	2.4	4.0	1,882	9.7	3.6	2.9	2,921
Coloured	6.2	3.6	3.8	637	8.2	2.8	5.5	806
White	8.5	2.8	2.4	564	8.1	2.9	4.0	767
Asian	8.9	2.9	4.9	195	12.5	0.7	2.7	300
Total	6.7	2.3	4.0	5,671	8.6	2.8	4.1	8,156

12.11 Associations of Respiratory Symptoms and Abnormal PEFR with Risk Factors Measured in the Survey

The associations between specific risk factors and chronic lung diseases are examined by cross-tabulation of responses to questions about smoking, indoor air pollution, occupational exposure, underground mining (in men) and past tuberculosis with the symptom responses and abnormal PEFR prevalences. The comparison is expressed as a prevalence ratio, where a ratio of one implies no association and a ratio of two a “moderate” association. It should be emphasised that these risk factors may be correlated with each other, and that the resulting associations need to be examined further in an analysis that is able to control for competing risk factors so as to isolate the effect of the risk factor of interest more clearly. In this analysis, the prevalence ratios are adjusted for age only.

Tobacco smoking

The importance of tobacco smoking in respiratory disease in South Africa is confirmed by the finding that at all ages, men and women, who had “ever” smoked have a higher prevalence particularly of chronic bronchitis, but also of episodic airflow limitation and abnormal PEFR, than “never smokers”(Table 12.9).

There is a complex exposure response relationship between the number of years smoked and such symptoms (data not shown). In many of the age strata, smokers who have smoked for more than the median number of years have lower prevalences than those with fewer years of smoking. Inaccurate reporting of duration of smoking history may be one explanation for this anomaly. Another explanation is that smokers who suffer respiratory symptoms are more likely to give up smoking, producing a spurious association between symptoms and shorter duration of smoking.

Tobacco smoking and associated policy needs are discussed in detail in Chapter 13. However, some points bear emphasis in this chapter. The impact of tobacco smoking on lung function and associated symptoms is slow and cumulative, beginning with a long phase in which smokers may be unaware of lung damage, followed by a period in middle and later life of increasing symptoms and disability.

There is good evidence that smokers who quit can slow the accelerated decline in their lung function compared to those who continue smoking (Rennard,1998). Further, among smokers there is a sub-group at greater risk of significant COPD. The earlier in the natural history that these “fast decliners” can be detected and assisted to stop smoking, the greater the lung function loss and risk of significant COPD prevented.

The benefits of smoking cessation have important implications for action within the health services. Early detection of lung function loss through spirometry may be a means of both identifying those at highest risk of COPD in later life and also a valuable educational tool in assisting such people to give up smoking. However, unlike the widespread availability of blood pressure measuring equipment, spirometers are typically unavailable outside of the private sector and the larger state hospitals.

COPD is associated with relatively high consumption of a variety of medications by patients. However, many of the medications prescribed and used in the treatment of COPD offer little or arguable benefit, requiring a more discriminating prescribing policy by practitioners (Working group of the South African Pulmonology Society,1998).

At the level of referral services, there is a shortage of medical practitioners with special expertise in respiratory medicine in a number of areas of the country. In addition, there has been a downgrading of the

profession of clinical pulmonary technologist (with special expertise in lung function testing) in recent years as a result of the freezing or disappearance of hospital posts. This will reduce incentives to enter the profession and cause a shortage of trained pulmonary technologists in state hospitals in the future.

Exposure to indoor air pollution from cooking fuels

High exposures to indoor air pollution are common in the developing world (Smith,1987). The use of fuels such as coal, wood and cow dung for domestic purposes in conditions of inadequate ventilation has the potential to produce high concentrations of indoor air pollution. This has been implicated in both acute and chronic respiratory disease, including acute respiratory infection in children (Bumgarner and Speizer,1993; Terblanche *et al.*,1993).

In this study, respondents who use coal, wood or animal dung for cooking and heating report higher prevalences of chronic bronchitis than those reporting use of electricity, gas or paraffin (Table 12.9). The effect is weaker for airflow limitation and hardly evident for abnormal PEFr.

Also, the effect is not consistent across different age groups. Among men, the association is strongest in the younger age groups, particularly the age group 25 to 34 years, while among women the effect is strongest in older age groups, particularly the age group 55-64 years. Speculatively, this may fit a pattern whereby the cumulative effect of indoor air pollution is evident in women who spend most time at home and among young adult men at home prior to their entry into the workplace and among whom rates of unemployment are highest.

Besides indoor air pollution, the above findings may be partly due to the correlated effects of tuberculosis. Local outdoor air pollution from use of these fuels in residential areas may also contribute to this effect (Terblanche,1993).

The survey did not include questions about outdoor air pollution. The findings of higher prevalences of symptoms in non-urban/countryside respondents than urban suggest that factors other than pollution from industry and motor vehicles are important. In addition, the most urban industrialised province, Gauteng, did not stand out as having the highest prevalences of symptoms or PEFr abnormality.

However, a previous study of the effects of outdoor air pollution in the Vaal Triangle revealed a health impact of some magnitude (Terblanche,1993). There are also parts of the country with high prevalences of respiratory symptom complaints attributed to indoor air pollution, for example in areas of Cape Town and Durban. In addition, the contribution of motor vehicles to air pollution in the form of photochemical smog is likely to increase. A recent study of Cape Town's "brown haze" phenomenon found a high proportion of the haze was attributable to diesel exhaust (Wicking-Baird,1997). The recapitalisation of the country's taxi fleet with diesel mini-buses, if successful, has the potential to add to the country's load of air pollution, particularly in respect of small particulates.

Occupational exposure

Occupational respiratory hazards exist in a range of sectors including mining, construction, manufacturing and agriculture. While there are a number of specific work exposures that have been shown to cause fibrosis of the lung, occupational asthma and chronic bronchitis, there is more general evidence associating work in dusty occupations with COPD (Becklake,1989). In this survey respondents were asked whether they had "ever worked in a job.... regularly exposed to smoke, dust, fumes or strong smells", and the duration in such a job.

There is a moderately strong association in males between occupational exposure and both airflow limitation and chronic bronchitis, and a little less so for PEFr abnormality. Of note is that these prevalence ratios are generally higher than those for smoking.

As with smoking, however, there is no clear exposure response effect by years of exposure (data not shown). Similar bias factors may be operating here as for smoking, including inaccurate reporting of duration of exposure and selection of those with respiratory symptoms out of the more polluted jobs. In addition, the nature of the household survey methodology in this study may have introduced biases with respect to occupational influences. This is discussed in more detail in section 10.8 in Chapter 10.

Work-related COPD outside the mining sector is not a compensatable disease. While the difficulties of attributing cause in individual cases is recognised, an unfortunate consequence is that the contribution of occupational air pollution to aggravation of COPD is under-recognised and an opportunity for prevention lost.

Underground mining work

Underground mining work, which is of particular relevance in South Africa, is associated with a variety of respiratory hazards, the principal being silica in the gold mining industry. Silica exposure and silicosis are in turn associated with an increased risk of tuberculosis.

A sizeable number of male respondents (n=562) reported ever having worked underground in a mine, reflecting the importance of this sector in South Africa. An increased prevalence of airflow limitation, chronic bronchitis and abnormal PEFr is evident among those who had done such work (Table 12.9).

This survey supports what has been found in a limited number of studies (Cowie and Mabena, 1991; Hnizdo, 1992) namely, that underground mineworkers are at increased risk of COPD. This condition has in fact been compensatable in mineworkers for a long time, although it is likely that it is under-recognised and under-reported by medical practitioners, particularly in Africa.

This is a striking example of a population-based survey documenting an apparent adverse health effect of dust or other respiratory hazards associated with mine work. This association may contribute to the adverse effects noted under more general occupational exposure in the previous section. Here too, however, further analysis is needed to examine the relative effects of other factors such as smoking and tuberculosis that may be associated with mine work.

Tuberculosis

Although active pulmonary tuberculosis is curable if diagnosed early and adequately treated, permanent damage to the lungs is commonly noted in persons with a prior history of tuberculosis. Such damage may take the form of scarring and shrinkage of part of the lung, damage to the air spaces, or abnormal dilatation of the bronchial tree (bronchiectasis). Chronic phlegm production and airflow limitation may be features of such damage.

There was a strong association between a history of diagnosed tuberculosis and airflow limitation, chronic bronchitis and abnormal PEFr among men and women, confirming the importance and impact of the tuberculosis epidemic at the population level. The prevalence ratios are the highest of any of the associations investigated.

These data add to the findings of a recent study of mineworkers that observed a strong impact of tuberculosis on airflow limitation, the effect increasing after recurrent episodes of tuberculosis (Hnizdo *et al.*, 2000). Tuberculosis in South Africa is discussed in more details in Chapter 10, Section 10.6.

Table 12.9 Lung disease and risk factors

Percentage of men and women aged 15 and over who report symptoms of airflow limitation or chronic bronchitis or who have abnormal peak flow rates, by history of various risk factors for lung disease (smoking, past TB, exposure to smoky home fuels, exposure to occupational air pollution, or underground mining work), South Africa, 1998

Risk factor	Airflow limitation			Chronic bronchitis			Abnormal peak flow rate		
	Yes	No	Prevalence ratio*	Yes	No	Prevalence ratio*	Yes	No	Prevalence ratio*
M E N									
Tobacco smoking	9.0	4.2	1.7	3.3	1.2	2.1	5.1	2.8	1.4
Indoor fuel exposure	7.6	6.2	1.3	3.1	1.9	1.8	4.5	3.8	1.2
Occupational exposure	13.0	3.7	2.8	4.3	1.4	2.3	6.2	3.0	1.6
Underground mine work	13.1	7.6	0.7	3.9	2.5	0.8	6.5	4.0	1.3
History of TB	32.7	5.9	4.3	14.7	2.0	5.7	13.4	3.7	2.8
W O M E N									
Tobacco smoking	12.5	7.4	1.5	4.7	2.1	1.9	6.4	3.4	1.3
Indoor fuel exposure	10.0	7.9	1.2	4.0	2.2	1.7	4.5	3.9	1.1
Occupational exposure	14.2	7.7	1.7	3.9	2.6	1.4	5.9	3.8	1.4
History of TB	20.7	8.4	2.3	18.3	2.5	4.7	11.7	4.0	2.6

* Adjusted for age

12.12 Discussion

The data presented here show clearly that about 6.1 million South Africans have a BP of $\geq 140/90$ mmHg or are taking medication for hypertension, which, if untreated, imparts risk to develop strokes, heart attacks, kidney failure, eye diseases and even heart failure. Of these, about 3.3 million have high risk ($BP \geq 160/95$ mmHg) for these conditions if uncontrolled. About a quarter of hypertensive men and half of the women know that they suffer from the condition, and less than 40 percent of men and about 55 percent of women are taking appropriate hypertensive medication. About a third of the patients with hypertension have a BP below 160/95mmHg. Ideally, good BP control is present when hypertensive patients have BP below 140/90mmHg. Depending on what definition of hypertension is used, about a quarter of hypertensive women and less than 20 percent of hypertensive men had BP control that reduced the risk of target organ damage that will reduce the level of morbidity and mortality. It is particularly the high risk non-urban African hypertensive men and women who had the worse level of hypertension control, along with the young male hypertensive patients. Although a large proportion of South Africa's chronic diseases drug bill is spent on anti-hypertensive medication relatively little benefit will be gleaned from this expenditure if such poor levels of control are achieved.

Many aspects of lifestyle-related hypertension risk factors have been found to be much higher in the hypertensive patients than in the general population, including alcohol use and being obese. Although crude methods of identifying high salt intakes were used in this study that did not show a difference between hypertensive and normotensive participants, they clearly showed that young people consume more salt than older people. If the hypertensive people in our country are found to be salt-sensitive, this higher intake of salt in the young might well predispose even more of them to develop hypertension when they grow older in comparison to what is currently found in the older African people in the country. South Africa bread has a much higher level of salt than that of other industrialised countries and many foods are preserved with high levels of sal in the country. This aspect of the food industry needs attention if BP levels are to be

controlled. Also important is the issue of excessive alcohol use as a predisposing risk factor for hypertension. Similarly, being obese also needs to be addressed if hypertension rates are to be reduced. The level of hypertension diagnoses is inadequate, particularly in younger men and more so in non-urban African men. Many aspects of patient education that are recommended in the guidelines for hypertension care in South Africa need to be addressed according to these findings. For example as seen from Chapter 10, Table 10.7 relatively few patients knew the names of their drugs or, as seen from Tables 12.5 and 12.6, very few patients knew if their BP was high or controlled. About half of the women and just more than a third of the men had their BP measured during the previous year.

The data presented here represent the first national survey of the symptoms and prevalence of chronic lung disease in South Africa. A potential bias is that healthy working people may be under represented in a household survey. Previous morbidity information was derived from surveys of selected populations only.

For example, Wicht *et al.* (1979) demonstrated high prevalences of COPD and moderate prevalences of asthma in a population sample of whites in Cape Town. A number of workforce studies have demonstrated high rates of chronic bronchitis (Becklake, 1995). Studies of asthma in children in Cape Town documented high population prevalences of asthma symptoms in children (Ehrlich *et al.*, 1994), although in an international comparison using a video depicting scenes of asthma symptoms the prevalence of wheezing in Cape Town pre-adolescents lay in the mid-range internationally (ISAAC Steering Committee, 1998).

Regarding asthma specifically, the findings of this survey suggest that asthma is underdiagnosed and undertreated. As stated earlier, it is difficult in a survey of this nature to distinguish asthma from COPD in adults. Nevertheless, of the prevalence of airflow limitation reported (10 to 15 percent of the population above 44 years of age), a significant proportion is likely to have asthma.

The public health and clinical approaches to asthma are usually distinguished from those with respect to COPD. While measures to reduce tobacco consumption as well as domestic and workplace air pollution are likely to have a positive impact on the asthma, medical evaluation and therapy make a particularly significant contribution to the quality of life of people with asthma. Early diagnosis of asthma is important in that proper patient education and treatment can maintain the quality of life, and perhaps slow down the rate of lung function loss, in people with asthma.

There is evidence internationally that asthma is underdiagnosed and undertreated, and similar local evidence for children (Ehrlich *et al.*, 1998). Treatment guidelines for asthma have been produced by consensus expert groups (Potter *et al.*, 1994; South African Pulmonology Society Adult Asthma Working Group, 2000) and have been updated from time to time.

Recent guidelines have emphasised the use of inhaled adrenergic and steroid agents in milder, more frequently encountered asthmatics. Table 11.10 in Chapter 11 gives an indication of the medications commonly used to treat asthma and chronic bronchitis. The data show a strong preference for use of oral agents (adrenergics and xanthines) in these conditions. This preference may be that of the prescribers or consumers of these medications, but either way there is cause for concern because of the low efficacy and generally poor cost-benefit ratio of this type of medication. In this survey, inhaled adrenergics and steroids were reported half as often as the oral medications.

The relatively high cost and/or unavailability of asthma care in poorly-resourced health care facilities should be recognised (Watson and Lewis, 1997). However, the cost-effectiveness of such treatment for the system as a whole in reducing frequent severe attacks and hospital admissions needs to be taken into account.

CHAPTER 13

ADULT HEALTH RISK PROFILES

13.1 Introduction

This chapter reports on the smoking and drinking behaviour of adult South Africans aged 15 and older. Data on tobacco use were collected using a standard questionnaire recommended by the WHO to monitor the tobacco epidemic (WHO, 1998). In addition, participants were asked their opinions on the health effects of tobacco use, their exposure to environmental tobacco smoke and their exposure to other fumes and dust. Eight questions to assess lifetime and current use of alcohol, weekend and weekday consumption as well as a four-item measure of alcohol dependence were included in the questionnaire.

This chapter, also reports on the anthropometric measurements of South Africans, as over nutrition causing overweight and obesity is often linked to many chronic diseases of adulthood, such as hypertension, type II diabetes, ischaemic heart disease, strokes and several cancers which are often preceded by a state of chronic over nutrition (WHO/NUT/NCD, 1998; Jung RT, 1997). A number of smaller cross-sectional studies in various settings in South Africa have suggested that over nutrition already constitutes a significant problem in South Africa. Furthermore, these studies show that obesity independently predicts the emergence of hypertension and diabetes in adult South Africans. In the adult health module of the SADHS an attempt was made to describe the anthropometry of South Africans by means of easily measured variables. In addition, the perception participants have about their own body weight was also investigated.

13.2 Prevalence of Tobacco Use Among Adults

Tables 13.1 and 13.2 show the prevalence of tobacco use among men and women, respectively, as well as the mean age at which smokers started and their duration of smoking according to background characteristics. One in four South African adults smokes. Smoking is much more common among men than women; 42 percent of men and 11 percent of women smoke cigarettes either daily or occasionally. Women though, are more likely to use snuff than men; 11 percent of women used smokeless tobacco products compared to less than one percent of men. Over half of men and about one-quarter of women have ever used any form of tobacco.

In both sexes, more urban than non-urban residents have ever used tobacco products. The province with the highest prevalence of tobacco use for both men (65 percent) and women (43 percent) is the Northern Cape, while the lowest prevalence rate for men is in the Northern Province (37 percent) and for women in KwaZulu-Natal (11 percent). Those with the least formal education have the highest prevalence rates of ever using tobacco products. This finding may however be influenced by the fact that older people mostly have lower levels of education than younger people. African men are less likely to have ever used tobacco products than other men. For women, differences are much more marked, with coloured women ever used tobacco products four times more likely to have as Asian women (52 vs.12 percent). Figure 13.1 shows the prevalence of smoking by population group and sex.

Smokeless tobacco has rarely been used by men, but almost as many women have used snuff as have smoked cigarettes. The few men who have used smokeless tobacco are mostly older than 65 years, have no or little formal education and live in the non-urban areas of Northern or North West province. For

women the picture is quite different. Particularly for non-urban African women, the proportion who have ever used smokeless tobacco daily (13 percent) is double the proportion who have ever smoked (5 percent). The only other group of women who have used smokeless tobacco is the coloured group, but far less frequently. Smokeless tobacco use is highest among older women with low levels of formal education living in non-urban areas. The highest ever use rates among women were reported in the Free State (21 percent) and the North West provinces (21 percent) and the lowest rate in the Western Cape (1 percent).

Smoking starts early in life. In the age group 15-24 years, 24 percent of men and 6 percent of women are already smoking. Prevalence rates are higher in urban settings than in non-urban ones, especially for women, where the difference is almost two-fold (13 vs. 7 percent). The Northern Cape and Western Cape have the highest rates of current smoking, while the lowest rates by far were recorded in the Northern Province. Among men, smoking is clearly related to education level, with more educated men less likely to smoke than those with less education. However, among women there is little difference in smoking prevalence according to education. Coloured (57 percent) and Asian men (54 percent) are more likely to smoke than African (40 percent) or white men (39 percent). Coloured women are the most likely to be current smokers (40 percent), followed by white women (27 percent). Only 5 percent of African and 9 percent of Asian women are smokers.

Most smokers use manufactured cigarettes (80 percent of men and 83 percent of women). However, older non-urban African men and women are more likely than other groups to smoke pipes and other forms of tobacco instead of manufactured cigarettes. The mean duration of tobacco smoking for both sexes is about 19 years. The mean age of starting for men was about 20 years and for women a little later at about 22 years.

Smoking during pregnancy is not only harmful for the mother, but can also cause health problems for the developing foetus. Of the 198 pregnant women who participated in the study, 9 percent reported smoking during their pregnancy, with higher levels among coloured women (data not shown). A similar finding was also reported by Steyn *et al.* (1997).

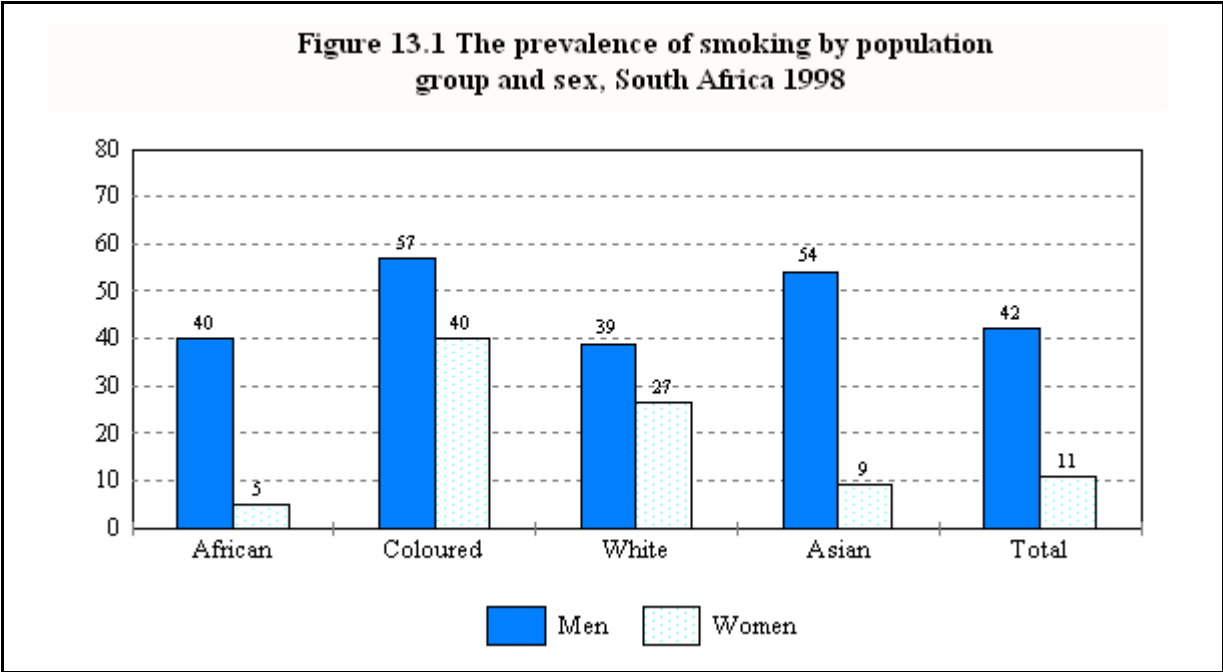


Table 13.1 Tobacco use among men

Percentage of all men aged 15 and over who ever used tobacco products and among those who ever smoked daily, the percentage who smoked manufactured cigarettes, the mean duration of smoking and mean starting age, according to background characteristics, South Africa 1998

Background characteristic	Among all men, percentage who:							Among men who ever smoked cigarettes daily					
	Ever used any tobacco products	Ever used smokeless tobacco daily	Ever smoked tobacco daily	Currently smoke daily	Currently smoke occasionally	Smoke daily or occasionally	Number of men	Percentage who smoked manufactured cigarettes	Mean duration of smoking in years	STD Error	Mean age when started smoking	STD Error	Number who ever smoked cigarettes daily
Age													
15 - 24	28.0	0.4	27.6	20.0	4.3	24.4	1,816	90.1	5.0	0.17	16.3	0.13	501
25 - 34	60.2	0.1	60.0	45.1	8.1	53.1	1,123	85.8	10.4	0.23	18.9	0.20	674
35 - 44	67.3	0.4	66.7	51.1	7.6	58.7	1,005	81.6	17.7	0.38	20.8	0.26	670
45 - 54	63.3	2.1	61.9	44.3	3.0	47.4	701	74.9	25.6	0.53	20.7	0.37	434
55 - 64	64.9	1.6	62.0	39.8	7.0	46.9	518	69.8	30.6	0.88	22.6	0.55	321
65+	67.1	3.2	63.8	35.4	3.2	38.5	507	63.1	37.6	1.12	23.4	0.55	324
Residence													
Urban	55.1	0.7	54.3	38.0	6.1	44.1	3,569	86.5	18.2	0.40	20.0	0.19	1,939
Non-urban	48.3	1.3	46.8	34.4	4.9	39.3	2,102	66.3	19.4	0.52	20.2	0.22	984
Province													
Western Cape	59.6	0.4	58.9	44.7	4.3	48.9	721	86.6	20.0	0.94	18.9	0.36	424
Eastern Cape	56.0	0.7	55.4	37.3	8.6	45.9	758	74.9	19.5	0.65	20.3	0.30	420
Northern Cape	64.5	0.2	64.3	55.0	2.6	57.7	135	77.6	22.1	0.86	19.4	0.27	87
Free State	55.0	1.1	54.5	37.1	6.9	44.0	444	69.0	19.6	0.76	20.3	0.33	242
KwaZulu-Natal	48.6	0.7	47.3	32.5	5.6	38.1	1,064	77.0	17.5	0.73	20.4	0.38	503
North West	53.7	1.7	52.1	41.5	3.8	45.3	551	71.5	19.7	0.89	21.5	0.46	287
Gauteng	54.7	0.5	54.0	35.5	6.9	42.4	1,099	89.7	16.9	0.96	20.1	0.44	593
Mpumalanga	49.8	0.9	49.3	37.7	2.3	40.0	378	77.2	18.6	0.82	19.1	0.35	186
Northern	37.2	2.2	34.7	24.8	4.4	29.2	521	80.2	16.3	1.14	19.9	0.51	181
Education													
No education	63.9	2.7	61.2	44.7	5.7	50.5	562	48.2	28.6	0.89	22.0	0.39	344
Sub A - Std 3	59.7	1.5	57.7	44.6	4.3	48.9	777	62.3	21.9	0.76	20.7	0.45	448
Std 4 - Std 5	54.3	1.0	53.2	39.2	5.7	44.8	755	80.5	18.6	0.73	19.9	0.32	402
Std 6 - Std 9	48.4	0.6	47.9	34.7	6.0	40.7	2,297	87.6	16.3	0.45	19.4	0.21	1,101
Std 10	49.3	0.2	48.9	32.5	5.5	38.0	801	95.5	13.5	0.78	19.8	0.35	392
Higher	49.0	0.0	48.3	25.4	6.7	32.0	440	96.1	15.3	0.96	19.3	0.32	213
Population group													
African	48.3	1.0	47.2	33.9	6.1	40.0	4,257	75.0	17.2	0.36	20.8	0.18	2,008
Afr. urban	50.5	0.6	49.8	35.3	7.1	42.3	2,375	82.2	16.6	0.47	20.8	0.25	1,182
Afr. non-urban	45.4	1.4	43.9	32.2	4.9	37.1	1,882	64.7	18.2	0.56	20.7	0.25	826
Coloured	65.2	0.4	65.1	54.9	2.0	57.0	637	80.6	21.9	0.71	18.2	0.27	415
White	65.6	1.2	64.4	33.4	5.6	39.0	564	96.9	21.9	1.15	18.4	0.35	363
Asian	66.4	0.5	65.9	47.7	6.5	54.2	195	99.4	19.5	1.28	20.0	0.76	129
Total	52.6	0.9	51.5	36.7	5.6	42.3	5,671	79.7	18.6	0.33	20.1	0.14	2,923

Note: STD Error = standard deviation of the mean

Table 13.2 Tobacco use among women

Percentage of all women aged 15 and over who ever used tobacco products and among those who ever smoked daily, the percentage who smoked manufactured cigarettes, the mean duration of smoking and mean starting age, according to background characteristics, South Africa 1998

Background characteristic	Among all women, percentage who:						Number of women	Among women who ever smoked cigarettes daily					Number of women who ever smoked cigarettes daily
	Ever used any tobacco products	Ever used smoke-less tobacco daily	Ever smoked tobacco daily	Currently smoke daily	Currently smoke occasionally	Smoke daily or occasionally		Percentage who smoked manufactured cigarettes	Mean duration of smoking in years	STD Error	Mean age when started smoking	STD Error	
Age													
15 - 24	9.8	2.8	7.0	4.7	0.9	5.6	2,084	94.0	4.3	0.27	16.1	0.25	145
25 - 34	19.3	7.0	12.3	8.5	1.2	9.7	1,720	84.5	10.0	0.42	19.6	0.37	211
35 - 44	30.0	9.8	20.3	14.6	1.5	16.1	1,460	86.1	16.5	0.60	21.8	0.51	296
45 - 54	35.6	13.5	22.0	15.3	1.9	17.2	1,116	82.5	22.7	0.76	23.0	0.56	245
55 - 64	33.8	16.3	17.8	9.3	1.3	10.7	914	78.8	29.2	1.16	24.0	0.76	162
65+	36.2	22.9	13.4	6.6	1.0	7.6	861	65.2	35.1	1.81	27.6	0.97	116
Residence													
Urban	26.8	8.7	18.1	11.5	1.7	13.3	4,998	89.3	18.3	0.61	21.4	0.31	906
Non-urban	20.7	12.1	8.5	6.1	0.5	6.6	3,157	61.7	19.3	1.24	23.0	0.55	270
Province													
Western Cape	41.1	1.2	39.7	27.0	2.3	29.4	799	90.9	19.4	1.11	19.4	0.42	317
Eastern Cape	20.0	6.3	13.8	8.9	1.9	10.8	1,161	57.6	21.2	0.96	25.3	0.83	160
Northern Cape	43.4	7.7	35.6	28.8	2.5	31.4	168	75.4	19.3	0.82	20.8	0.58	60
Free State	34.3	21.4	13.5	9.3	1.5	10.9	519	66.4	18.1	1.48	23.6	1.11	70
KwaZulu-Natal	11.4	4.6	6.5	4.1	0.7	4.8	1,608	92.1	15.2	1.63	24.1	0.94	104
North West	29.7	20.7	9.1	6.8	0.8	7.6	646	65.3	22.3	1.62	23.9	1.18	59
Gauteng	30.5	12.6	17.9	10.8	1.4	12.2	1,887	93.0	17.4	1.34	21.0	0.59	338
Mpumalanga	19.4	10.7	9.3	5.8	0.6	6.3	507	73.0	18.1	2.23	20.8	0.91	47
Northern	15.2	12.8	2.4	1.2	0.6	1.8	859	100.0	11.2	1.81	20.8	3.22	20
Education													
No education	36.6	22.5	14.1	10.3	1.2	11.5	1,186	49.2	25.2	1.08	24.8	0.71	168
Sub A - Std 3	33.1	15.7	17.4	11.5	1.3	12.8	1,088	67.7	20.4	1.21	22.6	0.85	189
Std 4 - Std 5	25.4	10.9	14.8	10.6	1.0	11.7	1,136	81.6	19.8	1.19	21.6	0.59	168
Std 6 - Std 9	19.6	7.1	12.6	8.2	1.2	9.4	3,092	94.6	16.8	1.02	21.2	0.47	388
Std 10	16.5	2.3	14.1	8.9	1.4	10.3	1,120	98.9	15.6	1.31	20.5	0.67	158
Higher	21.1	1.5	18.8	7.6	2.3	9.9	495	100.0	13.5	1.40	20.1	0.56	93
Population group													
African	18.9	12.6	6.4	4.2	0.8	5.0	6,268	65.5	18.5	0.77	25.0	0.53	400
Afr. urban	19.9	12.4	7.7	5.0	1.1	6.2	3,347	75.8	17.8	0.96	24.7	0.71	257
Afr. non-urban	17.8	12.9	4.9	3.3	0.5	3.7	2,921	46.9	19.9	1.29	25.6	0.74	143
Coloured	52.3	2.9	49.4	37.3	2.7	40.0	806	84.4	20.3	0.88	19.5	0.38	398
White	44.3	0.4	43.5	23.2	3.4	26.6	767	100.0	17.3	1.29	20.5	0.40	334
Asian	12.3	0.0	12.2	7.6	1.4	9.0	300	100.0	12.4	1.91	23.6	1.24	37
Total	24.4	11.2	14.4	9.4	1.3	10.7	8,155	83.0	18.6	0.28	21.8	0.28	1,175

Note: STD Error = standard deviation of the mean

13.3 Perceptions About Tobacco Use and Tobacco Cessation Patterns in Adults

Table 13.3 shows data about participants' perceptions as to whether smoking is harmful to health as well as the proportion of smokers who attempted and succeeded in stopping tobacco use. Almost 90 percent of men and 94 percent of women thought that smoking is harmful to one's health. This perception was uniformly high with little difference by background characteristics except that those with higher levels of education thought so more frequently than those who were less educated.

Of current and former regular smokers of tobacco, 66 percent of men and 83 percent of women have tried to quit. Of this group, 19 percent of men and 51 percent of women succeeded. Even among those aged 15-24 years, at least two-thirds of smokers have tried to quit, though only 12 percent of the men and 37 percent of the women have succeeded in doing so. Older people are more likely to have quit, perhaps because they were motivated by ill health caused by their many years of smoking.

It is interesting to note the high rates of quitting reported by African women. Almost three-quarters of non-urban African women who ever smoked regularly have quit. For the urban African women, this figure is 63 percent. Such high rates were not observed for African men. The highest rate of successful quitting was reported for white men. Coloured men and women had the lowest quitting rate.

Table 13.3 Perceptions about tobacco on health and tobacco cessation patterns of adults

Percentage of men and women age 15 and above who think smoking is harmful to health and of the percentage of women who ever smoked tobacco regularly who tried to quit and who are ex-smokers by background characteristics, South Africa 1998

Background characteristic	Men					Women				
	All men		Ever smoked tobacco regularly ¹			All women		Ever smoked tobacco regularly ¹		
	Percentage who think smoking is harmful to health	Total	Percentage who ever tried to quit	Percentage who are ex-smokers	Number	Percentage who think smoking is harmful to health	Total	Percentage who ever tried to quit	Percentage who are ex-smokers	Number
Age										
15 - 24	93.4	1,807	66.7	11.5	500	96.7	2,080	74.7	37.3	185
25 - 34	87.7	1,120	63.3	11.1	671	95.5	1,717	78.8	42.4	291
35 - 44	88.4	1,005	62.4	12.5	674	95.4	1,454	84.6	41.6	404
45 - 54	84.4	699	67.6	24.6	440	92.1	1,111	79.6	45.9	356
55 - 64	87.2	518	65.9	26.9	332	91.1	909	89.5	64.5	275
65+	86.0	503	75.0	42.5	340	89.1	856	90.9	76.1	274
Residence										
Urban	88.6	3,562	66.1	19.1	1,945	94.9	4,988	81.5	45.8	1,227
Non-urban	89.7	2,090	65.8	18.5	1,012	93.0	3,138	87.6	62.4	557
Province										
Western Cape	84.5	718	57.6	17.2	426	92.9	799	66.4	27.0	321
Eastern Cape	88.2	755	63.8	17.7	423	94.0	1,152	83.7	44.0	224
Northern Cape	90.3	135	62.8	10.3	87	95.2	168	76.8	22.3	68
Free State	92.2	444	65.6	19.5	243	94.5	519	86.5	60.6	143
KwaZulu Natal	89.7	1,060	69.5	20.8	512	94.7	1,599	83.0	53.9	166
North West	86.4	548	60.3	15.0	294	92.9	645	89.5	64.6	139
Gauteng	90.6	1,099	71.5	21.3	593	94.9	1,884	87.9	55.8	523
Mpumalanga	90.5	376	68.2	19.4	187	96.2	507	92.4	62.7	86
Northern	90.4	517	71.1	20.9	192	92.1	854	96.1	86.1	113
Education										
No education	85.0	557	62.5	20.9	358	88.2	1,177	86.9	64.0	378
Sub A - Std 3	86.9	773	61.3	17.4	460	92.5	1,086	84.2	55.9	316
Std 4 - Std 5	88.1	750	61.8	16.8	406	94.1	1,127	76.2	47.6	253
Std 6 - Std 9	89.5	2,292	66.0	15.5	1,105	95.5	3,087	84.1	46.9	549
Std 10	91.1	801	70.8	21.7	389	96.3	1,120	79.4	35.0	178
Higher	93.7	439	81.2	33.5	212	98.3	494	89.1	49.4	97
Population										
African	90.0	4,245	65.4	16.5	2,039	94.2	6,243	89.5	68.1	993
Afr. urban	89.5	2,372	64.7	15.3	1,187	95.3	3,342	88.4	63.3	566
Afr. non-urban	90.6	1,874	66.3	18.1	852	92.9	2,902	90.9	74.4	427
Coloured	81.8	636	53.7	12.7	416	92.1	806	68.4	22.1	414
White	91.5	564	81.6	39.7	365	95.4	767	83.7	38.9	334
Asian	84.3	193	68.7	17.8	129	96.0	296	80.8	26.6	37
Total	89.0	5,652	66.0	18.9	2,957	94.1	8,126	83.4	51.0	1,784

¹ A regular smoker is defined as a person who currently smokes daily or occasionally, or had done so in the past

13.4 Exposure to Environmental Tobacco Smoke and to Dust or Fumes in the Work Place

Tables 13.4 and 13.5 show the exposure of non-smokers to environmental tobacco smoke (ETS). It also shows the percentage of all adults who are exposed to ETS in their home and work place as well as those exposed to dust and fumes at work.

Of those participants who never smoked, 25 percent of men and 31 percent of women report living in a home where other people smoke cigarettes regularly. This occurs more frequently in the urban than non-urban settings. Fifty-five percent of non-smoking coloured men live with smokers, while 58 percent of coloured and 49 percent of Asian non-smoking women are exposed to ETS at home. Equally worrying is the number of persons who managed to quit smoking but who are still exposed to ETS; again this occurs most often in the successful quitters who are coloured.

The extent of exposure to ETS in the home and work place is shown in Figure 13.2 in contrast to current smoking and exposure to dust or fumes in the work place. Of all the men in the study, 32 percent are non-smokers who live with smokers and 28 percent work with smokers, while 32 percent have worked in an environment where they were regularly exposed to smoke, dust, fumes or strong smells. Among women, 36 percent live with smokers, 12 percent work with smokers and 15 percent work in an environment with dust or fumes. For both men and women this happens more frequently in urban rather than non-urban areas. Exposure to dust and fumes at work was reported to have occurred for an average of about 10 years among men and 8 years among women.

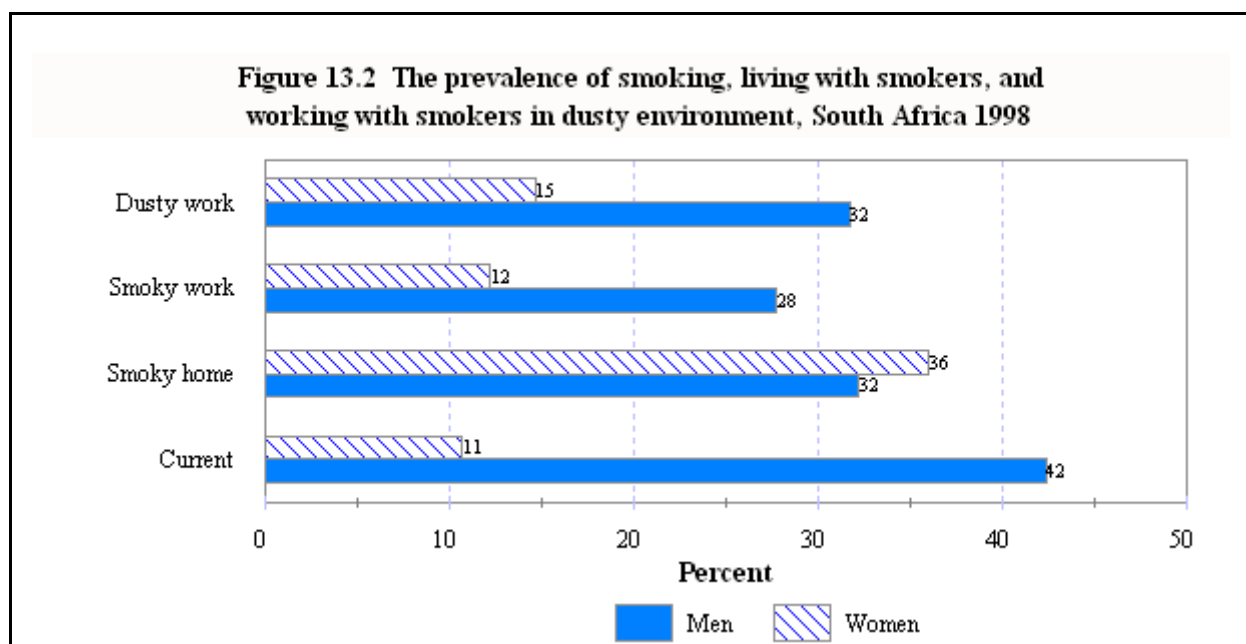


Table 13.4 Environmental tobacco smoke (ETS) and fume or dust exposure among men

Percentage of adult men never-smokers and adult men ex-smokers who are exposed to environmental tobacco smoke (ETS) and percentage of all men 15 and above who live with smokers, who work with smokers and who work in a dusty environment and the mean number of years exposure to work in dusty exposure by background characteristics, South Africa 1998

Background characteristic	Never-smokers		Ex-smokers		All men			Exposed to dust or fumes at work			
	Percentage exposed to ETS	Number who never smoked	Percentage exposed to ETS	Number of ex-smokers	Percentage who live with smokers	Percentage who work in smoking environment	Percentage who work in dust and fumes	Number of all men	Mean number of years' exposure	STD Error	Number who work in dusty environments
Age											
15 - 24	34.0	1,308	38.6	57	38.6	12.8	12.1	1,809	1.4	0.19	219
25 - 34	21.2	450	26.6	73	34.9	37.8	33.2	1,121	4.0	0.33	372
35 - 44	15.9	330	20.1	84	29.7	44.5	41.3	1,005	8.8	0.43	414
45 - 54	8.5	258	24.1	108	24.7	41.6	49.2	701	13.7	0.71	345
55 - 64	17.9	186	25.0	89	29.7	23.0	44.2	518	16.0	1.17	228
65+	14.8	167	13.8	144	21.3	10.2	42.7	506	18.4	1.67	217
Residence											
Urban	27.0	1,614	23.7	369	34.6	29.7	32.5	3,565	9.9	0.39	1,155
Non-urban	21.8	1,084	21.0	187	28.1	24.2	30.5	2,096	9.7	0.74	638
Province											
Western Cape	34.7	293	41.7	72	44.1	38.6	28.5	718	8.9	0.93	204
Eastern Cape	23.3	334	16.2	74	31.2	17.7	33.2	758	10.1	0.54	252
Northern Cape	36.5	48	(40.8)	9	51.2	40.6	43.6	135	10.1	0.82	59
Free State	30.3	201	38.5	47	34.2	27.8	28.9	444	10.6	0.77	128
KwaZulu-Natal	17.9	549	15.2	106	22.5	28.7	35.2	1,062	9.6	0.72	371
North West	33.5	256	(32.5)	44	39.1	25.9	24.8	550	9.5	0.76	136
Gauteng	21.5	504	14.6	127	31.1	27.2	36.4	1,099	10.5	1.13	399
Mpumalanga	20.6	190	12.7	36	26.6	35.0	36.7	377	9.1	0.79	139
Northern	25.9	324	(22.8)	40	29.2	18.9	20.5	517	10.1	1.01	106
Education											
No education	19.2	202	15.1	74	28.4	27.4	45.1	561	12.3	0.68	252
Sub A - Std 3	22.0	314	26.8	80	33.4	28.7	40.4	775	9.0	0.62	313
Std 4 - Std 5	31.7	344	16.1	68	35.6	26.1	32.8	753	9.2	0.71	246
Std 6 - Std 9	27.3	1,186	27.0	170	34.4	24.6	23.9	2,291	10.0	0.70	546
Std 10	22.2	412	26.7	85	30.3	32.2	35.3	801	9.2	0.88	283
Higher	16.8	227	19.0	71	20.2	36.4	31.7	439	9.2	1.24	139
Population group											
African	23.3	2,207	20.9	336	28.9	23.6	27.0	4,252	8.3	0.47	1,145
Afr. urban	24.7	1,180	22.0	181	31.2	25.6	25.5	2,372	8.0	0.59	605
Afr. non-urban	21.7	1,027	19.7	154	26.1	21.1	28.9	1,880	8.9	0.77	540
Coloured	46.0	222	34.1	51	55.0	41.0	34.9	636	9.2	0.73	221
White	20.7	199	23.9	145	32.0	36.4	56.1	564	14.6	0.79	315
Asian	24.1	67	*	23	29.6	49.1	53.3	195	13.1	1.00	104
Total	24.9	2,698	22.9	555	32.2	27.7	31.7	5,660	9.8	0.35	1,793

Note: STD Error = standard deviation of the mean; numbers of cases exclude those not stated. Numbers in parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates a figure is based on fewer than 25 respondents and has been suppressed.

Table 13.5 Environmental tobacco smoke (ETS) and fume or dust exposure among women

Percentage of adult women never-smokers and adult women ex-smokers who are exposed to environmental tobacco smoke (ETS) and percentage of all women 15 and above who live with smokers, who work with smokers and who work in a dusty environment and the mean number of years exposure to work in dusty exposure by background characteristics, South Africa 1998

Background characteristic	Never-smokers		Ex-smokers		All women			Exposed to dust or fumes at work			
	Percentage exposed to ETS	Number who never smoked	Percentage exposed to ETS	Number of ex-smokers	Percentage who live with smokers	Percentage who work in smoking environment	Percentage who work in dust and fumes	Number of all women	Mean number of years' exposure	STD Error	Number who work in dusty environments
Age											
15 - 24	34.1	1,872	43.4	69	37.2	7.7	6.7	2,077	1.5	0.18	139
25 - 34	32.1	1,382	46.0	123	37.4	15.8	14.7	1,715	4.0	0.25	252
35 - 44	31.0	1,016	49.0	164	39.3	22.1	20.7	1,453	7.2	0.45	301
45 - 54	26.9	724	37.2	163	35.9	13.8	18.4	1,114	9.0	0.80	204
55 - 64	26.3	604	42.8	177	33.8	8.0	18.9	913	14.1	0.91	173
65+	22.8	549	29.7	208	27.3	2.2	14.2	861	18.0	1.16	122
Residence											
Urban	33.8	3,650	40.6	558	39.5	15.3	17.6	4,986	8.4	0.39	877
Non-urban	25.6	2,497	40.0	347	30.4	7.5	10.0	3,146	7.6	0.66	314
Province											
Western Cape	41.8	470	49.1	87	51.3	22.6	19.6	797	8.9	0.93	156
Eastern Cape	25.6	926	26.0	99	29.6	5.8	8.0	1,159	6.5	0.54	93
Northern Cape	51.2	96	51.2	15	57.2	17.4	18.2	168	(7.0)	(0.82)	31
Free State	39.1	343	53.9	87	44.7	15.6	11.7	519	9.0	0.77	61
KwaZulu-Natal	24.2	1,420	17.0	90	25.9	9.1	14.9	1,601	7.3	0.72	239
North West	41.9	455	49.8	90	45.3	10.0	9.9	644	7.7	0.76	64
Gauteng	29.8	1,306	41.1	287	37.4	16.4	21.8	1,881	9.1	1.13	411
Mpumalanga	35.0	408	53.3	54	38.2	9.8	13.6	506	6.4	0.79	69
Northern	26.7	726	36.9	97	28.7	8.6	7.9	856	8.7	1.01	68
Education											
No education	23.9	750	35.6	242	30.2	6.8	12.8	1,184	12.8	1.24	151
Sub A - Std 3	29.5	727	40.7	177	37.4	8.1	12.2	1,083	6.2	0.77	133
Std 4 - Std 5	33.5	846	52.6	120	40.3	11.8	14.7	1,133	6.7	0.75	166
Std 6 - Std 9	32.7	2,474	42.4	254	37.5	11.2	13.1	3,081	7.7	0.57	404
Std 10	30.8	934	33.6	62	34.9	21.7	19.8	1,119	7.9	1.01	222
Higher	24.3	395	29.9	48	29.3	20.0	22.3	495	9.3	1.22	110
Population group											
African	28.0	5,064	37.7	672	31.0	9.1	9.9	6,247	7.5	0.32	616
Afr. urban	31.1	2,671	39.4	354	34.1	11.9	10.8	3,336	7.6	0.46	360
Afr. non-urban	24.7	2,393	35.8	318	27.5	6.0	8.8	2,910	7.4	0.45	256
Coloured	58.2	386	67.7	91	65.6	25.5	22.1	806	8.2	0.77	178
White	24.0	433	33.2	130	39.0	20.3	40.2	767	9.8	1.14	307
Asian	48.6	263	*	10	51.5	20.1	28.0	299	7.5	1.11	84
Total	30.5	6,150	40.3	903	36.0	12.2	14.6	8,132	8.2	0.34	1191

Note: STD Error = standard deviation of the mean; numbers of cases exclude those not stated

13.5 Patterns of Alcohol Consumption

Just under half of adult men (45 percent) and one-fifth of women (17 percent) currently consume alcohol (Table 13.6). For the total population, the rate is 28 percent, which translates to 8.3 million South Africans 15 years or older who currently consume alcohol. Rates of current drinking differ substantially by population group and sex, with the highest levels reported by white men (71 percent), followed by white women (51 percent) and coloured men (45 percent). The lowest rates were reported by African and Asian women (12 percent and 9 percent, respectively). With the exception of Asian and coloured females, the rates are all substantially lower than were reported in smaller surveys conducted between 1985 and 1990 by the HSRC (Rocha-Silva, 1989, 1991a/b). The relative differences between the various ethnic and sex groupings have, however, remained the same. Several explanations for the lower rates are possible. While a decrease in drinking rates could have occurred, this is unlikely. A more plausible explanation is that the HSRC surveys were specifically designed to assess substance use and are likely to have encouraged a higher level of disclosure about drinking habits.

For both men and women, the highest levels of current alcohol use were recorded among persons in the 35-44 and 45-54 year age groups and the lowest levels in the 15-24 year group. Slightly higher rates of current drinking were recorded in urban areas for both sexes. For males, the highest current drinking levels were reported in the Free State and Gauteng provinces (50 percent or more) and the lowest levels were reported in Northern Province (28 percent). For females, the lowest levels were also recorded in Northern Province (9 percent), with the highest levels being in the Free State, Western Cape and Northern Cape (23-24 percent). Men and women with either low or high levels of education are more likely to drink than those with moderate education (Standards 4-9). Rates of lifetime consumption of alcohol ("Ever drunk alcohol?") were 58 percent for males and 26 percent for females. The differences by age, population group, education, urban/non-urban and province described above for current drinking rates are very similar for lifetime consumption of alcohol.

13.6 Risky Drinking and Alcohol Dependence

Risky drinking was defined as drinking five or more standard drinks per day for men and three or more drinks per day for women. While communal drinking is often also risky, respondents who reported communal drinking were not classified as "risky drinkers". The percentages reported for the SADHS should therefore be viewed as minimum estimates. These levels were defined as "hazardous/harmful" by the Australian National Health and Medical Research Council (1992).

Rates of risky drinking on weekdays were similar for men and women (7 percent of men who drink and 9 percent of women who drink). Rates were roughly 4-5 times greater at weekends than on weekdays, with one-third of current drinkers drinking at risky levels over weekends (Table 13.6). Risky drinking at weekends appears to be highest among persons in the middle categories for age (35-44 years for males and 45-54 years for females), persons residing in non-urban areas, those with less education (Sub A-Standard 5), and coloureds and Africans. Recent comparative data from other studies are only available for Africans. The rates of risky drinking by African males in urban areas (33 percent) are very similar to levels found for African males in a 1990 study (Rocha-Silva, 1991b). The rates of risky drinking for females in the SADHS are higher, but this is likely to be partly due to the differential levels of risky drinking used for males and females. Only 7 percent of pregnant women (13/191) interviewed in the SADHS acknowledged current drinking.

Alcohol dependence was assessed in the SADHS by using a set of questions known as the CAGE Questionnaire (Erwing, 1984). The questions inquire if the participant has ever felt that he/she should cut down on their drinking; have been annoyed by being criticized for drinking; felt guilty about drinking or have ever had a drink first thing in the morning to steady nerves or get rid of a hangover. Over one-fifth of men (28 percent) and 10 percent of women were found to score above the cutoff on this questionnaire (Table 13.6). The highest dependence was noted among males aged 35-44 and females aged 45-54, persons with the lowest levels of education, and coloureds and Africans.

Table 13.6 Risky drinking and alcohol dependency

Percentage of men and women aged 15 and above who ever drank alcohol, who show signs of alcohol dependence, who currently drink alcohol, and the percentage of current drinkers who engage in risky drinking on weekdays and on weekends by background characteristics, South Africa 1998

Background characteristic	All men and women								Current drinkers					
	Ever drank alcohol		Alcohol dependent ¹		Drink now		Number		Risky drinking-weekdays ²		Risky drinking-weekends ²		Number	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Age														
15-24	35.5	15.9	17.3	5.8	23.3	8.5	1,811	2,074	3.0	1.5	28.7	30.0	423	176
25-34	65.7	24.5	34.9	9.7	51.7	15.6	1,122	1,716	8.3	8.9	36.7	33.1	581	268
35-44	71.9	29.4	37.9	12.1	58.9	20.9	1,005	1,455	7.4	7.1	38.6	31.7	592	304
45-54	72.7	31.6	31.2	13.3	60.0	23.4	698	1,112	8.0	13.9	31.4	35.2	419	260
55-64	67.2	29.8	27.5	9.5	54.2	20.5	598	913	7.6	12.6	26.4	30.6	281	187
65+	65.3	33.4	22.6	12.0	45.7	20.3	505	861	6.7	6.8	20.9	29.6	231	175
Residence														
Urban	59.9	29.2	27.4	10.3	46.7	19.2	3,565	4,982	6.2	6.9	29.4	29.0	1664	956
Non-urban	55.0	20.2	27.9	9.2	41.2	13.2	2,094	3,147	8.2	12.8	37.9	39.0	861	414
Province														
Western Cape	61.4	40.1	27.6	11.7	43.5	24.1	719	799	6.0	5.6	33.2	29.6	319	193
Eastern Cape	60.1	22.3	33.7	10.9	47.4	16.2	758	1,158	6.4	9.8	30.9	33.0	359	187
Northern Cape	63.4	34.4	38.6	18.5	48.4	23.2	134	168	5.5	6.2	36.7	47.6	65	39
Free State	66.5	31.6	34.4	11.9	56.0	24.4	444	519	5.5	5.7	27.2	29.4	249	127
KwaZulu-Natal	54.4	17.9	22.5	6.9	39.7	11.4	1,060	1,064	8.3	14.0	31.2	36.2	421	183
North West	57.5	23.7	24.8	11.5	46.6	17.0	551	645	9.0	14.4	42.2	42.1	257	110
Gauteng	59.1	32.4	23.7	10.4	49.5	20.6	1,097	1,876	5.9	4.8	23.3	21.9	543	387
Mpumalanga	62.1	21.0	38.2	11.5	45.8	14.1	377	504	5.6	9.7	48.5	46.5	173	71
Northern	45.1	15.7	23.7	6.1	28.3	8.6	519	855	11.0	18.9	40.6	45.4	147	74
Education														
No education	70.4	33.5	33.4	16.9	54.4	22.8	559	1,183	6.8	14.5	36.0	38.2	304	270
Sub A - Std 3	63.2	24.3	35.4	13.1	50.4	16.3	772	1,085	12.0	11.3	40.2	44.7	389	177
Std 4 - Std 5	55.2	20.5	32.0	11.2	41.9	13.2	753	1,135	10.4	9.6	43.0	44.9	316	149
Std 6 - Std 9	51.2	20.7	25.7	7.6	38.0	12.7	2,295	3,076	4.5	7.3	30.0	31.9	873	392
Std 10	59.5	28.9	22.3	6.5	46.6	18.5	801	1,120	6.6	6.0	23.4	17.8	374	207
Higher	70.4	45.7	17.7	4.9	57.3	33.4	439	492	2.0	2.0	23.5	12.7	252	165
Population group														
African	53.4	18.8	29.4	9.6	41.4	12.3	4,249	6,243	7.6	13.2	35.6	41.9	1759	766
Afr. urban	54.1	19.9	30.5	10.8	43.6	12.8	2,372	3,332	6.5	11.5	32.5	40.7	1034	425
Afr. non-urban	52.4	17.6	28.0	8.3	38.6	11.7	1,877	2,911	9.1	15.3	40.0	43.4	725	341
Coloured	63.6	40.6	33.6	18.4	44.7	23.7	637	806	9.2	4.0	39.0	34.0	285	187
White	84.9	69.8	9.9	6.1	71.0	50.5	564	767	3.1	2.6	17.6	13.7	401	387
Asian	64.7	14.9	20.1	1.7	37.3	9.0	195	299	1.4	0.0	5.5	0.0	73	27
Total	58.1	25.7	27.6	9.9	44.6	16.9	5,659	8,129	6.9	8.7	32.3	32.0	2525	1370

¹ Alcohol dependence has been identified using four screening questions that indirectly inquire about alcohol use (CAGE questions – see text for details). Affirmative answers to two or more questions is classified as alcohol dependence.

² Defined for males as drinking ≥ 5 drinks per day, and for females as drinking ≥ 3 drinks per day

13.7 Perceptions of Own Body Weight

The responses of the participants to the question on their perception of their own body weight are shown in Table 13.7. Many more women than men perceive themselves to be overweight, while about 16 percent of both men and women perceive themselves to be underweight. For women between 25 and 64 years, about 25 percent consider themselves to be overweight. Many more urban than non-urban men and women think themselves to be overweight; consequently, many more men and women in Gauteng and the Western Cape - the predominantly urban provinces - reported being overweight than respondents in other provinces.

The level of education is also related to perceptions of weight. Men and women with low education levels are far more likely to report that they are underweight and less likely to say that they are overweight, while those with Standard 10 or higher report the opposite. Those most likely to think themselves overweight are white women and to a lesser extent, white men, while Africans are the least. For example, only 15 percent of African women think themselves to be overweight, compared to 53 percent of white women. Of the men, 5 percent of Africans and as many as 35 percent of whites perceive themselves as overweight. A comparison between perceived weight and actual body mass indices is presented in section 13.9.

13.8 Weight, Height, and Mid-Upper Arm Circumference

Tables 13.8 and 13.9 provide the mean weight, height and upper arm circumference for South African men and women aged 15 years or older, respectively. The distribution is shown according to background characteristics. On average, men are about 10 cm taller than women. Differences in mean height by age, residence and province are generally slight. Height varies by education level. The tallest men and women are those with the highest education level, while those without education are the shortest. The most marked differences in height for both men and women are found by population group. White men in South Africa are on average 10 cm taller than African and coloured men, while white women are on average 8 cm taller than Asian women, who are the shortest.

Although men are taller than women, they weigh less on average (66 vs. 68 kg). The heaviest men and women are in the 45-54 age group. There is a clear gradient in weight by residence, with non-urban men and women weighing less than those in the cities. The lightest men and women were found in the Northern Cape, North West and Northern provinces. The heaviest men and women are from the most urbanised provinces, Western Cape and Gauteng, while KwaZulu-Natal also has heavier than average women. Education level is not highly correlated with weight, although men with a standard 10 or higher education are heavier on average than less educated men. By far the largest differentials in weight are by population group. White men are by far the heaviest, weighing 19 kg more than African men on average, and 15-16 kg more than coloured and Asian men. White women are also heavier than other women, though the differences are smaller than for men. African women are almost as heavy as white women, followed by coloured women. Asian women weigh the least.

The mid-upper-arm circumference (MUAC) of women is higher than for men (30 vs. 28 cm). It can be assumed that women, therefore carry more adipose tissue than men, as men are more muscular than women. Again, the MUAC is slightly higher among urban than non-urban residents. For men, the highest educated have the highest MUAC, while for women there is little difference between groups.

Table 13.7 Adult self perceptions of weight

Percentage of men and women 15 years and above who perceive themselves to be underweight, normal weight, and over weight, by background characteristics, South Africa 1998

Background characteristic	Men				Women			
	Under weight	Normal weight	Over weight	Number	Under weight	Normal weight	Over weight	Number
Age								
15-24	12.3	78.6	4.6	1,807	12.9	66.4	15.5	2,072
25-34	18.0	68.5	9.7	1,118	13.7	59.2	21.8	1,713
35-44	15.8	66.8	12.0	1,001	11.9	56.3	26.1	1,450
45-54	14.6	62.2	16.5	699	16.1	52.9	25.7	1,112
55-64	18.9	63.5	9.7	513	17.2	52.0	24.4	914
65+	23.9	60.3	9.0	501	28.1	52.0	11.5	862
Residence								
Urban	14.3	68.2	11.8	3,559	11.7	55.2	27.0	4,990
Non-urban	18.9	71.5	4.8	2,095	21.4	62.8	10.7	3,148
Province								
Western Cape	9.5	70.1	13.5	719	7.0	51.7	35.1	797
Eastern Cape	20.6	66.8	9.5	755	23.7	58.1	13.6	1,159
Northern Cape	17.4	63.6	9.3	135	12.6	51.5	21.8	168
Free State	13.0	69.9	8.4	443	15.0	53.9	21.7	518
KwaZulu-Natal	16.0	70.0	7.8	1,061	17.4	59.4	15.7	1,605
North West	13.5	72.6	5.6	547	13.6	66.5	13.8	642
Gauteng	19.0	63.3	13.1	1,097	12.2	50.1	31.9	1,884
Mpumalanga	20.5	71.0	6.9	378	20.1	61.8	17.6	507
Northern	13.4	80.7	3.7	519	14.7	74.7	8.2	857
Education								
No education	25.2	63.6	3.6	561	27.2	55.4	9.0	1,185
Sub A - Std 3	23.7	63.3	4.7	772	23.0	56.9	12.8	1,087
Std 4 - Std 5	21.8	68.9	4.8	755	15.8	61.7	15.7	1,135
Std 6 - Std 9	13.0	74.0	7.5	2,291	11.8	59.5	23.2	3,082
Std 10	9.7	70.8	16.6	801	8.7	54.1	33.5	1,118
Higher	7.7	63.1	27.5	434	8.3	59.1	32.2	494
Population group								
African	17.2	71.7	5.0	4,245	17.8	61.1	14.7	6,257
Afr. urban	16.0	70.4	6.4	2,367	14.0	58.4	19.8	3,344
Afr. non-urban	18.7	73.3	3.3	1,878	22.1	64.2	8.9	2,913
Coloured	12.5	71.5	11.8	637	10.4	50.9	32.7	805
White	11.7	52.5	35.4	564	5.1	41.1	53.4	767
Asian	14.8	63.4	15.1	195	6.2	58.3	29.8	298
Total	16.0	69.4	9.2	5,653	15.4	58.1	20.7	8,138

Table 13.8 Anthropometry of adult men

The mean and standard error of weight in kg, height in m, and mid-upper arm circumference (MUAC) in cm of men aged 15 and above by background characteristics, South Africa 1998

Background characteristic	Weight (kg)			Height (m)			Mid-upper arm circumference (cm) MUAC		
	Mean	STD Error	Number	Mean	STD Error	Number	Mean	STD Error	Number
Age									
15-24	59.0	0.35	1,798	1.67	0.28	1,798	26.2	0.11	1,795
25-34	66.7	0.55	1,104	1.69	0.37	1,104	28.7	0.15	1,105
35-44	70.1	0.67	992	1.69	0.48	990	29.5	0.15	989
45-54	71.8	0.87	681	1.69	0.42	679	30.0	0.21	682
55-64	69.6	0.80	512	1.67	0.52	511	29.2	0.24	513
65+	68.2	0.95	483	1.67	0.47	484	28.4	0.24	485
Residence									
Urban	68.0	0.40	3,497	1.69	0.24	3,492	28.8	0.11	3,495
Non-urban	62.2	0.41	2,074	1.67	0.31	2,073	27.2	0.12	2,072
Province									
Western Cape	69.2	0.94	707	1.67	0.58	707	29.2	0.19	703
Eastern Cape	65.2	0.58	750	1.67	0.33	750	27.9	0.15	750
Northern Cape	62.9	1.07	133	1.68	0.55	132	27.2	0.32	133
Free State	65.2	0.93	442	1.70	0.54	439	26.9	0.23	442
KwaZulu-Natal	66.1	0.71	1,051	1.67	0.52	1,050	28.7	0.23	1,051
North West	62.1	0.83	545	1.67	0.55	544	28.1	0.22	544
Gauteng	68.6	0.95	1,060	1.70	0.58	1,060	28.7	0.24	1,060
Mpumalanga	64.1	0.94	367	1.69	0.42	366	27.7	0.32	368
Northern	62.7	0.86	516	1.68	0.48	516	27.1	0.27	517
Education									
No education	63.7	0.64	551	1.66	0.37	549	27.8	0.21	550
Sub A - Std 3	63.0	0.55	763	1.66	0.46	760	27.8	0.18	760
Std 4 - Std 5	63.1	0.60	745	1.66	0.43	747	27.4	0.16	745
Std 6 - Std 9	64.4	0.39	2,260	1.68	0.28	2,258	27.8	0.11	2,260
Std 10	71.0	0.82	786	1.71	0.39	786	29.4	0.19	785
Higher	76.9	1.11	430	1.74	0.56	430	30.5	0.28	429
Population group									
African	63.6	0.28	4,200	1.67	0.19	4,194	27.7	0.09	4,200
Afr. urban	65.3	0.40	2,336	1.68	0.25	2,331	28.3	0.12	2,336
Afr. non-urban	61.4	0.34	1,864	1.66	0.30	1,863	27.0	0.12	1,864
Coloured	66.5	0.86	629	1.67	0.45	629	28.3	0.19	627
White	82.5	0.92	537	1.77	0.47	537	31.2	0.23	536
Asian	67.4	1.24	190	1.70	0.56	190	29.2	0.38	191
Total	65.9	0.30	5,570	1.68	0.19	5,565	28.2	0.81	5,568

Note: STD Error = standard deviation of the mean

Table 13.9 Anthropometry of adult women

The mean and standard error of weight in kg, height in m, and mid-upper arm circumference (MUAC) in cm of women aged 15 and above by background characteristics, South Africa 1998

Background characteristic	Weight (kg)			Height (cm)			Mid-upper arm circumference (cm) MUAC		
	Mean	STD Error	Number	Mean	STD Error	Number	Mean	STD Error	Number
Age									
15-24	59.4	0.35	2,047	1.59	0.20	2,052	27.1	0.10	2,047
25-34	68.1	0.46	1,685	1.59	0.25	1,691	30.1	0.14	1,693
35-44	73.1	0.55	1,438	1.59	0.24	1,441	31.8	0.17	1,442
45-54	73.9	0.69	1,089	1.58	0.25	1,093	32.3	0.20	1,093
55-64	73.9	0.79	902	1.58	0.30	895	32.4	0.27	901
65+	66.3	0.75	837	1.55	0.40	831	30.3	0.23	840
Residence									
Urban	69.6	0.34	4,900	1.59	0.17	4,906	30.6	0.30	4,911
Non-urban	65.5	0.44	3,098	1.58	0.22	3,097	29.6	0.29	3,105
Province									
Western Cape	69.1	0.84	789	1.58	0.42	788	30.3	0.29	784
Eastern Cape	66.6	0.52	1,134	1.57	0.21	1,140	29.8	0.16	1,145
Northern Cape	63.9	0.96	167	1.57	0.42	166	28.7	0.32	167
Free State	67.7	0.77	518	1.59	0.53	517	29.5	0.26	516
KwaZulu-Natal	69.8	0.68	1,569	1.57	0.31	1,561	30.6	0.17	1,577
North West	64.2	0.69	643	1.60	0.48	644	29.5	0.22	641
Gauteng	71.1	0.63	1,844	1.59	0.35	1,852	31.2	0.21	1,852
Mpumalanga	66.7	0.80	502	1.58	0.35	500	29.7	0.21	503
Northern	63.6	0.69	832	1.58	0.32	834	29.2	0.19	831
Education									
No education	67.3	0.66	1,172	1.56	0.24	1,169	30.5	0.19	1,175
Sub A - Std 3	68.7	0.69	1,061	1.57	0.28	1,061	30.8	0.20	1,065
Std 4 - Std 5	69.3	0.66	1,109	1.57	0.24	1,112	30.9	0.23	1,119
Std 6 - Std 9	67.6	0.42	3,042	1.59	0.19	3,045	29.9	0.13	3,046
Std 10	67.9	0.60	1,098	1.60	0.31	1,100	29.8	0.16	1,097
Higher	67.4	0.81	480	1.61	0.42	480	29.3	0.23	478
Population group									
African	68.2	0.30	6,161	1.58	0.14	6,168	30.4	0.09	6,178
Afr. urban	70.6	0.40	3,297	1.58	0.19	3,306	31.1	0.13	3,309
Afr. non-urban	65.4	0.44	2,864	1.57	0.20	2,862	29.6	0.12	2,870
Coloured	65.9	0.81	801	1.57	0.35	801	29.3	0.26	799
White	71.0	0.80	733	1.64	0.34	737	30.2	0.26	737
Asian	61.3	1.25	288	1.56	0.56	284	28.7	0.36	290
Total	68.0	0.26	7,998	1.58	0.13	8,003	30.2	0.79	8,016

Note: STD Error = standard deviation of the mean

13.9 Body Mass Index (BMI) and Prevalence of Obesity

Body mass index is a useful measure of nutritional status that combines height and weight data. It is calculated as the weight in kilograms divided by the square of the height in metres. Tables 13.10 and 13.11 show the mean body mass index (BMI) for adult men and women as well as the distribution of the study population by whether they are underweight, normal weight, overweight or obese, according to the World Health Organisation's cut-off points (WHO, 1995).

The mean BMI is 23 for men and 27 for women. Those with a BMI of less than 18.5 are usually considered to be underweight. According to this definition, 13 percent of men and 6 percent of women are underweight. Those who are most likely to be underweight are men and women aged 15-24, those who live in the Northern Cape, and Asians. In addition, non-urban African men have higher levels of underweight than the other groups of men.

At the other end of the spectrum, 29 percent of men and 56 percent of women are overweight, according to WHO standards. Almost one in ten men and three in ten women are severely overweight or obese. In general, the tendency towards being overweight increases with age, although among women age 65 and over, the level of obesity is sharply reduced. Urban men and women are more likely to be obese than non-urban men and women. Levels of overweight and obesity are highest in Western Cape, KwaZulu-Natal and Gauteng. In terms of education, men with the highest rates of overweight and obesity are those who have completed standard 10 or higher, while differences for women are less pronounced. White men are by far the most likely to be overweight or obese and African men the least likely. Among women, the pattern is different. African women are more likely to be overweight or obese, followed by coloured women, white women and Asian women, but the differences are much less pronounced than among men.

A comparison between Table 13.7 and Tables 13.8 and 13.9 allows an understanding of the participant's perceived weight and the actual weight categories by BMI. The comparison shows that for many men and women, their perceived weight clearly differs from their actual classification according to BMI categories. For example, only 9 percent of men perceive themselves to be overweight, when in fact, 29 percent are overweight. Women's perceptions are even farther from the truth; while 21 percent say they are overweight, in fact 56 percent are actually overweight. The least educated groups have the largest discrepancies between perceived and actual overweight and differences between population groups are shown in Figure 13.3.

13.10 Waist and Hip Circumference and Waist/Hip Ratio

Tables 13.12 and 13.13 show the mean waist and hip circumferences and the waist/hip ratios for men and women, respectively, as well as the prevalence of men and women with a waist/hip ratio greater than or equal to 1.0 for men and greater than or equal to 0.85 for women. In addition, the tables show the percentage of men and women whose waist measures 102 cm or more for men and 88 cm or more for women.

For both men and women the mean waist and mean hip circumferences tend to increase with age; both measures are lower for non-urban men and women. The lowest levels were recorded in the Northern Province and the highest tended to be in the most urbanised provinces, Gauteng and Western Cape. For men, the mean waist and hip circumference increases with increasing levels of education, while for women the highest mean waist circumferences are among women with no or low levels of education. There is no clear pattern across the levels of education for the mean hip circumference in women. As with the other measures of over-nutrition discussed above, white men have the highest mean waist and hip circumferences. African men have the lowest measures. Differences among women are not as strong as among men, except that Asian women clearly have smaller waist and hip measurements than the other population groups.

A waist circumference above the cut-off point has been shown to be associated with shortness of breath on walking upstairs; Type-two diabetes; having other cardiovascular disease risk factors; having difficulties with activities of daily living and having back pain or symptoms of intervertebral disc herniation (Lean MEJ, *et al.*, 1998). This condition was predominantly found in older South Africans, those living in an urban setting and for men in the higher educated group, while for women it was found among those without education and those with tertiary education. The highest levels were found among white men and among urban African and coloured women.

Seven percent of men and 32 percent of women have a waist/hip ratio above the cut-off point. The percentage with a waist/hip ratio above the cut-off points shows interesting patterns, with the ratio increasing with age for men and women. Among women, the percentage with a waist/hip ratio above the cut-off point is considerably higher in non-urban than urban areas, while there is almost no such difference among men. A higher proportion of men in KwaZulu-Natal have waist/hip ratios above the cut-off points, as do white and Asian men. Among women, the highest proportions above the cut-off point are those in North West province and those with no education.

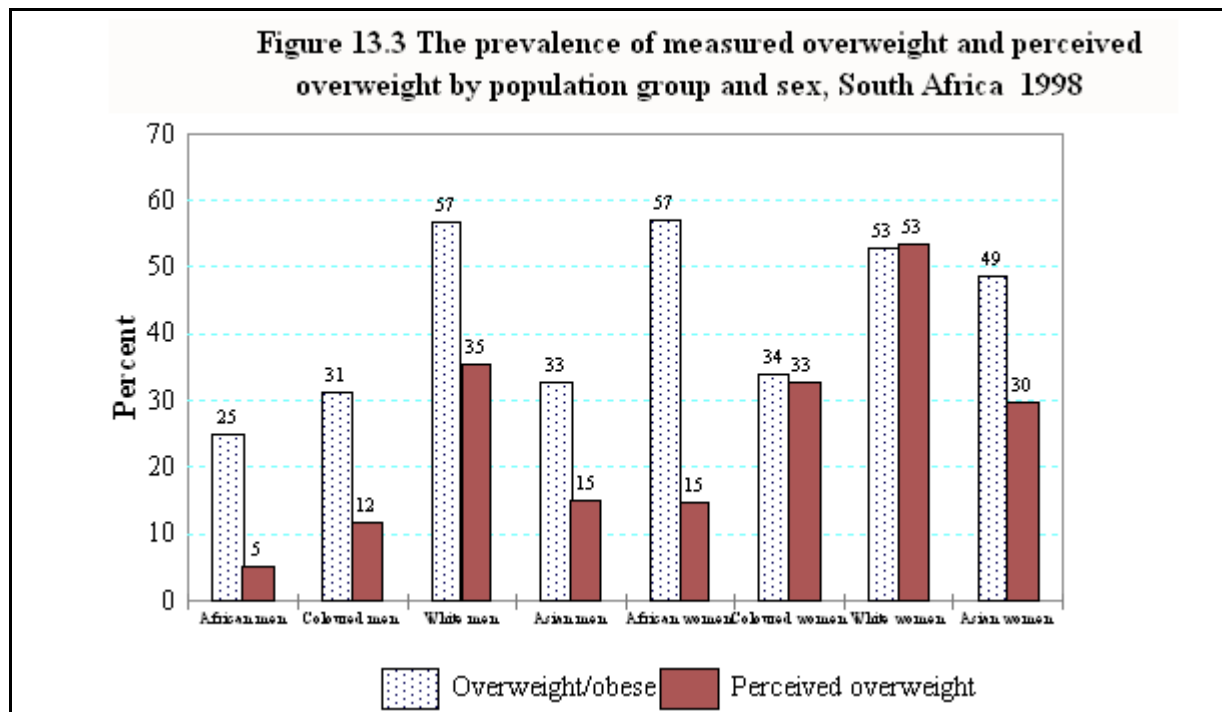


Table 13.10 Body mass index (BMI) of men

Mean and standard error of the BMI (kg/m²) and the percentage of men aged 15 and above by body mass index categories according to background characteristics, South Africa 1998

Background characteristic	Body mass index		BMI categories				Number
	Mean	STD Error	Underweight <18.5	Normal 18.5 - 24.9	Overweight 25 - 29.9	Obese 30+	
Age							
15-24	21.1	0.11	21.3	67.5	8.4	2.7	1,796
25-34	23.4	0.18	8.5	62.9	20.7	7.8	1,103
35-44	25.0	0.20	8.5	52.8	24.9	12.8	990
45-54	25.3	0.25	9.2	45.2	28.1	17.3	678
55-64	25.2	0.24	9.1	47.5	28.3	14.4	510
65+	24.4	0.28	9.9	47.7	28.5	13.9	482
Residence							
Urban	24.0	0.12	10.8	55.5	22.2	11.1	3,486
Non-urban	22.5	0.11	16.4	61.4	15.6	6.3	2,072
Province							
Western Cape	24.9	0.24	5.8	55.3	25.3	13.1	706
Eastern Cape	23.6	0.16	11.5	57.6	20.5	10.1	750
Northern Cape	22.5	0.29	23.1	54.3	14.4	7.6	132
Free State	22.5	0.25	18.8	56.7	16.3	8.1	439
KwaZulu-Natal	23.8	0.21	11.1	56.8	21.4	10.4	1,047
North West	22.3	0.22	17.5	61.4	15.4	5.5	544
Gauteng	24.0	0.27	9.7	58.5	21.1	10.2	1,060
Mpumalanga	22.5	0.29	16.9	59.1	16.6	7.5	366
Northern	22.3	0.25	19.7	57.9	16.0	6.2	515
Education							
No education	23.2	0.20	12.2	58.3	21.3	8.2	549
Sub A - Std 3	23.3	0.22	14.6	58.3	18.4	8.2	760
Std 4 - Std 5	23.2	0.20	15.9	58.5	17.6	7.4	745
Std 6 - Std 9	23.0	0.13	15.0	59.8	17.2	7.6	2,256
Std 10	24.2	0.22	5.6	58.7	22.2	13.4	785
Higher	25.4	0.32	7.1	41.6	33.5	17.8	430
Population group							
African	23.0	0.10	14.0	60.8	17.1	7.8	4,191
Afr. urban	23.6	0.15	11.8	59.4	18.8	9.6	2,329
Afr. non-urban	22.3	0.12	16.7	62.6	15.0	5.5	1,862
Coloured	24.1	0.23	11.4	56.6	22.1	9.2	628
White	26.2	0.27	4.7	38.4	36.1	20.8	536
Asian	23.1	0.38	16.6	50.7	23.7	9.0	189
Total	23.4	0.09	12.9	57.7	19.8	9.3	5,558

Note: STD Error = standard deviation of the mean

Table 13.11 Body mass index (BMI) of women

Mean and standard error of the BMI (kg/m²) and the percentage of women aged 15 and above by body mass index categories according to background characteristics, South Africa 1998

Background characteristic	Body mass index		BMI categories				Number
	Mean	STD Error	Underweight <18.5	Normal 18.5 - 24.9	Overweight 25 - 29.9	Obese 30+	
Age							
15 - 24	23.7	0.13	9.5	60.7	20.0	9.6	2,044
25 - 34	27.2	0.18	5.1	38.4	29.2	27.0	1,679
35 - 44	29.2	0.21	2.7	27.2	30.7	39.3	1,436
45 - 54	29.9	0.27	3.7	23.9	26.5	45.5	1,087
55 - 64	29.8	0.32	2.7	25.6	25.6	46.1	895
65+	27.7	0.32	7.4	32.5	26.5	33.3	829
Residence							
Urban	27.8	0.14	5.0	35.6	26.0	33.2	4,886
Non-urban	26.6	0.15	6.5	41.9	26.2	25.1	3,084
Province							
Western Cape	27.7	0.32	4.9	37.8	25.9	31.2	788
Eastern Cape	27.0	0.19	5.8	38.8	25.7	29.7	1,130
Northern Cape	26.1	0.37	12.5	37.5	24.9	24.8	166
Free State	26.9	0.33	7.0	37.9	26.0	29.2	517
KwaZulu-Natal	28.5	0.25	5.4	31.2	27.4	35.4	1,554
North West	25.5	0.24	8.1	46.8	25.8	18.9	642
Gauteng	28.2	0.27	3.4	34.3	26.6	35.6	1,842
Mpumalanga	26.9	0.29	4.9	43.8	24.9	25.8	500
Northern	25.4	0.26	7.2	48.7	24.0	20.1	831
Education							
No education	27.6	0.26	5.8	34.4	27.2	32.6	1,166
Sub A - Std 3	27.9	0.27	6.4	32.3	25.2	36.0	1,055
Std 4 - Std 5	28.4	0.26	4.8	33.4	28.1	33.2	1,102
Std 6 - Std 9	27.1	0.17	5.6	41.2	24.3	28.7	3,039
Std 10	26.5	0.22	6.3	38.8	30.0	24.8	1,096
Higher	26.2	0.32	4.1	49.1	23.3	23.3	477
Population group							
African	27.6	0.12	4.9	37.7	25.9	31.2	6,143
Afr. urban	28.4	0.17	3.9	34.0	25.5	36.3	3,293
Afr. non-urban	26.6	0.15	6.0	42.0	26.5	25.3	2,850
Coloured	27.0	0.33	9.9	36.1	25.3	28.5	800
White	26.5	0.27	2.9	44.2	27.4	25.5	731
Asian	25.1	0.40	15.6	35.8	27.3	21.3	284
Total	27.3	0.10	5.6	38.1	26.1	30.1	7,970

Note: STD Error = standard deviation of the mean

Table 13.12 Waist and hip circumference of adult men

Mean and standard error of the waist (cm), hip circumference (cm) and the waist/hip ratios (WHR) for men aged 15 and above; and of men with WHR ≥ 1.0 and waist circumference ≥ 102 cm by background characteristics, South Africa 1998

Background characteristic	Waist circumference (cm)				Hip circumference (cm)			Waist hip ratio (WHR)			
	Mean	STD Error	Percentage with waist ≥ 102 cm	Number	Mean	STD Error	Number	Mean	STD Error	Percentage with WHR ≥ 1.0	Number
Age											
15 - 24	73.6	0.27	1.2	1,798	89.8	0.29	1,799	0.82	0.0024	2.9	1,797
25 - 34	81.0	0.51	5.5	1,101	94.9	0.42	1,102	0.86	0.0040	4.2	1,100
35 - 44	85.8	0.55	11.7	989	96.5	0.47	986	0.89	0.0038	7.0	985
45 - 54	89.7	0.66	17.5	677	98.1	0.52	678	0.92	0.0037	12.2	676
55 - 64	89.8	0.75	18.4	512	97.8	0.50	512	0.92	0.0053	14.9	511
65+	89.6	0.85	18.0	481	96.9	0.67	484	0.92	0.0055	16.8	481
Residence											
Urban	83.3	0.36	10.9	3,485	95.6	0.30	3,491	0.87	0.0022	8.1	3,481
Non-urban	80.0	0.37	5.8	2,073	92.3	0.28	2,071	0.87	0.0027	6.2	2,068
Province											
Western Cape	84.4	0.89	11.9	700	95.7	0.89	705	0.88	0.0051	8.7	698
Eastern Cape	81.9	0.43	7.8	750	95.1	0.36	750	0.86	0.0028	5.3	750
Northern Cape	80.6	0.84	8.7	132	93.4	0.66	133	0.86	0.0062	5.8	132
Free State	81.4	0.85	11.8	442	95.1	0.66	442	0.85	0.0047	6.5	442
KwaZulu-Natal	82.5	0.58	8.5	1,048	94.0	0.42	1,047	0.88	0.0038	10.2	1,045
North West	81.4	0.90	9.8	544	92.8	0.76	543	0.88	0.0067	8.9	543
Gauteng	83.6	0.79	9.6	1,060	95.9	0.58	1,060	0.87	0.0048	6.5	1,060
Mpumalanga	79.8	0.74	6.8	366	93.2	0.60	367	0.85	0.0041	3.9	366
Northern	79.2	0.85	4.8	516	91.2	0.63	516	0.87	0.0068	6.8	515
Education											
No education	83.4	0.58	6.5	549	94.1	0.49	550	0.89	0.0045	7.3	547
Sub A - Std 3	81.4	0.61	7.0	759	92.5	0.46	760	0.88	0.0052	9.1	756
Std 4 - Std 5	79.9	0.54	6.6	745	92.4	0.45	746	0.86	0.0036	6.1	745
Std 6 - Std 9	80.5	0.37	6.9	2,256	93.5	0.30	2,257	0.86	0.0025	6.9	2,254
Std 10	84.5	0.73	14.4	788	97.4	0.54	787	0.86	0.0040	7.5	787
Higher	89.4	0.96	20.7	427	106.9	0.73	427	0.89	0.0063	8.8	425
Population group											
African	80.1	0.27	5.9	4,191	92.8	0.23	4,192	0.86	0.0019	6.5	4,184
Afr. urban	80.8	0.37	6.8	2,328	93.8	0.35	2,332	0.86	0.0026	7.1	2,325
Afr. non-urban	79.2	0.38	4.8	1,864	91.7	0.28	1,861	0.87	0.0029	5.8	1,859
Coloured	83.4	0.71	8.8	628	95.9	0.54	630	0.87	0.0046	5.2	628
White	95.2	0.91	30.8	535	104.2	0.52	535	0.91	0.0054	14.7	535
Asian	86.2	0.99	12.1	190	95.5	1.07	189	0.90	0.0076	11.2	189
Total	82.1	0.27	9.0	5,558	94.4	0.22	5,561	0.87	0.0017	7.4	5,550

Note: STD Error = standard deviation of the mean

Table 13.13 Waist and hip circumference of adult women

Mean and standard error of the waist (cm), hip circumference (cm) and the waist/hip ratios (WHR) for women aged 15 and above and percentage of women with WHR ≥ 1.0 and waist circumference ≥ 102 cm by background characteristics, South Africa 1998

Background characteristic	Waist circumference (cm)				Hip circumference (cm)			Waist hip ratio (WHR)			
	Mean	STD Error	Percentage with waist ≥ 88 cm	Number	Mean	STD Error	Number	Mean	STD Error	Percentage with WHR ≥ 0.85	Number
Age											
15 - 24	74.9	0.31	11.3	2,029	97.8	0.30	2,037	0.77	0.0027	13.1	2,024
25 - 34	84.1	0.41	33.5	1,671	105.1	0.42	1,677	0.80	0.0027	22.4	1,666
35 - 44	89.4	0.46	50.5	1,436	108.5	0.46	1,435	0.83	0.0034	33.4	1,433
45 - 54	92.5	0.54	61.3	1,087	109.3	0.55	1,090	0.85	0.0033	45.6	1,087
55 - 64	93.8	0.63	64.0	902	109.4	0.67	898	0.86	0.0042	49.8	897
65+	91.7	0.67	56.4	834	104.7	0.66	832	0.88	0.0048	58.1	832
Residence											
Urban	86.4	0.30	42.6	4,883	106.6	0.28	4,886	0.81	0.0020	29.1	4,871
Non-urban	84.9	0.35	37.2	3,076	102.2	0.36	3,083	0.83	0.0023	63.6	3,067
Province											
Western Cape	87.7	0.70	46.7	785	104.8	0.67	781	0.84	0.0058	39.6	781
Eastern Cape	85.6	0.37	39.6	1,131	104.2	0.41	1,137	0.82	0.0023	32.8	1,130
Northern Cape	84.0	0.85	37.2	167	102.0	0.83	167	0.83	0.0068	34.2	166
Free State	84.2	0.72	41.4	517	105.1	0.76	517	0.80	0.0049	28.5	519
KwaZulu-Natal	87.4	0.59	43.9	1,548	105.7	0.54	1,559	0.83	0.0032	36.7	1,541
North West	86.0	0.83	42.2	644	103.3	0.87	645	0.84	0.0049	41.3	644
Gauteng	86.5	0.58	42.9	1,844	108.4	0.51	1,844	0.80	0.0039	22.2	1,842
Mpumalanga	83.3	0.71	32.2	495	103.0	0.64	495	0.81	0.0054	26.8	494
Northern	82.3	0.56	28.4	827	99.1	0.70	824	0.83	0.0059	34.2	823
Education											
No education	89.1	0.55	50.0	1,171	103.7	0.58	1,166	0.86	0.0033	51.8	1,166
Sub A - Std 3	88.8	0.63	47.8	1,047	105.2	0.57	1,050	0.85	0.0044	42.4	1,043
Std 4 - Std 5	87.8	0.58	47.0	1,109	106.2	0.61	1,110	0.83	0.0031	34.4	1,105
Std 6 - Std 9	84.4	0.39	36.7	3,032	104.5	0.35	3,036	0.81	0.0025	27.9	3,026
Std 10	82.5	0.53	32.8	1,087	105.7	0.51	1,094	0.78	0.0032	17.3	1,086
Higher	80.9	0.72	72.8	478	104.0	0.65	477	0.78	0.0045	15.3	477
Population group											
African	86.0	0.26	40.9	6,126	105.0	0.27	6,137	0.82	0.0018	33.3	6,108
Afr. urban	86.9	0.37	44.6	3,284	107.3	0.35	3,288	0.81	0.0026	30.2	3,275
Afr. non-urban	84.8	0.36	36.6	2,842	102.1	0.38	2,849	0.83	0.0024	37.0	2,833
Coloured	86.4	0.68	43.8	800	104.1	0.61	798	0.83	0.0039	36.2	798
White	85.5	0.71	39.1	731	106.7	0.59	734	0.80	0.0042	20.4	731
Asian	80.3	0.97	27.3	289	100.4	0.77	287	0.80	0.0069	23.2	287
Total	85.8	0.23	40.5	7,959	105.0	0.22	7,969	0.82	0.0016	32.0	7,938

Note: STD Error = standard deviation of the mean

CHAPTER 14

ORAL HEALTH AND ORAL CARE IN ADULTS

14.1 Introduction

Oral diseases are widespread in South Africa and affect large numbers of people in terms of pain, tooth loss, disfigurement, loss of function and even death. The majority of South Africans are dependent on the State for oral health care services, yet less than ten percent of the population utilises public oral health services. This under utilisation is due to limited resources and inaccessibility. Only about 11 percent of oral health professionals are in the public sector, of which the greatest proportion are located in Gauteng (47 percent) and the Western Cape (23 percent). Nearly 15 percent of all public health facilities have oral health facilities (Health Systems Trust, 1998; Department of Health, 1999).

Oral health in industrialised countries has improved dramatically over the last two decades, but the trends in developing communities are equivocal. The decline of oral diseases in industrial countries means that the burden of oral diseases of the South African population can be reduced and controlled with fairly simple interventions. Advances in knowledge and technology and preventive interventions in health could virtually eliminate the pain, suffering and loss of quality of life that accompany oral diseases. In South Africa, the availability of such advances is not universal.

The formulation and implementation of public health oral policy, based on appropriate dental information, is the critical first step in lessening the oral disease burden. Oral health policy makers, the Department of Health and the dental profession have been engaged in efforts to determine oral health needs in order to develop appropriate policies to promote oral health and prevent, treat, monitor and evaluate oral diseases of the population. In 1999, the Department of Health conducted a national oral health survey focussing only on pre-school and primary school children, using clinical indices. Decisions about utilisation of services are however, mostly made by adult care givers. Oral health status is traditionally measured by clinical indicators, however more recently, there has been an increased consensus that emphasis needs to be placed on people's self assessment of their oral health status, their knowledge and behaviour toward oral health and their experiences with the delivery of services.

This chapter reports on the data collected on adults, 15 years and older, relating to perceptions of oral health. The questions dealt with oral health pathology, utilisation of oral health services, loss of natural teeth, oral health practices and knowledge of the benefit of water fluoridation.

14.2 Perceptions of Oral Health Problems

Table 14.1 shows the percentages of respondents who report dental problems against the background characteristics. Thirty six per cent of the sample indicate that they have problems, of which 79 percent are related to the teeth and 8 percent to the gums. Analysis of the results in terms of gender shows that more women (41 percent) than men (30 percent) report problems with their mouth, teeth or gums. Reporting of symptoms increases with increasing age. Younger adults report fewer problems with their teeth than older adults, while the reverse was true for gum problems.

More people in non-urban areas report experiencing oral problems, with 29 percent of men and 39 percent of women from non-urban areas reporting problems with their teeth, while in the urban areas these figures

are 21 percent and 27 percent respectively. About 3 percent of men in urban areas report gum problems compared to 2 percent of men in the non-urban areas. For both men and women, those in the higher education groups report markedly fewer problems with their teeth than people in the lower educational groups. However, among women, higher education groups report more gum problems than the lower education group. Less than 20 percent of people in the Western Cape report problems with their oral health compared to 44 percent in the Free State. More than 10 percent of the populations in Western Cape and Gauteng said that their problems are related to their gums. Both African men and women report about two and half times more oral problems than whites and Asians.

These results are similar to the 1997 WHO Second International Collaborative Study (ICS II) in terms of the perceptions and age pattern of oral problems, but differ in terms of education and the reporting of oral problems. In the Who study, high education was significantly related to the reporting of more symptoms, while low education was generally associated with worse quality of life. This phenomenon may reflect the greater propensity of those in higher education groups to report their symptoms, while low education was generally associated with worse quality of life. This phenomenon may reflect the greater propensity of those in higher education groups to report their symptoms than to experience such symptoms (Chen & Andersen, 1997). An earlier South African study (Gilbert, 1994) reported similar findings to the present survey in terms of education levels, race and problems with respondent's teeth and gums. Females were more likely than males to report oral disease symptoms. The relatively high perceived oral health problems experienced underlines the argument of many oral health researchers that oral health should be given a greater priority; the prevention and control of oral diseases deserves greater attention because of the adverse impact of poor oral health on the individuals.

Table 14.1 Dental problems among adults

Percentage of all men and women aged 15 and over who experience problems with their mouth, teeth or gums according to background characteristics, South Africa 1998

Background characteristic	Any problem	Men				Number	Women			
		Teeth	Gums	Other	Any problem		Teeth	Gums	Other	Number
Age										
15 - 24	20.9	16.1	2.8	1.8	1,816	29.4	21.2	3.9	4.0	2,084
25 - 34	30.1	22.7	2.6	4.4	1,123	37.0	28.7	2.8	5.2	1,721
35 - 44	32.3	26.9	1.0	4.1	1,005	41.7	33.3	3.6	4.6	1,460
45 - 54	35.9	30.0	3.0	2.6	701	45.3	36.4	2.1	6.4	1,116
55 - 64	40.8	32.4	3.4	4.7	518	52.2	41.1	4.1	6.8	914
65+	40.4	32.7	2.2	5.3	507	56.7	45.2	2.6	8.8	861
Residence										
Urban	27.7	21.3	3.0	3.2	3,569	36.5	27.4	3.4	5.5	4,999
Non-urban	34.3	28.7	1.6	3.8	2,102	47.6	38.9	3.2	5.5	3,157
Province										
Western Cape	17.8	15.0	1.3	1.1	721	20.1	14.1	4.0	1.5	799
Eastern Cape	33.0	28.8	1.9	2.1	758	45.0	40.3	1.9	2.7	1,161
Northern Cape	34.3	30.5	1.5	2.1	135	37.1	32.4	2.4	2.3	168
Free State	40.4	35.5	1.8	2.9	444	46.8	40.3	2.8	3.8	519
KwaZulu-Natal	35.9	27.9	3.0	4.9	1,064	48.3	37.0	3.9	7.2	1,608
North West	29.6	24.3	1.3	3.5	551	35.0	27.7	2.0	4.6	647
Gauteng	27.8	18.9	4.6	4.1	1,099	41.4	28.3	4.0	9.0	1,887
Mpumalanga	32.7	23.6	2.1	6.6	378	42.1	32.8	3.1	6.0	507
Northern	25.1	21.0	1.7	2.4	521	39.9	32.0	3.3	4.6	859
Education										
No education	48.9	42.2	1.7	4.6	562	58.2	48.0	2.7	7.3	1,186
Sub A - Std 3	41.3	33.7	4.7	2.7	777	53.7	42.2	3.1	8.3	1,088
Std 4 - Std 5	32.6	26.7	2.8	2.8	755	42.3	33.1	2.8	6.3	1,136
Std 6 - Std 9	25.4	19.8	2.3	3.0	2,297	36.8	28.7	3.3	4.7	3,094
Std 10	23.2	17.1	2.3	3.0	801	26.5	18.5	3.7	4.0	1,120
Higher	19.4	13.3	2.2	3.8	440	25.0	16.9	5.8	2.1	495
Population group										
African	34.6	27.8	2.7	3.8	4,257	46.9	37.1	3.3	6.3	6,269
Afr. urban	33.9	26.5	3.6	3.5	2,375	44.8	34.1	3.6	6.9	3,349
Afr. non-urban	35.4	29.5	1.6	4.2	1,882	49.3	40.6	2.9	5.6	2,921
Coloured	19.1	14.9	1.4	2.2	637	24.9	17.9	3.7	2.9	806
White	15.2	11.3	1.9	2.0	564	17.7	11.3	3.7	2.5	767
Asian	15.6	9.5	2.5	3.6	195	16.3	11.1	1.7	3.5	300
Total	30.1	24.0	2.5	3.4	5,671	40.8	31.8	3.3	5.5	8,156

14.3 Utilisation of Health Services

Table 14.2 shows the rates of attendance at dental services. Half of men and women report that they have ever visited a dentist. About two and a half percent reported a visit during the month prior to the survey.

Slightly more women (53 percent) than men (48 percent) report ever visiting an oral health care worker, though more men (3 percent) than women (2 percent) made a visit in the last month. There is no discernable pattern between age and the utilisation of services except that young adults are less likely to have ever visited a dentist. Many more people in urban areas utilise services than those in non-urban areas. Overall 18 percent of men and 16 percent of women had medical aid cover (see section 11.4) and they constituted the group that attend the dental services most frequently and they live mostly in the urban areas, have higher levels of education and are predominantly White.

More than seventy percent of the people in the Western Cape and Northern Cape report ever visiting a dentist, while the lowest rates are reported in the Northern Province. Non-urban African men and women had the lowest rates of having ever visited a dentist while most whites and Asians have done so. Of the whites who visited the dentist in the last month, 80 percent were on medical aid, while only 3 percent of the non-urban African had such cover.

Although several studies have demonstrated that females are more likely than males to have made an oral health visit in the past year (Gift, 1984), in this survey slightly more males than females had visited the dentist in the last month. In the ICS II study, adults in the 35-44 age group used services more frequently than older adults, whereas in the current survey this was found for the higher age groups. The literature indicates that utilisation is positively correlated with an individual's level of education (Gift, 1984). Gaps in utilisation are generally found to be greater between individuals with very poor education and those with moderate levels of education, than between the moderate and high levels of education (Gift, 1986).

The reasons for the low utilisation of services, despite the high reported prevalence of oral health problems, may be due to the factors highlighted by Gugushe (1999) who found that there were problems in the structure and management of oral health services in most of the provinces, that dental public health services are essentially dentist driven, that most services are palliative and demand driven, that there are inequities in oral health care in the provinces and that the oral health care services are essentially urban based. The quality of most facilities vary from fair to poor.

Table 14.2 Utilisation of health services among adults

Percentage of all men and women aged 15 and over who ever visited a dentist and the percentage who visited in the last month according to background characteristics, South Africa 1998

Background characteristic	MEN			WOMEN		
	Ever visited a dentist	Visited dentist in last month	Number	Ever visited a dentist	Visited dentist in last month	Number
Age						
15 - 24	31.7	2.4	1,816	34.1	2.3	2,084
25 - 34	50.5	3.0	1,123	50.9	2.8	1,721
35 - 44	54.6	3.4	1,005	61.0	1.9	1,460
45 - 54	60.5	2.6	701	66.6	2.3	1,116
55 - 64	61.5	2.5	518	60.3	3.0	914
65+	55.8	1.8	507	61.1	1.5	861
Residence						
Urban	57.7	3.5	3,569	62.8	3.2	4,999
Non-urban	31.3	1.2	2,102	36.7	1.0	3,157
Province						
Western Cape	74.8	2.2	721	80.8	3.4	799
Eastern Cape	43.6	3.1	758	43.4	1.6	1,161
Northern Cape	72.4	1.3	135	72.2	1.0	168
Free State	47.2	2.4	444	45.8	2.6	519
KwaZulu-Natal	49.9	2.3	1,064	59.1	1.9	1,608
North West	27.8	2.9	551	33.8	1.5	647
Gauteng	59.1	4.1	1,099	64.4	3.8	1,887
Mpumalanga	34.0	2.9	378	43.6	2.1	507
Northern	15.1	0.7	521	21.8	0.8	859
Education						
No education	38.7	1.6	562	42.4	0.6	1,186
Sub A - Std 3	39.3	0.7	777	47.5	1.7	1,088
Std 4 - Std 5	40.5	2.4	755	46.3	1.6	1,136
Std 6 - Std 9	45.1	2.6	2,297	53.4	2.3	3,094
Std 10	62.1	4.2	801	62.4	4.8	1,120
Higher	75.8	5.3	440	75.3	4.6	495
Population group						
African	33.8	2.0	4,257	40.9	1.6	6,269
African urban	41.1	2.7	2,375	48.2	2.3	3,349
African non-urban	24.7	1.1	1,882	32.5	0.7	2,921
Coloured	86.4	1.5	637	86.9	2.6	806
White	96.3	9.3	564	98.6	8.6	767
Asian	89.1	3.1	195	89.9	1.9	300
Total	47.9	2.7	5,671	52.7	2.3	8,156

14.4 Loss of Natural Teeth and Use of Dentures

Table 14.3 shows the percentage of men and women who have lost natural teeth or who are wearing dentures. Fifty-nine percent of men and 64 percent of women report that they have lost some of their natural teeth. Loss of some natural teeth increases from about 32 percent in the younger age groups to about 90 percent in the older age group. More respondents in urban areas experienced some tooth loss than respondents in the non-urban areas. Generally with increased levels of education tooth loss declines. This could be due to the fact that the less educated participants tended to be older. More than three-quarters of the respondents in the Western Cape and the Northern Cape report having lost some of their natural teeth. The Northern Province is the only area where less than 50 percent of the respondents have not experienced some form of tooth loss.

By far the highest rate of tooth loss is reported for Coloured men and women, followed by the Asian men and women. The lowest rates of tooth loss are reported by non-urban African men and women.

Seven percent of men and 9 percent of women reported being edentulous, having lost *all* their natural teeth. As expected edentulousness increases with increasing age. Total tooth loss in the age groups 35-44 was below 10 percent whereas in the age groups 65 years or above about a quarter of the participants had no natural teeth.

Edentulousness amongst respondents in the urban areas was at least double that of those in the non-urban areas. There was no discernable trend between total tooth loss and education. The highest rate of being edentulous is reported in the Western Cape, where almost a third of the women in the Western Cape without any natural teeth. This was followed by the rates in the Northern Cape and Eastern Cape and the lowest rates were reported in the Northern Province. Again the Coloured men and women had the highest rates of edentulousness followed by the White participants. The lowest rates were reported by the non-urban African community.

These levels of tooth loss are unacceptably high. The high percentage of tooth loss is of concern as dental caries and periodontal disease are not only preventable and avoidable conditions, but also because of the increased risk of blood borne infections such as HIV/AIDS and hepatitis after an extraction, in a region where these conditions are rife. High rates of tooth loss were reported in areas where low levels of fluoride are found in the water supplies. (Grobler, Dreyer, 1988).

A shift from the endemic curative philosophy to a more promotive integrated oral health care approach, both among the public and health care professionals is urgently required.

Ten percent of the men and 12 percent of the women report that they wear dentures. The percentage of denture wearers increases with increasing age. There are more than three times as many denture wearers in urban than non-urban areas. Dentures are worn by far the most frequently in the Western Cape, followed by Gauteng. The percentage of denture wearers increases with increasing education. Whites have the highest likelihood of wearing dentures, followed by coloureds and Asians. The non-urban African community has the lowest rate of wearing dentures.

Table 14.3 Tooth loss and dentures among adults

Percentage of all men and women aged 15 and over who have lost any or all their natural teeth and the percentage who wear full or partial dentures, according to background characteristics, South Africa 1998

Background characteristic	MEN				WOMEN			
	Lost any natural teeth	Have lost all natural teeth	Wear dentures	Number	Lost any natural teeth	Have lost all natural teeth	Wear dentures	Number
Age								
15 - 24	30.5	0.9	1.9	1,816	33.1	0.9	1.4	2,084
25 - 34	55.9	2.6	6.0	1,123	57	3.3	6.5	1,721
35 - 44	69	6.5	11.2	1,005	73.9	6.8	13.1	1,460
45 - 54	77	9.9	13.4	701	81	15.8	19	1,116
55 - 64	86.9	18.8	23	518	87.1	17.4	21.8	914
65+	88.5	25.6	25.8	507	92.2	26.5	24.7	861
Residence								
Urban	63.6	9.1	13.1	3,569	69.6	11.9	16.5	4,999
Non-urban	49.9	3.9	4.4	2,102	55.9	4.5	4.1	3,157
Province								
Western Cape	77.8	19.9	22.3	721	81.5	32.3	37.4	799
Eastern Cape	60.9	8.9	8.2	758	67.6	10.4	10.5	1,161
Northern Cape	74.8	10.6	9.1	135	73.6	15	11.8	168
Free State	57.4	3.4	5.4	444	63.1	4.7	6.7	519
KwaZulu-Natal	63.5	3.6	6.0	1,064	70	4.7	8.1	1,608
North West	47.4	3.5	5.7	551	52.3	4.9	6.2	647
Gauteng	58.4	8.3	16.1	1,099	67.2	8.3	13.5	1,887
Mpumalanga	49.4	2.9	5.3	378	54.4	5.2	6.9	507
Northern	33.6	1.3	1.5	521	40.4	2.1	2.5	859
Education								
No education	72	6.7	3.1	562	73.8	8.2	5.7	1,186
Sub A - Std 3	66.4	7.6	5.5	777	70.2	7.8	6.7	1,088
Std 4 - Std 5	57.8	7.1	6.7	755	65.8	10.4	8.4	1,136
Std 6 - Std 9	52.6	7.3	10.9	2,297	60.5	10.4	15.4	3,094
Std 10	56.9	7.9	15.5	801	58.1	6.1	13.7	1,120
Higher	60.8	3.8	14.7	440	61	7.8	15.6	495
Population group								
African	52.4	2.8	3.8	4,257	60.1	4.1	5	6,269
Afr. urban	57.5	3.8	5.7	2,375	65.7	5.5	7.4	3,349
Afr. non-urban	45.9	1.6	1.4	1,882	53.6	2.4	2.1	2,921
Coloured	84.8	23.7	23.8	637	86.3	34.4	35.6	806
White	69.7	20.8	36	564	72	23.7	39.2	767
Asian	74.9	8.3	19.8	195	73.6	6.9	18.2	300
Total	58.5	7.2	9.9	5,671	64.3	9.0	11.7	8,156

14.5 Oral Health Practices

Table 14.4 shows the proportion of participants with natural teeth who own a toothbrush of those who had natural teeth, and the proportion of edentulous people who rinsed their mouths every day.

Of the people with natural teeth 94 percent of men and women owned a toothbrush. This response appears to be high, and one can question whether the response reflects actual patterns of behaviour or merely responses participants believe are expected. Although there is no answer to this question at present, oral health practice information offers at least a level of knowledge in the different population groups, as well as their awareness of the measure as appropriate health behaviour. Toothbrush ownership occurred more frequently in younger age groups than in the older age groups, but there were only small differences between urban and non-urban groups. The lowest rate of toothbrush ownership was recorded in those with the lowest level of education. Of those without teeth, only a very small percentage reported rinsing their mouth every day.

Oral health care professionals recommend brushing teeth one or more times a day to control plaque growth (Frandsen, 1986). Oral health care professionals also recommend the regular use of oral health services to prevent or treat oral diseases (Frazier *et al.*, 1977; Horowitz, 1983). The two types of oral health behaviour have very different characteristics. Tooth brushing is usually practiced by the individual at home. It is a daily habit developed from early childhood and is probably related to social and cultural norms (Gift, 1986). In contrast, the use of oral health services requires the individual to seek professional help outside the home. Here the resources and organisation of the oral health care system are important additional factors affecting behaviour (Gift, 1984).

Access to oral health services, as well as social, cultural and economic conditions is an important determinant for service utilisation (Gift, 1984). For preventive visits, additional factors, such as preventive orientation of the oral health care system and of society may also play significant roles (Gift 1984, Horowitz, 1984).

The decline of dental caries in industrialised countries, has been attributed in part to the use of fluoridated toothpastes rather than the practice of tooth brushing (Murray, 1988). It is important therefore that the utilisation of fluoridated toothpaste be measured.

Table 14.4 Toothbrush ownership and oral rinsing among adults

Percentage of men and women aged 15 and over with natural teeth who reported owning a toothbrush and the percentage of men and women age 15 and over with no natural teeth who rinse daily, according to background characteristics, South Africa 1998

Background characteristic	MEN				WOMEN			
	Own a toothbrush	Number with natural teeth	Rinse every day	Number with no natural teeth	Own a toothbrush	Number with natural teeth	Rinse every day	Number with no natural teeth
Age								
15 - 24	95.6	1,801	*	16	96.9	2,065	*	19
25 - 34	96.6	1,094	*	30	97.3	1,665	2.7	56
35 - 44	95.3	940	5.2	65	95.4	1,362	6.3	99
45 - 54	94.2	632	8.8	69	94.0	934	14.5	176
55 - 64	86.9	421	17.1	97	89.7	755	16.5	159
65+	83.5	377	23.5	130	79.5	633	24.2	228
Residence								
Urban	95.9	3,244	8.0	325	96.9	4,405	11.1	594
Non-urban	91.0	2,020	2.9	81	90.1	3,014	3.6	142
Province								
Western Cape	93.8	577	18.8	143	96.5	541	31.3	258
Eastern Cape	87.2	691	8.1	68	88.0	1,041	9.5	121
Northern Cape	96.4	120	9.9	14	96.4	143	14.3	25
Free State	95.9	429	*	15	97.4	495	*	24
KwaZulu-Natal	93.5	1,026	(2.4)	38	93.6	1,532	3.7	76
North West	96.2	532	*	19	96.9	616	(3.6)	32
Gauteng	96.9	1,008	(6.9)	91	97.3	1,730	7.8	157
Mpumalanga	94.3	367	*	11	96.3	481	(4.3)	27
Northern	94.6	515	*	7	89.4	841	*	18
Education								
No education	82.9	524	(4.8)	38	82	1,089	6.3	97
Sub A - Std 3	88.7	717	5.5	59	91.3	1,003	6.9	85
Std 4 - Std 5	94.7	701	(6.2)	54	95.4	1,018	9.7	118
Std 6 - Std 9	96.8	2,129	6.6	168	97.3	2,771	10.0	323
Std 10	96.7	738	(6.8)	63	98.2	1,052	5.0	69
Higher	97.4	424	*	17	97.9	456	(7.3)	39
Population group								
African	93.5	4,137	1.8	119	93.3	6,015	3.2	254
Afr. urban	95.4	2,285	2.4	89	96.3	3,166	4.6	183
Afr. non-urban	91.1	1,852	*	30	89.9	2,849	1.5	71
Coloured	94.4	486	22.6	151	96.2	529	33.1	277
White	98.2	447	20.3	117	98.9	585	23.5	182
Asian	98.5	179	*	16	99.3	279	(6.9)	21
Total	94	5,264	6.1	407	94.1	7,419	8.2	737

Note: Parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates a figure is based on fewer than 25 respondents and has been suppressed.

14.6 Knowledge about Fluoride in Water

Table 14.5 shows the extent that respondents think that water fluoridation is beneficial to dental health. About half of the sample indicated that fluoride “makes teeth strong”. There is little difference between men and women. Levels of knowledge on fluoride are inversely correlated with increasing age and directly associated with increased levels of education. Respondents in non-urban areas (56 percent) are more likely to think that water fluoridation is beneficial than respondents in the urban areas (48 percent). The Free State and Gauteng have the least number of participants with a positive attitude to water fluoridation while more than two-thirds of the respondents in the Eastern Cape and Northern Province feel fluoride is beneficial. Just over a quarter of the Asian respondents have a positive response, while more than half of African respondents think that fluoride in water strengthens teeth.

In this study, 51 percent of the sample indicated that fluoride “makes teeth strong” compared to just over a third of the sample in a study by Chikte & Brand (1999) who identified the purpose of water fluoridation as protecting teeth.

Table 14.5 Knowledge about fluoride among adults

Percentage of men and women aged 15 and over who agree that fluoride strengthens teeth according to background characteristics, South Africa 1998

Background characteristic	MEN		WOMEN	
	Fluoride beneficial	Number	Fluoride beneficial	Number
Age				
15 - 24	58.4	1,816	58.1	2,084
25 - 34	55.1	1,123	54.4	1,721
35 - 44	51.5	1,005	52.4	1,460
45 - 54	46.4	701	45.8	1,116
55 - 64	39.1	518	43.4	914
65+	39.5	507	35.6	861
Residence				
Urban	48.1	3,569	47.6	4,999
Non-urban	57.4	2,102	55.4	3,157
Province				
Western Cape	49.1	721	42.3	799
Eastern Cape	66.1	758	68.8	1,161
Northern Cape	47.3	135	48.6	168
Free State	36.0	444	42.4	519
KwaZulu-Natal	49.3	1,064	44.2	1,608
North West	61.2	551	58.4	647
Gauteng	33.9	1,099	39.1	1,887
Mpumalanga	61.3	378	61	507
Northern	73.0	521	64.4	859
Education				
No education	40.1	562	38	1,186
Sub A - Std 3	50.0	777	48.6	1,088
Std 4 - Std 5	50.6	755	49.6	1,136
Std 6 - Std 9	55.5	2,297	53.5	3,094
Std 10	50.5	801	56.9	1,120
Higher	54.5	440	56.7	495
Population group				
African	57.3	4,257	54.7	6,269
African urban	54.3	2,375	52.5	3,349
African non-urban	61.1	1,882	57.2	2,921
Coloured	32.6	637	36.4	806
White	40.0	564	41.8	767
Asian	24.5	195	26.5	300
Total	51.6	5,671	50.6	8,156

14.7 Policy Implications

Some of the current national oral health policies for South Africa are highlighted in Table 14.6 (Department of Health, 1999).

Table 14.6 Oral health policy for South Africa

Selected national goals for 2005 and 2010 from the draft national oral health policy for South Africa, 1999

Selected National Goals for 2005

- To increase primary health care facilities delivering oral health care services by ensuring that these services are being made available in the following order of priority: district hospitals, community health centres, clinics. Oral health should be integrated into general health programmes.
- To ensure that 40% of the population with piped water systems requiring fluoridation receive optimally fluoridated water
- To reduce the average national restoration: extraction ratio of 1:12 to 1:8
- To decrease the shortfall in facilities and personnel in rural areas from 70% to 60%

National Goals for 2010

Age 15: at least 5 healthy sextants

Age 18: to ensure that 60% or more will retain all their teeth

Age 35-44: no more than 5% edentulous; 80% with a minimum of 20 functional teeth

Age 65-74: no more than 15% edentulous; 60% with a minimum of 20 functional teeth

Additional Goals

- Promote the reduction of risk factors, like sugar intake, tobacco and alcohol abuse
- The age standardised incidence rate (ASIR) of the combined figures for mouth, tongue, lip and gingival cancer be 6 per 100 000.

Comparing SADHS data with national goals yields the following recommendations:

- (i) A higher priority needs to be given to oral health issues. Many oral health researchers argue that the prevention and control of oral diseases deserves greater attention because the adverse impact of poor oral health on individuals is underestimated. This is clearly demonstrated in the present study by the high levels of people who had experienced oral health problems;
- (ii) Although it is important to expand access by increasing primary health care facilities that deliver oral health care services, it should be noted that much of what oral health care professionals do in many systems continues to be of a curative nature, thus even individuals who have a usual source of oral health care are more likely to make a visit for treatment instead of prevention;
- (iii) The high prevalence of hepatitis and HIV/AIDS infection poses a risk to oral health personnel and the public. This highlights the need for promotion and prevention of oral diseases and the consequent reduction of invasive dental procedures;

- (iv) The low dose and frequent exposure of teeth to fluoride has been shown to be one of the most equitable and cost-effective caries preventive measure. The successful implementation of water fluoridation depends upon public knowledge and support. This survey shows that only half of adult South Africans are aware of the benefits of fluoride.
- (v) Research to develop socio-dental indicators for measuring and demonstrating the comprehensive impact of oral disease on the individual is needed.
- (vi) There is a need for research into the development of effective modern oral health care systems and self care products such as toothpastes and improving nutrition.
- (vii) Research on health services utilisation, satisfaction and barriers to service uptake is needed.

CHAPTER 15

IMPLICATIONS OF FINDINGS

15.1 Major Findings

The Demographic and Health Survey is the first national health survey conducted across the whole of South Africa. As part of the international series of such surveys, it has benefited from the extensive experience from the numerous surveys conducted in developing countries. In addition, the South African survey has an innovative adult health component which was designed to provide information about the provision of health services for adults. Including 12,247 households, this survey is smaller than the annual October Household Survey series but differs in that individual members of the household are interviewed directly for in-depth information concerning their health and measurements have been made on a sample of adults. In total, 11,357 women of reproductive age were interviewed and measurements were taken on 13,827 men and women over the age of 15 years.

The survey has confirmed evidence of the demographic transition occurring in South Africa and has found that the total fertility rate has dropped to a level of 2.9 children per woman, although it is possibly a slight under-estimate. Fertility is clearly higher in the rural areas and is correlated with education levels. There is almost universal knowledge among women about modern contraceptives and a relatively high use of contraceptives with a particularly high use of injectable contraceptives.

Teenage pregnancy remains a problem, although it has also been declining in recent years. The survey found 35 percent of 19 year-old women had been pregnant. Teenage pregnancy is high amongst coloured and African women, and was cited as the most important reason for leaving school before completion of secondary school education among the 15-24 year olds. The second most often-cited reason for dropping out of school was inability to pay school fees.

The survey provides evidence of abuse against women. One in eight women reported that they had at some point been beaten by their partner. Data from other studies suggests that this may be an under-estimate of the true level, due to the sensitivity of the questions on this topic.

Most women interviewed have heard about AIDS and there is good knowledge about the ways in which the disease is transmitted. However, this knowledge does not translate into protective behaviour as only 8 percent of women who had sex in the last 12 months, reported that they used a condom the last time they had sexual intercourse. The prevalence of STD symptoms is very high. Twelve percent of men over the age of 15 years reported that in the three months preceding the survey, they had experienced symptoms such as painful urination, penile discharge or genital sores.

The survey found an infant mortality rate of 45 deaths per 1,000 live births for the period from 1994 to 1998 which is within the WHO's target for the year 2000 of 50 deaths per 1,000 births. However, this still means that 1 in every 22 children born in South Africa dies before reaching the first birthday, and as expected, where socio-economic conditions are poorer, infant mortality is higher. Furthermore, infant mortality has begun to increase having reached a low in about 1992. This increase is likely to be due to HIV/AIDS.

Immunisation coverage is 63 percent among children aged 12-23 months and is similar between urban and non-urban areas. It has not improved since 1994. Exclusive breast feeding is low, even in the first 3 months of life. Only 10 percent of infants under 3 months are fed nothing but breast milk.

In terms of morbidity, diarrhoeal diseases continue to make an important contribution in the first two years of life and 23 percent of children age 6-23 months had an episode of diarrhoea in the two-weeks preceding the survey. Just half of women with young children (49 percent) have heard of oral rehydration therapy for ameliorating diarrhoea, but 57 percent of all the children who were reported to have had diarrhoea were given oral rehydration therapy. Commercial solutions were most commonly used. Acute respiratory infection is also prevalent amongst children and 19 percent were ill with symptoms during the 2-week period prior to the survey. A relatively large proportion of these children (75 percent) were reported to have been taken to a health facility for advice or treatment. The rate of serious and moderate injuries requiring medical attention for the under-5 year olds was 422 per 100,000 children in the preceding month. Although the most common cause of the injuries were unintentional such as burns, falls and traffic accidents, it is cause for concern that a quarter of the injuries were intentional.

Most women do receive antenatal care during their pregnancies (94 percent) and only 15 percent of deliveries take place without medical assistance from either a nurse/midwife or doctor. However, the maternal mortality ratio remains high at 150 deaths per 100,000 live births.

Attempts to measure the extent of maternal morbidity revealed that 10 percent of women who have been pregnant report leakage of urine. Less educated women were more likely to report it, which may be confounded with parity. This survey has been the first attempt to collect data on the prevalence of stress incontinence, a neglected consequence of child birth. The area of foetal incontinence as a consequence of child birth was not adequately addressed by the questionnaire but there is a suggestion that it is not a negligible problem in South Africa.

Adolescence is an important period of transition involving social and biological factors when health behaviours develop. The survey suggests that there is a need to target the youth and develop life skill programmes to empower children in issues regarding sex, tobacco abuse, negotiation and other skills to avoid violence. There is relatively high teenage pregnancy and sexually active teenage women reported low condom use during their last sexual intercourse. Although it may be an under-estimate, 15 percent of male and 7 percent of females aged 15-19years acknowledge consuming alcohol. Very similar proportions report that they currently smoke tobacco, mostly cigarettes, and 6 percent of the 15 year-olds report that they have experimented with tobacco products. Over a third (35 percent) of the adolescents who have ever smoked reported that they live with smokers in the home and are therefore exposed to environmental tobacco smoke.

The SADHS data confirm the high levels of adult mortality. The recent increase in mortality of young adults with the probability of a 15 year-old dying before the age of 50 going from 8 percent to 13 percent for women and from about 17 percent to 25 percent for men are cause for concern. The increase is likely to be a consequence of the AIDS epidemic and confirms that HIV/AIDS is a priority.

Hypertension and lung disease were measured as indicator conditions for monitoring adult health. In terms of lung disease, tuberculosis is the most serious preventable cause of chronic lung disease. It can be expected that the situation with respect to tuberculosis will worsen in the next few years, as a result of the HIV epidemic. Seven percent of men and 9 percent of women age 15 and over reported that they had symptoms of asthma, while 2 percent of men and 3 percent of women reported having had chronic bronchitis. The Eastern Cape is the province with the biggest TB problem. Some of the major risk factors for airway diseases include smoking, wood/coal/paraffin fuels, occupational exposure and air pollution.

Estimates imply that some 3,3 million adults in South Africa are hypertensive (13 percent of men and 16 percent of women) and that less than half of them are aware of it. Moreover, few hypertensives have their blood pressure under control - only 10 percent of men and 18 percent of women.

Hypertensive African men, especially those in rural areas, are seldom diagnosed as hypertensive, which points to a need for increased screening when they visit health facilities. The treatment status of hypertensives in South Africa suggests a general need for improvement in the quality of care provided for adults with chronic conditions in South Africa. It was interesting to find that alcohol use is higher among hypertensives. Of concern is that young people consume more salty food than the older people, suggesting that the prevalence of hypertension may increase as this generation gets older.

The profile of risk factors for chronic diseases suggests that there is a need for extensive health promotion. Thirty percent of women are classified as obese and this was highest among African and coloured women. Interestingly, there was a high level of misperception about overweight and many obese women perceive their weight to be normal. Nine percent of men are obese and this is highest among the whites. The prevalence of smoking appears to have dropped in recent years, although it remains very high for men (42 percent). The survey found that a large proportion of smokers had unsuccessfully attempted to stop. Exposure to environmental tobacco smoke is an issue in many homes and workplaces.

The survey found that one in six adults requires medical attention annually for an injury. Most of these injuries are unintentional in nature but nearly one-third are a result of interpersonal violence or are self-inflicted. Injuries are particularly prevalent in young males and in urban areas.

Over 13 percent of adult respondents who had earned money in the past year reported that their health had been affected by their work. The highest proportion was observed in the 45-54 age-group, and was higher among men than women. One in eleven working respondents reported that work-related diseases and injuries (caused or aggravated) resulted in absenteeism from work. Projected to the estimated 8-9 million South African workers, 712,000 to 801,000 workers may be absent from work in a year due to a condition which is likely to be largely preventable.

Investigation of the medication used on a regular basis revealed extensive use of expensive medicines in both the public and private sector. There were cases where this appeared to be inappropriate and where the Essential Drug List (EDL) guidelines did not appear to be followed which would probably have resulted in more cost-effective medication. For example, there appears to be relatively widespread use of Methyldopa for the treatment of hypertension in the public sector. This medication is not on the EDL as it is expensive and has side effects. The first line treatment for asthma appears to be inhaled steroids and adrenergic inhalers in the private sector, while there is inappropriate use of systemic anticholinergics in the public sector. There is a glaringly low use of aspirin as a preventative measure against stroke in both the public and the private sector and little use of cholesterol-lowering agents in the public sector.

Limited information was included in the survey about the oral health of adults. While about a third of the sample reported that they are experiencing problems with their teeth or gums, only 3 percent of them reported that they had visited a dentist in the last month. The survey found very high prevalence of tooth brush ownership (94 percent) amongst adults. Nearly 10 percent of adults aged 25-44 were completely edentulous (toothless), compared to more than a quarter of the people over 65 years, higher than the targets that have been set for 2010. The urban areas have more extensive edentulism than the rural areas. Half of the sample were aware that fluoride strengthens teeth.

15.2 Population Issues

There are large differences between the urban and rural areas of the country, which implies that policies and implementation strategies suitable for urban communities may be less applicable to their rural counterparts. Rural areas have a greater percentage of children in the age range 0-14 years. The reasons

for this are that the fertility rate is higher in rural areas and that urban dwellers send their children to the rural areas for schooling. Resources that target this age group may need to have a greater allocation to rural areas.

The burden carried by rural households is significant. Households in rural areas are more likely to be female-headed than to urban ones. In addition, more rural households have foster children compared to their urban counterparts (34 percent compared to 17 percent). Adults in rural households are less well educated than those in urban areas. Rural households are about two times more likely to go hungry compared to urban households (15 percent and 8 percent respectively). They are less likely to have access to safe water and electricity and more likely to use wood as the primary source of energy (45 percent of rural households do not have easy access to clean water and 62 percent of rural households do not have access to electricity). Finally, 26 percent of rural households (compared to 2 percent of urban households) do not have access to toilets of any type.

Given these differences it should not be surprising that the burden of disease in rural areas is different to that found in urban communities. This difference implies that resource allocation must be revised to take this reality into account. In addition, intervention strategies for rural communities may need to be different than those for urban communities given the differences illustrated above. A “one size fits all” policy that aims to address the health status of rural communities and urban communities is not likely to work given the material differences found by the SADHS.

15.3 Child Health

Infant and child mortality

The provinces with the highest infant mortality rates are Eastern Cape (61 per 1000 livebirths), Free State (53 per 1000 live births), KwaZulu-Natal (52 per 1000 live births) and Mpumalanga (47 per 1000 livebirths). These provinces need to review both their health and non-health policies that impact on infant mortality to ensure that the IMR is reduced.

The findings on infant mortality demonstrate that where socio-economic conditions are poorer, infant mortality is higher. As expected, infant mortality has begun to increase with the impact of the HIV/AIDS epidemic. Government initiatives on poverty alleviation and the focus on the HIV/AIDS are timely interventions to improve the health status of all South Africans.

Birth order and the length of intervals between births affect mortality, with first births, more than three births and birth intervals of less than 2 years being risk factors. Policies and health interventions need to address these issues.

Childhood illnesses

The age pattern of early childhood diarrhoeal disease observed in this survey is likely to be associated with increased exposure to the illness as a result of weaning, greater mobility of the child, as well as the immature immune system of children age 6-23 months. African rural communities appear to experience more diarrhoea than urban communities with KwaZulu-Natal and Mpumalanga reporting higher rates than the national average. Although strategies are in place to encourage women to give oral rehydration solutions to children with diarrhoea, the survey suggests a clear need to intensify health promotion campaigns in these areas. There is a need for more education and training of caregivers in the use of oral rehydration solutions in rural communities in particular.

In most developing countries, diarrhoeal disease and acute respiratory infections make sizeable contributions to morbidity and mortality in children under the age of 5 years and particularly in the first two years of life. These two conditions combine with malaria and the vaccine-preventable diseases, particularly measles, to account for the main disease burden and the refractory infant and child mortality rates in large tracts of sub-Saharan Africa. Based on these trends, the prevailing approach in countries with high infant mortality rates, has been to implement programmes that specifically target these diseases and protein energy and other forms of malnutrition that contribute to mortality. Large global child health programmes, such as the Integrated Management of Childhood Illness (IMCI) are predicated on the belief that this small group of preventable conditions, together with underlying deficiencies in key macro- and micro-nutrients, continue to be major contributors to infant and child mortality in less developed countries.

In South Africa, where malaria makes a minor and very patchy contribution to child morbidity and mortality and vaccination coverage is fairly high, diarrhoeal disease and acute respiratory infections remain important preventable and treatable causes of morbidity in children. As South Africa moves further into the demographic and epidemiologic transition, confirmed by the infant mortality rate of 45 per 1000 live births measured in this survey, the proportion of infant deaths attributable to diarrhoeal disease is expected to decrease. These patterns have been clearly shown in developed countries, where the contribution of early and late neonatal deaths to infant mortality has rapidly increased and that of infectious diseases has decreased as the infant mortality rate fell below 40 per thousand.

These trends will be confounded by the HIV epidemic. Large numbers of children are already infected with the virus by vertical transmission and, with antenatal HIV seroprevalence levels of more than 30 percent in the worst affected parts of the country, these numbers will probably continue to rise in the absence of effective interventions. Since the majority of this new morbidity will be reflected as a rising prevalence of diarrhoeal disease and respiratory infections, an unknown but significant proportion of the recorded prevalence of diarrhoeal disease and acute respiratory infections in this survey and future population-based surveys can and will be attributable to HIV/AIDS. These changing trends in all-cause and cause-specific mortality and morbidity should redirect child health priorities and influence the content of child health programmes in South Africa.

Childhood injuries

The survey found that three-quarters of injuries in children were due to burns, falls and traffic accidents. A small but disconcerting number were attributed to interpersonal injuries (19 percent). Health promotion programmes should be reviewed to focus on these priorities. In addition, other government departments and agencies and other relevant stakeholders need to work together to decrease the number of childhood injuries.

Infant feeding

Breastfeeding among South African women is alarmingly low. Of all children aged 0-3 months, only 10 percent receive breast milk exclusively, and of those aged 4-6 months, less than 2 percent are exclusively breastfed. Breast milk is recommended during the first 4 - 6 months of a baby's life because it limits exposure to disease agents and provides all the nutrients that a baby requires. The major reasons provided by respondents for stopping breastfeeding earlier than expected included: weaning age; infant refused the breast; insufficient milk; mother had to go back to work. While the policy on breastfeeding remains complex in view of the potential transmission of HIV/AIDS, this survey has highlighted the importance of providing mothers with information about the benefits and risks of breastfeeding and the need to create

an enabling environment in support of breastfeeding.

Use of health services

The findings on immunisation coverage show that 63 percent of children by age 23 months were fully vaccinated against the major childhood diseases, with 55 percent of children vaccinated by their first birthday. The coverage in African rural communities is still low at 58 percent but appears to be increasing. KwaZulu-Natal (50 percent) and Eastern Cape (53 percent) are the two provinces that fall below the national average and clearly these provinces need a greater focus on immunisation.

A gratifying finding is the extent of early polio coverage. Even though this policy was recently adopted, the survey found that 91 percent of children have already received polio at birth. In addition, almost three-quarters of children have received hepatitis B vaccination.

The 'road to health' card appears to be widely used. Three-quarters of mothers of children under five could produce a 'road to health' card on request. If completed correctly, the card is an important indicator of use of health services in general, and immunisation coverage in particular. Health workers should be encouraged to ensure that the road to health card is correctly filled in and used for monitoring.

The narrowing of the gap in coverage between the urban and non-urban areas is an important indicator of the success of the government's primary health care policy. However, the study shows a relatively high dropout rate between the first and third doses of DPT and polio vaccines, indicating a need to increase campaigns to encourage mothers to complete the full course of basic immunisations for their children.

The survey also found that 92 percent of children between 6-15 years of age are in school. This implies that schools could be an important site for health promotion. The adoption of the health promotion schools initiative is a clear recognition of the importance of schools. There is therefore a need for health policies to ensure that they consider schools as an important ally in the drive to improve child health.

15.4 Youth and Adolescent Health

Teenage pregnancy appears to be a greater problem in some parts of the country and segments of the population with greater concentrations of the problem are: Mpumalanga (25 percent), Northern Province (20 percent), Eastern Cape (18 percent) Northern Cape (18 percent); rural African teenagers (21 percent), coloured teenagers (19 percent) and those teenagers with 5 years of schooling and less. These findings suggest that a more focused and targeted approach may be necessary.

The age of first use of contraception has decreased from 24 to 19 years. The most common sources of information about contraception are mothers and friends. Younger respondents appear to rely on their mothers for information whilst the older respondents sought information from nurses and doctors. The findings suggest that health promotion and education targeted at the youth must also include their caregivers and friends.

Smoking habits were found to start early. The survey also found that three-quarters of the respondents aged 15-24 years have tried to stop with a success rate of 14 percent among males and 39 percent among women. These findings suggest that it is difficult to give up smoking once started and that men have greater difficulty to stop smoking than women in this age range. "No-smoking" and "stop-smoking" policies that target youth and adolescents should take these findings into consideration.

Roughly 25 percent of adolescents aged 15-19 who are current drinkers admit to drinking at risky levels at weekends. It is important that special attention be given to designing health promotion and education and other initiatives to prevent alcohol misuse by young persons.

15.5 Maternal and Reproductive Health

Maternal health is one of the priority programmes identified by the South African government in the past five years. Pregnant and lactating women and children under 6 years of age were the first to receive health care, free at the point of delivery, as from 1995. This was intended to promote safe motherhood, reduce maternal morbidity and mortality and infant and child mortality. The SADHS results provide an opportunity to assess maternal health programmes and identify characteristics of non-users of MCH services and hence identify women at risk.

The survey suggests that fertility rates have been declining and even those provinces that previously had high fertility rates have experienced reductions. This finding is consistent with increasing access to education (only 7 percent of women of reproductive age have no education) and an increase in contraceptive use. The key policy issues that remain are the promotion of timing of childbearing and the need to encourage teenagers to time their first and subsequent births (preferably reducing teenage pregnancies).

Access to family planning services is an issue despite the high use of contraception. Ten percent of all women and 15 percent of married women reported unmet family planning needs. The greatest need for family planning services were reported by those under 25 and those between 45-49 years of age. The unmet need is highest in rural areas (2 times that of urban areas), 6 times higher amongst those with no formal education compared to those with post basic education and highest in the Northern Province and Eastern Cape. Clearly, strategies need to focus on increasing access of segments of the population of family planning services.

Fifty-three percent of women reported knowledge about the key provisions of the Choice on Termination of Pregnancy Act. The least knowledgeable were teenagers, those aged between 45-49, those living in rural areas and those living in the Eastern Cape, Northern Province and the Northern Cape. Given that access to terminations increases the choices available to women, it is important that the availability of these services is more widely known.

A major problem reported by respondents was the poor quality of care provided by health facilities rendering reproductive health care. Quality of care was worst at family planning clinics, followed by public hospitals and clinics. Staff rendering mobile services were found to be the least unfriendly. In the private health sector, respondents reported that staff at pharmacies were the most unfriendly followed by private doctors. The major policy challenge is for government to introduce policies that would improve the quality of services received in both the public and private health sectors.

The survey revealed generally high levels of use of primary health care for women and children. For example, women received antenatal care from a nurse or doctor for 94 percent of births. Most of the visits (66 percent) were to a nurse. Only 14 percent of births in the five years preceding the survey were delivered without medical assistance from either a nurse/midwife or doctor. Seventy-three percent had 4 or more antenatal care visits and 63 percent of the visits occurred in the first 6 months of pregnancy. Eighty-three percent of deliveries were in a health facility with home deliveries being more frequent in rural African communities, when the mother had less than 5 years of education and in the Eastern Cape, Mpumalanga and the Northern Province.

Of concern however, is the finding that the maternal mortality ratio remains high, at 150 per 100,000 live births. It is hoped that the 'Confidential Enquiry into the Causes of Maternal Deaths in South Africa' process instituted by the Minister of Health in 1997 will provide more information on the factors which are contributing to this high ratio and that the mechanisms to improve quality of care built into the confidential enquiry process will contribute to a reduction in maternal mortality.

15.6 HIV/AIDS and STDs

There is extensive awareness about HIV/AIDS, yet this awareness does not seem to translate into knowledge which enables safer sexual behaviour. Condom use is low among teenagers and adults, and only 8 percent of women reported that their partner had used a condom during their last sexual intercourse. Condom usage is, however, slightly higher for sexual encounters with non-marital partners (16 percent) but nowhere near acceptable levels. Another indication that awareness of HIV/AIDS is not being translated to safer sex behaviour is the high rates of STD symptoms reported. Twelve percent of men interviewed reported having symptoms of an STD in the three months prior to the survey. The data suggest that STD infections are a bigger problem in certain communities. Levels are higher among non-urban men, men in KwaZulu-Natal and Mpumalanga, and African men. These findings support the need for greater partnerships and a strengthening of the government's drive to prevent the further spread of HIV/AIDS.

15.7 Adult Health

The level of mortality is a key indicator of adult health. Different data sources have yielded conflicting information on the exact level of adult mortality and the SADHS data is an important source of new information that can be used to determine adult mortality. The survey suggests that there has been an increase in premature adult mortality and recent increase for young adults is cause for concern. It is important for all the mortality data to be evaluated together to be able to monitor the trends in mortality.

If the burden of chronic diseases in South Africa is to be determined in any accurate way, self-reporting by people of the conditions they suffer from cannot be relied on. Chronic conditions need to be diagnosed by objective means, such as measuring blood pressure for hypertension or doing a glucose tolerance test for diabetes. As the actual diagnosis of many chronic conditions is a costly process, a cost-effective approach would be to identify one or more measures that can be done cheaply and accurately to diagnose one or more common chronic conditions. Such a condition could then be used as an indicator condition to address the care provided for adult conditions. An example would be the measurement of blood pressure to identify hypertension.

The survey data suggest that many of these common chronic conditions are under-diagnosed and poorly treated. The condition that seems to be most under-reported is hyperlipidaemia. This condition is a major risk factor for atherosclerosis-related conditions that precede heart attacks and strokes.

Lung disease

Tuberculosis is the most serious preventable cause of chronic lung disease in South Africa. Not only is tuberculosis a serious cause of death, it is also a serious cause of disability, particularly in people who have required repeat courses of treatment. Much of what must be done to prevent tuberculosis lies outside of the sphere of health care. Improving the lives of all South Africans, but especially the poorest groups in society through employment creation, provision of houses and engendering caring communities will, given time, have a positive impact on the tuberculosis situation. The HIV pandemic requires all

possible efforts to reduce its impact partly to prevent tuberculosis. Once a person develops tuberculosis the only available effective route is medical therapy. It can be expected that the situation with respect to tuberculosis in South Africa will worsen in the next few years. Therefore, in anticipation of this and in order to limit consequent death, disability and the perpetuation of tuberculosis, serious consideration must be given to ways to strengthen South Africa's tuberculosis control programme at local, provincial and national levels of government. The poor reporting rate of tuberculosis cases is noted. This must be improved so that reliable statistics are obtained through notification data. Measures to control tuberculosis will also have a population benefit in reducing the burden of chronic obstructive lung disease.

The survey revealed a high burden due to other respiratory diseases and data suggest that control of tobacco smoking remains a priority. While the means of primary prevention of asthma at the population level are still poorly understood, protection of the unborn child and young children from passive smoking can prevent a significant number of cases of childhood asthma and aggravation of established cases.

There is much scope to improve the provision of care. All health care providers need to be made aware of the latest consensus approach to the management of COPD (Working Group of the South African Pulmonary Society, 1998), in particular the need to give advice on smoking cessation and rational prescribing. To achieve such awareness, more active professional development approaches are needed than the publication of guidelines alone. Primary care practitioners need to be trained in clinical evaluation of COPD. At the very least, primary care facilities need to be equipped with peak flow meters, although practitioners need to be aware of the limitations of peak flow meters in the diagnosis of COPD. Efforts to extend the benefits of optimal asthma care to the population at large need to be intensified (Potter *et al.*, 1994, South African Pulmonary Society Asthma Working Group, 2000). The skills of primary care practitioners in diagnosing and caring for asthma need to be improved and their practices brought into line with currently recommended guidelines. Attention needs to be given to ensuring that the appropriate and most cost-effective medication for asthma are available.

The key to prevention of occupational respiratory disease is the control of occupational air pollution. This requires the enforcement of engineering and other workplace control solutions as required by the Occupational Health and Safety Act (No. 85 of 1996) and the Mine Health and Safety Act (No. 29 of 1997). There is, however, an urgent need for the co-ordination of preventive and enforcement efforts in South Africa, currently fragmented across different departments. There is also the need for greater use of the mechanisms for worker participation provided by the above acts, for example, through health and safety committees.

As an adjunct to workplace prevention of occupational lung disease, education of health care providers to recognise and report occupational diseases is needed. An overhaul of the administration system for occupational diseases, whose inefficiencies currently represent a major obstacle to the reporting and management of occupational diseases, is needed (Ehrlich *et al.*, 1995). The separation of compensation and preventions systems further adds to inefficiency.

The problem of indoor air pollution due to fuels can best be addressed by the use of alternative fuels. Paraffin (kerosene) is less polluting than coal (Bailie *et al.*, 1999), although it is associated with increased risk of accidental child poisoning. The current programme to extend electrification to households in all areas of the country is thus likely to produce a substantial health benefit. However, South Africa's heavy reliance on coal for electricity generation confers substantial external costs (Van Hoorn, 1996), which need to be taken into account.

Population research is needed to describe the relative contribution of tobacco and other risk factors to the prevalence of COPD and asthma in South Africa. In particular, research is needed into the contribution of

mining and other occupations with significant workplace air pollution to lung function loss and COPD. There is a pressing need to investigate why women with low smoking prevalence report relatively high levels of COPD and asthma symptoms. Careful measurement of risk factors such as indoor and localised outdoor pollution, tuberculosis and lung function will be needed.

Large scale epidemiological studies are needed to determine the health effects in areas of high or increasing air pollution. In addition to traditional industrial pollution, the impacts of photochemical smog and small particulate pollution need to be monitored. With the relatively rapid social and economic change in South Africa, it is possible to investigate emerging hypotheses on the contribution to the population incidence of asthma of changing infection rates, immunisation rates, diet, family size, and other correlates of development.

Operations research is required to identify barriers to the implementation of recommended COPD and asthma care at primary level. Research into the cost of asthma and COPD care and the burden on health facility budgets of asthma medication is needed to enable managers and practitioners to plan appropriately. A study of the country's human resources in pulmonary care, including pulmonologists and pulmonary technologists should be undertaken to estimate future needs and to propose a training and placement strategy to meet these needs. Operational research is required in those provinces where there appear to be very low notification rates for tuberculosis to determine why this is the case and to make suggestions on the best ways of remedying this.

Hypertension

While national guidelines for the management of hypertension in the primary health care setting have been developed and launched, the findings of the survey suggest that these are not being implemented comprehensively. It is likely that staff at primary care centres need to be trained to apply the proposed guidelines. In addition, patient education modules, in line with these guidelines, need to be developed and evaluated as well as tools to assist the clinic staff with the heavy patient loads that they currently face. The most cost-effective combination of therapies to manage hypertension should be identified and implemented, at least in the public sector facilities. This might require the development of low-cost combination forms of medication.

The level of blood pressure that identifies hypertensive patients (either 160/95 mmHg or 140/90 mmHg) needs to be agreed upon, taking the resources within the public sector into account. The Hypertension Society of South Africa, in line with WHO recommendations, have revised the cut-off to 140/90 mmHg. This will clearly lead to many more individuals being diagnosed as hypertensive. The cost-effectiveness of attempting to manage hypertension based on this cut-off needs careful consideration.

The salt content of South African staple food, such as bread, needs to be investigated and controlled if necessary. The policy of alcohol use should consider the impact that this agent has on hypertension and should be included in an education package regarding safe alcohol use. The impact of obesity on the prevalence of hypertension should motivate a concerted effort to address obesity in the South African population by the health care services.

A system to monitor hypertension needs to be developed. Indicators and tools to monitor the treatment of hypertensive patients should be developed and the questionnaire and measurements used in this survey should be enhanced and validated for forthcoming surveys.

Although hypertension has been used in this survey as an indicator condition for the health care provided for adults, it is essential to adopt a total risk assessment for cardiovascular diseases (CVD) in order to develop a more cost-effective approach. The blood pressure status should be considered alongside

tobacco usage, diabetes and hyperlipidaemia status to assess their overall risk for developing cardiovascular diseases.

Many issues to improve the management of hypertension need further research. It would be useful to study the determinants in patients, the health care team and the service structure that influence the poor hypertension control that has been observed. Epidemiological research is needed to develop and evaluate modules to identify the overall cardiovascular disease risk profile of patients to determine which patients can be treated cost-effectively. Intervention material needs to be developed and evaluated for hypertension patients that would empower them to become active in improving their own control and methods need to be developed to ensure that more men, particularly young and rural men, are diagnosed and enter treatment. Epidemiological studies should be undertaken to determine if the blood pressure of the African community is salt-sensitive. Lastly, while the disease burden of hypertension is clearly extensive, it would be useful to study the cost effectiveness of possible interventions that could be introduced to reduce it.

Lifestyle factors

The lifestyle indicators that have been identified suggest that, for men, the high rate of smoking needs intervention and for women, the high rates of overweight and obesity as well as high rates of smoking among coloured women.

Twenty-nine percent of men and 56 percent of women were found to be overweight or obese, with white, educated men being the most obese of all men, and African urban women of low education level being the most obese of all women. In Gauteng and KwaZulu-Natal, more than one-third of women are obese. Overall, these data suggest that the predominant pattern of malnutrition in adult South Africans, particularly in African and coloured women, is one of over nutrition, with remarkably high rates of obesity. Obesity is a predisposing factor for developing hypertension, diabetes and a range of other pathologies. While some scientists have suggested that obesity may be less harmful in African people (Stevens J, *et al.*, 1992), a number of South African studies have shown that obesity is an independent predictor of the emergence of hypertension and diabetes in Africans. Besides, obesity tends to cluster with other cardiovascular disease risk factors, such as high blood lipids.

The policy proposals for obesity must predominantly lie with prevention, as it is an extremely difficult condition to treat effectively. Cultural issues will have to be addressed as some traditions convey positive connotations about being obese. This has been illustrated with the survey data showing the discrepancies between perceived body weight and the actual high rates of obesity. In addition, educating young women on healthy eating patterns must be prioritised, which will benefit them and their families.

The health promoting schools initiative should also focus on issues of over-nutrition and obesity. Healthy eating patterns must be established at a young age. Basic nutrition education is needed and there should be an equal focus on a well-balanced diet, while preventing obesity.

Another issue regarding healthy eating is related to the labeling of food products. This has not received sufficient attention to support people who buy food to make healthy choices. Labeling should also consider people who cannot read English or have low literacy levels.

The Tobacco Products Control Amendment Act of 1999 provides the country with one of the most comprehensive pieces of tobacco legislation in the world. The Act is a necessary and timely response to a growing public health problem. It is designed to shield children from expensive advertising and promotional campaigns designed to get teenagers to think that smoking is 'cool' and 'smart' and not a deadly addiction. The Act also protects the right of non-smokers to a clean environment unpolluted by tobacco smoke.

The accelerating trend in tobacco consumption in South Africa that began in the 1960s appears to have peaked early in this decade and is now on the decline, although the country still has about 7 million smokers aged 15 years or older. In 1992 Martin *et al.* reported that 32 percent of South Africans over the age of 18 years smoked and in 1996 Reddy *et al.* reported a figure of 34 percent. A lower rate of 28 percent amongst adults aged 16 years and older was found by the South African Advertising Research Foundation in 1998. In the SADHS, the overall smoking rate for all South Africans 18 years and older was found to be 26 percent.

While the lower smoking rates in the SADHS could reflect a true reduction in tobacco use in South Africa, it is necessary to consider methodological and other contributing factors to explain the results. The sampling procedures used in the previous surveys selected one person per household, while the SADHS studied all adults in selected households. An additional possibility for explaining the lower smoking level observed could be that the sampling frame of the SADHS included a truly representative rural component to a greater extent than the sampling frame used in other studies.

It is nonetheless possible that the tobacco control campaigns conducted in South Africa during the last few years have resulted in a reduction in smoking. There is very high awareness in the population that smoking is harmful to health. The health warning messages on tobacco products and advertisements seem to have been effective in raising public knowledge and awareness of the risks of smoking. In 1992, for instance, 67 percent of men and 78 percent of women thought that tobacco use was bad for one's health (Martin *et al.*, 1992). This figure increased to 89 percent for men and 94 percent for women in the SADHS in 1998.

In order to strengthen the anti-smoking policy the following proposals are made: greater emphasis on the monitoring of the impact of the policy; providing smokers with viable strategies to stop smoking; including anti-smoking as part of the curricula of health worker training, especially nurse/midwives and school health personnel; and monitoring tobacco-related disability and deaths.

Regarding alcohol use, just under half of males and one-fifth of females 15 years and older acknowledge being current consumers of alcohol. This is lower than would be expected based on the findings of other research and less than would be expected based on estimates of the amount of alcohol consumed in South Africa. The data, however, indicate very high levels of risky drinking (especially over weekends) and high levels of alcohol dependence among those persons who do consume alcohol. Intervention is especially needed to reduce high levels of drinking over weekends, particularly by African and coloured populations, non-urban populations, and persons having lower education. Ongoing surveillance of alcohol use, risky drinking and associated problems is required to inform the targeting of appropriate interventions and to assess the impact of such interventions.

Injuries

Injury prevention and control should be a national priority since it is one of the leading causes of mortality and morbidity among South Africans. In addition, injuries result in significant costs not only to the individual, but to their families, the community, the health services and ultimately the society as a whole. Although long-term injury reduction lies with primary prevention it is essential that the other two

components, viz., secondary and tertiary prevention, also be foci of attention. South Africa should look to the industrialised nations that have had good success in reducing unintentional injury rates. If we adapt some of these public health techniques in order to accommodate local needs there is every reason to believe that our overall injury rate, and even that of violence, can be reduced.

The survey found evidence of abuse against women, with one in 8 women (13 percent) reporting they had, at some time been beaten by a partner. Four percent of women who had ever been pregnant reported they had been physically abused during the pregnancy. Only 4 percent of all women reported ever having been raped. One in five currently married women reported economic abuse, where their partners did not provide money for food, rent or bills, but used it for other things. The extent of abuse may well represent under-reporting but is still of major significance and requires the implementation of health policies that will address this issue. Clearly, the need for intersectoral action, with such other role-players as the Departments of Safety and Security, Justice, Social Development, NGOs and the private sector is critical for any successful intervention strategy.

Occupational health

Of those employed in the past 12 months, 14 percent reported work-related injury or disease. Although bias introduced by the household survey methodology may have contributed to this high rate, the survey has provided the most broadly based indication of the prevalence of work-related health concerns available to date for South Africa. Whatever the limitations, it is clear that health services at all levels can expect a substantial proportion of their adult working patients to present with work-related complaints. This emphasises the importance of effective occupational health services.

15.8 Oral Health

A higher priority needs to be given to oral health issues. Many oral health researchers argue that the prevention and control of oral diseases deserves greater attention because the adverse impact of poor oral health on the individuals is underestimated. This is clearly demonstrated in the present study by the number of people who had experienced oral health problems.

Although it is important to expand access by increasing primary health care facilities through delivering oral health care services, it should be noted that much of what oral health care professionals do in many systems continues to be of a curative nature, thus even individuals who have a usual source of oral health care are more likely to make a visit for treatment instead of prevention.

The high prevalence of hepatitis and HIV/AIDS infections poses a higher risk to oral health personnel and the public. This highlights the need for promotion and prevention of oral diseases and the consequent reduction of invasive dental procedures. The low dose and frequent exposure of teeth to fluoride has been shown to be one of the most equitable and cost-effective preventive measure for dental caries. The successful implementation of water fluoridation depends upon public knowledge and support.

The findings of the survey support a number of the current national oral health policies for South Africa, highlighted in Table 15.1 (Department of Health, 1999).

Table 15.1 Draft National Oral Health Policy for South Africa	
Selected National Goals for 2005	
1	To increase primary health care facilities delivering oral health care services by ensuring that these services are being made available in the following order of priority: district hospitals, community health centres, clinics. Oral health should be integrated into general health programmes.
2	To ensure that 40% of the population with piped water systems requiring fluoridation receive optimally fluoridated water
3	To reduce the average national restoration: extraction ratio of 1:12 to 1:8
4	To decrease the shortfall in facilities and personnel in rural areas from 70% to 60%
National Goals for 2010	
Age 15:	at least 5 healthy sextants
Age 18:	to ensure that 60% or more will retain all their teeth
Age 35-44:	no more than 5% edentulous; 80% with a minimum of 20 functional teeth
Age 65-74:	no more than 15% edentulous; 60% with a minimum of 20 functional teeth
Other	
5	To promote the reduction of risk factors, like sugar intake, tobacco and alcohol abuse.
6	To reduce the Age Standardised Incidence Rate (ASIR) of the combined figures for mouth, tongue, lip and gingival cancer to 6 per 100,000.

There is a need for research in oral health. Socio-dental indicators need to be developed for measuring and demonstrating the comprehensive impact of oral disease on the individual. The development of effective modern oral health care systems and self care products such as toothpastes and improved nutrition are needed and health services research of utilisation, satisfaction and barrier to service uptake are needed.

15.9 Use of Chronic Medication

The most commonly used drugs are for the treatment of hypertension, followed by drugs for diabetes, asthma and chronic obstructive pulmonary diseases. The effectiveness of these chronic disease drugs can be estimated by assessing the degree of hypertension control achieved by the health services in the country. Data gathered suggest that neither the public nor private health care sectors have achieved an acceptable level of hypertension control. This implies that both doctors and their patients need to work on ways of improving prescription use and compliance with treatment guidelines which go beyond the dispensing of drugs.

The drug utilisation pattern furthermore highlights some glaring lack of the use of cost-effective medication that can save lives and decrease morbidity. This is highlighted by the very low level of aspirin being used for atherosclerosis- and stroke-related conditions as well as very little hypolipidaemic drugs use. There are about 4 million people in South Africa with hyperlipidaemia who are currently untreated.

This figure will increase as development and upward social morbidity increase the risk for developing hyperlipidaemia and atherosclerosis related conditions.

Despite the publication and distribution of essential drug lists and rational prescription guidelines for use in the primary as well as the secondary and tertiary health care services, the use of pharmacologic treatments are not optimal. More attention, in the form of monitoring and support in this regard are necessary.

15.10 Conclusions

The results of the SADHS suggest that health policies in a number of areas need to be strengthened. In addition, the inter-provincial and rural-urban variation suggests that a one-size fits all approach to policy making will not facilitate easy implementation. Instead policies and implementation strategies that fit the reality of communities need to be considered.

Beyond the general points made above, the chapter has attempted to tease out the major policy implications of the results of the survey. It is clear that the implementation of the Strategic Framework, 1999-2004 be guided by the findings of this survey.

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APPENDIX A

SAMPLE DESIGN

A1 Introduction

The 1998 South African Demographic and Health Survey (SADHS) covered the population living in private households in the country. The design for the SADHS called for a representative probability sample of approximately 12,000 completed individual interviews with women between the ages of 15 and 49. It was designed principally to produce reliable estimates of demographic rates (particularly fertility and childhood mortality rates), of maternal and child health indicators, and of contraceptive knowledge and use for the country as a whole, the urban and the non-urban areas separately, and for the nine provinces. As far as possible, estimates were to be produced for the four South African population groups. Also, in the Eastern Cape province, estimates of selected indicators were required for each of the five health regions.

In addition to the main survey of households and women 15-49 that followed the DHS model, an adult health module was administered to a sample of adults aged 15 and over in half of the households selected for the main survey. The adult health module collected information on oral health, occupational hazard and chronic diseases of lifestyle.

A2 Sampling Frame

The sampling frame for the SADHS was the list of approximately 86,000 enumeration areas (EAs) created by Central Statistics (now Statistics South Africa, SSA) for the Census conducted in October 1996. The EAs, ranged from about 100 to 250 households, and were stratified by province, urban and non-urban residence and by EA type. The number of households in the EA served as a measure of size of the EA.

A3 Characteristics of the SADHS Sample

The sample for the SADHS was selected in two stages. Due to confidentiality of the census data, the sampling was carried out by experts at the CSS according to specifications developed by members of the SADHS team. Within each stratum a two stage sample was selected. The primary sampling units (PSUs), corresponded to the EAs and will be selected with probability proportional to size (PPS), the size being the number of households residing in the EA, or where this was not available, the number of census visiting points in the EA. This led to 972 PSUs being selected for the SADHS (690 in urban areas and 282 in non-urban areas). Where provided by SSA, the lists of visiting points together with the households found in these visiting points, or alternatively a map of the EA which showed the households, was used as the frame for second-stage sampling to select the households to be visited by the SADHS interviewing teams during the main survey fieldwork. This sampling was carried out by the MRC behalf of the SADHS working group. If a list of visiting points or a map was not available from SSA, then the survey team took a systematic sample of visiting points in the field. In an urban EA ten visiting points were sampled, while in a non-urban EA twenty visiting points were sampled. The survey team then interviewed the household in the selected visiting point. If there were two households in the selected visiting point, both households were interviewed. If there were three or more households, then the team randomly selected one household for interview.

In each selected household, a household questionnaire was administered; all women between the ages of 15 and 49 were identified and interviewed with a woman questionnaire. In half of the selected households (identified by the SADHS working group), all adults over 15 years of age were also identified and interviewed with an adult health questionnaire.

A4 Sample Allocation

Tables A1 and A2 show the estimated distribution of the population of South Africa, broken down by province and urban /non-urban, as of October 1996, based on the preliminary estimates from the 1996 census.

Table A1. Population of South Africa, October 1996.

Province	Urban	Non-urban	Total
Western Cape	3,703,000	415,000	4,118,000
Eastern Cape	2,188,000	3,677,000	5,865,000
Northern Cape	535,000	211,000	746,000
Free State	1,718,000	752,000	2,470,000
KwaZulu-Natal	3,341,000	4,331,000	7,672,000
North-West	1,060,000	1,983,000	3,043,000
Gauteng	6,911,000	260,000	7,171,000
Mpumalanga	1,014,000	1,632,000	2,646,000
Northern	490,000	3,638,000	4,128,000
South Africa	20,960,000	16,899,000	37,859,000

Table A2. Percent population distribution (1996)

Province	Urban	Non-urban	Total
Western Cape	89.9 %	10.1 %	10.9 %
Eastern Cape	37.3 %	62.7 %	15.5 %
Northern Cape	71.7 %	28.3 %	2.0 %
Free State	69.6 %	30.4 %	6.5 %
KwaZulu-Natal	43.5 %	56.5 %	20.3 %
North-West	34.8 %	65.2 %	8.0 %
Gauteng	96.4 %	3.6 %	18.9 %
Mpumalanga	38.3 %	61.7 %	7.0 %
Northern	11.9 %	88.1 %	10.9 %
South Africa	55.4 %	44.6 %	100.0 %

Except for Eastern Cape, the provinces were stratified by urban and non-urban areas, for a total of 16 sampling strata. Eastern Cape was stratified by the five health regions and urban and non-urban within each region, for a total of 10 sampling strata. There were thus 26 strata in total.

Originally, it was decided that a sample of 9,000 women 15-49 with complete interviews allocated equally to the nine provinces would be adequate to provide estimates for each province separately; results of other demographic and health surveys have shown that a minimum sample of 1,000 women is required in order to obtain estimates of fertility and childhood mortality rates at an acceptable level of sampling

errors. Since one of the objectives of the SADHS was to also provide separate estimates for each of the four population groups, this allocation of 1,000 women per province would not provide enough cases for the Asian population group since they represent only 2.6 percent of the population (according to the results of the 1994 October Household Survey conducted by SSA). The decision was taken to add an additional sample of 1,000 women to the urban areas of KwaZulu-Natal and Gauteng to try to capture as many Asian women as possible as Asians are found mostly in these areas. A more specific sampling scheme to obtain an exact number of Asian women was not possible for two reasons: the population distribution by population group was not yet available from the 1996 census and the sampling frame of EAs cannot be stratified by population group according to SSA as the old system of identifying EAs by population group has been abolished.

An additional sample of 2,000 women was added to Eastern Cape at the request of the Eastern Cape province who funded this additional sample. In Eastern Cape, results by urban and non-urban areas can be given. Results of selected indicators such as contraceptive knowledge and use can also be produced separately for each of the five health regions but not for urban/non-urban within health region.

Table A3 shows the allocation of the target sample of 12,000 women by province and by urban/non-urban residence. Within each province, the sample is allocated proportionately to the urban/non-urban areas. The allocation of the sample to the health regions of Eastern Cape will be shown in table A7 below.

Table A3. Sample allocation of 12 000 women with complete interviews

Province	Urban	Non-urban	Total
Western Cape	899	101	1,000
Eastern Cape	1,119	1,881	3,000
Northern Cape	717	283	1,000
Free State	696	304	1,000
KwaZulu-Natal	1,265	565	1,800
North-West	348	652	1,000
Gauteng	1,164	36	1,200
Mpumalanga	383	617	1,000
Northern	119	881	1,000
<i>South Africa</i>	<i>6,680</i>	<i>5,320</i>	<i>12,000</i>

In the above allocation, the urban areas of KwaZulu-Natal have been oversampled by about 57 percent while those of Gauteng have been oversampled by less than 1 percent. For comparison purposes, Table A4 shows a proportional allocation of the 12,000 women to the nine provinces that would result in a completely self-weighting sample but does not allow for reliable estimates for at least four provinces (Northern Cape, Free State, Mpumalanga and North-West).

Table A4. Proportional sample allocation

Province	Urban	Non-urban	Total
Western Cape	1,173	132	1,305
Eastern Cape	694	1,165	1,859
Northern Cape	169	67	236
Free State	545	238	783
KwaZulu-Natal	1,059	1,373	2,432
North-West	336	629	965
Gauteng	2,191	82	2,273
Mpumalanga	322	517	839
Northern	155	1,153	1,308
South Africa	6,644	5,356	12,000

The number of households to be selected for each stratum was calculated as follows:

$$\text{Number of HHs} = \frac{\text{Target number of women 15-49}}{\text{Number of women 15-49 per HH} \times \text{Overall response rate}}$$

According to the 1994 October Household Survey, the estimated number of women 15-49 per households is 1.2. The overall response rate was assumed to be 80 percent, i.e., of the households selected for the survey only 90 percent would be successfully interviewed, and of the women identified in the households with completed interviews, only 90 percent would have a complete woman questionnaire. Using these two parameters in the above equation, we would expect to select approximately 12,500 households in order to yield the target sample of women. The number of households to be selected in each stratum is shown in Table A5.

Table A5. Number of households to be selected

Province	Urban	Non-urban	Total
Western Cape	936	105	1,041
Eastern Cape	1,166	1,959	3,125
Northern Cape	747	295	1,042
Free State	725	317	1,042
KwaZulu-Natal	1,286	589	1,875
North-West	363	679	1,042
Gauteng	1,213	38	1,251
Mpumalanga	399	643	1,042
Northern	124	918	1,042
South Africa	6,959	5,543	12,502

The number of sample points (or clusters) to be selected for each stratum is calculated by dividing the number of households in the stratum by the average "take" in the cluster. In SADHS, each cluster will correspond to a census EA. Analytical studies of surveys of the same nature suggest that the optimum number of women to be interviewed is around 20-25 in each urban cluster and 30-35 in each non-urban

cluster. However it was decided that these numbers would be lower for the SADHS, given the practice of small cluster "take" in surveys conducted in South Africa and that the field cost is generally reasonable. If we selected 10 households in each urban cluster and 20 households in each non-urban cluster, the distribution of sample points or EAs would be as follows:

Table A6. Number of EAs to select

Province	Urban	Non-urban	Total
Western Cape	94	5	99
Eastern Cape	117	98	215
Northern Cape	75	15	90
Free State	73	16	89
KwaZulu-Natal	129	29	158
North-West	36	34	70
Gauteng	121	2	123
Mpumalanga	40	32	72
Northern Province	12	46	58
<i>South Africa</i>	<i>697</i>	<i>277</i>	<i>974</i>

Some rearrangement was then necessary so that in each stratum there was an even number of EAs. This is recommended for the purpose of calculating sampling errors using Taylor linearization in which the first step is to form pairs of homogeneous clusters.

In the Eastern Cape, the sample was distributed equally among the five health regions since estimates are required at the level of health region. Within each health region the sample was distributed proportionally to urban/non-urban according to the distribution of population in 1993. Table A7 shows the proposed number of EAs to be selected.

Table A7. Proposed number of EAs to be selected

Province	Urban	Non-urban	Total
Western Cape	94	6	100
Eastern Cape	108	102	210
Health reg A	54	4	58
Health reg B	18	22	40
Health reg C	26	18	44
Health reg D	6	28	34
Health reg E	4	30	34
Northern Cape	74	16	90
Free State	74	16	90
KwaZulu-Natal	130	28	158
North-West	36	34	70
Gauteng	122	2	124
Mpumalanga	40	32	72
Northern	12	46	58
<i>South Africa</i>	<i>690</i>	<i>282</i>	<i>976</i>

In allocating the number of EAs to the five health regions of the Eastern Cape, we tried to follow the rule of an even number of clusters per sampling stratum while aiming for a regional sample of approximately 600 households (resulting in about 600 women aged 15-49).

The magisterial district composition of the health regions in Eastern Cape is as follows:

Health region A (14 magisterial districts) (88% Urban)	Aberdeen Graaf-Reinet Willowmore Steytlerville Joubertina Humansdorp Hankey Jansenville Pearston Somerset-East Kirkwood Uitenhage Port Elizabeth Alexandria
Health region B (14 magisterial districts) (30% Urban)	Venterstad Steynsburg Middleburg Cradock Hofmeyer Tarka Queenstown Albert Aliwal North Wodehouse Lady Grey Herschel Barkley East Indwe
Health region C (21 magisterial districts) (43% urban)	Bedford Adelaide Fort Beaufort Stockenstrom Keiskammahoek Albany Bathurst Peddie Middledrift Victoria East King Williams Town Mdantsane East London Stutterheim Butterworth Nqamakwe Willowvale Kentani Idutywa Komga Tsomo
Health region D (11 magisterial districts) (7 % urban)	Elliot Maclear Qumbu Tsolo

	Engcobo
	Umtata
	Mqanduli
	Elliotdale
	Ngqeleni
	Port St. Johns
	Libode
Health region E (9 magisterial districts)	Umzimkulu
	Matatiele
	Mount Fletcher
	Mount Frere
(2 % Urban)	Tabankulu
	Flagstaff
	Bizana
	Mt Ayliff
	Lusikisiki

A5 Stratification and Systematic Selection of EAs

Stratification and selection of the EAs for the SADHS was done by CSS according to the following specifications. Explicit stratification of the EAs was by province and by urban/non-urban within province except in Eastern Cape where the strata were the urban and non-urban areas of each of the five health regions. EAs that contain only institutions such as prisons and mine hostels were excluded from the sampling frame. Within each EA type, the EAs were ordered according to geographic or administrative units as adopted by SSA for the census. The number of EAs, as specified in Table A7, were then selected independently within each explicit stratum and with probability proportional to size. The measure of size used for selection was the number of households enumerated in each EA by the census.

The selection procedure that SSA used in each explicit stratum was as follows:

1. calculating the selection interval for the EAs:

$$I = \frac{\Sigma M_i}{a}$$

where ΣM_i is the size of the stratum (total number of households or population in the stratum according to the census) and a is the number of EAs to be selected in the stratum;

2. calculating the cumulated size of each EA;
3. calculating the series of sampling numbers $R, R+I, R+2I, \dots, R+(a-1)I$, where R is a random number between 1 and I ;
4. comparing each sampling number with the cumulated sizes.

The first EA to be selected was the first EA on the list whose cumulated size was equal or greater than the first sampling number. The second EA to be selected was the next EA on the list (after the first selected one) whose cumulated size was equal or greater than the second sampling number, and so on.

A6 Sampling Probabilities

The sampling probabilities were calculated separately for each sampling stage, and independently for each stratum. The following notations will be used:

- P_1 : first-stage sampling probability (EAs)
- P_2 : second-stage sampling probability (households)

Let a_h be the number of EAs selected in stratum h , M_{hi} the size (number of households according to the sampling frame) of the i^{th} EA in stratum h , and ΣM_{hi} the total size of the stratum (number of households according to the sampling frame). The probability of inclusion of the i^{th} EA in the sample is calculated as follows:

$$P_{1hi} = \frac{a_h \times M_{hi}}{\Sigma M_{hi}}$$

In the second stage, we will select a number b_{hi} households from the number M_{hi} of households in the i^{th} EA. We then have:

$$P_{1hi} \cdot P_{2hi} = \frac{a_h \cdot M_{hi}}{\Sigma M_{hi}} \times \frac{b_{hi}}{M_{hi}}$$

In order for the sample to be self-weighting within the stratum, the overall probability $f_h = P_{1hi} \cdot P_{2hi}$ must be the same for each household within the stratum, where f_h is the sampling fraction calculated separately for stratum h :

$$f_h = \frac{n_h}{N_h}$$

where n_h is the number of households selected in stratum h , and N_h is the number of households that exist in stratum h .

A7 Sample Implementation

The sampling of EAs was carried out by SSA as described in section A4. This led to a total of 972 EAs being selected for the SADHS (690 in urban areas and 282 in non-urban areas). Fieldwork in three EAs was not implemented and the questionnaires for another three EAs were lost in transit. So the data file contains information for a total of 966 EAs. Results of the sample implementation are given in Table A.8 for the usual DHS schedule (women's questionnaire) and in Table A9 for the adult health module.

The results for the usual DHS schedule (women's questionnaire) indicate that of 12,860 households selected in the survey, 95.2 percent were successfully interviewed. The main reasons for not successfully interviewing the households were refusals (1.8 percent), dwelling vacant (1 percent) and household absent (0.6 percent). The response rate at the household level was 97 percent. In these households there were 12,327 women aged 15-49, 95 percent of whom were successfully interviewed. The overall response rate for the women's questionnaire is thus 92.3 percent.

Table A.9 presents the results for the Adult Health survey. Of the 6,457 households selected for the adult survey, 95.3 percent were completed. Two percent of households refused, being the largest category of non-response. The response rate for households was 96.8 percent once the appropriate exclusions were made. At the individual level, 92.6 percent of eligible adults were included in the survey, although not all of them had all the measurements taken. There were 3.1 percent of the respondents not at home and a further 2.1 percent refused. The overall response rate for the adult survey was 89.7 percent. It was substantially lower in Gauteng (67.5 percent) where a large proportion of adults were not at home (13 percent). The response rate was higher in the non-urban area than the urban area.

A8 Fieldwork

The SADHS questionnaires were translated into all nine official languages in South Africa. They were pretested in November/December 1996 as part of a pilot study carried out by a private research company, Markinor, using sixteen female interviewers, most of whom were part of Markinor's regular pool of interviewers. The interviewers for the pilot study were trained for 10 days by two MRC staff members; after training they conducted approximately 150 interviews in several provinces under the supervision of staff from MRC and Macro. Areas were specifically chosen in order to test the questionnaires in all the major ethnic groups and several languages. Discussions with the pilot field staff were held, and revisions were made to the questionnaires and the translations, based on the experience of the pretest exercise.

Towards the end of 1997, the group responsible for the field work (the Centre for Health systems Research at the University of the Free State) recruited 175 candidates for involvement in the field work. The survey staff were selected for their education, maturity, field experience and ability to conduct interviews in the relevant languages in a given province. Training was done in two phases. During the first four days editors, supervisors, provincial managers and representatives of the provincial Health Departments were given an overview of the content of the questionnaires and the objectives and design of the survey, as well as brief training on editing questionnaires. During the second week the interviewers joined the editors, supervisors, provincial managers and health representatives for more detailed training on the questionnaires. The training was followed by a third week of field practice and discussions in each province. The training was conducted by personnel from the MRC, the Human sciences Research Council, Free State University and Macro International. Training consisted of plenary sessions on more general issues such as contraceptive methods, and more specific discussions in separate venues for each of the nine provinces. There was also intensive training in anthropometric measurements, taking blood pressure and measuring lung capacity.

Fieldwork for the SADHS was carried out by 33 interviewing teams. Each province had three teams, with the exception of the Eastern Cape, which had seven teams and KwaZulu-Natal which had five teams. Each team consisted of 2-5 female interviewers, a supervisor, and a field editor. In each province there was a provincial manager who was an overall supervisor of the fieldwork operations. In addition, two fieldwork co-ordinators, based at the University of the Free state, provided logistical and management support for the field operations. In many provinces, staff from the provincial Department of Health offices, who had attended the training course, formed fieldwork quality control teams to check on the field work teams and to conduct revisits. Finally staff from the MRC, the HSRC and Macro International conducted periodic quality control visits during fieldwork. Fieldwork commenced in late January 1998 and was completed in september 1998.

A9 Data Processing

All completed questionnaires for the SADHS were submitted to the provincial offices of King Finance (who were in partnership with the Centre for Health Systems Research at the University of the Free State), which then forwarded them to the MRC for data processing. The processing operation consisted of office editing, coding of open-ended questions, initial data entry and subsequent re-entry of all questionnaires to ensure correct data-capture, and finally editing inconsistencies found by the computer program. The SADHS data entry and editing programs were written using ISSA (Integrated System for Survey Analysis) by staff from Macro International. Data processing commenced in mid-March 1998 and was completed in October 1998.

Table A.7 Results of the household and individual interviews by residence and province

Percent distribution of households and eligible women in the sample by results of the household and individual interviews, and household, eligible women and overall response rates, according to province and residence, South Africa 1998

Result	Province									Residence		Total
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu Natal	North West	Gauteng	Mpumalanga	Northern	Urban	Non-urban	
Selected households												
Completed (C)	87.9	98.4	96.4	97.4	95.5	95.8	88.7	95.9	96.1	93.3	97.8	95.2
No competent respondent at home (HP)	2.6	0.1	0.5	0.5	0.7	0.8	1.9	0.8	0.2	1.1	0.3	0.8
Postponed	0.3	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Refused (R)	4.7	0.4	0.9	0.4	2.2	0.7	7.2	0.6	0.0	3.0	0.3	1.8
Dwelling not found (DNF)	1.2	0.1	0.1	0.2	0.1	0.2	0.2	0.9	0.5	0.3	0.3	0.3
Household absent (HA)	1.6	0.2	0.9	0.2	0.3	1.3	1.3	0.3	0.1	0.8	0.3	0.6
Dwelling vacant	0.7	0.6	0.9	1.3	1.1	1.1	0.5	1.5	3.0	1.1	1.0	1.0
Dwelling destroyed (DD)	0.3	0.1	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Other (O)	0.8	0.1	0.2	0.0	0.0	0.1	0.2	0.0	0.0	0.2	0.1	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1,091	3,238	1,092	1,049	1,954	1,037	1,320	1,042	1,037	7,202	5,658	12,860
Household response rate (HRR)^a												
	90.2	99.3	98.3	98.9	96.8	98.2	90.4	97.7	99.3	95.2	99.1	96.9
Eligible women												
Completed (EWC)	92.3	96.4	97.9	96.4	95.7	95.4	84.6	98.0	99.0	93.3	97.6	95.2
Not at home (EWNH)	3.9	1.3	0.3	1.2	1.8	2.4	8.0	0.4	0.1	3.0	0.8	2.1
Postponed (EWP)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Refused (EWR)	2.7	0.6	0.8	0.6	1.3	0.3	5.3	0.3	0.0	2.0	0.3	1.3
Partly completed (EWPC)	0.4	0.0	0.2	0.0	0.0	0.2	0.4	0.3	0.0	0.2	0.1	0.1
Incapacitated (EWI)	0.6	1.4	0.6	1.5	0.7	0.7	0.5	0.3	0.6	0.8	0.9	0.9
Other	0.1	0.3	0.2	0.2	0.6	1.0	1.1	0.7	0.3	0.7	0.2	0.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	996	2,860	1,063	971	1,909	976	1,249	1,154	1,149	6,983	5,344	12,327
Eligible woman response rate (EWRR)^b												
	92.3	96.4	97.9	96.4	95.7	95.4	84.6	98.0	99.0	93.3	97.6	95.2
Overall response rate (ORR)^c												
	83.2	95.6	96.3	95.4	92.6	93.7	76.5	95.8	98.4	88.9	96.7	92.3

^a Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$C$$

$$C + HP + P + R + DNF$$

^b Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$EWC$$

$$EWC + EWNH + EWP + EWR + EWPC$$

^c The overall response rate (ORR) is calculated as:

$$ORR = HRR * EWRR$$

Table A.8 Results of the household and individual interviews by residence and province for adult health survey

Percent distribution of households and eligible adults in the sample by results of the household and individual interviews, and household, eligible adults and overall response rates, according to province and residence, South Africa 1998

Result	Province									Residence		Total
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu Natal	North West	Gauteng	Mpumalanga	Northern	Urban	Non-urban	
Selected households												
Completed (C)	88.2	98.8	96.2	97.3	95.8	95.6	87.4	96.2	96.7	93.3	97.9	95.3
No competent respondent at home (HP)	0.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Postponed	2.3	0.1	0.4	0.4	0.5	0.9	2.4	0.4	0.0	1.1	0.2	0.7
Refused (R)	5.3	0.4	1.3	0.6	2.4	0.6	7.7	0.8	0.0	3.3	0.4	2.0
Dwelling not found (DNF)	0.9	0.1	0.0	0.0	0.0	0.2	0.2	1.2	0.4	0.2	0.3	0.3
Household absent (HA)	1.6	0.1	1.1	0.4	0.3	1.3	1.5	0.2	0.2	0.9	0.2	0.6
Dwelling vacant	0.2	0.4	0.9	1.3	0.8	0.8	0.5	1.2	2.8	0.8	0.9	0.8
Dwelling destroyed (DD)	0.2	0.0	0.0	0.0	0.0	0.4	0.2	0.2	0.0	0.1	0.0	0.1
Other (O)	0.7	0.1	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.1	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	561	1,620	549	527	982	528	661	521	508	3,635	2,822	6,457
Household response rate (HRR)^a												
	90.0	99.3	98.1	99.0	96.9	98.1	89.3	97.7	99.6	95.0	99.0	96.8
Eligible adults												
Completed (EAC)	89.1	95.1	97.5	96.0	90.6	94.7	75.6	97.6	97.3	90.0	96.3	92.6
Not at home (EANH)	4.9	1.8	0.2	1.0	3.8	2.5	13.0	0.7	0.3	4.6	1.1	3.1
Postponed (EAP)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
Refused (EAR)	3.6	0.8	1.1	0.8	3.2	0.9	8.0	0.3	0.4	3.2	0.6	2.1
Partly completed (EAPC)	1.0	0.0	0.2	0.1	0.1	0.2	0.6	0.2	0.2	0.3	0.2	0.2
Incapacitated (EAI)	0.7	1.6	0.8	2.0	1.1	0.8	1.0	0.6	1.1	1.0	1.3	1.1
Other	0.7	0.7	0.2	0.1	1.2	0.8	1.6	0.6	0.7	1.0	0.6	0.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1,288	3,548	1,293	1,250	2,265	1,310	1,471	1,272	1,231	8,618	6,310	14,928
Eligible adults response rate (EARR)^b												
	89.1	95.1	97.5	96.0	90.6	94.7	75.6	97.6	97.3	90.0	96.3	92.6
Overall response rate (ORR)^c												
	80.1	94.4	95.7	95.1	87.8	92.9	67.5	95.3	96.9	85.5	95.3	89.7

^a Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$C$$

$$C + HP + P + R + DNF$$

^b Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$EAC$$

$$EAC + EANH + EAP + EAR + EAPC$$

^c The overall response rate (ORR) is calculated as:

$$ORR = HRR * EARR$$

APPENDIX B

ESTIMATES OF SAMPLING ERRORS

The estimates from a sample survey are affected by two types of errors: (1) non-sampling errors, and (2) sampling errors. Non-sampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the SADHS to minimise this type of error, non-sampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the SADHS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the SADHS sample is the result of a two-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the SADHS is the ISSA Sampling Error Module. This module used the Taylor linearisation method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearisation method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y , and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below with the standard error being the square root of the variance:

$$var(r) = \frac{1-f}{x^2} \sum_{h=1}^H \left[\frac{m_h}{m_h - 1} \left(\frac{\sum_{i=1}^{m_h} z_{hi}^2}{m_h} - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - r.x_{hi} , \text{ and } z_h = y_h - r.x_h$$

where h represents the stratum which varies from 1 to H ,
 m_h is the total number of enumeration areas (EAs) selected in the h^{th} stratum,

y_{hi} is the weighted sum of the values of variable y in the i^{th} EA in the h^{th} stratum,
 x_{hi} is the weighted sum of the number of cases in the i^{th} EA in the h^{th} stratum, and
 f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* clusters in the calculation of the estimates. Pseudo-independent replications are thus created. In the SADHS, there were 966 non-empty clusters. Hence, 965 replications were created. The variance of a rate r is calculated as follows:

$$SE^2(R) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^k (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)}$$

where r is the estimate computed from the full sample of 966 clusters,
 $r_{(i)}$ is the estimate computed from the reduced sample of 965 clusters (i^{th} cluster excluded),
 and
 k is the total number of clusters.

In addition to the standard error, ISSA computes the design effect (DEFT) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. ISSA also computes the relative error and confidence limits for the estimates.

Sampling errors for the SADHS are calculated for selected variables considered to be of primary interest. The results are presented in this appendix for the country as a whole, for urban and rural areas, for each of the 9 provinces, and for each of the four population groups. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1. Tables B.2 to B.17 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits ($R \pm 2SE$), for each variable. The DEFT is considered undefined when the standard error considering simple random sample is zero (when the estimate is close to 0 or 1). In the case of the total fertility rate, the number of unweighted cases is not relevant since there is no known unweighted value for woman-years of exposure to childbearing.

The confidence interval (e.g., as calculated for *children ever born to women age 15-49*) can be interpreted as follows: the overall average from the national sample is 1.939 and its standard error is .024. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e., $1.939 \pm 2 \times .024$. There is a high probability (95 percent) that the *true* average number of children ever born to all women aged 15 to 49 is between 1.891 and 1.987.

Sampling errors are analysed for the national sample and for two separate groups of estimates: (1) means and proportions, and (2) complex demographic rates. The relative standard errors (SE/R) for the means and proportions range between 0 percent and 34 percent with an average of 4.6 percent; the highest

relative standard errors are for estimates of very low values (e.g., *currently using periodic abstinence* among currently married women). If estimates of very low values (less than 10 percent) were removed, then the average drops to 2.1 percent. So in general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. The relative standard error for the total fertility rate is small, 2.7 percent. However, for the mortality rates, the average relative standard error is higher, 8.2 percent.

There are differentials in the relative standard error for the estimates of sub-populations. For example, for the variable *with standard 6 or higher*, the relative standard errors as a percent of the estimated mean for the whole country, for the rural areas, and for Northern Cape Province are 1.0 percent, 2.3 percent, and 4.9 percent, respectively.

For the total sample, the value of the design effect (DEFT) averaged over all variables is 1.33, which means that due to multi-stage clustering of the sampling error is increased by a factor of 1.33 over that in an equivalent simple random sample.

Table B.1 List of selected variables for sampling errors, South Africa 1998

Variable	Description	Base population
Urban	Proportion	All women 15-49
No education	Proportion	All women 15-49
Reached standard 6 or higher	Proportion	All women 15-49
Never married	Proportion	All women 15-49
Currently married	Proportion	All women 15-49
Married before age 20	Proportion	All women 15-49
Sex before age 18	Proportion	All women 15-49
Children ever born	Mean	All women 15-49
Children ever born to women over 40	Mean	All women 40-49
Children surviving	Mean	All women 15-49
Knowing any contraceptive method	Proportion	Currently married women 15-49
Knowing any modern contraceptive method	Proportion	Currently married women 15-49
Ever used any contraceptive method	Proportion	Currently married women 15-49
Currently using any method	Proportion	Currently married women 15-49
Currently using a modern method	Proportion	Currently married women 15-49
Currently using pill	Proportion	Currently married women 15-49
Currently using IUD	Proportion	Currently married women 15-49
Currently using injections	Proportion	Currently married women 15-49
Currently using condom	Proportion	Currently married women 15-49
Currently using female sterilisation	Proportion	Currently married women 15-49
Currently using male sterilisation	Proportion	Currently married women 15-49
Currently using calendar/rhythm method	Proportion	Currently married women 15-49
Currently using withdrawal	Proportion	Currently married women 15-49
Using public sector source	Proportion	Current users of modern method
Want no more children	Proportion	Currently married women 15-49
Want to delay at least 2 years	Proportion	Currently married women 15-49
Ideal number of children	Mean	All women 15-49
Mothers received tetanus injection	Proportion	Births in last 5 years
Mothers received medical care at birth	Proportion	Births in last 5 years
Had diarrhoea in the last 2 weeks	Proportion	Children under 5
Treated with ORS packets	Proportion	Children under 5 with diarrhoea in last 2 weeks
Sought medical treatment	Proportion	Children under 5 with diarrhoea in last 2 weeks
Having health card, seen	Proportion	Children 12-23 months
Received BCG vaccination	Proportion	Children 12-23 months
Received DPT vaccination (3 doses)	Proportion	Children 12-23 months
Received polio vaccination (3 doses)	Proportion	Children 12-23 months
Received measles vaccination	Proportion	Children 12-23 months
Fully immunised	Proportion	Children 12-23 months
Total fertility rate (3 years)	Rate	Women-years of exposure to childbearing

Table B.1 continued

Variable	Description	Base population
Neonatal mortality rate (10 years)	Rate	Number of births exposed to death
Infant mortality rate (10 years)	Rate	Number of births exposed to death
Child mortality rate (10 years)	Rate	Number of births exposed to death
Under-five mortality rate (10 years)	Rate	Number of births exposed to death
Postneonatal mortality rate (10 years)	Rate	Number of births exposed to death
Injuries in the last month (men)	Rate	All men over 15 years
Injuries in the last month (women)	Rate	All women over 15 years
Currently smoking (occasionally or daily) (men)	Proportion	All men over 15 years
Currently smoking (occasionally or daily) (women)	Proportion	All women over 15 years
Drink alcohol >= 3 or 4 (week or weekend)(men)	Proportion	All men over 15 years
Drink alcohol >= 3 or 4 (week or weekend)(women)	Proportion	All women over 15 years
Waist circumference (men)	Mean	All men over 15 years
Waist circumference (women)	Mean	All women over 15 years
Hip circumference	Proportion	All adults over 15 years
Waist/hip ratio	Proportion	All adults over 15 years
Injuries in the last month (men)	Rate	All men over 15 years
Injuries in the last month (women)	Rate	All women over 15 years
Currently smoking (occasionally or daily) (men)	Proportion	All men over 15 years
Currently smoking (occasionally or daily) (women)	Proportion	All women over 15 years
Drink alcohol >= 3 or 4 (week or weekend)(men)	Proportion	All men over 15 years
Drink alcohol >= 3 or 4 (week or weekend)(women)	Proportion	All women over 15 years
Hip circumference (men)	Mean	All men over 15 years
Hip circumference (women)	Mean	All women over 15 years
Waist/hip ratio (men)	Mean	All men over 15 years
Waist/hip ratio (women)	Mean	All women over 15 years
MUAC (men)	Mean	All men over 15 years
MUAC (women)	Mean	All women over 15 years
Height (men)	Mean	All men over 15 years
Height (women)	Mean	All women over 15 years
Body Mass Index (men)	Mean	All men over 15 years
Body Mass Index (women)	Mean	All women over 15 years
Obesity (men)	Proportion	All men over 15 years
Obesity (women)	Proportion	All women over 15 years
Systolic Blood Pressure (men)	Mean	All men over 15 years
Systolic Blood Pressure (women)	Mean	All women over 15 years
Diastolic Blood Pressure (men)	Mean	All men over 15 years
Diastolic Blood Pressure (women)	Mean	All women over 15 years
Pulse (men)	Proportion	All men over 15 years
Pulse (women)	Proportion	All women over 15 years
Hypertension1	Proportion	All adults over 15 years
Airflow Limitation	Proportion	All adults over 15 years
Chronic Bronchitis	Proportion	All adults over 15 years
Abnormal Peak Flow	Proportion	All adults over 15 years

Table B.2 Sampling errors - Total sample, South Africa 1998

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un- weighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
Urban	0.605	0.006	11735	11735	1.312	0.010	0.593	0.616
No education	0.068	0.004	11735	11735	1.506	0.051	0.061	0.075
Reached standard 6 or higher	0.683	0.007	11735	11735	1.652	0.010	0.669	0.697
Never married	0.483	0.007	11735	11735	1.488	0.014	0.469	0.496
Currently married	0.433	0.007	11735	11735	1.431	0.015	0.420	0.446
Married before age 20	0.240	0.006	9362	9486	1.269	0.023	0.229	0.252
Sex before age 18	0.463	0.007	9362	9486	1.429	0.016	0.448	0.478
Children ever born	1.939	0.024	11735	11735	1.313	0.012	1.891	1.987
Children ever born to women over 40	3.738	0.062	2221	2264	1.263	0.017	3.614	3.861
Children surviving	1.785	0.022	11735	11735	1.294	0.012	1.742	1.828
Knowing any contraceptive method	0.981	0.003	4948	5077	1.439	0.003	0.976	0.987
Knowing any modern contraceptive method	0.980	0.003	4948	5077	1.604	0.003	0.973	0.986
Ever used any contraceptive method	0.846	0.007	4948	5077	1.401	0.008	0.832	0.860
Currently using any method	0.563	0.009	4948	5077	1.207	0.015	0.546	0.580
Currently using a modern method	0.551	0.009	4948	5077	1.221	0.016	0.534	0.568
Currently using pill	0.106	0.005	4948	5077	1.231	0.051	0.095	0.116
Currently using IUD	0.018	0.002	4948	5077	1.238	0.132	0.013	0.022
Currently using injections	0.232	0.007	4948	5077	1.229	0.032	0.217	0.247
Currently using condom	0.017	0.002	4948	5077	1.177	0.128	0.012	0.021
Currently using female sterilisation	0.158	0.006	4948	5077	1.214	0.040	0.145	0.171
Currently using male sterilisation	0.021	0.003	4948	5077	1.561	0.150	0.015	0.028
Currently using calendar/rhythm method	0.003	0.001	4948	5077	1.298	0.337	0.001	0.005
Currently using withdrawal	0.006	0.002	4948	5077	1.456	0.260	0.003	0.010
Using public sector source	0.836	0.007	5777	5790	1.491	0.009	0.821	0.850
Want no more children	0.436	0.008	4948	5077	1.124	0.018	0.421	0.452
Want to delay at least 2 years	0.124	0.006	4948	5077	1.275	0.048	0.112	0.136
Ideal number of children	2.859	0.021	11567	11550	1.475	0.008	2.816	2.902
Mothers received tetanus injection	0.588	0.011	5066	4992	1.442	0.019	0.565	0.610
Mothers received medical care at birth	0.844	0.008	5066	4992	1.414	0.010	0.827	0.860
Had diarrhoea in the last 2 weeks	0.132	0.006	4797	4740	1.174	0.046	0.120	0.144
Treated with ORS packets	0.512	0.025	634	627	1.200	0.049	0.462	0.562
Sought medical treatment	0.592	0.027	634	627	1.316	0.046	0.538	0.646
Having health card, seen	0.746	0.017	971	973	1.201	0.023	0.712	0.780
Received BCG vaccination	0.968	0.006	971	973	1.151	0.007	0.955	0.981
Received DPT vaccination (3 doses)	0.764	0.018	971	973	1.323	0.024	0.728	0.800
Received polio vaccination (3 doses)	0.721	0.018	971	973	1.229	0.025	0.685	0.756
Received measles vaccination	0.822	0.016	971	973	1.289	0.019	0.791	0.854
Fully immunised	0.634	0.021	971	973	1.325	0.033	0.593	0.675
Total fertility rate (3 years)	2.896	0.079	NA	33082	1.630	0.027	2.737	3.055
Neonatal mortality rate (10 years)	19.169	1.686	10555	10472	1.182	0.088	15.796	22.541
Infant mortality rate (10 years)	42.214	2.655	10566	10481	1.248	0.063	36.904	47.524
Child mortality rate (10 years)	15.376	1.732	10590	10498	1.360	0.113	11.911	18.841
Under-five mortality rate (10 years)	56.941	3.229	10602	10508	1.308	0.057	50.482	63.399
Postneonatal mortality rate (10 years)	23.046	2.050	10565	10480	1.283	0.089	18.945	27.146
Injuries in the last month age >15 (men)	0.018	0.001	14535	14679	1.055	0.069	0.015	0.020
Injuries in the last month age >15 (women)	0.008	0.001	17898	17937	1.091	0.102	0.006	0.010
Currently smoking (occasionally or daily) (men)	0.423	0.009	5753	5671	1.123	0.020	0.406	0.440
Currently smoking (occasionally or daily) (women)	0.107	0.006	8073	8155	1.553	0.060	0.0944	0.120
Drink alcohol >= 3 or 4 (week)(men)	0.031	0.003	5753	5671	0.975	0.108	0.026	0.036
Drink alcohol >= 3 or 4 (weekend)(men)	0.144	0.006	5753	5671	1.087	0.040	0.133	0.155
Drink alcohol >= 3 or 4 (week)(women)	0.015	0.002	8073	8155	1.025	0.105	0.012	0.105
Drink alcohol >= 3 or 4 (weekend)(women)	0.054	0.003	8073	8155	1.061	0.054	0.048	0.054
Hip circumference (men)	94.153	0.218	5396	5290	1.286	0.002	93.725	94.581
Hip circumference (women)	104.645	0.233	7713	7776	1.195	0.002	104.187	105.103
Waist/hip ratio (men)	0.868	0.002	5396	5290	1.090	0.002	0.865	0.872
Waist/hip ratio (women)	0.818	0.002	7713	7776	1.197	0.002	0.815	0.821
MUAC (men)	28.032	0.079	5396	5290	1.247	0.003	27.877	28.188
MUAC (women)	30.176	0.080	7713	7776	1.134	0.003	30.019	30.332
Height (men)	168.612	0.174	5396	5290	1.305	0.0174	168.270	168.954
Height (women)	158.269	0.127	7713	7776	1.335	0.001	158.020	158.518
Body Mass Index (men)	22.861	0.083	5396	5290	1.185	0.004	22.697	23.025
Body Mass Index (women)	27.078	0.103	7713	7776	1.140	0.004	26.876	27.279
Obesity (men)	1.930	0.004	5396	5290	1.065	0.002	1.921	1.939
Obesity (women)	1.707	0.007	7713	7776	1.115	0.004	1.693	1.721
Systolic Blood Pressure (men)	123.207	0.382	5553	5463	1.189	0.003	122.457	123.957
Systolic Blood Pressure (women)	118.619	0.363	7747	7798	1.203	0.003	117.906	119.332
Diastolic Blood Pressure (men)	75.886	0.256	5555	5465	1.204	0.003	75.384	76.388
Diastolic Blood Pressure (women)	75.236	0.203	7749	7799	1.171	0.003	74.837	75.634
Pulse (men)	72.967	0.228	5660	5564	1.193	0.003	72.519	73.414
Pulse (women)	76.680	0.186	7859	7910	1.150	0.002	76.315	77.046
Hypertensive (men)	0.126	0.006	5753	5671	1.084	0.046	0.115	0.138
Hypertensive (women)	0.163	0.006	8073	8155	1.111	0.034	0.152	0.174
Airflow Limitation (men)	0.067	0.005	5753	5671	1.167	0.072	0.057	0.076
Airflow Limitation (women)	0.086	0.004	8073	8155	1.114	0.049	0.078	0.094
Chronic Bronchitis (men)	0.0233	0.003	5753	5671	1.081	0.109	0.018	0.028
Chronic Bronchitis (women)	0.028	0.002	8073	8155	1.029	0.082	0.023	0.032
Abnormal Peak Flow (men)	0.040	0.003	5753	5671	1.029	0.082	0.034	0.047
Abnormal Peak Flow (women)	0.041	0.003	8073	8155	1.144	0.076	0.035	0.047

Table B.3 Sampling errors - Urban sample, South Africa 1998

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un- weighted (N)	Weighted (WN)			Value- 2SE (R-2SE)	Value+ 2SE (R+2SE)
Urban	1.000	0.000	6518	7095	NA	0.000	1.000	1.000
No education	0.033	0.003	6518	7095	1.261	0.084	0.028	0.039
Reached standard 6 or higher	0.777	0.007	6518	7095	1.452	0.010	0.762	0.792
Never married	0.479	0.009	6518	7095	1.448	0.019	0.461	0.497
Currently married	0.428	0.009	6518	7095	1.419	0.020	0.411	0.446
Married before age 20	0.198	0.006	5362	5898	1.161	0.032	0.185	0.21
Sex before age 18	0.421	0.010	5362	5898	1.433	0.023	0.402	0.441
Children ever born	1.720	0.027	6518	7095	1.254	0.016	1.667	1.774
Children ever born to women over 40	3.218	0.064	1317	1459	1.222	0.020	3.089	3.347
Children surviving	1.608	0.025	6518	7095	1.277	0.016	1.557	1.658
Knowing any contraceptive method	0.993	0.002	2689	3038	1.072	0.002	0.989	0.996
Knowing any modern contraceptive method	0.993	0.002	2689	3038	1.072	0.002	0.989	0.996
Ever used any contraceptive method	0.910	0.007	2689	3038	1.310	0.008	0.895	0.924
Currently using any method	0.637	0.011	2689	3038	1.207	0.018	0.615	0.660
Currently using a modern method	0.628	0.011	2689	3038	1.220	0.018	0.605	0.651
Currently using pill	0.134	0.008	2689	3038	1.214	0.060	0.118	0.150
Currently using IUD	0.027	0.004	2689	3038	1.201	0.140	0.019	0.034
Currently using injections	0.212	0.010	2689	3038	1.270	0.047	0.192	0.232
Currently using condom	0.021	0.003	2689	3038	1.173	0.153	0.015	0.028
Currently using female sterilisation	0.203	0.010	2689	3038	1.232	0.047	0.184	0.222
Currently using male sterilisation	0.031	0.005	2689	3038	1.430	0.153	0.022	0.041
Currently using calendar/rhythm method	0.005	0.002	2689	3038	1.252	0.346	0.001	0.008
Currently using withdrawal	0.003	0.001	2689	3038	1.250	0.460	0.000	0.005
Using public sector source	0.795	0.010	3595	3884	1.480	0.013	0.775	0.815
Want no more children	0.407	0.011	2689	3038	1.161	0.027	0.385	0.429
Want to delay at least 2 years	0.108	0.008	2689	3038	1.300	0.072	0.092	0.123
Ideal number of children	2.593	0.022	6429	6995	1.242	0.008	2.550	2.637
Mothers received tetanus injection	0.462	0.015	2247	2470	1.286	0.032	0.432	0.492
Mothers received medical care at birth	0.934	0.007	2247	2470	1.298	0.008	0.920	0.949
Had diarrhoea in the last 2 weeks	0.108	0.008	2158	2374	1.163	0.075	0.091	0.124
Treated with ORS packets	0.488	0.041	235	255	1.188	0.083	0.407	0.569
Sought medical treatment	0.633	0.040	235	255	1.212	0.063	0.553	0.713
Having health card, seen	0.753	0.023	433	491	1.126	0.030	0.707	0.799
Received BCG vaccination	0.980	0.008	433	491	1.230	0.008	0.963	0.996
Received DPT vaccination (3 doses)	0.817	0.019	433	491	1.053	0.023	0.779	0.856
Received polio vaccination (3 doses)	0.755	0.023	433	491	1.137	0.031	0.709	0.801
Received measles vaccination	0.851	0.020	433	491	1.220	0.024	0.810	0.892
Fully immunised	0.671	0.025	433	491	1.108	0.037	0.622	0.720
Total fertility rate (3 years)	2.254	0.073	NA	20171	1.362	0.033	2.107	2.401
Neonatal mortality rate (10 years)	16.383	2.276	4817	5298	1.211	0.139	11.830	20.936
Infant mortality rate (10 years)	32.556	3.281	4819	5301	1.257	0.101	25.994	39.117
Child mortality rate (10 years)	11.027	1.810	4831	5311	1.176	0.164	7.407	14.647
Under-five mortality rate (10 years)	43.223	3.647	4833	5314	1.199	0.084	35.930	50.517
Postneonatal mortality rate (10 years)	16.172	2.436	4819	5301	1.325	0.151	11.301	21.044
Injuries in the last month (men)	0.020	0.002	8353	9047	1.050	0.093	0.017	0.024
Injuries in the last month (women)	0.010	0.001	9779	10538	1.109	0.132	0.008	0.013
Currently smoking (occasionally or daily) (men)	0.441	0.011	3341	3569	1.046	0.234	0.420	0.462
Currently smoking (occasionally or daily) (women)	0.137	0.008	4411	4998	1.342	0.060	0.117	0.148
Drink alcohol >= 3 or 4 (week)(men)	0.029	0.003	3341	3569	0.966	0.114	0.023	0.036
Drink alcohol >= 3 or 4 (weekend)(men)	0.137	0.007	3341	3569	1.076	0.053	0.123	0.152
Drink alcohol >= 3 or 4 (week)(women)	0.013	0.002	4411	4998	1.055	0.155	0.009	0.017
Drink alcohol >= 3 or 4 (weekend)(women)	0.055	0.004	4411	4998	1.051	0.075	0.047	0.064
Hip circumference (men)	95.436	0.288	3113	3312	1.306	0.003	94.870	96.002
Hip circumference (women)	106.402	0.281	4235	4789	1.100	0.003	105.851	106.953
Waist/hip ratio (men)	0.870	0.002	3113	3312	1.123	0.003	0.866	0.875
Waist/hip ratio (women)	0.810	0.002	4235	4789	1.163	0.002	0.806	0.814
MUAC (men)	28.639	0.106	3113	3312	1.263	0.004	28.431	28.847
MUAC (women)	30.561	0.106	4235	4789	1.106	0.003	30.353	30.769
Height (men)	169.431	0.231	3113	3312	1.322	0.001	168.977	169.885
Height (women)	158.595	0.162	4235	4789	1.300	0.001	158.277	158.914
Body Mass Index (men)	23.341	0.111	3113	3312	1.184	0.005	23.123	23.56
Body Mass Index (women)	27.606	0.134	4235	4789	1.086	0.005	27.342	27.869
Obesity (men)	1.916	0.006	3113	3312	1.088	0.003	1.903	1.928
Obesity (women)	1.674	0.009	4235	4789	1.095	0.006	1.656	1.693
Systolic Blood Pressure (men)	124.085	0.465	3235	3448	1.093	0.004	123.172	124.998
Systolic Blood Pressure (women)	118.620	0.488	4246	4785	1.197	0.004	117.661	119.579
Diastolic Blood Pressure (men)	76.477	0.304	3237	3450	1.102	0.004	75.881	77.074
Diastolic Blood Pressure (women)	75.393	0.268	4246	4785	1.145	0.003	74.866	75.920
Pulse (men)	72.892	0.276	3279	3493	1.120	0.004	72.350	73.434
Pulse (women)	76.339	0.241	4288	4831	1.111	0.003	75.865	76.813
Hypertensive (men)	0.135	0.007	3341	3569	1.006	0.052	0.123	0.151
Hypertensive (women)	0.185	0.007	4411	4998	1.075	0.040	0.170	0.120
Airflow Limitation (men)	0.058	0.005	3341	3569	1.075	0.086	0.048	0.068
Airflow Limitation (women)	0.080	0.005	4411	4998	1.000	0.061	0.071	0.090
Chronic Bronchitis (men)	0.022	0.003	3341	3569	0.998	0.139	0.016	0.028
Chronic Bronchitis (women)	0.022	0.003	4411	4998	1.043	0.126	0.016	0.027
Abnormal Peak Flow (men)	0.039	0.004	3341	3569	1.050	0.109	0.031	0.048
Abnormal Peak Flow (women)	0.045	0.004	4411	4998	1.086	0.092	0.037	0.053

Table B.4 Sampling errors - Non-urban sample, South Africa 1998

	Value	Standard error	Number of cases		Design effect	Relative error	Confidence intervals	
			Un-weighted	Weighted			Value-2SE	Value+2SE
Urban	0.000	0.000	5217	4640	NA	NA	0.000	0.000
No education	0.122	0.008	5217	4640	1.679	0.062	0.107	0.138
Reached standard 6 or higher	0.539	0.013	5217	4640	1.822	0.023	0.514	0.564
Never married	0.488	0.011	5217	4640	1.545	0.022	0.466	0.509
Currently married	0.439	0.010	5217	4640	1.428	0.022	0.420	0.459
Married before age 20	0.311	0.010	4000	3588	1.430	0.034	0.290	0.332
Sex before age 18	0.532	0.011	4000	3588	1.386	0.021	0.510	0.554
Children ever born	2.273	0.044	5217	4640	1.364	0.019	2.186	2.361
Children ever born to women over 40	4.680	0.122	904	804	1.391	0.026	4.437	4.924
Children surviving	2.056	0.038	5217	4640	1.306	0.018	1.981	2.132
Knowing any contraceptive method	0.965	0.006	2259	2039	1.602	0.006	0.952	0.977
Knowing any modern contraceptive method	0.960	0.007	2259	2039	1.798	0.008	0.946	0.975
Ever used any contraceptive method	0.751	0.013	2259	2039	1.469	0.018	0.724	0.778
Currently using any method	0.451	0.013	2259	2039	1.225	0.028	0.425	0.477
Currently using a modern method	0.437	0.013	2259	2039	1.203	0.029	0.412	0.462
Currently using pill	0.063	0.006	2259	2039	1.136	0.092	0.052	0.075
Currently using IUD	0.004	0.001	2259	2039	1.022	0.342	0.001	0.007
Currently using injections	0.262	0.011	2259	2039	1.160	0.041	0.241	0.284
Currently using condom	0.010	0.002	2259	2039	1.039	0.217	0.006	0.014
Currently using female sterilisation	0.091	0.007	2259	2039	1.081	0.072	0.078	0.104
Currently using male sterilisation	0.006	0.004	2259	2039	2.138	0.568	0.000	0.013
Currently using calendar/rhythm method	0.000	0.000	2259	2039	0.742	1.000	0.000	0.001
Currently using withdrawal	0.012	0.004	2259	2039	1.578	0.307	0.004	0.019
Using public sector source	0.918	0.008	2182	1906	1.447	0.009	0.901	0.935
Want no more children	0.480	0.011	2259	2039	1.038	0.023	0.458	0.502
Want to delay at least 2 years	0.148	0.009	2259	2039	1.240	0.063	0.130	0.167
Ideal number of children	3.268	0.040	5138	4555	1.685	0.012	3.188	3.348
Mothers received tetanus injection	0.711	0.014	2819	2522	1.455	0.020	0.683	0.740
Mothers received medical care at birth	0.755	0.014	2819	2522	1.486	0.018	0.728	0.783
Had diarrhoea in the last 2 weeks	0.157	0.009	2639	2366	1.194	0.056	0.140	0.175
Treated with ORS packets	0.528	0.032	399	372	1.238	0.060	0.465	0.592
Sought medical treatment	0.563	0.037	399	372	1.448	0.065	0.490	0.637
Having health card, seen	0.738	0.025	538	483	1.292	0.033	0.689	0.788
Received BCG vaccination	0.956	0.010	538	483	1.146	0.011	0.936	0.976
Received DPT vaccination (3 doses)	0.710	0.030	538	483	1.512	0.042	0.650	0.769
Received polio vaccination (3 doses)	0.686	0.026	538	483	1.314	0.038	0.633	0.739
Received measles vaccination	0.793	0.024	538	483	1.397	0.031	0.744	0.842
Fully immunised	0.596	0.032	538	483	1.526	0.054	0.531	0.661
Total fertility rate (3 years)	3.924	0.145	NA	12911	1.637	0.037	3.634	4.213
Neonatal mortality rate (10 years)	22.025	2.484	5738	5175	1.187	0.113	17.058	26.993
Infant mortality rate (10 years)	52.156	4.125	5747	5180	1.270	0.079	43.907	60.406
Child mortality rate (10 years)	20.081	2.958	5759	5187	1.491	0.147	14.165	25.997
Under-five mortality rate (10 years)	71.190	5.171	5769	5194	1.377	0.073	60.848	81.531
Postneonatal mortality rate (10 years)	30.131	3.290	5746	5179	1.305	0.109	23.550	36.7
Injuries in the last month age >15 (men)	0.0135	0.002	6182	5632	1.072	0.138	0.010	0.017
Injuries in the last month age >15 (women)	0.005	0.001	8119	7399	1.038	0.190	0.003	0.007
Currently smoking (occasionally or daily) (men)	0.392	0.013	2412	2102	1.128	0.033	0.367	0.418
Currently smoking (occasionally or daily) (women)	0.066	0.006	3662	3157	1.215	0.096	0.054	0.079
Drink alcohol >= 3 or 4 (week)(men)	0.034	0.004	2412	2102	0.993	0.131	0.025	0.042
Drink alcohol >= 3 or 4 (weekend)(men)	0.155	0.009	2412	2102	1.102	0.061	0.137	0.174
Drink alcohol >= 3 or 4 (week)(women)	0.017	0.002	3662	3157	0.976	0.147	0.012	0.022
Drink alcohol >= 3 or 4 (weekend)(women)	0.051	0.004	3662	3157	1.080	0.086	0.042	0.060
Hip circumference (men)	92.005	0.311	2283	1978	1.217	0.003	91.392	92.617
Hip circumference (women)	101.827	0.365	3478	2987	1.257	0.004	101.109	102.545
Waist/hip ratio (men)	0.865	0.002	2283	1978	1.023	0.003	0.860	0.869
Waist/hip ratio (women)	0.831	0.002	3478	2987	1.199	0.003	0.826	0.836
MUAC (men)	27.017	0.114	2283	1978	1.256	0.004	26.791	27.242
MUAC (women)	29.556	0.114	3478	2987	1.150	0.004	29.334	29.781
Height (men)	167.239	0.255	2283	1978	1.289	0.002	166.736	167.742
Height (women)	157.746	0.203	3478	2987	1.404	0.001	157.346	158.146
Body Mass Index (men)	22.057	0.119	2283	1978	1.177	0.005	21.822	22.292
Body Mass Index (women)	26.231	0.149	3478	2987	1.211	0.006	1.741	1.779
Obesity (men)	1.955	0.005	2283	1978	0.986	0.003	1.945	1.966
Obesity (women)	1.760	0.010	3478	2987	1.120	0.006	1.741	1.779
Systolic Blood Pressure (men)	121.705	0.602	2318	2016	1.257	0.005	120.520	122.889
Systolic Blood Pressure (women)	118.617	0.492	3501	3013	1.127	0.004	117.648	119.586
Diastolic Blood Pressure (men)	74.874	0.441	2318	2016	1.336	0.006	74.006	75.743
Diastolic Blood Pressure (women)	74.987	0.265	3503	3015	1.055	0.265	74.464	75.509
Pulse (men)	73.093	0.386	2381	2071	1.282	0.005	72.333	73.853
Pulse (women)	77.216	0.289	3571	3079	1.215	0.004	76.647	77.785
Hypertensive (men)	0.108	0.009	2412	2102	1.119	0.084	0.090	0.125
Hypertensive (women)	0.129	0.007	3662	3157	1.023	0.054	0.115	0.143
Airflow Limitation (men)	0.081	0.008	2412	2102	1.030	0.097	0.065	0.096
Airflow Limitation (women)	0.095	0.006	3662	3157	1.042	0.006	0.083	0.108
Chronic Bronchitis (men)	0.026	0.005	2412	2102	1.219	0.177	0.017	0.035
Chronic Bronchitis (women)	0.037	0.004	3662	3157	0.930	0.0977	0.030	0.0445
Abnormal Peak Flow (men)	0.041	0.005	2412	2102	0.995	0.124	0.031	0.051
Abnormal Peak Flow (women)	0.035	0.004	3662	3157	1.253	0.128	0.026	0.044

Table B.5 Sampling errors - Western Cape sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un-weighted (N)	Weighted (WN)			Value-2SE (R-2SE)	Value+2SE (R+2SE)
Urban	0.896	0.024	919	1193	2.395	0.027	0.848	0.944
No education	0.02	0.004	919	1193	0.822	0.191	0.012	0.027
Reached standard 6 or higher	0.751	0.023	919	1193	1.595	0.03	0.705	0.796
Never married	0.463	0.021	919	1193	1.246	0.044	0.422	0.504
Currently married	0.455	0.018	919	1193	1.122	0.041	0.418	0.492
Married before age 20	0.172	0.015	769	998	1.089	0.086	0.142	0.201
Sex before age 18	0.335	0.017	769	998	1.017	0.052	0.300	0.37
Children ever born	1.623	0.062	919	1193	1.137	0.038	1.500	1.746
Children ever born to women over 40	3.030	0.152	177	230	1.107	0.050	2.726	3.335
Children surviving	1.572	0.060	919	1193	1.145	0.038	1.453	1.691
Knowing any contraceptive method	0.998	0.002	420	543	1.003	0.002	0.993	1
Knowing any modern contraceptive method	0.998	0.002	420	543	1.003	0.002	0.993	1
Ever used any contraceptive method	0.940	0.011	420	543	0.953	0.012	0.918	0.962
Currently using any method	0.709	0.020	420	543	0.883	0.028	0.670	0.748
Currently using a modern method	0.707	0.020	420	543	0.898	0.028	0.667	0.747
Currently using pill	0.112	0.019	420	543	1.229	0.169	0.074	0.150
Currently using IUD	0.017	0.007	420	543	1.132	0.420	0.003	0.031
Currently using injections	0.219	0.025	420	543	1.236	0.114	0.169	0.269
Currently using condom	0.010	0.005	420	543	1.009	0.497	0.000	0.019
Currently using female sterilisation	0.320	0.021	420	543	0.926	0.066	0.277	0.362
Currently using male sterilisation	0.029	0.011	420	543	1.348	0.380	0.007	0.051
Currently using calendar/rhythm method	0.002	0.002	420	543	1.010	0.999	0.000	0.007
Currently using withdrawal	0.000	0.000	420	543	NA	NA	0.000	0.000
Using public sector source	0.869	0.020	555	720	1.393	0.023	0.829	0.909
Want no more children	0.268	0.025	420	543	1.140	0.092	0.219	0.318
Want to delay at least 2 years	0.099	0.016	420	543	1.113	0.164	0.066	0.131
Ideal number of children	2.428	0.047	889	1154	0.987	0.019	2.334	2.521
Mothers received tetanus injection	0.178	0.025	312	401	1.023	0.139	0.129	0.228
Mothers received medical care at birth	0.961	0.011	312	401	0.902	0.011	0.940	0.983
Had diarrhoea in the last 2 weeks	0.099	0.017	308	396	0.987	0.171	0.065	0.133
Treated with ORS packets	0.445	0.094	31	39	1.032	0.210	0.258	0.632
Sought medical treatment	0.580	0.085	31	39	0.940	0.146	0.411	0.749
Having health card, seen	0.758	0.050	62	80	0.914	0.066	0.658	0.858
Received BCG vaccination	0.983	0.016	62	80	1.008	0.017	0.951	1.000
Received DPT vaccination (3 doses)	0.742	0.051	62	80	0.921	0.069	0.639	0.845
Received polio vaccination (3 doses)	0.725	0.054	62	80	0.952	0.075	0.617	0.834
Received measles vaccination	0.837	0.047	62	80	0.988	0.056	0.743	0.930
Fully immunised	0.642	0.063	62	80	1.030	0.098	0.516	0.768
Total fertility rate (3 years)	2.293	0.172	NA	3415	1.187	0.075	1.948	2.637
Neonatal mortality rate (10 years)	4.003	2.386	647	834	1.007	0.596	0	8.774
Infant mortality rate (10 years)	8.370	3.366	647	834	0.965	0.402	1.637	15.103
Child mortality rate (10 years)	4.844	2.777	648	835	1.012	0.573	0	10.398
Under-five mortality rate (10 years)	13.174	4.235	648	835	0.968	0.321	4.703	21.644
Postneonatal mortality rate (10 years)	4.367	2.481	647	834	0.954	0.568	0.000	9.33
Injuries in the last month age >15 (men)	0.033	0.005	1368	1754	1.062	0.156	0.023	0.043
Injuries in the last month age >15 (women)	0.010	0.003	1422	1824	1.158	0.308	0.004	0.016
Currently smoking (occasionally or daily) (men)	0.489	0.023	545	721	1.088	0.048	0.443	0.536
Currently smoking (occasionally or daily) (women)	0.294	0.027	602	799	1.458	0.092	0.240	0.347
Drink alcohol >= 3 or 4 (week)(men)	0.026	0.006	545	721	0.921	0.243	0.014	0.039
Drink alcohol >= 3 or 4 (weekend)(men)	0.144	0.016	545	721	1.650	0.114	0.112	0.177
Drink alcohol >= 3 or 4 (week)(women)	0.014	0.006	602	799	1.174	0.412	0.002	0.025
Drink alcohol >= 3 or 4 weekend)(women)	0.071	0.011	602	799	1.013	0.149	0.050	0.093
Hip circumference (men)	95.770	0.782	494	653	1.470	0.782	94.217	97.323
Hip circumference (women)	104.752	0.672	577	765	1.069	0.006	103.418	106.0853
Waist/hip ratio (men)	0.879	0.005	494	653	1.151	0.006	0.869	0.890
Waist/hip ratio (women)	0.836	0.006	577	765	1.136	0.007	0.0824	0.847
MUAC (men)	29.038	0.180	494	653	1.082	0.006	28.680	29.397
MUAC (women)	30.200	0.243	577	765	1.131	0.008	29.718	30.682
Height (men)	168.315	0.580	494	653	1.539	0.003	167.165	169.466
Height (women)	158.571	0.377	577	765	1.326	0.002	157.823	159.318
Body Mass Index (men)	23.848	0.226	494	653	1.184	0.009	23.399	24.296
Body Mass Index (women)	27.449	0.296	577	765	1.046	0.011	26.861	28.036
Obesity (men)	1.912	0.014	494	653	0.969	0.007	1.883	1.940
Obesity (women)	1.7011	0.020	577	765	1.056	0.019	1.661	1.741
Systolic Blood Pressure (men)	125.506	1.081	523	691	1.325	0.009	123.360	127.651
Systolic Blood Pressure (women)	119.739	1.182	580	769	1.380	0.010	117.394	122.084
Diastolic Blood Pressure (men)	77.652	0.727	523	691	1.376	0.009	76.209	79.094
Diastolic Blood Pressure (women)	75.910	0.678	580	769	1.382	0.009	74.565	77.256
Pulse (men)	73.789	0.676	536	709	1.267	0.009	72.446	75.131
Pulse (women)	75.824	0.550	586	777	1.158	0.007	74.733	76.915
Hypertensive (men)	0.121	0.015	545	721	1.073	0.124	0.091	0.150
Hypertensive (women)	0.188	0.018	602	799	1.105	0.094	0.153	0.223
Airflow Limitation (men)	0.044	0.011	545	721	1.263	0.253	0.022	0.066
Airflow Limitation (women)	0.071	0.010	602	799	0.919	0.135	0.052	0.090
Chronic Bronchitis (men)	0.023	0.007	545	721	1.082	0.297	0.010	0.037
Chronic Bronchitis (women)	0.030	0.007	602	799	1.085	0.252	0.015	0.044
Abnormal Peak Flow (men)	0.029	0.007	545	721	1.004	0.248	0.015	0.043
Abnormal Peak Flow (women)	0.055	0.012	602	799	1.312	0.220	0.031	0.079

Table B.6 Sampling errors - Eastern Cape sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un- weighted (N)	Weighted (WN)			Value- 2SE (R-2SE)	Value+ 2SE (R+2E)
Urban	0.446	0.012	2756	1566	1.232	0.026	0.423	0.469
No education	0.051	0.005	2756	1566	1.104	0.091	0.041	0.06
Reached standard 6 or higher	0.639	0.014	2756	1566	1.520	0.022	0.611	0.667
Never married	0.546	0.013	2756	1566	1.403	0.024	0.519	0.572
Currently married	0.372	0.013	2756	1566	1.419	0.035	0.346	0.398
Married before age 20	0.236	0.010	2090	1197	1.123	0.044	0.215	0.257
Sex before age 18	0.537	0.013	2090	1197	1.191	0.024	0.511	0.563
Children ever born	2.033	0.039	2756	1566	0.924	0.019	1.955	2.111
Children ever born to women over 40	4.011	0.108	531	306	0.993	0.027	3.796	4.226
Children surviving	1.812	0.036	2756	1566	0.971	0.020	1.741	1.884
Knowing any contraceptive method	0.985	0.004	1038	583	1.076	0.004	0.976	0.993
Knowing any modern contraceptive method	0.984	0.004	1038	583	1.108	0.004	0.975	0.992
Ever used any contraceptive method	0.770	0.014	1038	583	1.090	0.018	0.742	0.799
Currently using any method	0.464	0.018	1038	583	1.186	0.040	0.427	0.5
Currently using a modern method	0.459	0.018	1038	583	1.191	0.040	0.422	0.496
Currently using pill	0.060	0.008	1038	583	1.083	0.133	0.044	0.076
Currently using IUD	0.014	0.004	1038	583	1.181	0.305	0.006	0.023
Currently using injections	0.229	0.015	1038	583	1.120	0.064	0.200	0.258
Currently using condom	0.011	0.003	1038	583	0.803	0.240	0.006	0.016
Currently using female sterilisation	0.123	0.012	1038	583	1.147	0.095	0.100	0.146
Currently using male sterilisation	0.022	0.006	1038	583	1.269	0.261	0.011	0.034
Currently using calendar/rhythm method	0.002	0.001	1038	583	1.041	0.715	0.000	0.005
Currently using withdrawal	0.002	0.001	1038	583	0.934	0.702	0.000	0.004
Using public sector source	0.923	0.008	1253	743	1.059	0.009	0.907	0.939
Want no more children	0.526	0.018	1038	583	1.188	0.035	0.490	0.563
Want to delay at least 2 years	0.083	0.010	1038	583	1.114	0.115	0.064	0.102
Ideal number of children	2.808	0.029	2735	1554	1.014	0.010	2.749	2.867
Mothers received tetanus injection	0.574	0.018	1359	741	1.104	0.031	0.539	0.610
Mothers received medical care at birth	0.746	0.017	1359	741	1.190	0.023	0.712	0.780
Had diarrhoea in the last 2 weeks	0.127	0.010	1260	690	0.984	0.077	0.108	0.147
Treated with ORS packets	0.546	0.045	164	88	1.082	0.082	0.456	0.636
Sought medical treatment	0.607	0.043	164	88	1.078	0.071	0.521	0.694
Having health card, seen	0.681	0.028	234	127	0.905	0.042	0.624	0.738
Received BCG vaccination	0.956	0.014	234	127	0.991	0.014	0.929	0.983
Received DPT vaccination (3 doses)	0.681	0.032	234	127	1.016	0.047	0.618	0.745
Received polio vaccination (3 doses)	0.613	0.033	234	127	1.020	0.054	0.546	0.679
Received measles vaccination	0.754	0.034	234	127	1.173	0.045	0.686	0.822
Fully immunised	0.526	0.036	234	127	1.079	0.069	0.453	0.598
Total fertility rate (3 years)	3.468	0.158	NA	4352	1.351	0.046	3.152	3.784
Neonatal mortality rate (10 years)	24.726	3.666	2776	1520	1.075	0.148	17.393	32.05
Infant mortality rate (10 years)	61.229	5.408	2783	1524	1.004	0.088	50.413	72.046
Child mortality rate (10 years)	20.509	3.023	2793	1528	1.014	0.147	14.462	26.555
Under-five mortality rate (10 years)	80.482	6.491	2800	1532	1.050	0.081	67.501	93.464
Postneonatal mortality rate (10 years)	36.504	3.808	2783	1524	0.967	0.104	28.888	44.119
Injuries in the last month age >15 (men)	0.016	0.002	3452	2019	1.085	0.154	0.011	0.02
Injuries in the last month age > 15 (women)	0.008	0.001	4612	2676	1.090	0.194	0.005	0.010
Currently smoking (occasionally or daily) (men)	0.460	0.016	1311	758	1.167	0.016	0.428	0.492
Currently smoking (occasionally or daily) (women)	0.108	0.012	2063	1161	1.612	0.107	0.085	0.131
Drink alcohol >= 3 or 4 (week)(men)	0.030	0.005	1311	758	1.059	0.167	0.020	0.040
Drink alcohol >= 3 or 4 (weekend)(men)	0.164	0.013	1311	758	1.293	0.088	0.121	0.172
Drink alcohol >= 3 or 4 (week)(women)	0.016	0.003	2063	1161	1.088	0.193	0.010	0.022
Drink alcohol >= 3 or 4 weekend)(women)	0.053	0.006	2063	1161	1.125	0.107	0.042	0.065
Hip circumference (men)	94.818	0.353	1245	720	1.207	0.004	94.122	95.514
Hip circumference (women)	104.141	0.408	1975	1114	1.265	0.004	103.336	104.945
Waist/hip ratio (men)	0.860	0.003	1245	720	1.189	0.003	0.854	0.865
Waist/hip ratio (women)	0.822	0.002	1975	1114	1.100	0.003	0.817	0.826
MUAC (men)	27.785	0.126	1245	720	1.140	0.005	27.536	28.034
MUAC (women)	29.858	0.153	1975	1114	1.300	0.005	29.556	30.159
Height (men)	167.263	0.290	1245	720	1.210	0.002	166.691	167.836
Height (women)	157.195	0.215	1975	1114	1.271	0.001	156.771	157.619
Body Mass Index (men)	22.949	0.144	1245	720	1.151	0.006	22.665	23.233
Body Mass Index (women)	26.887	0.187	1975	1114	1.256	0.007	26.518	27.255
Obesity (men)	1.927	0.007	1245	720	0.969	0.004	1.913	1.942
Obesity (women)	1.715	0.012	1975	1114	1.152	0.007	1.692	1.739
Systolic Blood Pressure (men)	124.205	0.735	1276	739	1.306	0.006	75.353	77.217
Systolic Blood Pressure (women)	121.394	0.657	2003	1129	1.261	0.005	120.099	122.689
Diastolic Blood Pressure (men)	76.285	0.473	1276	739	1.250	0.006	75.353	77.217
Diastolic Blood Pressure (women)	76.624	0.353	2005	1130	1.188	0.005	75.929	77.320
Pulse (men)	72.564	0.405	1295	750	1.160	0.006	71.766	73.362
Pulse (women)	76.553	0.355	2017	1136	1.287	0.005	75.853	77.253
Hypertensive (men)	0.138	0.011	1331	758	1.099	0.0784	0.117	0.159
Hypertensive (women)	0.164	0.009	2063	1161	1.113	0.057	0.145	0.182
Airflow Limitation (men)	0.069	0.007	1311	758	1.023	0.106	0.055	0.084
Airflow Limitation (women)	0.080	0.007	2063	1161	1.096	0.083	0.067	0.093
Chronic Bronchitis (men)	0.030	0.005	1311	758	1.123	0.178	0.020	0.041
Chronic Bronchitis (women)	0.049	0.005	2063	1161	1.111	0.107	0.039	0.107
Abnormal Peak Flow (men)	0.038	0.006	1311	758	1.070	0.150	0.026	0.049
Abnormal Peak Flow (women)	0.0413	0.005	2063	1161	1.060	0.114	0.032	0.051

Table B.7 Sampling errors - Northern Cape sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un- weighted (N)	Weighted (WN)			Value- 2SE (R-2SE)	Value+ 2SE (R+2E)
Urban	0.727	0.015	1041	253	1.099	0.021	0.696	0.757
No Education	0.085	0.014	1.41	253	1.674	0.17	0.056	0.114
Reached standard 6 or higher	0.59	0.029	1041	253	1.902	0.049	0.532	0.648
Never married	0.467	0.022	1041	253	1.402	0.046	0.423	0.51
Currently married	0.467	0.022	1041	253	1.438	0.048	0.423	0.512
Married before age 20	0.179	0.017	861	209	1.314	0.096	0.145	0.214
Sex before age 18	0.379	0.025	861	209	1.483	0.065	0.330	0.428
Children ever born	1.925	0.049	1041	253	0.885	0.025	1.827	2.023
Children ever born to women over 40	3.568	0.115	226	55	0.853	0.032	3.339	3.798
Children surviving	1.779	0.045	1041	253	0.901	0.025	1.688	1.869
Knowing any contraceptive method	0.986	0.005	484	118	0.991	0.005	0.975	0.996
Knowing any modern contraceptive method	0.986	0.005	484	118	0.991	0.005	0.975	0.996
Ever used any contraceptive method	0.930	0.011	484	118	0.920	0.011	0.908	0.951
Currently using any method	0.653	0.026	484	118	1.189	0.039	0.602	0.705
Currently using a modern method	0.653	0.026	484	118	1.189	0.039	0.602	0.705
Currently using pill	0.101	0.014	484	118	1.014	0.137	0.073	0.129
Currently using IUD	0.014	0.005	484	118	1.002	0.381	0.003	0.025
Currently using injections	0.268	0.021	484	118	1.032	0.078	0.226	0.31
Currently using condom	0.004	0.003	484	118	1.008	0.708	0.000	0.010
Currently using female sterilisation	0.245	0.019	484	118	0.987	0.079	0.206	0.284
Currently using male sterilisation	0.021	0.009	484	118	1.361	0.427	0.003	0.038
Currently using calendar/rhythm method	0.000	0.000	484	118	NA	NA	0.000	0
Currently using withdrawal	0.000	0.000	484	118	NA	NA	0.000	0.000
Using public sector source	0.911	0.013	546	133	1.095	0.015	0.884	0.938
Want no more children	0.415	0.026	484	118	1.160	0.063	0.362	0.467
Want to delay at least 2 years	0.075	0.011	484	118	0.937	0.150	0.052	0.097
Ideal number of children	2.541	0.043	1032	251	1.012	0.017	2.456	2.627
Mothers received tetanus injection	0.534	0.026	419	102	0.972	0.048	0.482	0.586
Mothers received medical care at birth	0.903	0.021	419	102	1.404	0.024	0.860	0.945
Had diarrhoea in the last 2 weeks	0.104	0.018	399	97	1.158	0.173	0.068	0.140
Treated with ORS packets	0.465	0.098	41	10	1.237	0.211	0.269	0.660
Sought medical treatment	0.706	0.063	41	10	0.885	0.090	0.580	0.832
Having health card, seen	0.878	0.033	83	20	0.907	0.037	0.813	0.943
Received BCG vaccination	0.975	0.024	83	20	1.387	0.024	0.927	1.000
Received DPT vaccination (3 doses)	0.890	0.031	83	20	0.908	0.035	0.828	0.952
Received polio vaccination (3 doses)	0.855	0.039	83	20	1.004	0.045	0.777	0.932
Received measles vaccination	0.905	0.039	83	20	1.205	0.043	0.828	0.983
Fully immunised	0.808	0.048	83	20	1.103	0.059	0.712	0.903
Total fertility rate (3 years)	2.676	0.144	NA	716	0.983	0.054	2.388	2.964
Neonatal mortality rate (10 years)	20.476	5.333	833	203	0.986	0.260	9.811	31.142
Infant mortality rate (10 years)	41.771	7.683	833	203	1.004	0.184	26.405	57.136
Child mortality rate (10 years)	14.288	4.658	837	204	1.008	0.326	4.971	23.605
Under-five mortality rate (10 years)	55.462	9.228	837	204	1.039	0.166	37.006	73.918
Postneonatal mortality rate (10 years)	21.294	5.732	833	203	1.007	0.269	9.830	32.758
Injuries in the last month age >15 (men)	0.015	0.003	1259	321	0.923	0.21	0.009	0.022
Injuries in the last month age > 15 (women)	0.007	0.002	1515	386	1.125	0.338	0.002	0.012
Currently smoking (occasionally or daily) (men)	0.576	0.024	560	135	1.139	0.0413	0.529	0.624
Currently smoking (occasionally or daily) (women)	0.314	0.023	701	168	1.34	0.750	0.267	0.36
Drink alcohol >= 3 or 4 (week)(men)	0.027	0.007	560	135	1.103	0.281	0.012	0.042
Drink alcohol >= 3 or 4 (weekend)(men)	0.177	0.020	560	135	1.264	0.115	0.136	0.218
Drink alcohol >= 3 or 4 (week)(women)	0.014	0.005	701	168	1.129	0.335	0.004	0.025
Drink alcohol >= 3 or 4 weekend)(women)	0.110	0.014	701	168	1.180	0.127	0.082	0.138
Hip circumference (men)	93.343	0.671	539	130	1.355	0.007	92.011	94.676
Hip circumference (women)	101.853	0.815	684	164	1.395	0.008	100.233	103.474
Waist/hip ratio (men)	0.865	0.006	539	130	1.249	0.007	0.853	0.878
Waist/hip ratio (women)	0.824	0.005	684	164	1.279	0.006	0.813	0.834
MUAC (men)	27.159	0.307	539	130	1.653	0.011	26.549	27.769
MUAC (women)	28.717	0.314	684	164	1.459	0.011	28.093	29.342
Height (men)	168.240	0.508	539	130	1.418	0.003	167.231	169.250
Height (women)	156.861	0.411	684	164	1.44	0.003	156.044	157.679
Body Mass Index (men)	22.004	0.278	539	130	1.411	0.026	21.452	22.556
Body Mass Index (women)	25.820	0.369	684	164	1.422	0.014	25.086	26.554
Obesity (men)	1.928	0.013	539	130	1.151	0.007	1.903	1.953
Obesity (women)	1.758	0.020	684	164	1.227	0.011	1.718	1.798
Systolic Blood Pressure (men)	127.057	1.033	551	132	1.226	0.008	125.004	129.110
Systolic Blood Pressure (women)	122.427	1.194	689	166	1.351	0.010	120.053	124.802
Diastolic Blood Pressure (men)	78.656	0.539	551	132	0.975	0.007	77.585	79.726
Diastolic Blood Pressure (women)	77.385	0.592	689	166	1.209	0.008	76.208	78.562
Pulse (men)	74.661	0.6189	552	133	1.126	0.008	73.432	75.891
Pulse (women)	78.723	0.641	691	166	1.361	0.008	77.448	79.998
Hypertensive (men)	0.157	0.015	560	135	0.977	0.096	0.127	0.187
Hypertensive (women)	0.211	0.018	701	168	1.169	0.085	0.175	0.247
Airflow Limitation (men)	0.103	0.0155	560	135	1.196	0.150	0.072	0.134
Airflow Limitation (women)	0.091	0.012	701	168	1.067	0.128	0.068	0.113
Chronic Bronchitis (men)	0.051	0.010	560	135	1.082	0.199	0.031	0.071
Chronic Bronchitis (women)	0.025	0.005	701	168	0.923	0.221	0.014	0.035
Abnormal Peak Flow (men)	0.094	0.0132	560	135	1.071	0.140	0.068	0.121
Abnormal Peak Flow (women)	0.118	0.015	701	168	1.191	0.124	0.089	0.147

Table B.8 Sampling errors - Free State sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un- weighted (N)	Weighted (WN)			Value- 2SE (R-2SE)	Value+ 2SE (R+2E)
Urban	0.702	0.014	936	763	0.934	0.02	0.674	0.73
No education	0.05	0.009	936	763	1.292	0.193	0.028	0.063
Reached standard 6 or higher	0.683	0.019	936	763	1.275	0.028	0.644	0.722
Never married	0.417	0.019	936	763	1.183	0.046	0.379	0.456
Currently married	0.466	0.022	936	763	1.330	0.047	0.422	0.509
Married before age 20	0.284	0.019	769	627	1.189	0.068	0.245	0.322
Sex before age 18	0.480	0.022	769	627	1.234	0.046	0.436	0.525
Children ever born	1.805	0.063	936	763	1.088	0.035	1.678	1.932
Children ever born to women over 40	3.629	0.168	171	139	1.094	0.046	3.294	3.964
Children surviving	1.670	0.059	936	763	1.102	0.035	1.553	1.788
Knowing any contraceptive method	0.988	0.005	434	355	1.009	0.005	0.978	0.999
Knowing any modern contraceptive method	0.988	0.005	434	355	1.009	0.005	0.978	0.999
Ever used any contraceptive method	0.910	0.012	434	355	0.883	0.013	0.885	0.934
Currently using any method	0.661	0.021	434	355	0.909	0.031	0.619	0.702
Currently using a modern method	0.658	0.021	434	355	0.909	0.031	0.617	0.700
Currently using pill	0.101	0.014	434	355	0.952	0.137	0.073	0.128
Currently using IUD	0.007	0.002	434	355	0.571	0.334	0.002	0.011
Currently using injections	0.354	0.025	434	355	1.107	0.072	0.304	0.405
Currently using condom	0.018	0.007	434	355	1.038	0.365	0.005	0.032
Currently using female sterilisation	0.130	0.017	434	355	1.022	0.127	0.097	0.163
Currently using male sterilisation	0.048	0.014	434	355	1.322	0.284	0.021	0.075
Currently using calendar/rhythm method	0.000	0.000	434	355	NA	NA	0.000	0.000
Currently using withdrawal	0.002	0.002	434	355	0.985	0.999	0.000	0.007
Using public sector source	0.892	0.017	531	433	1.235	0.019	0.858	0.925
Want no more children	0.433	0.020	434	355	0.824	0.045	0.394	0.473
Want to delay at least 2 years	0.120	0.018	434	355	1.143	0.149	0.084	0.155
Ideal number of children	2.456	0.053	931	759	1.230	0.022	2.350	2.562
Mothers received tetanus injection	0.758	0.038	313	257	1.436	0.050	0.683	0.834
Mothers received medical care at birth	0.880	0.026	313	257	1.326	0.029	0.829	0.932
Had diarrhoea in the last 2 weeks	0.091	0.018	297	244	1.094	0.198	0.055	0.127
Treated with ORS packets	0.552	0.098	27	22	1.032	0.178	0.356	0.749
Sought medical treatment	0.627	0.094	27	22	1.015	0.150	0.439	0.815
Having health card, seen	0.756	0.065	62	51	1.194	0.086	0.626	0.885
Received BCG vaccination	0.951	0.028	62	51	1.008	0.029	0.895	1.000
Received DPT vaccination (3 doses)	0.821	0.064	62	51	1.311	0.077	0.694	0.948
Received polio vaccination (3 doses)	0.726	0.072	62	51	1.284	0.100	0.581	0.871
Received measles vaccination	0.808	0.060	62	51	1.200	0.074	0.688	0.927
Fully immunised	0.678	0.074	62	51	1.257	0.109	0.529	0.826
Total fertility rate (3 years)	2.187	0.179	NA	2166	1.215	0.082	1.830	2.545
Neonatal mortality rate (10 years)	9.896	3.442	717	587	0.938	0.348	3.013	16.780
Infant mortality rate (10 years)	36.786	8.359	717	587	1.078	0.227	20.069	53.503
Child mortality rate (10 years)	13.681	4.019	719	589	0.935	0.294	5.642	21.719
Under-five mortality rate (10 years)	49.963	10.185	719	589	1.166	0.204	29.592	70.334
Postneonatal mortality rate (10 years)	26.89	8.084	717	587	1.153	0.301	10.721	43.058
Injuries in the last month age >15 (men)	0.009	0.003	1194	1002	1.014	0.003	0.003	0.040
Injuries in the last month age > 15 (women)	0.005	0.002	1361	1144	0.964	0.364	0.001	0.009
Currently smoking (occasionally or daily) (men)	0.440	0.022	554	444	1.055	0.051	0.395	0.484
Currently smoking (occasionally or daily) (women)	0.109	0.016	646	519	1.297	0.146	0.077	0.140
Drink alcohol >= 3 or 4 (week)(men)	0.031	0.007	554	444	0.904	0.216	0.017	0.044
Drink alcohol >= 3 or 4 (weekend)(men)	0.153	0.019	554	444	1.262	0.127	0.114	0.191
Drink alcohol >= 3 or 4 (week)(women)	0.014	0.006	646	519	1.380	0.457	0.001	0.027
Drink alcohol >= 3 or 4 weekend)(women)	0.072	0.012	646	519	1.178	0.167	0.048	0.096
Hip circumference (men)	94.701	0.661	533	427	1.472	0.007	93.387	96.015
Hip circumference (women)	105.22	0.759	642	516	1.237	0.007	103.712	106.730
Waist/hip ratio (men)	0.853	0.005	533	427	1.167	0.006	0.843	0.863
Waist/hip ratio (women)	0.801	0.005	642	516	1.098	0.006	0.792	0.811
MUAC (men)	26.856	0.216	533	427	1.356	0.008	26.426	27.285
MUAC (women)	29.325	0.256	642	516	1.204	0.009	28.816	29.835
Height (men)	169.84	0.516	533	427	1.454	0.003	168.821	170.874
Height (women)	158.80	0.488	642	516	1.587	0.003	157.835	159.775
Body Mass Index (men)	22.376	0.243	533	427	1.280	0.011	21.892	22.860
Body Mass Index (women)	26.835	0.331	642	516	1.264	0.012	26.177	27.493
Obesity (men)	1.931	0.012	533	427	1.093	0.006	1.908	1.956
Obesity (women)	1.715	0.021	642	516	1.164	0.012	1.674	1.757
Systolic Blood Pressure (men)	126.40	1.101	534	428	1.248	0.009	124.217	128.593
Systolic Blood Pressure (women)	122.39	1.136	623	501	1.318	0.009	120.140	124.657
Diastolic Blood Pressure (men)	78.624	0.718	534	428	1.212	0.009	77.197	80.051
Diastolic Blood Pressure (women)	77.805	0.679	623	501	1.289	0.009	76.455	79.154
Pulse (men)	72.090	0.569	549	440	1.083	0.008	70.958	73.221
Pulse (women)	76.587	0.578	628	505	1.122	0.008	75.438	77.736
Hypertensive (men)	0.120	0.013	554	444	0.954	0.110	0.094	0.146
Hypertensive (women)	0.156	0.014	646	519	0.949	0.087	0.129	0.183
Airflow Limitation (men)	0.064	0.010	554	444	0.921	0.151	0.045	0.084
Airflow Limitation (women)	0.068	0.011	646	519	1.052	0.155	0.047	0.089
Chronic Bronchitis (men)	0.016	0.005	554	444	0.989	0.327	0.006	0.027
Chronic Bronchitis (women)	0.021	0.006	646	519	0.971	0.267	0.010	0.032
Abnormal Peak Flow (men)	0.038	0.010	554	444	1.233	0.264	0.018	0.058
Abnormal Peak Flow (women)	0.022	0.008	646	519	1.380	0.365	0.006	0.038

Table B9. Sampling errors - KwaZulu-Natal sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un-weighted (N)	Weighted (WN)			Value-2SE (R-2SE)	Value+2SE (R+2E)
Urban	0.515	0.017	1826	2364	1.444	0.033	0.481	0.549
No education	0.105	0.013	1826	2364	1.753	0.12	0.08	0.13
Reached standard 6 or higher	0.621	0.020	1826	2364	1.790	0.033	0.580	0.662
Never married	0.517	0.017	1826	2364	1.486	0.034	0.482	0.552
Currently married	0.404	0.016	1826	2364	1.426	0.041	0.371	0.437
Married before age 20	0.201	0.014	1482	1908	1.317	0.068	0.174	0.229
Sex before age 18	0.419	0.017	1482	1908	1.352	0.041	0.384	0.453
Children ever born	2.071	0.074	1826	2364	1.461	0.036	1.923	2.219
Children ever born to women over 40	4.021	0.189	349	452	1.363	0.047	3.642	4.399
Children surviving	1.876	0.061	1826	2364	1.343	0.033	1.753	1.998
Knowing any contraceptive method	0.959	0.012	735	955	1.587	0.012	0.936	0.982
Knowing any modern contraceptive method	0.953	0.014	735	955	1.816	0.015	0.924	0.981
Ever used any contraceptive method	0.800	0.019	735	955	1.270	0.023	0.763	0.838
Currently using any method	0.508	0.018	735	955	0.972	0.035	0.472	0.544
Currently using a modern method	0.489	0.017	735	955	0.924	0.035	0.455	0.523
Currently using pill	0.112	0.011	735	955	0.927	0.096	0.090	0.133
Currently using IUD	0.012	0.004	735	955	0.944	0.316	0.004	0.020
Currently using injections	0.162	0.013	735	955	0.949	0.080	0.136	0.188
Currently using condom	0.01	0.004	735	955	0.994	0.319	0.005	0.021
Currently using female sterilisation	0.185	0.014	735	955	0.964	0.075	0.158	0.213
Currently using male sterilisation	0.005	0.002	735	955	0.681	0.354	0.001	0.009
Currently using calendar/rhythm method	0.002	0.001	735	955	0.861	0.709	0.000	0.005
Currently using withdrawal	0.015	0.007	735	955	1.495	0.446	0.002	0.028
Using public sector source	0.839	0.013	830	998	1.058	0.016	0.813	0.866
Want no more children	0.421	0.015	735	955	0.823	0.036	0.391	0.451
Want to delay at least 2 years	0.115	0.017	735	955	1.409	0.144	0.082	0.148
Ideal number of children	3.114	0.067	1802	2329	1.674	0.022	2.979	3.248
Mothers received tetanus injection	0.749	0.024	759	1094	1.397	0.032	0.701	0.796
Mothers received medical care at birth	0.825	0.020	759	1094	1.332	0.024	0.786	0.864
Had diarrhoea in the last 2 weeks	0.178	0.015	713	1022	1.016	0.083	0.149	0.208
Treated with ORS packets	0.648	0.051	124	182	1.193	0.079	0.546	0.750
Sought medical treatment	0.650	0.062	124	182	1.441	0.095	0.526	0.774
Having health card, seen	0.622	0.046	150	208	1.191	0.075	0.530	0.715
Received BCG vaccination	0.970	0.017	150	208	1.231	0.017	0.937	1.000
Received DPT vaccination (3 doses)	0.623	0.053	150	208	1.368	0.085	0.516	0.729
Received polio vaccination (3 doses)	0.596	0.042	150	208	1.072	0.070	0.513	0.680
Received measles vaccination	0.825	0.039	150	208	1.298	0.047	0.747	0.903
Fully immunised	0.495	0.054	150	208	1.350	0.109	0.387	0.603
Total fertility rate (3 years)	3.326	0.251	NA	6615	1.798	0.075	2.825	3.827
Neonatal mortality rate (10 years)	23.228	4.189	1597	2282	1.133	0.180	14.850	31.607
Infant mortality rate (10 years)	52.085	7.122	1597	2282	1.241	0.137	37.842	66.329
Child mortality rate (10 years)	23.64	5.853	1600	2286	1.559	0.248	11.938	35.349
Under-five mortality rate (10 years)	74.5	8.944	1600	2286	1.371	0.120	56.610	92.386
Postneonatal mortality rate (10 years)	28.86	6.082	1597	2282	1.326	0.211	16.694	41.02
Injuries in the last month age >15 (men)	0.01	0.003	2247	2948	1.031	0.194	0.009	0.02
Injuries in the last month age > 15 (women)	0	0.001	2728	3663	1.004	0.302	0.002	0.007
Currently smoking (occasionally or daily) (men)	0.381	0.02	823	1064	1.136	0.053	0.341	0.422
Currently smoking (occasionally or daily) (women)	0.05	0.007	1230	1608	1.212	0.151	0.335	0.062
Drink alcohol >= 3 or 4 (week)(men)	0.033	0.007	823	1064	0.989	0.218	0.019	0.047
Drink alcohol >= 3 or 4 (weekend)(men)	0.123	0.012	823	1064	0.989	0.101	0.099	0.148
Drink alcohol >= 3 or 4 (week)(women)	0.016	0.004	1230	1608	0.916	0.234	0.009	0.023
Drink alcohol >= 3 or 4 weekend)(women)	0.041	0.007	1230	1608	1.118	0.168	0.027	0.055
Hip circumference (men)	93.92	0.408	761	985	1.059	0.004	93.116	94.728
Hip circumference (women)	105.4	0.519	1140	1493	1.166	0.005	104.401	106.452
Waist/hip ratio (men)	0.879	0.004	761	985	0.925	0.004	0.872	0.887
Waist/hip ratio (women)	0.828	0.003	1140	1493	1.043	0.004	0.823	0.835
MUAC (men)	28.38	0.183	761	985	1.214	0.006	28.014	28.736
MUAC (women)	30.69	0.18	1140	1493	1.132	0.006	30.336	31.048
Height (men)	167.6	0.371	761	985	1.156	0.002	166.856	168.32
Height (women)	157.4	0.277	1140	1493	1.257	0.002	156.871	157.966
Body Mass Index (men)	23.18	0.195	761	985	1.223	0.008	22.799	23.569
Body Mass Index (women)	27.86	0.234	1140	1493	1.166	0.008	27.394	28.319
Obesity (men)	1.925	0.011	761	985	1.178	0.006	1.904	1.947
Obesity (women)	1.658	0.17	1140	1493	1.121	0.01	1.625	1.691
Systolic Blood Pressure (men)	121.7	0.765	801	1035	1.051	0.006	120.144	123.167
Systolic Blood Pressure (women)	118.5	0.737	1174	1540	1.014	0.006	117.078	119.989
Diastolic Blood Pressure (men)	75.65	0.579	801	1035	1.165	0.008	74.508	76.797
Diastolic Blood Pressure (women)	75.52	0.376	1174	1540	0.936	0.005	74.775	76.26
Pulse (men)	73.82	0.594	810	1048	1.255	0.008	72.645	74.992
Pulse (women)	76.18	0.417	1190	1562	1.171	0.005	75.351	76.998
Hypertensive (men)	0.126	0.013	823	1064	1.096	0.107	0.099	0.152
Hypertensive (women)	0.177	0.011	1230	1608	0.977	0.064	0.155	0.199
Airflow Limitation (men)	0.1	0.012	823	1064	1.013	0.118	0.076	0.123
Airflow Limitation (women)	0.135	0.011	1230	1608	1.04	0.084	0.112	0.157
Chronic Bronchitis (men)	0.03	0.008	823	1064	1.224	0.286	0.012	0.044
Chronic Bronchitis (women)	0.04	0.006	1230	1608	0.944	0.162	0.025	0.048
Abnormal Peak Flow (men)	0.04	0.008	823	1064	1.057	0.197	0.026	0.059
Abnormal Peak Flow (women)	0.03	0.006	1230	1608	1.077	0.178	0.02	0.043

Table B.10. Sampling errors - North West sample, South Africa 1998

Variables	Number of cases					Confidence intervals		
	Value (R)	Standard error (SE)	Un-weighted (N)	Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Value-2SE (R-2SE)	Value+2SE (R+2E)
Urban	0.414	0.016	931	909	0.994	0.039	0.382	0.446
No education	0.079	0.010	931	909	1.085	0.122	0.060	0.098
Reached standard 6 or higher	0.662	0.024	931	909	1.576	0.037	0.613	0.711
Never married	0.537	0.016	931	909	1.008	0.031	0.504	0.570
Currently married	0.387	0.015	931	909	0.937	0.039	0.357	0.417
Married before age 20	0.186	0.014	762	744	0.989	0.075	0.158	0.214
Sex before age 18	0.415	0.019	762	744	1.056	0.045	0.377	0.453
Children ever born	1.823	0.064	931	909	1.087	0.035	1.694	1.951
Children ever born to women over 40	3.693	0.191	163	159	1.200	0.052	3.311	4.075
Children surviving	1.701	0.060	931	909	1.083	0.035	1.581	1.820
Knowing any contraceptive method	0.984	0.008	360	352	1.162	0.008	0.968	0.999
Knowing any modern contraceptive method	0.984	0.008	360	352	1.162	0.008	0.968	0.999
Ever used any contraceptive method	0.896	0.020	360	352	1.266	0.023	0.855	0.937
Currently using any method	0.661	0.032	360	352	1.265	0.048	0.598	0.725
Currently using a modern method	0.659	0.032	360	352	1.293	0.049	0.594	0.723
Currently using pill	0.129	0.014	360	352	0.766	0.105	0.102	0.156
Currently using IUD	0.025	0.009	360	352	1.124	0.368	0.007	0.044
Currently using injections	0.378	0.031	360	352	1.220	0.083	0.315	0.440
Currently using condom	0.011	0.005	360	352	0.987	0.495	0.000	0.022
Currently using female sterilisation	0.104	0.019	360	352	1.169	0.181	0.066	0.142
Currently using male sterilisation	0.011	0.004	360	352	0.698	0.342	0.004	0.019
Currently using calendar/rhythm method	0.003	0.003	360	352	1.024	0.995	0.000	0.009
Currently using withdrawal	0.000	0.000	360	352	NA	NA	0.000	0.000
Using public sector source	0.878	0.019	537	526	1.355	0.022	0.840	0.917
Want no more children	0.538	0.027	360	352	1.039	0.051	0.483	0.593
Want to delay at least 2 years	0.117	0.017	360	352	0.977	0.141	0.084	0.150
Ideal number of children	2.704	0.056	922	900	1.215	0.021	2.592	2.816
Mothers received tetanus injection	0.563	0.035	350	340	1.228	0.063	0.493	0.634
Mothers received medical care at birth	0.883	0.023	350	340	1.270	0.026	0.837	0.929
Had diarrhoea in the last 2 weeks	0.122	0.025	337	327	1.348	0.202	0.072	0.171
Treated with ORS packets	0.556	0.083	41	40	1.035	0.149	0.390	0.723
Sought medical treatment	0.462	0.087	41	40	1.089	0.188	0.288	0.636
Having health card, seen	0.665	0.055	69	67	0.968	0.083	0.555	0.775
Received BCG vaccination	0.957	0.024	69	67	0.988	0.025	0.908	1.000
Received DPT vaccination (3 doses)	0.822	0.048	69	67	1.048	0.059	0.726	0.919
Received polio vaccination (3 doses)	0.708	0.062	69	67	1.124	0.087	0.585	0.831
Received measles vaccination	0.87	0.039	69	67	0.957	0.045	0.793	0.948
Fully immunised	0.606	0.067	69	67	1.139	0.111	0.472	0.740
Total fertility rate (3 years)	2.436	0.167	NA	2584	1.059	0.068	2.103	2.769
Neonatal mortality rate (10 years)	20.036	4.858	808	785	0.990	0.242	10.321	29.751
Infant mortality rate (10 years)	36.79	6.868	809	786	1.006	0.187	23.052	50.525
Child mortality rate (10 years)	8.817	3.791	812	790	1.009	0.430	1.235	16.399
Under-five mortality rate (10 years)	45.281	7.996	813	790	0.997	0.177	29.290	61.272
Postneonatal mortality rate (10 years)	16.752	4.945	809	786	1.017	0.295	6.863	26.641
Injuries in the last month age >15 (men)	0	0.002	1277	1271	0.9	0.27	0	0.013
Injuries in the last month age > 15 (women)	0.01	0.003	1428	1421	1.004	0.267	0.01	0.015
Currently smoking (occasionally or daily) (men)	0.453	0.196	571	551	0.937	0.043	0.414	0.492
Currently smoking (occasionally or daily) (women)	0.08	0.015	669	646	1.433	0.195	0.047	0.106
Drink alcohol >= 3 or 4 (week)(men)	0.042	0.009	571	551	1.017	0.204	0.025	0.059
Drink alcohol >= 3 or 4 (weekend)(men)	0.196	0.019	571	551	1.163	0.099	0.158	0.235
Drink alcohol >= 3 or 4 (week)(women)	0.025	0.007	669	646	1.074	0.266	0.012	0.038
Drink alcohol >= 3 or 4 weekend)(women)	0.072	0.011	669	646	1.071	0.151	0.050	0.093
Hip circumference (men)	91.55	0.714	507	489	1.344	0.008	90.126	92.978
Hip circumference (women)	102	0.746	624	604	1.182	0.007	100.519	103.495
Waist/hip ratio (men)	0.868	0.006	507	489	1.287	0.007	0.855	0.88
Waist/hip ratio (women)	832	0.005	624	604	1.107	0.006	0.822	0.842
MUAC (men)	27.72	0.21	507	489	1.219	0.008	27.297	28.134
MUAC (women)	29.45	0.213	624	604	1.171	0.007	29.026	29.875
Height (men)	167.7	0.556	507	489	1.494	0.003	166.544	168.762
Height (women)	159.6	0.436	624	604	1.456	0.003	158.747	160.489
Body Mass Index (men)	21.93	0.207	507	489	1.219	0.009	21.517	22.345
Body Mass Index (women)	25.26	0.258	624	604	1.152	0.01	24.743	25.773
Obesity (men)	1.966	0.009	507	489	1.154	0.005	1.947	1.984
Obesity (women)	1.807	0.018	624	604	1.133	0.01	1.771	1.843
Systolic Blood Pressure (men)	119.5	1.235	522	505	1.414	0.01	117.021	121.95
Systolic Blood Pressure (women)	117.6	1.103	605	585	1.364	0.009	115.369	119.774
Diastolic Blood Pressure (men)	75.45	0.699	524	507	1.217	0.009	74.057	76.848
Diastolic Blood Pressure (women)	75.5	0.671	605	585	1.226	0.009	74.162	76.842
Pulse (men)	74.19	0.659	563	544	1.236	0.009	72.878	75.511
Pulse (women)	77.66	0.63	662	640	1.288	0.008	76.403	78.919
Hypertensive (men)	0.113	0.015	571	551	1.143	0.135	0.083	0.144
Hypertensive (women)	0.157	0.016	669	646	1.12	0.101	0.125	0.188
Airflow Limitation (men)	0.05	0.01	571	551	1.137	0.214	0.214	0.067
Airflow Limitation (women)	0.07	0.012	669	646	1.155	0.159	0.051	0.098
Chronic Bronchitis (men)	0.02	0.007	571	551	1.28	0.383	0.005	0.04
Chronic Bronchitis (women)	0	0.004	669	646	0.976	0.397	0.002	0.017
Abnormal Peak Flow (men)	0.03	0.007	571	551	1.128	0.298	0.01	0.04
Abnormal Peak Flow (women)	0.05	0.011	669	646	1.38	0.242	0.024	0.07

Table B.11 Sampling errors - Gauteng sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un- weighted (N)	Weighted (WN)			Value- 2SE (R-2SE)	Value+ 2SE (R+2E)
Urban	0.968	0.002	1057	2552	0.288	0.002	0.965	0.971
No education	0.029	0.005	1057	2552	0.982	0.175	0.019	0.039
Reached standard 6 or higher	0.801	0.014	1057	2552	1.163	0.018	0.772	0.829
Never married	0.427	0.020	1057	2552	1.282	0.046	0.388	0.466
Currently married	0.480	0.019	1057	2552	1.211	0.039	0.442	0.517
Married before age 20	0.220	0.013	902	2175	0.912	0.057	0.194	0.245
Sex before age 18	0.447	0.020	902	2175	1.237	0.046	0.406	0.488
Children ever born	1.800	0.061	1057	2552	1.176	0.034	1.678	1.921
Children ever born to women over 40	3.146	0.116	244	590	1.006	0.037	2.914	3.377
Children surviving	1.686	0.058	1057	2552	1.197	0.034	1.570	1.802
Knowing any contraceptive method	0.994	0.003	505	1224	0.993	0.003	0.987	1.000
Knowing any modern contraceptive method	0.994	0.003	505	1224	0.993	0.003	0.987	1.000
Ever used any contraceptive method	0.902	0.014	505	1224	1.089	0.016	0.874	0.931
Currently using any method	0.598	0.022	505	1224	0.999	0.036	0.554	0.642
Currently using a modern method	0.586	0.022	505	1224	1.013	0.038	0.542	0.631
Currently using pill	0.128	0.016	505	1224	1.044	0.121	0.097	0.159
Currently using IUD	0.033	0.007	505	1224	0.940	0.226	0.018	0.048
Currently using injections	0.194	0.019	505	1224	1.083	0.098	0.156	0.232
Currently using condom	0.025	0.006	505	1224	0.906	0.250	0.013	0.038
Currently using female sterilisation	0.169	0.017	505	1224	1.039	0.103	0.134	0.203
Currently using male sterilisation	0.037	0.011	505	1224	1.287	0.292	0.015	0.059
Currently using calendar/rhythm method	0.006	0.003	505	1224	0.997	0.579	0.000	0.013
Currently using withdrawal	0.004	0.003	505	1224	1.001	0.712	0.000	0.009
Using public sector source	0.704	0.023	556	1341	1.174	0.032	0.658	0.749
Want no more children	0.430	0.022	505	1224	1.008	0.052	0.386	0.475
Want to delay at least 2 years	0.119	0.016	505	1224	1.088	0.132	0.088	0.150
Ideal number of children	2.681	0.045	1049	2533	1.039	0.017	2.591	2.770
Mothers received tetanus injection	0.376	0.029	398	954	1.073	0.078	0.317	0.434
Mothers received medical care at birth	0.940	0.013	398	954	1.047	0.014	0.913	0.967
Had diarrhoea in the last 2 weeks	0.094	0.016	380	911	0.976	0.167	0.063	0.126
Treated with ORS packets	0.472	0.094	36	86	1.038	0.199	0.284	0.660
Sought medical treatment	0.667	0.094	36	86	1.096	0.140	0.480	0.854
Having health card, seen	0.796	0.046	83	199	1.038	0.058	0.704	0.889
Received BCG vaccination	0.976	0.017	83	199	1.007	0.017	0.942	1.000
Received DPT vaccination (3 doses)	0.856	0.036	83	199	0.938	0.042	0.784	0.929
Received polio vaccination (3 doses)	0.808	0.045	83	199	1.027	0.055	0.719	0.898
Received measles vaccination	0.844	0.041	83	199	1.015	0.048	0.763	0.925
Fully immunised	0.724	0.046	83	199	0.929	0.063	0.633	0.816
Total fertility rate (3 years)	2.343	0.159	NA	7315	1.201	0.068	2.025	2.661
Neonatal mortality rate (10 years)	17.800	5.073	842	2028	1.053	0.285	7.653	27.947
Infant mortality rate (10 years)	36.300	7.264	843	2030	1.111	0.200	21.771	50.829
Child mortality rate (10 years)	9.341	3.246	843	2030	0.970	0.348	2.849	15.832
Under-five mortality rate (10 years)	45.301	7.795	844	2033	1.046	0.172	29.711	60.891
Postneonatal mortality rate (10 years)	18.500	5.438	843	2030	1.186	0.294	7.624	29.376
Injuries in the last month age >15 (men)	0.02	0.004	1413	3094	1.051	0.184	0.014	0.031
Injuries in the last month age > 15 (women)	0.02	0.003	1683	3680	1.105	0.22	0.008	0.021
Currently smoking (occasionally or daily) (men)	0.44	0.022	554	444	0.981	0.051	0.395	0.484
Currently smoking (occasionally or daily) (women)	0.122	0.016	704	1887	1.216	0.128	0.091	0.153
Drink alcohol >= 3 or 4 (week)(men)	0.029	0.008	408	1099	0.942	0.269	0.014	0.044
Drink alcohol >= 3 or 4 (weekend)(men)	0.115	0.016	408	1099	0.139	0.139	0.083	0.147
Drink alcohol >= 3 or 4 (week)(women)	0.010	0.004	704	1887	0.985	0.371	0.003	0.017
Drink alcohol >= 3 or 4 weekend)(women)	0.045	0.008	704	1887	0.986	0.171	0.030	0.060
Hip circumference (men)	95.86	0.592	382	1028	1.059	0.006	94.689	97.037
Hip circumference (women)	108.2	0.508	678	1818	1.166	0.005	107.234	109.246
Waist/hip ratio (men)	0.869	0.005	382	1028	0.925	0.006	0.86	0.879
Waist/hip ratio (women)	0.797	0.004	678	1818	1.043	0.005	0.789	0.804
MUAC (men)	28.68	0.245	382	1028	1.214	0.009	28.2	29.169
MUAC (women)	31.14	0.203	678	1818	1.132	0.007	30.733	31.537
Height (men)	170.7	0.5	382	1028	1.156	0.003	169.677	171.659
Height (women)	159	0.323	678	1818	1.257	0.002	158.345	159.626
Body Mass Index (men)	23.32	0.253	382	1028	1.223	0.011	22.82	23.824
Body Mass Index (women)	28.11	0.262	678	1818	1.166	0.009	27.593	28.63
Obesity (men)	1.913	0.014	382	1028	1.178	0.007	1.885	1.942
Obesity (women)	1.649	0.019	678	1818	1.122	1.012	1.61	1.687
Systolic Blood Pressure (men)	126.4	1.101	534	428	1.054	0.009	124.217	128.593
Systolic Blood Pressure (women)	118.2	1.055	669	1794	1.189	0.009	116.099	120.276
Diastolic Blood Pressure (men)	78.62	0.718	534	428	1.148	0.009	77.197	80.051
Diastolic Blood Pressure (women)	74.93	0.562	669	1794	1.129	0.007	73.822	76.046
Pulse (men)	72.09	0.569	549	440	1.062	0.008	70.958	73.221
Pulse (women)	76.75	0.5	672	1802	1.049	0.007	75.755	77.734
Hypertensive (men)	0.12	0.013	554	444	0.974	0.11	0.094	0.146
Hypertensive (women)	0.198	0.017	704	1887	1.09	0.084	0.165	0.231
Airflow Limitation (men)	0.06	0.01	554	444	1.008	0.151	0.045	0.084
Airflow Limitation (women)	0.08	0.01	704	1887	0.97	0.121	0.063	0.103
Chronic Bronchitis (men)	0.02	0.005	554	444	0.941	0.327	0.006	0.027
Chronic Bronchitis (women)	0.02	0.006	704	1887	1.989	0.249	0.012	0.035
Abnormal Peak Flow (men)	0.04	0.01	554	444	1.008	0.264	0.018	0.058
Abnormal Peak Flow (women)	0.06	0.009	704	1887	1.07	0.168	0.037	0.074

Table B.12 Sampling errors - Mpumalanga sample, South Africa 1998

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un-weighted (N)	Weighted (WN)			Value-2SE (R-2SE)	Value+2SE (R+2E)
Urban	0.424	0.022	1131	819	1.492	0.052	0.38	0.468
No education	0.103	0.011	1131	819	1.183	0.104	0.082	0.125
Reached standard 6 or higher	0.623	0.020	1131	819	1.38	0.032	0.584	0.663
Never married	0.538	0.017	1131	819	1.153	0.032	0.504	0.572
Currently married	0.377	0.018	1131	819	1.227	0.047	0.341	0.412
Married before age 20	0.277	0.017	864	629	1.142	0.063	0.242	0.312
Sex before age 18	0.656	0.017	864	629	1.068	0.026	0.622	0.691
Children ever born	2.063	0.062	1131	819	0.930	0.030	1.940	2.186
Children ever born to women over 40	4.507	0.198	199	146	1.060	0.044	4.112	4.903
Children surviving	1.825	0.053	1131	819	0.934	0.029	1.719	1.932
Knowing any contraceptive method	0.98	0.007	421	309	0.980	0.007	0.966	0.993
Knowing any modern contraceptive method	0.978	0.007	421	309	0.966	0.007	0.964	0.992
Ever used any contraceptive method	0.841	0.021	421	309	1.199	0.025	0.799	0.884
Currently using any method	0.485	0.025	421	309	1.035	0.052	0.435	0.536
Currently using a modern method	0.459	0.026	421	309	1.089	0.058	0.406	0.512
Currently using pill	0.087	0.011	421	309	0.810	0.128	0.065	0.110
Currently using IUD	0.009	0.005	421	309	0.977	0.498	0.000	0.018
Currently using injections	0.211	0.020	421	309	1.009	0.095	0.171	0.251
Currently using condom	0.022	0.009	421	309	1.332	0.438	0.003	0.04
Currently using female sterilisation	0.110	0.020	421	309	1.337	0.185	0.069	0.151
Currently using male sterilisation	0.019	0.011	421	309	1.563	0.542	0.000	0.040
Currently using calendar/rhythm method	0.008	0.006	421	309	1.384	0.737	0.000	0.021
Currently using withdrawal	0.009	0.003	421	309	0.734	0.374	0.002	0.016
Using public sector source	0.837	0.023	521	379	1.430	0.028	0.791	0.884
Want no more children	0.453	0.025	421	309	1.038	0.056	0.402	0.503
Want to delay at least 2 years	0.151	0.019	421	309	1.060	0.123	0.114	0.188
Ideal number of children	3.151	0.050	1115	808	1.035	0.016	3.050	3.251
Mothers received tetanus injection	0.618	0.019	532	379	0.785	0.030	0.580	0.655
Mothers received medical care at birth	0.760	0.028	532	379	1.336	0.037	0.704	0.816
Had diarrhoea in the last 2 weeks	0.162	0.017	507	361	1.000	0.104	0.128	0.196
Treated with ORS packets	0.451	0.050	83	59	0.877	0.111	0.351	0.551
Sought medical treatment	0.628	0.065	83	59	1.155	0.104	0.497	0.758
Having health card, seen	0.795	0.036	100	72	0.891	0.046	0.723	0.867
Received BCG vaccination	0.964	0.013	100	72	0.707	0.014	0.937	0.99
Received DPT vaccination (3 doses)	0.777	0.034	100	72	0.817	0.044	0.708	0.845
Received polio vaccination (3 doses)	0.759	0.039	100	72	0.897	0.051	0.682	0.836
Received measles vaccination	0.837	0.028	100	72	0.741	0.033	0.782	0.892
Fully immunised	0.672	0.042	100	72	0.892	0.063	0.587	0.756
Total fertility rate (3 years)	3.088	0.194	NA	2280	1.174	0.063	2.700	3.475
Neonatal mortality rate (10 years)	23.626	4.736	1067	763	0.997	0.200	14.155	33.097
Infant mortality rate (10 years)	47.264	6.938	1068	763	1.033	0.147	33.388	61.141
Child mortality rate (10 years)	17.262	3.939	1069	764	0.929	0.228	9.385	25.139
Under-five mortality rate (10 years)	63.710	8.382	1070	765	1.095	0.132	46.946	80.475
Postneonatal mortality rate (10 years)	23.64	4.920	1068	763	0.993	0.208	13.797	33.479
Injuries in the last month age >15 (men)	0.02	0.004	1246	948	0.969	0.186	0.014	0.03
Injuries in the last month age > 15 (women)	0	0.002	1532	1161	0.972	0.399	0	0.008
Currently smoking (occasionally or daily) (men)	0.4	0.025	528	377	1.139	0.061	0.351	0.449
Currently smoking (occasionally or daily) (women)	0.06	0.013	713	507	1.361	0.198	0.038	0.088
Drink alcohol >= 3 or 4 (week)(men)	0.026	0.008	528	377	1.094	0.302	0.010	0.041
Drink alcohol >= 3 or 4 (weekend)(men)	0.221	0.022	528	377	0.872	0.101	0.177	0.266
Drink alcohol >= 3 or 4 (week)(women)	0.014	0.005	713	507	1.096	0.347	0.004	0.023
Drink alcohol >= 3 or 4 (weekend)(women)	0.065	0.011	713	507	1.160	0.167	0.043	0.089
Hip circumference (men)	92.9	0.525	499	355	1.149	0.006	91.856	93.949
Hip circumference (women)	103	0.643	692	462	1.096	0.006	101.736	104.3
Waist/hip ratio (men)	0.855	0.004	499	355	1.124	0.005	0.847	0.863
Waist/hip ratio (women)	0.807	0.005	692	492	1.203	0.006	0.798	0.005
MUAC (men)	27.5	0.268	499	355	1.444	0.01	26.97	28.036
MUAC (women)	29.63	0.224	692	492	1.118	0.008	29.186	30.081
Height (men)	169.1	0.439	499	355	1.294	0.003	168.243	169.994
Height (women)	158.3	0.305	692	492	1.144	0.002	157.71	158.928
Body Mass Index (men)	22.15	0.257	499	355	1.326	0.012	21.635	22.66
Body Mass Index (women)	26.54	0.286	692	492	1.134	0.011	25.969	27.109
Obesity (men)	1.948	0.011	499	355	1.068	0.006	1.927	1.97
Obesity (women)	1.742	0.016	692	492	0.94	0.009	1.71	1.773
Systolic Blood Pressure (men)	119.4	1.002	505	360	1.29	0.008	117.377	121.372
Systolic Blood Pressure (women)	113.8	0.853	691	492	1.077	0.007	112.118	115.522
Diastolic Blood Pressure (men)	73.37	0.685	505	360	1.202	0.009	71.999	74.731
Diastolic Blood Pressure (women)	72.91	0.583	691	492	1.141	0.008	71.748	74.075
Pulse (men)	73.09	0.576	512	365	1.034	0.008	71.941	74.238
Pulse (women)	77.9	0.47	695	494	1.034	0.006	76.959	78.833
Hypertensive (men)	0.07	0.011	528	377	0.994	0.159	0.048	0.093
Hypertensive (women)	0.102	0.014	713	507	1.171	0.133	0.075	0.129
Airflow Limitation (men)	0.05	0.011	528	377	1.112	0.206	0.032	0.077
Airflow Limitation (women)	0.07	0.01	713	507	1	0.136	0.052	0.091
Chronic Bronchitis (men)	0.01	0.005	528	377	0.964	0.365	0.004	0.023
Chronic Bronchitis (women)	0.02	0.004	713	507	0.886	0.256	0.008	0.025
Abnormal Peak Flow (men)	0.04	0.008	528	377	0.019	0.231	0.02	0.053
Abnormal Peak Flow (women)	0.02	0.006	713	507	1.057	0.293	0.008	0.03

Table B13 Sampling errors - Northern Province sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un-weighted (N)	Weighted (WN)			Value-2SE (R-2SE)	Value+2SE (R+2E)
Urban	0.15	0.015	1138	1316	1.375	0.097	0.121	0.179
No education	0.125	0.013	1138	1316	1.299	0.102	0.1	0.151
Reached standard 6 or higher	0.627	0.020	1138	1316	1.392	0.032	0.587	0.667
Never married	0.442	0.019	1138	1316	1.297	0.043	0.404	0.480
Currently married	0.485	0.018	1138	1316	1.199	0.037	0.450	0.521
Married before age 20	0.438	0.024	863	998	1.391	0.054	0.391	0.485
Sex before age 18	0.543	0.025	863	998	1.500	0.047	0.492	0.594
Children ever born	2.231	0.062	1138	1316	0.915	0.028	2.107	2.356
Children ever born to women over 40	4.914	0.250	161	186	1.218	0.051	4.414	5.415
Children surviving	2.075	0.057	1138	1316	0.905	0.028	1.960	2.189
Knowing any contraceptive method	0.967	0.008	551	639	1.039	0.008	0.952	0.983
Knowing any modern contraceptive method	0.966	0.008	551	639	1.011	0.008	0.950	0.981
Ever used any contraceptive method	0.720	0.030	551	639	1.553	0.041	0.661	0.78
Currently using any method	0.454	0.027	551	639	1.279	0.060	0.399	0.508
Currently using a modern method	0.435	0.027	551	639	1.286	0.062	0.381	0.490
Currently using pill	0.089	0.014	551	639	1.169	0.160	0.060	0.117
Currently using IUD	0.005	0.003	551	639	0.999	0.578	0.000	0.012
Currently using injections	0.278	0.023	551	639	1.225	0.084	0.231	0.325
Currently using condom	0.020	0.006	551	639	1.032	0.308	0.008	0.032
Currently using female sterilisation	0.043	0.012	551	639	1.323	0.265	0.020	0.066
Currently using male sterilisation	0.000	0.000	551	639	NA	NA	0.000	0.000
Currently using calendar/rhythm method	0.000	0.000	551	639	NA	NA	0.000	0.000
Currently using withdrawal	0.013	0.005	551	639	1.096	0.411	0.002	0.023
Using public sector source	0.889	0.018	448	518	1.219	0.020	0.853	0.926
Want no more children	0.474	0.020	551	639	0.934	0.042	0.434	0.514
Want to delay at least 2 years	0.209	0.015	551	639	0.856	0.071	0.179	0.239
Ideal number of children	3.436	0.071	1092	1263	1.322	0.021	3.295	3.577
Mothers received tetanus injection	0.808	0.024	624	724	1.401	0.030	0.760	0.856
Mothers received medical care at birth	0.785	0.033	624	724	1.777	0.043	0.718	0.852
Had diarrhoea in the last 2 weeks	0.146	0.018	596	691	1.198	0.123	0.110	0.182
Treated with ORS packets	0.310	0.054	87	101	1.063	0.174	0.203	0.418
Sought medical treatment	0.425	0.065	87	101	1.165	0.152	0.296	0.554
Having health card, seen	0.890	0.021	128	149	0.745	0.023	0.849	0.932
Received BCG vaccination	0.969	0.016	128	149	1.065	0.017	0.936	1.000
Received DPT vaccination (3 doses)	0.851	0.040	128	149	1.264	0.047	0.772	0.931
Received polio vaccination (3 doses)	0.836	0.039	128	149	1.197	0.047	0.757	0.914
Received measles vaccination	0.804	0.050	128	149	1.414	0.062	0.705	0.904
Fully immunised	0.749	0.050	128	149	1.303	0.067	0.649	0.850
Total fertility rate (3 years)	3.875	0.237	NA	3638	1.224	0.061	3.401	4.350
Neonatal mortality rate (10 years)	18.348	4.514	1268	1471	1.078	0.246	9.319	27.376
Infant mortality rate (10 years)	37.201	6.745	1269	1472	1.235	0.181	23.710	50.691
Child mortality rate (10 years)	15.699	4.361	1269	1472	1.153	0.278	6.977	24.420
Under-five mortality rate (10 years)	52.315	7.954	1271	1474	1.169	0.152	36.407	68.224
Postneonatal mortality rate (10 years)	18.85	4.754	1268	1471	1.243	0.252	9.345	28.361
Injuries in the last month age >15 (men)	0.009	0.004	1079	1322	1.282	0.404	0.002	0.017
Injuries in the last month age > 15 (women)	0.004	0.002	1617	1982	1.198	0.452	0	0.008
Currently smoking (occasionally or daily) (men)	0.292	0.029	453	521	1.34	0.098	0.235	0.349
Currently smoking (occasionally or daily) (women)	0.02	0.007	745	859	1.439	0.382	0.004	0.032
Drink alcohol >= 3 or 4 (week)(men)	0.031	0.068	453	521	0.994	0.262	0.147	0.047
Drink alcohol >= 3 or 4 (weekend)(men)	0.114	0.016	453	521	1.071	0.140	0.082	0.146
Drink alcohol >= 3 or 4 (week)(women)	0.016	0.005	745	859	0.983	0.282	0.007	0.025
Drink alcohol >= 3 or 4 weekend)(women)	0.039	0.008	745	859	1.071	0.195	0.024	0.054
Hip circumference (men)	91.21	0.608	436	502	1.164	0.007	89.987	92.424
Hip circumference (women)	98.87	0.692	701	809	1.29	0.007	92.486	100.26
Waist/hip ratio (men)	0.865	0.005	436	502	1.07	0.006	0.854	0.876
Waist/hip ratio (women)	0.831	0.005	701	809	1.331	0.006	0.82	0.842
MUAC (men)	26.98	0.244	436	502	1.315	0.009	26.495	27.473
MUAC (women)	29.19	0.194	701	809	1.117	0.007	28.801	0.007
Height (men)	168.3	0.448	436	502	1.191	0.003	167.451	169.246
Height (women)	158.3	0.303	701	809	1.105	0.002	157.723	158.939
Body Mass Index (men)	21.93	0.232	436	502	1.188	0.011	21.46	22.391
Body Mass Index (women)	25.32	0.278	701	809	1.254	0.011	24.767	25.88
Obesity (men)	1.957	0.009	436	502	0.955	0.005	1.938	1.975
Obesity (women)	1.814	0.018	701	809	1.204	0.011	24.767	25.88
Systolic Blood Pressure (men)	119.7	0.969	448	516	1.158	0.008	117.755	121.638
Systolic Blood Pressure (women)	115.4	0.81	713	822	1.085	0.007	113.785	117.032
Diastolic Blood Pressure (men)	72.43	0.661	448	516	1.172	0.009	71.103	73.752
Diastolic Blood Pressure (women)	72.03	0.453	713	822	1	0.006	71.124	72.942
Pulse (men)	71.65	0.754	449	517	1.36	0.011	70.142	73.166
Pulse (women)	76.64	0.623	718	828	1.405	0.008	75.389	77.885
Hypertensive (men)	0.09	0.016	453	521	1.195	0.178	0.058	0.122
Hypertensive (women)	0.08	0.009	745	859	0.973	0.125	0.056	0.093
Airflow Limitation (men)	0.04	0.011	453	521	1.214	0.289	0.016	0.06
Airflow Limitation (women)	0.05	0.009	745	859	1.048	0.159	0.037	0.072
Chronic Bronchitis (men)	0.01	0.005	453	521	0.977	0.397	0.003	0.024
Chronic Bronchitis (women)	0.02	0.003	745	859	0.911	0.273	0.007	0.023
Abnormal Peak Flow (men)	0.03	0.007	453	521	0.899	0.237	0.016	0.046
Abnormal Peak Flow (women)	0.02	0.006	745	859	1.071	0.274	0.009	0.031

Table B.14 Sampling errors - African sample, South Africa 1998

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un-weighted (N)	Weighted (WN)			Value-2SE (R-2SE)	Value+2SE (R+2E)
Urban	0.533	0.008	8993	9147	1.548	0.015	0.516	0.549
No education	0.082	0.004	8993	9147	1.490	0.053	0.073	0.090
Reached standard 6 or higher	0.641	0.008	8993	9147	1.655	0.013	0.624	0.658
Never married	0.516	0.008	8993	9147	1.494	0.015	0.500	0.532
Currently married	0.397	0.008	8993	9147	1.454	0.019	0.382	0.412
Married before age 20	0.237	0.006	7083	7345	1.251	0.027	0.224	0.249
Sex before age 18	0.517	0.008	7083	7345	1.384	0.016	0.501	0.533
Children ever born	2.015	0.029	8993	9147	1.323	0.015	1.957	2.074
Children ever born to women over 40	4.082	0.080	1579	1646	1.300	0.020	3.923	4.242
Children surviving	1.836	0.026	8993	9147	1.295	0.014	1.784	1.888
Knowing any contraceptive method	0.975	0.004	3459	3628	1.432	0.004	0.968	0.983
Knowing any modern contraceptive method	0.973	0.004	3459	3628	1.601	0.005	0.964	0.982
Ever used any contraceptive method	0.804	0.009	3459	3628	1.384	0.012	0.785	0.823
Currently using any method	0.502	0.010	3459	3628	1.206	0.020	0.481	0.522
Currently using a modern method	0.490	0.010	3459	3628	1.210	0.021	0.469	0.510
Currently using pill	0.083	0.006	3459	3628	1.173	0.066	0.072	0.094
Currently using IUD	0.012	0.002	3459	3628	1.109	0.172	0.008	0.016
Currently using injections	0.279	0.009	3459	3628	1.129	0.031	0.261	0.296
Currently using condom	0.012	0.002	3459	3628	1.157	0.176	0.008	0.017
Currently using female sterilisation	0.104	0.007	3459	3628	1.302	0.065	0.090	0.117
Currently using male sterilisation	0.000	0.000	3459	3628	0.477	1.000	0.000	0.000
Currently using calendar/rhythm method	0.002	0.001	3459	3628	1.331	0.466	0.000	0.005
Currently using withdrawal	0.007	0.002	3459	3628	1.440	0.286	0.003	0.011
Using public sector source	0.883	0.007	4294	4368	1.516	0.008	0.868	0.898
Want no more children	0.482	0.009	3459	3628	1.082	0.019	0.464	0.501
Want to delay at least 2 years	0.141	0.007	3459	3628	1.267	0.053	0.126	0.156
Ideal number of children	2.975	0.026	8865	9004	1.550	0.009	2.923	3.028
Mothers received tetanus injection	0.653	0.012	4119	4149	1.463	0.019	0.629	0.677
Mothers received medical care at birth	0.821	0.009	4119	4149	1.392	0.012	0.802	0.84
Had diarrhoea in the last 2 weeks	0.142	0.007	3882	3920	1.167	0.048	0.128	0.156
Treated with ORS packets	0.521	0.027	549	556	1.196	0.051	0.467	0.574
Sought medical treatment	0.591	0.030	549	556	1.338	0.050	0.532	0.650
Having health card, seen	0.737	0.019	794	815	1.186	0.025	0.700	0.774
Received BCG vaccination	0.962	0.008	794	815	1.151	0.008	0.947	0.978
Received DPT vaccination (3 doses)	0.755	0.020	794	815	1.301	0.026	0.715	0.795
Received polio vaccination (3 doses)	0.712	0.019	794	815	1.199	0.027	0.673	0.75
Received measles vaccination	0.814	0.018	794	815	1.307	0.022	0.778	0.85
Fully immunised	0.618	0.023	794	815	1.311	0.037	0.572	0.663
Total fertility rate (3 years)	3.105	0.094	NA	27768	1.597	0.030	2.917	3.294
Neonatal mortality rate (10 years)	20.559	1.860	8571	8663	1.152	0.090	16.839	24.278
Infant mortality rate (10 years)	47.034	2.954	8582	8672	1.211	0.063	41.125	52.943
Child mortality rate (10 years)	17.362	2.040	8601	8686	1.354	0.117	13.282	21.442
Under-five mortality rate (10 years)	63.580	3.586	8613	8696	1.269	0.056	56.408	70.752
Postneonatal mortality rate (10 years)	26.476	2.429	8581	8671	1.289	0.092	21.619	31.333
Currently smoking (occasionally or daily) (men)	0.4	0.009	4283	4257	1.12	0.024	0.382	0.419
Currently smoking (occasionally or daily) (women)	0.501	0.004	6173	6268	10190	0.073	0.043	0.058
Drink alcohol >= 3 or 4 (week)(men)	0.031	0.003	4283	4257	0.973	0.098	0.025	0.038
Drink alcohol >= 3 or 4 (weekend)(men)	0.147	0.007	4283	4257	1.080	0.045	0.134	0.160
Drink alcohol >= 3 or 4 (week)(women)	0.016	0.002	6173	6268	0.998	0.114	0.012	0.020
Drink alcohol >= 3 or 4 (weekend)(women)	0.051	0.003	6173	6268	1.037	0.064	0.045	0.058
Hip circumference (men)	92.53	0.214	4002	3959	1.172	0.002	92.109	92.948
Hip circumference (women)	104.6	0.275	5886	5974	1.217	0.003	104.104	105.183
Waist/hip ratio (men)	0.861	0.002	4002	3959	1.082	0.002	0.858	0.865
Waist/hip ratio (women)	0.82	0.002	5886	5974	1.214	0.002	0.816	0.823
MUAC (men)	27.53	0.085	4002	3959	1.25	0.003	27.366	27.699
MUAC (women)	30.36	0.09	5886	5974	1.112	0.003	30.184	30.536
Height (men)	167.5	0.167	4002	3959	1.139	0.001	167.18	167.836
Height (women)	159.9	0.129	5886	5974	1.229	0.001	157.67	158.178
Body Mass Index (men)	22.36	0.085	4002	3959	1.15	0.004	22.195	22.529
Body Mass Index (women)	27.28	0.118	5886	5974	1.148	0.004	27.049	27.513
Obesity (men)	1.949	0.004	4002	3959	1.045	0.002	1.941	1.958
Obesity (women)	1.696	0.008	5886	5974	1.142	0.005	1.68	1.712
Systolic Blood Pressure (men)	121.3	0.388	4125	4099	1.095	0.003	120.54	122.063
Systolic Blood Pressure (women)	118.1	0.406	5913	5988	1.204	0.003	117.298	118.891
Diastolic Blood Pressure (men)	74.79	0.272	1427	4101	1.126	0.004	74.257	75.327
Diastolic Blood Pressure (women)	75	0.226	5915	5989	1.173	0.003	74.555	75.443
Pulse (men)	72.54	0.256	4229	4198	1.195	0.004	72.041	73.047
Pulse (women)	76.82	0.208	6020	6095	1.142	0.003	76.414	77.231
Hypertensive (men)	0.105	0.006	4283	4257	1.061	0.056	0.094	0.117
Hypertensive (women)	0.146	0.006	6173	6268	1.111	0.04	0.134	0.157
Airflow Limitation (men)	0.06	0.005	4283	4257	1.133	0.074	0.055	0.074
Airflow Limitation (women)	0.09	0.005	6173	6268	1.157	0.053	0.077	0.094
Chronic Bronchitis (men)	0.02	0.003	4283	4257	1.108	0.138	0.015	0.026
Chronic Bronchitis (women)	0.03	0.002	6173	6268	1.031	0.087	0.023	0.033
Abnormal Peak Flow (men)	0.04	0.004	4283	4257	1.043	0.093	0.035	0.05
Abnormal Peak Flow (women)	0.04	0.003	6173	6268	1.108	0.085	0.034	0.047

Table B.15 Sampling errors - Coloured sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un- weighted (N)	Weighted (WN)			Value- 2SE (R-2SE)	Value+ 2SE (R+2E)
Urban	0.824	0.025	1533	1201	2.577	0.030	0.774	0.874
No education	0.036	0.005	1533	1201	1.080	0.142	0.026	0.047
Reached standard 6 or higher	0.694	0.023	1533	1201	1.921	0.033	0.649	0.739
Never married	0.461	0.019	1533	1201	1.514	0.042	0.422	0.500
Currently married	0.460	0.018	1533	1201	1.397	0.039	0.425	0.496
Married before age 20	0.164	0.015	1257	993	1.406	0.090	0.135	0.193
Sex before age 18	0.343	0.016	1257	993	1.228	0.048	0.310	0.376
Children ever born	1.742	0.048	1533	1201	1.146	0.028	1.646	1.838
Children ever born to women over 40	3.220	0.123	310	236	1.172	0.038	2.974	3.466
Children surviving	1.656	0.047	1533	1201	1.187	0.028	1.562	1.749
Knowing any contraceptive method	0.995	0.003	693	553	1.104	0.003	0.989	1.000
Knowing any modern contraceptive method	0.995	0.003	693	553	1.104	0.003	0.989	1.000
Ever used any contraceptive method	0.940	0.011	693	553	1.166	0.011	0.919	0.961
Currently using any method	0.682	0.020	693	553	1.142	0.030	0.641	0.722
Currently using a modern method	0.678	0.021	693	553	1.161	0.030	0.636	0.719
Currently using pill	0.115	0.018	693	553	1.465	0.155	0.079	0.150
Currently using IUD	0.019	0.008	693	553	1.441	0.390	0.004	0.034
Currently using injections	0.234	0.023	693	553	1.430	0.098	0.188	0.280
Currently using condom	0.010	0.005	693	553	1.470	0.569	0.000	0.020
Currently using female sterilisation	0.278	0.021	693	553	1.210	0.074	0.237	0.320
Currently using male sterilisation	0.021	0.009	693	553	1.566	0.404	0.004	0.038
Currently using calendar/rhythm method	0.002	0.002	693	553	1.287	1.000	0.000	0.007
Currently using withdrawal	0.000	0.000	693	553	NA	NA	0.000	0.000
Using public sector source	0.902	0.016	788	644	1.469	0.017	0.871	0.933
Want no more children	0.352	0.023	693	553	1.272	0.066	0.306	0.398
Want to delay at least 2 years	0.093	0.014	693	553	1.296	0.154	0.064	0.121
Ideal number of children	2.506	0.042	1507	1175	1.139	0.017	2.423	2.590
Mothers received tetanus injection	0.310	0.025	589	445	1.184	0.082	0.260	0.361
Mothers received medical care at birth	0.948	0.010	589	445	1.041	0.011	0.928	0.968
Had diarrhoea in the last 2 weeks	0.115	0.016	570	435	1.198	0.140	0.083	0.147
Treated with ORS packets	0.469	0.078	67	50	1.239	0.166	0.314	0.625
Sought medical treatment	0.649	0.066	67	50	1.100	0.101	0.518	0.781
Having health card, seen	0.824	0.046	118	91	1.298	0.056	0.732	0.916
Received BCG vaccination	0.994	0.006	118	91	0.806	0.006	0.983	1.000
Received DPT vaccination (3 doses)	0.807	0.049	118	91	1.338	0.061	0.708	0.905
Received polio vaccination (3 doses)	0.790	0.050	118	91	1.325	0.064	0.689	0.890
Received measles vaccination	0.858	0.042	118	91	1.280	0.048	0.775	0.941
Fully immunised	0.746	0.055	118	91	1.360	0.074	0.636	0.856
Total fertility rate (3 years)	2.535	0.148	NA	3406	1.367	0.058	2.239	2.830
Neonatal mortality rate (10 years)	9.578	3.595	1215	929	1.242	0.375	2.388	16.768
Infant mortality rate (10 years)	18.803	4.735	1215	929	1.096	0.252	9.334	28.273
Child mortality rate (10 years)	9.559	3.871	1218	931	1.355	0.405	1.818	17.301
Under-five mortality rate (10 years)	28.183	7.066	1218	931	1.277	0.251	14.050	42.316
Postneonatal mortality rate (10 years)	9.225	2.660	1215	929	0.892	0.288	3.906	14.544
Currently smoking (occasionally or daily) (men)	0.570	0.023	772	637	1.060	0.040	0.524	0.614
Currently smoking (occasionally or daily) (women)	0.4	0.022	1008	806	1.15	0.054	0.357	0.442
Drink alcohol >= 3 or 4 (week)(men)	0.014	0.008	772	637	0.950	0.201	0.025	0.058
Drink alcohol >= 3 or 4 (weekend)(men)	0.174	0.019	772	637	1.182	0.109	0.137	0.212
Drink alcohol >= 3 or 4 (week)(women)	0.009	0.004	1008	806	1.164	0.458	0.001	0.018
Drink alcohol >= 3 or 4 weekend)(women)	0.079	0.010	1008	806	1.037	0.130	0.059	0.099
Hip circumference (men)	95.61	0.527	740	605	1.225	0.006	95.573	96.656
Hip circumference (women)	104.1	0.614	985	785	1.143	0.006	102.91	105.335
Waist/hip ratio (men)	0.866	0.005	740	605	1.131	0.005	0.857	0.875
Waist/hip ratio (women)	0.828	0.004	985	785	1.01	0.005	0.82	0.835
MUAC (men)	28.24	0.193	740	605	1.133	0.007	27.855	28.617
MUAC (women)	29.26	0.254	985	785	1.527	0.009	28.758	29.759
Height (men)	167.6	0.449	740	605	1.345	0.003	166.679	168.452
Height (women)	157	0.299	985	785	1.198	0.002	156.43	157.611
Body Mass Index (men)	23.2	0.223	740	605	1.169	0.01	22.756	23.635
Body Mass Index (women)	26.66	0.313	985	785	1.163	0.012	26.043	27.278
Obesity (men)	1.927	0.112	740	605	1.052	0.006	1.904	1.95
Obesity (women)	1.728	0.019	985	785	1.119	0.011	1.69	1.767
Systolic Blood Pressure (men)	128.5	0.922	763	629	1.116	0.007	126.664	130.305
Systolic Blood Pressure (women)	122.3	0.935	994	793	1.072	0.008	120.459	124.149
Diastolic Blood Pressure (men)	79.03	0.61	763	629	1.112	0.008	77.826	80.238
Diastolic Blood Pressure (women)	77.35	0.547	994	793	1.167	0.007	76.272	78.431
Pulse (men)	73.91	0.666	766	631	1.225	0.009	72.592	75.226
Pulse (women)	77.07	0.564	996	795	1.184	0.007	75.956	78.182
Hypertensive (men)	0.136	0.014	772	637	0.984	0.105	0.108	0.165
Hypertensive (women)	0.224	0.017	1008	806	1.061	0.077	0.19	0.258
Airflow Limitation (men)	0.06	0.012	772	637	1.237	0.191	0.039	0.086
Airflow Limitation (women)	0.08	0.01	1008	806	0.981	0.12	0.062	0.1
Chronic Bronchitis (men)	0.04	0.008	772	637	1.05	0.219	0.02	0.051
Chronic Bronchitis (women)	0.03	0.006	1008	806	1.086	0.221	0.016	0.041
Abnormal Peak Flow (men)	0.04	0.007	772	637	0.98	0.185	0.024	0.052
Abnormal Peak Flow (women)	0.06	0.01	1008	806	1.413	0.181	0.035	0.074

NA = Not applicable

Table B.16 Sampling errors - White sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un-weighted (N)	Weighted (WN)			Value-2SE (R-2SE)	Value+2SE (R+2E)
Urban	0.867	0.013	755	916	1.013	0.014	0.842	0.892
No education	0.001	0.001	755	916	0.728	0.688	0.000	0.004
Reached standard 6 or higher	0.993	0.004	755	916	1.367	0.004	0.985	1.000
Never married	0.259	0.022	755	916	1.409	0.087	0.214	0.304
Currently married	0.671	0.024	755	916	1.424	0.036	0.623	0.720
Married before age 20	0.322	0.024	639	754	1.291	0.074	0.274	0.370
Sex before age 18	0.206	0.021	639	754	1.314	0.102	0.164	0.248
Children ever born	1.535	0.077	755	916	1.590	0.050	1.380	1.689
Children ever born to women over 40	2.453	0.099	219	267	1.238	0.040	2.256	2.651
Children surviving	1.515	0.076	755	916	1.586	0.050	1.363	1.666
Knowing any contraceptive method	0.999	0.001	522	615	0.459	0.001	0.998	1.000
Knowing any modern contraceptive method	0.999	0.001	522	615	0.459	0.001	0.998	1.000
Ever used any contraceptive method	0.974	0.009	522	615	1.214	0.009	0.956	0.991
Currently using any method	0.727	0.023	522	615	1.167	0.031	0.682	0.773
Currently using a modern method	0.713	0.023	522	615	1.148	0.032	0.667	0.758
Currently using pill	0.150	0.016	522	615	1.050	0.110	0.117	0.183
Currently using IUD	0.042	0.011	522	615	1.217	0.254	0.021	0.064
Currently using injections	0.043	0.012	522	615	1.360	0.281	0.019	0.067
Currently using condom	0.042	0.009	522	615	1.049	0.221	0.023	0.060
Currently using female sterilisation	0.281	0.016	522	615	0.824	0.058	0.249	0.314
Currently using male sterilisation	0.155	0.020	522	615	1.284	0.131	0.114	0.196
Currently using calendar/rhythm method	0.007	0.005	522	615	1.227	0.634	0.000	0.016
Currently using withdrawal	0.005	0.004	522	615	1.319	0.781	0.000	0.014
Using public sector source	0.444	0.027	452	522	1.145	0.060	0.390	0.497
Want no more children	0.267	0.021	522	615	1.108	0.080	0.224	0.310
Want to delay at least 2 years	0.072	0.013	522	615	1.182	0.186	0.045	0.098
Ideal number of children	2.337	0.045	747	907	1.024	0.019	2.247	2.428
Mothers received tetanus injection	0.113	0.027	212	250	1.042	0.237	0.059	0.167
Mothers received medical care at birth	0.990	0.009	212	250	1.320	0.009	0.972	1.000
Had diarrhoea in the last 2 weeks	0.053	0.022	209	245	1.184	0.410	0.010	0.096
Treated with ORS packets	0.282	0.160	11	13	1.082	0.566	0.000	0.601
Sought medical treatment	0.370	0.243	11	13	1.287	0.658	0.000	0.856
Having health card, seen	0.720	0.088	34	42	1.154	0.123	0.543	0.896
Received BCG vaccination	1.000	0.000	34	42	NA	0.000	1.000	1.000
Received DPT vaccination (3 doses)	0.786	0.090	34	42	1.285	0.114	0.606	0.965
Received polio vaccination (3 doses)	0.702	0.092	34	42	1.188	0.132	0.517	0.887
Received measles vaccination	0.852	0.068	34	42	1.126	0.080	0.716	0.988
Fully immunised	0.627	0.099	34	42	1.201	0.157	0.430	0.825
Total fertility rate (3 years)	1.885	0.234	NA	2574	1.249	0.124	1.417	2.353
Neonatal mortality rate (10 years)	11.413	8.939	445	546	1.344	0.783	0.000	29.291
Infant mortality rate (10 years)	11.413	8.939	445	546	1.344	0.783	0.000	29.291
Child mortality rate (10 years)	3.884	2.419	446	547	0.882	0.623	0.000	8.723
Under-five mortality rate (10 years)	15.254	9.133	446	547	1.281	0.599	0.000	33.521
Postneonatal mortality rate (10 years)	0	0.000	445	546	NA	NA	0.000	0.000
Currently smoking (occasionally or daily) (men)	0.39	0.024	500	564	0.888	0.623	0.342	0.438
Currently smoking (occasionally or daily) (women)	0.266	0.027	603	767	1.272	0.101	0.212	0.319
Drink alcohol >= 3 or 4 (week)(men)	0.022	0.009	500	564	1.066	0.386	0.005	0.039
Drink alcohol >= 3 or 4 (weekend)(men)	0.125	0.019	500	564	0.986	0.154	0.087	0.163
Drink alcohol >= 3 or 4 (week)(women)	0.013	0.006	603	767	1.108	0.430	0.002	0.024
Drink alcohol >= 3 or 4 weekend)(women)	0.069	0.015	603	767	1.161	0.210	0.040	0.098
Hip circumference (men)	104.1	0.513	470	527	0.97	0.005	103.059	105.085
Hip circumference (women)	106.8	0.602	572	722	0.919	0.006	105.584	107.965
Waist/hip ratio (men)	0.91	0.006	470	527	1.04	0.006	0.899	0.921
Waist/hip ratio (women)	0.8	0.004	572	722	1.047	0.005	0.792	0.808
MUAC (men)	31.09	0.236	470	527	0.976	0.008	30.621	31.554
MUAC (women)	30.21	0.256	572	722	1.021	0.008	29.708	30.719
Height (men)	177.4	0.458	470	527	1.192	0.003	176.477	178.287
Height (women)	163.4	0.328	572	722	1.057	0.002	162.786	164.08
Body Mass Index (men)	26.09	0.28	470	527	0.961	0.107	25.54	26.646
Body Mass Index (women)	26.51	0.278	572	722	0.927	0.011	25.957	27.057
Obesity (men)	1.805	0.022	470	527	0.969	0.012	1.849	1.761
Obesity (women)	1.749	0.019	572	722	0.828	0.011	1.712	1.787
Systolic Blood Pressure (men)	131.9	1.424	477	533	1.178	0.011	129.096	134.729
Systolic Blood Pressure (women)	120.7	1.295	569	724	1.203	0.011	118.093	123.213
Diastolic Blood Pressure (men)	80.29	0.9	477	533	1.206	0.011	78.512	82.069
Diastolic Blood Pressure (women)	75.73	0.598	569	724	1.049	0.008	74.546	76.91
Pulse (men)	72.94	0.703	477	533	1.036	0.01	71.547	74.326
Pulse (women)	74.12	0.568	569	724	0.958	0.008	73.001	75.245
Hypertensive (men)	0.246	0.025	500	564	1.071	0.101	0.197	0.295
Hypertensive (women)	0.234	0.023	603	767	1.059	0.992	0.28	0.188
Airflow Limitation (men)	0.09	0.18	500	564	1.258	0.213	0.049	0.12
Airflow Limitation (women)	0.08	0.011	603	767	0.906	0.141	0.058	0.103
Chronic Bronchitis (men)	0.03	0.009	500	564	0.956	0.312	0.011	0.046
Chronic Bronchitis (women)	0.03	0.01	603	767	1.006	0.333	0.01	0.473
Abnormal Peak Flow (men)	0.02	0.104	500	564	0.968	0.433	0.003	0.045
Abnormal Peak Flow (women)	0.04	0.011	603	767	1.057	0.264	0.192	0.061

Table B.17 Sampling errors - Asian sample, South Africa 1998

Variables	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Un-weighted (N)	Weighted (WN)			Value-2SE (R-2SE)	Value+2SE (R+2E)
Urban	0.982	0.018	393	406	2.681	0.019	0.945	1
No education	0.012	0.006	393	406	1.070	0.495	0.000	0.023
Reached standard 6 or higher	0.896	0.019	393	406	1.202	0.021	0.859	0.933
Never married	0.300	0.022	393	406	0.971	0.075	0.255	0.345
Currently married	0.615	0.024	393	406	0.996	0.040	0.566	0.664
Married before age 20	0.367	0.031	330	340	1.161	0.084	0.305	0.429
Sex before age 18	0.216	0.025	330	340	1.088	0.114	0.167	0.266
Children ever born	1.682	0.093	393	406	1.159	0.056	1.495	1.868
Children ever born to women over 40	2.676	0.180	100	102	1.172	0.067	2.317	3.035
Children surviving	1.612	0.084	393	406	1.097	0.052	1.443	1.78
Knowing any contraceptive method	0.990	0.009	242	250	1.506	0.010	0.972	1
Knowing any modern contraceptive method	0.990	0.009	242	250	1.506	0.010	0.972	1
Ever used any contraceptive method	0.938	0.018	242	250	1.133	0.019	0.902	0.973
Currently using any method	0.775	0.027	242	250	1.018	0.035	0.720	0.830
Currently using a modern method	0.767	0.028	242	250	1.018	0.036	0.712	0.823
Currently using pill	0.294	0.030	242	250	1.035	0.103	0.234	0.355
Currently using IUD	0.037	0.015	242	250	1.208	0.396	0.008	0.067
Currently using injections	0.038	0.011	242	250	0.909	0.294	0.016	0.061
Currently using condom	0.038	0.014	242	250	1.154	0.375	0.009	0.066
Currently using female sterilisation	0.356	0.030	242	250	0.965	0.084	0.296	0.415
Currently using male sterilisation	0.004	0.004	242	250	0.946	0.983	0.000	0.011
Currently using calendar/rhythm method	0.004	0.004	242	250	0.942	0.979	0.000	0.011
Currently using withdrawal	0.004	0.004	242	250	0.938	0.975	0.000	0.011
Using public sector source	0.638	0.043	216	224	1.315	0.068	0.552	0.724
Want no more children	0.391	0.032	242	250	1.008	0.081	0.328	0.454
Want to delay at least 2 years	0.070	0.019	242	250	1.131	0.265	0.033	0.108
Ideal number of children	2.472	0.070	387	399	1.042	0.028	2.333	2.612
Mothers received tetanus injection	0.344	0.051	110	114	1.006	0.148	0.242	0.446
Mothers received medical care at birth	0.992	0.008	110	114	0.949	0.008	0.975	1.000
Had diarrhoea in the last 2 weeks	0.065	0.028	107	111	1.184	0.436	0.008	0.121
Treated with ORS packets	0.467	0.228	6	7	1.204	0.489	0.010	0.923
Sought medical treatment	0.733	0.176	6	7	1.044	0.239	0.382	1.000
Having health card, seen	0.820	0.085	21	21	1.005	0.104	0.650	0.990
Received BCG vaccination	1.000	0.000	21	21	NA	0.000	1.000	1.000
Received DPT vaccination (3 doses)	0.910	0.062	21	21	0.981	0.068	0.786	1.000
Received polio vaccination (3 doses)	0.820	0.085	21	21	1.005	0.104	0.650	0.990
Received measles vaccination	0.910	0.065	21	21	1.026	0.071	0.780	1.000
Fully immunised	0.775	0.099	21	21	1.070	0.127	0.578	0.972
Total fertility rate (3 years)	-	-	-	-	-	-	-	-
Neonatal mortality rate (10 years)	-	-	-	-	-	-	-	-
Infant mortality rate (10 years)	-	-	-	-	-	-	-	-
Child mortality rate (10 years)	-	-	-	-	-	-	-	-
Under-five mortality rate (10 years)	-	-	-	-	-	-	-	-
Postneonatal mortality rate (10 years)	-	-	-	-	-	-	-	-
Currently smoking (occasionally or daily) (men)	0.542	0.04	183	195	1.129	0.074	0.461	0.623
Currently smoking (occasionally or daily) (women)	0.09	0.022	279	300	1.213	0.244	0.046	0.134
Drink alcohol >= 3 or 4 (week)(men)	0.005	0.005	183	195	0.987	0.987	0	0.015
Drink alcohol >= 3 or 4 (weekend)(men)	0.021	0.009	183	195	0.322	0.453	0.002	0.030
Drink alcohol >= 3 or 4 (week)(women)	-	-	279	300	-	-	-	-
Drink alcohol >= 3 or 4 weekend)(women)	-	-	279	300	-	-	-	-
Hip circumference (men)	95.62	1.084	173	186	1.095	0.011	93.442	97.805
Hip circumference (women)	100.3	0.761	261	282	0.939	0.008	98.8	101.859
Waist/hip ratio (men)	0.904	0.008	173	186	0.853	0.009	0.889	0.92
Waist/hip ratio (women)	0.799	0.007	261	282	1.299	0.009	0.785	0.813
MUAC (men)	29.17	0.331	173	186	0.91	0.011	28.503	29.834
MUAC (women)	28.63	0.342	261	282	1.171	0.012	27.943	29.316
Height (men)	170.4	0.57	173	186	1.015	0.003	169.248	171.543
Height (women)	155.6	0.562	261	282	1.16	0.004	154.459	156.714
Body Mass Index (men)	23.17	0.367	173	186	0.93	0.016	22.426	23.903
Body Mass Index (women)	25.17	0.406	261	282	1.041	0.016	24.354	25.984
Obesity (men)	1.909	0.021	173	186	0.997	0.011	1.866	1.952
Obesity (women)	1.786	0.026	261	282	0.983	0.015	1.732	1.839
Systolic Blood Pressure (men)	122.1	1.383	175	188	1.037	0.011	124.87	119.287
Systolic Blood Pressure (women)	113.6	1.596	261	280	1.113	0.014	110.367	116.796
Diastolic Blood Pressure (men)	76.35	0.938	175	188	0.998	0.012	74.46	78.247
Diastolic Blood Pressure (women)	72.6	0.788	261	280	1.036	0.011	71.016	74.19
Pulse (men)	78.57	0.808	175	188	1.01	0.01	76.937	80.197
Pulse (women)	79.09	0.794	264	283	1.132	0.01	77.494	80.691
Hypertensive (men)	0.187	0.028	183	195	0.941	0.153	0.129	0.244
Hypertensive (women)	0.18	0.022	279	300	0.937	0.125	0.135	0.225
Airflow Limitation (men)	0.09	0.023	183	195	0.969	0.257	0.043	0.136
Airflow Limitation (women)	0.125	0.019	279	300	0.958	0.154	0.086	0.163
Chronic Bronchitis (men)	0.03	0.016	183	195	1.005	0.559	0	0.062
Chronic Bronchitis (women)	0	0.005	279	300	0.992	0.7	0	0.016
Abnormal Peak Flow (men)	0.05	0.02	183	195	1.045	0.408	0.009	0.089
Abnormal Peak Flow (women)	0.03	0.01	279	300	1.133	0.391	0.006	0.048

APPENDIX C

DATA QUALITY TABLES

The purpose of this Appendix is to provide the data user with a view of the general quality of the SADHS data. The tables in this appendix refer to possible *non-sampling* errors: digit preference, rounding or heaping on certain ages or dates; omission of events occurring further in the past; deliberate distortion of information by some interviewers in an attempt to lighten their workloads; non-cooperation of the respondent in providing information or refusal to be measured and weighted, etc. A description of the magnitude of such errors is provided in the following paragraphs.

Only 89 cases had missing information which accounted for 0.15 percent. The distribution of the de facto household population by single year of age is presented in Table C.1. The data show very little preference to report ages that end in zeros and fives (age “heaping” or digit preference) that is commonly found in countries where ages are not known well. There is some evidence of irregularities in the age distribution.

There is some evidence that interviewers “displaced” women age 15 and 49 years outside of the eligible range (15-49) presumably in order to avoid the need to interview them. For example, the number of women age 14 is substantially higher than the number age 15. For women, the number reported at age 14 (863) is more than that reported at age 13 (757) and 362 more than that at age 15 (863). At the other end of the range, the number of women age 49 is lower than the number age 50, implying that interviewers assigned an age 50 (or 51) to women in order to avoid interviewing them. A comparative study of DHS surveys noted some severe displacement out of the eligible age range (Rutstein and Bicego, 1990). The men also appear to have been “displaced” and there are a relatively high number age 14 (824) compared to age 15 (564).

The age distribution of eligible women from the de facto household population is compared with the age distribution of the sampled women interviewed. Table C.2 shows that the distributions are very similar and that the response rate was consistent across all ages. From Table C3, it can be seen that the response rate in the adult survey was higher for women (94 percent) than for men (85 percent). It was slightly higher for older men (90 percent) than for those under 65 years of age.

Information on the completeness of reporting selected important variables is provided in Table C.4. Overall, the percentage of cases with missing information is low. Month of birth was missing for 2.2 percent of births that occurred in the 15 years before the survey and, both month and year were recorded missing for less than 1 percent. Age at death was missing for 8.4 percent of non-surviving births which problematic. The size of child at birth had a sizeable proportion missing (21.8%). The missing information on the size of the child at birth is more likely to be attributed to the child not having been weighed at birth than interviewer negligence. A fairly high proportion of children had missing information on diarrhoea (5 percent).

According to Table C.5, the information on birth dating is of good quality: both month and year of birth were provided for 97 percent of all births and for 98 percent of surviving children. As expected, information on birth dates is more complete for children who were still living at the time of the survey than for those who had died. The sex ratio at birth was 103.4, which is very much what would be expected, but there was some variation from year to year.

There is very little evidence of transference of births out of 1994 to earlier years to avoid lengthier questionnaires. In fact, the ratio of births in 1994 to the average of the two adjoining years is 103 which shows slightly more births in 1994 than the average births of the two adjoining years.

Measurement of childhood deaths through retrospective household surveys often suffers from under reporting of deaths, in particular those deaths which occur very early in infancy. If early neonatal deaths are selectively under reported, the result would be an abnormally low ratio of deaths under seven days to all neonatal deaths and an abnormally low ratio of neonatal to infant mortality. Changes in these ratios over time can be examined to detect the hypothesis that under reporting of early deaths is more common for births that occurred longer before the survey.

Table C.6 shows the distribution of deaths under one month of age at death in days, while Table C.6 shows the distribution of deaths under two years of age by age of death in months. The data suggest that early infant deaths have *not* been severely under reported in the SADHS, since the percentage of early neonatal deaths during the neonatal period (next-to-last row in Table C.6) are reasonable. There is evidence of heaping on 7 days but this does not detract from the reasonable quality of the information. From Table C.6 it can be seen that the proportion of infant deaths that occur during the neonatal period is also reasonable and fairly stable at 45-50 percent.

The sibling history section of the women's questionnaire compiles a list of all of a respondent's brothers and sisters and collects information on the survival status of each of these siblings, the ages of living siblings and the ages at death and years since death of siblings who have died. These data can be used to measure all-cause adult mortality directly as well as maternal mortality.

Respondents provided information on 50,323 siblings, 6367 of whom were reported to have died (see Table C.8). Respondents knew the survival status of almost all of the siblings they reported and were able to report an age for 95.3 percent of their living siblings. However, they could only report both an age at death and the interval in years since the death for 66.8 percent of their dead siblings. While either an age at death or an interval since death was reported for slightly more than half of these dead siblings, neither item of information is available for 15.5 percent of them. The data on sisters and brothers suffer from about the same degree of incomplete reporting.

If reporting about siblings is accurate, one would expect their aggregate age distribution to resemble that of the respondents, which should be representative in turn of that of the population as a whole. Table C.9 provides these age distributions. As only women aged 15 to 49 were interviewed and they have siblings who fall outside this age range, the siblings should have a rather more dispersed age distribution than the respondents. Moreover, in a growing population the siblings should be slightly older on average than the respondents. The data conform to these patterns. Thus, Table C.9 provides no evidence of serious omissions of older brothers and sisters from the sibling histories or of major biases in the reporting of siblings' ages.

As most of the respondents' mothers have reached the end of their childbearing ages, the average size of respondents' sibships (i.e. the respondent herself plus all of her brothers and sisters) should be approximately equal to total fertility at the time when the respondents were born. Moreover, the ratio of brothers ever-born to sisters ever-born should be about the same as the sex ratio at birth. As can be seen from Table C.10, the sibling histories indicate a plausible downward trend in fertility in South Africa. Moreover, the sex ratio of the reported siblings of 1.01 does not differ significantly from a plausible sex ratio at birth for South Africa of 1.03 and is broadly the same for all cohorts of respondents. These statistics provide no evidence of poor quality reporting on siblings by older respondents.

In summary, the only important limitation of the sibling history data revealed by these simple checks is that the ages at death of about 23 percent of dead siblings had to be imputed.

Adjustment of DHS provincial estimates

The level of under-five mortality observed in SADHS was lower than that derived from the 1996 census (Udjo, 1998) and even lower than that from the 1993 Living Standards and Development Survey - (SALDRU 1994). This is likely to result from differences in the methodology used in the respective surveys - the census and the LSDS used indirect methods based on the proportion of children ever born who are still alive while SADHS collected a detailed pregnancy history enabling a direct estimate. The approach used in SADHS is usually considered to be more reliable. When the provincial estimates of under-five mortality in SADHS are compared with those in the census and those in the LSDS however, it is found that there is a good correlation between them in all the provinces excepting the Western Cape, Free State and North West where they appear to be too low in SADHS. This suggests that an adjustment for the underestimates for these three provinces would be appropriate.

An adjustment was made by using the underlying relationship between the child mortality observed in SADHS and the census results that were observed in the remaining provinces where there was good correlation. The child mortality in the three provinces could then be predicted from the level that was observed for that province in the census. The relationship between infant and child mortality observed in SADHS, excluding the three provinces could then be used to derive an adjusted infant mortality rate. The adjusted national and provincial rates are shown in Table C.11. Allowing for the underestimates in these three provinces the adjustment suggests that the national child mortality rates should be adjusted by a factor of 6.1%. While the adjusted rates should provide good estimates of child mortality for each province, reasons for the underestimates in these three provinces need to be explored.

The census and the Living Standards and Development Survey (LSDS) estimates of under five mortality are derived using a method developed by Brass (Brass 1964). The estimates used from the census correspond to the reference periods 1994.1 and 1992.3 using the data of women aged 20-24 and 25-29 respectively. The corresponding reference period from the LSDS is 1992.3 using the data of women aged 20-24. Table C.12 compares these to the SADHS rates which are based on the period 10 years before the survey and centres on the year 1993.

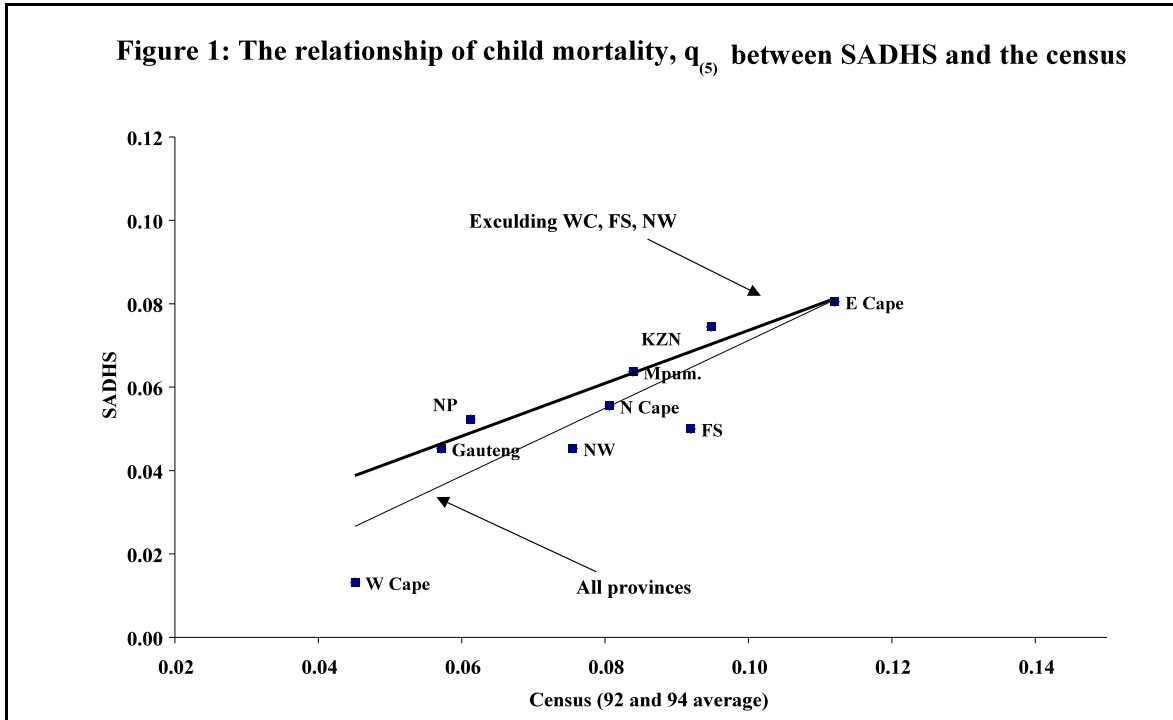
As can be seen from Figure 1, the relationship between the provincial $q_{(5)}$ estimates from the census and those from the SADHS show that there is a very good correlation between them excepting for the Western Cape, Free State and North West provinces where the mortality observed in SADHS appears to be lower than what would be expected. The correlation between the two sets of estimates show that the census 1992 estimate has the most agreement with the SADHS. An average of the 1992 and 1994 values gives a higher correlation. This average has been used to estimate the relationship between the SADHS child mortality and the census level. The correlation coefficients for the SADHS and the census for 1992, 1994, and an average of 1992 and 1994 are, 0.917, 0.925 and 0.93 respectively.

The relationship between $q_{(5)}$ estimates from the census and $q_{(5)}$ from the SADHS are shown in the graph and a line is fitted for the 6 provinces with reliable estimates which predicts $q_{(5)}$ for the 3 underestimated provinces using the equation :

$$q_{(5)} = 0.6343 * \text{census } q_{(5)} + 0.0102$$

Infant mortality is derived using the adjusted $q_{(5)}$ estimates and the equation:

$$q_{(1)} = 0.6920 * \text{adjusted } q_{(5)} + 0.0031$$



References

Brass W 1964 cited in Manual X. Indirect Techniques for Demographic Estimation. Department of International and Social Affairs. Population Studies Report No.81. United Nations, New York 1983.

SALDRU 1994. South Africans rich and poor: Baseline household statistics. Cape Town: South Africa Labour Development Research Unit, University of Cape Town.

Udjo E 1997. Additional evidence regarding fertility and mortality trends in South Africa and implications for population projections. Statistics South Africa, Pretoria.

Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), South Africa 1998

Age	Male		Female		Age	Male		Female	
	Number	Percent-age	Number	Percent-age		Number	Percent-age	Number	Percent-age
0	552	2.3	558	2.0	37	254	1.0	351	1.3
1	517	2.1	550	2.0	38	293	1.2	341	1.2
2	542	2.2	536	1.9	39	253	1.0	329	1.2
3	562	2.3	541	2.0	40	291	1.2	337	1.2
4	588	2.4	622	2.3	41	190	0.8	255	0.9
5	613	2.5	588	2.1	42	266	1.1	289	1.0
6	739	3.1	703	2.5	43	247	1.0	259	0.9
7	744	3.1	717	2.6	44	176	0.7	234	0.8
8	644	2.7	676	2.4	45	231	1.0	253	0.9
9	621	2.6	668	2.4	46	167	0.7	215	0.8
10	697	2.9	688	2.5	47	176	0.7	206	0.7
11	631	2.6	662	2.4	48	168	0.7	207	0.7
12	764	3.2	753	2.7	49	186	0.8	157	0.6
13	701	2.9	757	2.7	50	212	0.9	441	1.6
14	824	3.4	863	3.1	51	127	0.5	252	0.9
15	564	2.3	501	1.8	52	160	0.7	282	1.0
16	571	2.4	482	1.7	53	159	0.7	220	0.8
17	582	2.4	464	1.7	54	154	0.6	196	0.7
18	567	2.3	521	1.9	55	146	0.6	202	0.7
19	481	2.0	428	1.5	56	132	0.5	196	0.7
20	459	1.9	442	1.6	57	110	0.5	204	0.7
21	444	1.8	475	1.7	58	152	0.6	188	0.7
22	385	1.6	474	1.7	59	126	0.5	197	0.7
23	377	1.6	449	1.6	60	141	0.6	248	0.9
24	397	1.6	402	1.5	61	103	0.4	153	0.6
25	372	1.5	463	1.7	62	104	0.4	198	0.7
26	294	1.2	334	1.2	63	102	0.4	145	0.5
27	335	1.4	410	1.5	64	106	0.4	188	0.7
28	314	1.3	401	1.5	65	149	0.6	194	0.7
29	298	1.2	358	1.3	66	79	0.3	100	0.4
30	336	1.4	376	1.4	67	98	0.4	139	0.5
31	247	1.0	319	1.2	68	98	0.4	150	0.5
32	278	1.1	377	1.4	69	84	0.3	124	0.4
33	234	1.0	358	1.3	70+	618	2.6	1,146	4.1
34	269	1.1	359	1.3	Don't know				
35	309	1.3	382	1.4	missing	51	0.2	38	0.1
36	252	1.0	345	1.2					
					Total	24,215	100.0	27,643	100.0

Note: The de-facto population includes all residents and non residents (visitors) who slept in the household the night before the interview.

Table C.2 Age distribution of eligible and interviewed women

Percent distribution by age of the de facto household population of women age 10-54, and of interviewed women age 15-49, and percentage of eligible women who were interviewed (weighted), South Africa 1998

Age	Household		Women interviewed		
	Number	Percent-age	Number	Percent-age	Percentage interviewed
10-14	3,724	NA	NA	NA	NA
15-19	2,397	19.1	2,275	19.3	94.9
20-24	2,243	17.9	2,099	17.8	93.6
25-29	1,966	15.7	1,855	15.8	94.3
30-34	1,790	14.3	1,680	14.3	93.8
25-39	1,747	13.9	1,623	13.8	92.9
40-44	1,374	10.9	1,279	10.9	93.1
45-49	1,039	8.3	965	8.2	92.9
50-54	1,392	NA	NA	NA	NA
15-49	12,557	NA	11,775	NA	93.8

NA= Not applicable

Note: The de facto population includes all residents and non-residents who slept in the household the night before interview.

Table C.3 Age distribution of eligible and interviewed adults

Percent distribution by age of the de facto household population of adults age 15 and above and of the interviewed adults age 15 and above, and percentage of eligible adults who were interviewed (weighted), South Africa 1998

Age	Adult men 15+					Adult women 15+				
	Household		Men interviewed			Household		Women interviewed		
	Number	Percentage	Number	Percentage	Percentage interviewed	Number	Percentage	Number	Percentage	Percentage interviewed
15 - 24	2,056	31.4	1,805	32.3	87.8	2,157	25.3	2,041	25.7	94.6
25 - 34	1,310	20.0	1,095	19.6	83.6	1,824	21.4	1,690	21.3	92.6
35 - 44	1,205	18.4	1,992	17.8	82.3	1,530	18.0	1,408	17.7	92.0
45 - 54	841	12.8	687	12.3	81.7	1,155	13.6	1,087	13.6	94.1
55 - 64	580	8.9	506	9.1	87.2	958	11.2	905	11.3	94.5
65+	555	8.5	502	9.0	90.4	896	10.5	853	10.7	95.2
15+	6,547	100.0	5,587	100.0	85.3	8,520	100.0	7,984	100.0	93.7

Table C.4 Completeness of reporting

Percentage of observations missing information for selected demographic and health questions, South Africa 1998

Subject	Reference group	Percentage with missing information	Number
Birth Date	Last 15 years		
Month only		2.16	15,289
Month and year		0.72	15,289
Age at death	Death to births in last 15 years	8.35	906
Age/date at first union ¹	Ever-married women	2.51	6,070
Respondent's education	All women 15-49	0.00	11,735
Child's size at birth	Births in last 1-59 months	21.77	4,345
Diarrhoea in last 2 weeks	Living children age 1-59 months	4.98	4,740

¹Both year and age missing

Table C.5 Births by calendar year

Distribution of births by calendar year of birth since birth for living (L), dead (D), and all (A) children, according to reporting completeness, sex ratio at birth, and ratio of births by calendar year, South Africa 1998

Year	Total number of births			Percentage with complete birth date ¹			Sex ratio at birth ²			Calendar ratio ³			Number of male births			Number of female births		
	L	D	A	L	D	A	L	D	A	L	D	A	L	D	A	L	D	A
98	272	5	276	100.0	100.0	100.0	111.1	NA	114.9	-	-	-	143	5	148	129	0	129
97	1,014	61	1,075	98.9	90.3	98.4	94.3	146.1	96.6	158.0	210.1	160.2	492	36	528	522	25	547
96	1,012	53	1,065	99.1	89.8	98.7	97.2	157.6	99.6	107.0	90.3	106.0	499	32	531	513	21	534
95	878	57	935	98.0	99.1	98.0	95.5	151.4	98.2	90.5	114.1	91.7	429	34	463	449	22	472
94	928	46	974	98.0	97.8	98.0	110.6	148.6	112.1	103.9	86.8	103.0	487	28	515	441	19	459
93	907	50	957	98.9	83.3	98.1	104.5	82.0	103.2	89.0	78.8	88.4	464	22	486	444	27	471
92	1,112	80	1,192	97.7	89.8	97.2	93.4	138.9	95.9	108.9	170.1	111.6	537	47	584	575	34	608
91	1,134	45	1,179	98.4	78.0	97.6	106.9	77.7	105.6	106.9	69.4	104.8	586	19	605	548	25	573
90	1,010	48	1,058	98.0	88.4	97.6	96.4	139.3	98.0	96.7	89.9	96.4	496	28	524	514	20	534
89	954	63	1,017	97.1	84.6	96.3	88.3	190.2	92.4	-	-	-	447	41	488	507	22	528
94-98	4,104	221	4,325	98.6	94.2	98.4	99.8	156.4	102.1	-	-	-	2,051	135	2,185	2,054	86	2,140
89-93	5,117	285	5,403	98.0	85.4	97.3	97.8	123.4	99.0	-	-	-	2,530	158	2,687	2,588	128	2,715
84-88	4,485	355	4,840	97.8	91.0	97.3	99.5	139.1	101.9	-	-	-	2,237	206	2,443	2,248	148	2,396
79-83	3,641	358	3,999	97.5	83.1	96.2	111.9	121.6	112.7	-	-	-	1,923	196	2,119	1,718	162	1,880
< 79	3,599	589	4,189	97.1	82.9	95.1	101.2	118.4	103.5	-	-	-	1,811	320	2,130	1,789	270	2,059
All	20,947	1,808	22,756	97.8	86.3	96.9	101.5	127.9	103.4	-	-	-	10,551	1,015	11,566	10,396	794	11,190

NA = Not applicable

¹Both year and month of birth given

² $(B_m/B_f)*100$, where B_m and B_f are the numbers of male and female births, respectively

³ $[2B_x/(B_{x-1}+B_{x+1})]*100$, where B_x is the number births in calendar year x

Table C.6 Reporting of age at death in days

Distribution of reported deaths under 1 month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, for five year periods preceding the survey, South Africa 1998

Age at death (in days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	12	21	17	16	67
1	28	19	33	26	105
2	14	11	11	10	45
3	4	7	7	6	24
4	4	1	4	3	11
5	2	6	3	0	10
6	2	5	1	0	9
7	7	4	6	7	25
8	0	0	3	3	6
9	4	0	0	3	7
10	6	1	4	1	13
12	1	0	0	0	1
13	0	0	1	0	1
14	7	8	3	5	23
15	0	1	0	4	5
16	0	0	0	0	1
18	0	1	0	1	2
19	0	1	0	0	1
20	2	1	0	0	3
21	2	2	4	1	9
22	0	0	2	0	3
25	1	0	0	0	1
30	0	1	6	0	7
Total 0-30	96	91	104	87	378
Missing	1	1	0	2	4
Percent early neonatal ¹	68.4	76.8	72.2	69.5	71.7

¹Percent early neonatal: 0-6 days/0-30 days

Table C.7 Reporting of age at death in months

Distribution of reported deaths under 2 years of age by age at death in months and the percentage of infant deaths reported to occur at ages under one month, for five-year periods preceding the survey, South Africa 1998

Age at death (in months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
< 1 ^a	97	92	104	89	382
1	18	16	14	17	64
2	16	17	15	7	55
3	10	10	23	20	63
4	13	6	10	8	37
5	10	5	4	9	29
6	6	13	16	14	49
7	6	1	9	8	23
8	11	6	5	12	34
9	8	12	14	13	46
10	4	5	3	2	14
11	4	5	6	4	18
12	15	20	24	18	77
13	0	1	1	0	2
14	2	1	0	5	8
15	2	1	3	2	8
16	0	0	2	1	4
17	0	1	3	1	5
18	0	0	1	7	8
19	0	0	0	0	1
20	0	0	0	0	1
1 Year	6	12	9	9	36
Total 0-11 ^b	201	187	224	202	814
Percent Neonatal ^c	48.1	49.0	46.7	44.2	46

^a Includes deaths under 1 month reported in days.

^b Includes cases for which age at death (in exact months) is not known.

^c Deaths under 1 month divided by deaths under 1 year multiplied by 100.

Table C.8 Data on siblings: completeness of the reported data

Number of siblings reported by survey respondents and completeness of the reported data on age, age at death (AD), and years since death (YSD), South Africa 1998

Sibling status and completeness of reporting	Sisters		Brothers		Total	
	Number	Percent	Number	Percent	Number	Percent
All siblings	25,053	100.0	25,270	100.0	50,323	100.0
Living	22,514	89.9	21,319	84.4	43,834	87.1
Dead	2,497	10.0	3,870	15.3	6,367	12.7
Missing survival status	41	0.2	81	0.3	122	0.2
Living siblings	22,514	100.0	21,319	100.0	43,834	100.0
Age reported	21,467	95.4	20,301	95.2	41,769	95.3
Age missing	1,047	4.7	1,018	4.8	2,065	4.7
Dead siblings	2,497	100.0	3,870	100.0	6,367	100.0
AD and YSD reported	1,636	65.5	2,619	67.7	4,255	66.8
Only AD missing	148	5.9	302	7.8	450	7.1
Only YSD missing	306	12.3	368	9.5	674	10.6
AD and YSD missing	408	16.3	580	15.0	988	15.5

* AD=age at death, YSD=years since death

Table C.9 Percent distribution of respondents and their siblings by birth cohort, South Africa, 1998

Year of birth	Repondents	Siblings
Before 1945	0.0	4.1
1945-49	2.1	5.3
1950-49	9.6	7.4
1955-59	12.1	11.6
1960-64	14.3	13.8
1965-69	14.4	14.6
1970-74	16.4	13.9
1975 or later	31.1	29.1
All years	100.0	100.0
Median year of birth	1969	1967
Number of cases	11,735	50,285

Table C.10 Mean sibship size and sex ratio at birth of siblings by respondents' birth cohort, South Africa, 1998

Year of birth	Mean sibship size	Sex ratio at birth
1940s	6.3	100.9
1950-54	6.0	94.3
1955-59	5.7	96.3
1960-64	5.6	103.1
1965-69	5.5	103.1
1970-74	5.2	98.3
1975-79	4.9	105.9
1980-84	4.5	104.1
All years	5.3	100.9

Table C.11 Adjusted provincial and national estimates of infant and under-five mortality rates observed in the 10 year period preceding the survey

Province	Adjusted Infant mortality rate per 1000 births	Adjusted under-five mortality rate per 1000 births
Western Cape*	30.0	38.8
Eastern Cape	61.2	80.5
Northern Cape	41.8	55.5
Free State*	50.5	68.5
KwaZulu Natal	52.1	74.5
North West*	43.3	58.1
Gauteng	36.3	45.3
Mpumalanga	47.3	63.7
Northern	37.2	52.3
South Africa	47.8	60.4

*These provinces have been adjusted on the basis of the relationship between SADHS and the 1996 census data observed in the remaining provinces.

Table C.12 Under-five mortality rates derived from the 1996 census, LSDS and the SADHS

Province	Census 1992.3	Census 1994.1	LSDS	SADHS
Western Cape*	43.8	46.4	113.9	13.2
Eastern Cape	110.2	113.9	157.5	80.5
Northern Cape	80.4	80.8	97.5	55.5
Free State*	91.2	92.7	181.3	50.0
KwaZulu Natal	93.2	96.3	113.2	74.5
North West*	73.4	77.6	130.6	45.3
Gauteng	54.1	60.2	66.9	45.3
Mpumalanga	86.7	81.1	104.4	63.7
Northern	60.1	62.4	79.6	52.3

*Child mortality in these provinces is considered to be under reported in SADHS when compared with the LSDS and the census.

APPENDIX D

REFERENCE AND PREDICTIVE VALUES FOR PEAK EXPIRATORY FLOW RATE (PEFR)

Lung function is related to physical characteristics such as age and height. In order to assess the Peak Expiratory Flow Rate (PEFR) measurement it is necessary to establish reference values for PEFR for the South African population. These reference values, based on a healthy asymptomatic sample can then be used to standardise the PEFR of every individual in the sample for his or her physical characteristics.

A healthy sub-sample of the SADHS adult sample was created by excluding individuals with the following reported health and lung problems or status:

- 1) smokers
- 2) asthma
- 3) chronic bronchitis
- 4) reported asthma
- 5) reported TB
- 6) reported emphysema/bronchitis
- 7) reported lung cancer
- 8) pregnant women.

After these exclusions the data of the remaining sample was checked for outliers and inconsistencies in the data. The final sample size for the PEFR reference values is given in Table D1.

Description	Men	Women	Total
Total SADHS	5750	8067	13817
Total PEFR	5642	7884	13526
Total PEFR standardised	5604	7806	13410
Total healthy sub-sample	2373	5080	7453

PEFR was not measured in about 300 adults and another 100 adults had missing information on the variables used for the standardisation of PEFR.

Estimation of Reference Values

The modeling of PEFR in the healthy sub-sample consists of two components:

- i) the mean predicted value for a male or female of a specific age, height and weight
- ii) the mean predicted standard deviation in the population at the covariate values of (i).

Linear regression models were used for both of the components. The regression was done using only the basic characteristics of each subject: age in years, weight in kg, height in meters and sex. These are shown in Table D2 for men and women.

Table D2. Descriptive statistics for the healthy sub-sample

Characteristic	Men		Women	
	n=2373		n=5080	
	Mean	SD	Mean	SD
Age (years)	31	17	36	17
Weight (kg)	64	15	67	16
Height (m)	1.67	0.08	1.60	0.07
PEFR (liters/min)	370	108	306	84

In the case of the mean predicted value, the dependent variable PEFR was transformed by taking the natural logarithm of PEFR as a variance stabilising transformation.

In the case of the mean predicted standard deviation, the absolute value of the residuals from the log(PEFR) model was used as the dependent variable (Altman, 1993).

Regression Models

Both models consist of high order polynomials in the predictor variables and have interaction terms especially for sex to model the regression function for males and females. The higher order polynomials used, reflect the non-linear relationship of PEFR over especially age and weight ranges. All three the predictor variables (age, height and weight) were evaluated for the significance of fourth order polynomials and interactions. Since the models were developed for predictive purposes only the significant terms were included in the final model.

The inverse of height was used as a predictor which corresponds to the adjustment used for height in the calculation of the body mass index.

The estimated parameters of the two regression models are given in Table D3.

Table D3. Estimation equations

Regression model for log (pefr)

$$\begin{aligned}
 \text{pred_log(pefr)} = & 4.961423416 + \\
 & -0.021814972 \text{ *age} + \\
 & 0.000831883 \text{ *age**2} + \\
 & -0.000013905 \text{ *age**3} + \\
 & 0.000000072 \text{ *age**4} + \\
 & -0.227671804 \text{ *sex} + \\
 & 0.048494426 \text{ *age*sex} + \\
 & -0.001711697 \text{ *age**2*sex} + \\
 & 0.000024669 \text{ *age**3*sex} + \\
 & -0.000000126 \text{ *age**4*sex} + \\
 & 0.405514263 \text{ *ilht} + \\
 & 0.037593478 \text{ *wht} + \\
 & -0.000268379 \text{ *wht**2} + \\
 & 0.000000906 \text{ *wht**3} + \\
 & -0.019598017 \text{ *ilht*wht} + \\
 & 0.001108633 \text{ *wht*sex} + \\
 & -0.269653218 \text{ *ilht*sex}
 \end{aligned}$$

R-square =.214

Root MSE=.2541

Mean log (PEFR)=5.75025

Regression model for the standard deviation of log (pefr)

```
sd_log(pefr)= sqrt(3.141592654/2)*  
(0.0468321524 +  
 0.0121021061 *age +  
 -0.0003260880 *age**2 +  
 0.0000032264 *age**3 +  
 -0.0000000085 *age**4 +  
 -0.1984145411 *sex +  
 0.0225272293 *age*sex +  
 -0.0009063496 *age**2*sex +  
 0.0000143916 *age**3*sex +  
 -0.0000000778 *age**4*sex +  
 0.0000014714 *wht +  
 0.0006113482 *wht*sex)
```

R-square=.0117

Root MSE=.16033

Mean of absolute residuals=.19608

wht: weight in kg

ilht: 1/height (invers of height in meters)

sex: gender indicator with male=1, female=0

sqrt: square root

+: addition

*: multiply

** : to the power

Standardisation

The standardised values or Z-scores of PEFR is then obtained from the following equation :

$$z_pefr = (\log(\text{PEFR}) - \text{pred_log(pefr)}) / \text{sd_log(pefr)}$$

Where a PEFR was more than 2 standard deviations below the predicted value, it was considered abnormal and this cut-off was used in the total adult sample.

Graphical Displays

The following two figures display the scatterplot of PEFR versus age by sex. Superimposed on each plot as a smoothed curve which estimates the mean predicted PEFR value across the age range only, based on the healthy sub-sample.

Figure 1: Peakflow versus age in Males from healthy sub-sample

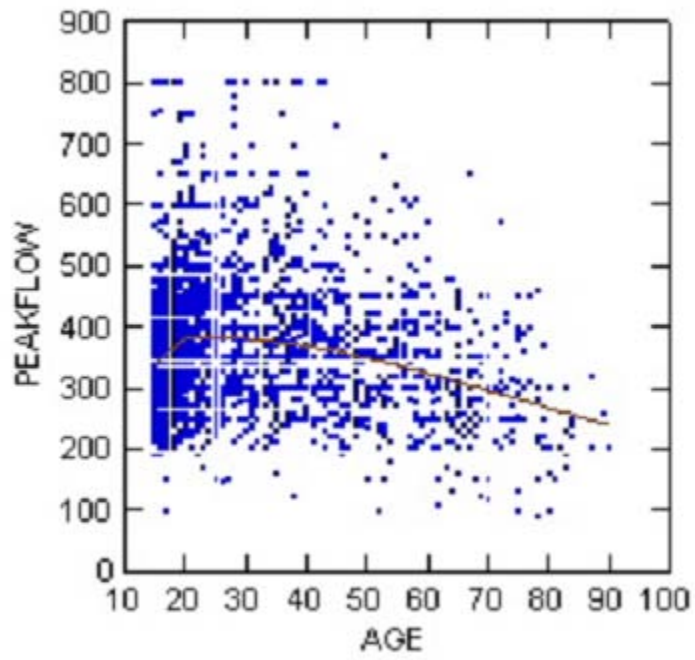
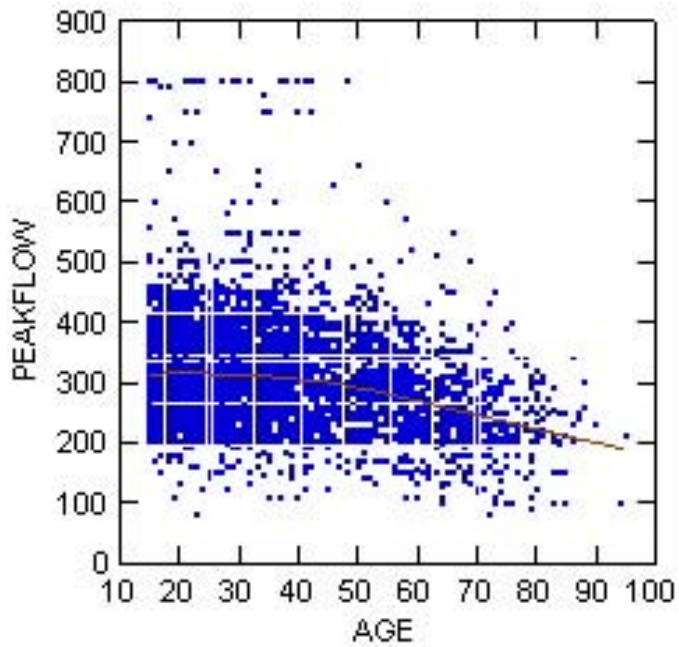


Figure 2 Peakflow versus age in Females from healthy sub-sample



PEFR Measurements

The following points about the PEFr measurement should be noted as background to the reference values that have been modeled.

- 1) The Peak Expiratory Flow Rate meter is a very crude device and the majority of the measurements were rounded to the nearest 50 liters/minute by the field workers.
- 2) The fieldworkers were required to write a referral note for the participant if he or she could not reach the reference value of 200 liters/minute. This possibly introduced an upward bias in the recordings to the level of 200 and 250 liters/minute or resulted in differential motivation by the fieldworkers so as to avoid this interaction with the respondent. Since the average PEFr for females is 306 l/min (SD=83) compared to 370 l/min (SD=108) for males, the regression models for women will be more affected. By combining the female and male data for the estimation of the reference values, this bias will have been reduced.
- 3) The maximum reading of the meter is 800 l/min. This censoring was not taken into account in the modeling since it involved a small number of participants.

The nonlinear relationship of PEFr against age, the threshold bias at 200 l/min, the censoring at 800 l/min and the heterogeneous variance across age is evident from both of the figures 1 and 2.

APPENDIX E

PERSONS INVOLVED IN THE 1998 SOUTH AFRICAN DEMOGRAPHIC AND HEALTH SURVEY

Members of the Management Committee

Dr Lindiwe Makubalo (Chair)	Department of Health Pretoria
Dr Shaheen Khotu	Department of Health Pretoria
Dr Debbie Bradshaw	Medical Research Council Cape Town
Ms Nolwazi Mbananga (Co-ordinator)	Medical Research Council Pretoria

Members of the Project Technical Team

Dr Lindiwe Makubalo	Department of Health Pretoria
Dr Rose Mulumba	Department of Health Pretoria
Ms Lusanda Mahlasela	Department of Health Pretoria
Mrs Golda Chimere-Dan	Department of Health Pretoria (formerly)
Ms Elizabeth Dartnall	Department of Health Pretoria (formerly)
Mr Steven Titus	Department of Health Pretoria (formerly)
Ms Annemieke van Middelkoop	Department of Health Pretoria (formerly)
Dr Debbie Bradshaw	Medical Research Council Cape Town
Dr Krisela Steyn	Medical Research Council Cape Town
Mrs Jean Fourie	Medical Research Council Cape Town
Ms Desiree Pieterse	Medical Research Council Cape Town
Ms Ria Laubscher	Medical Research Council Cape Town
Ms Nolwazi Mbananga	Medical Research Council Pretoria
Dr Rachel Jewkes	Medical Research Council Pretoria
Dr Jonathan Levin	Medical Research Council Pretoria
Dr Peggy Schrieber	Medical Research Council Pretoria (formerly)
Mr Johan van Zyl	Human Sciences Research Council Pretoria
Ms Annie Cross	Macro International Calverton Maryland US
Mr Guillermo Rojas	Macro International Calverton Maryland US
Dr Pav Govindasamy	Macro International Calverton Maryland US

Provincial Coordinators

Mr Z Ahmed	KwaZulu-Natal
Mrs A Swarbreck	KwaZulu-Natal
Mrs C Sebekedi	North West
Mr MM Hogue	North West
Ms L van der Bank	Free State
Mr Harry Theba	Northern Cape
Mr Pillay	Northern Cape
Dr A Verburgh	Mpumalanga
Dr Farshid Meidany	Eastern Cape
Ms P Moropyane	Gauteng
Mrs Judy Glynn	Gauteng
Mrs Z Airey	Western Cape

Dr N Shaikh
Mrs Hettie Muller
Mr Sinah Mahlangu

Western Cape
Northern Province
Northern Province

Contributors to Report

Dr Lindiwe Makubalo	Department of Health Pretoria
Dr Rose Mulumba	Department of Health Pretoria
Ms Lusanda Mahlasela	Department of Health Pretoria
Ms Nobayeni Dladla	Department of Health Pretoria (formerly)
Mr Steven Titus	Department of Health Pretoria (formerly)
Mrs Golda Chimere-Dan	Department of Health Pretoria (formerly)
Dr Mmipe Saasa-Modise	Department of Health Gauteng
Dr David Rees	National Centre for Occupational Health
Dr Danuta Kielkowski	National Department of Health
Dr Debbie Bradshaw	Medical Research Council Cape Town
Ms Jean Fourie	Medical Research Council Cape Town
Dr Rachel Jewkes	Medical Research Council Pretoria
Ms Ria Laubscher	Medical Research Council Cape Town
Dr Jonathan Levin	Medical Research Council Pretoria
Dr Carl Lombard	Medical Research Council Cape Town
Ms Nolwazi Mbananga	Medical Research Council Pretoria
Ms Nadine Nannan	Medical Research Council Cape Town
Dr Charles Parry	Medical Research Council Cape Town
Dr Margie Peden	Medical Research Council Cape Town (formerly)
Ms Desiree Pieterse	Medical Research Council Cape Town
Dr Thandi Puoane	Medical Research Council Cape Town
Mr Johan van Zyl	Human Sciences Research Council Pretoria
Prof Dingie van Rensburg	Free State University
Ms Annie Cross	Macro International Calverton Maryland US
Dr Rodney Ehrlich	University of Cape Town
Dr Neil White	University of Cape Town
Prof Gretchen Du Plessis	UNISA
Dr Mags Beksinska	Reproductive Health Research Unit
Dr Helen Rees	Reproductive Health Research Unit
Dr Sulaiman Bah	Stats South Africa
Dr Ian Timaeus	London School of Hygiene and Tropical Medicine
Prof Geoff Solarsh	University of Natal
Dr Yusuf Saloojee	National Council Against Smoking
Prof Hanif Moola	University of the Western Cape
Dr Sudeshni Naidoo	University of Stellenbosch
Prof Usuf Chikite	University of Stellenbosch
Dr Florence Bitalebeho	University of the Witwatersrand

Data Processing Staff

Desiree Pieterse	(Supervisor)	Medical Research Council Cape Town
Godfrey Bennett	(Administrator)	Medical Research Council Cape Town
Marilyn Littler	(Data entry operator)	Medical Research Council Cape Town
Dagmar Buckton	(Data entry operator)	Medical Research Council Cape Town

Gyreah Cariem	(Data entry operator)	Medical Research Council Cape Town
Mymona Jappie	(Data entry operator)	Medical Research Council Cape Town
Rowena Adams	(Data entry operator)	Medical Research Council Cape Town
Nadia Godenshweig	(Data entry operator)	Medical Research Council Cape Town
Karon Carr	(Data entry operator)	Medical Research Council Cape Town
Princess Bunge	(Data entry operator)	Medical Research Council Cape Town
Beatrice Nojilana	(Office editor)	Medical Research Council Cape Town
Lebohang Seklohomi	(Office editor)	Medical Research Council Cape Town
Katja Rossouw	(Office editor)	Medical Research Council Cape Town
Elize De Kock	(Typist)	Medical Research Council Cape Town

Fieldwork Agency

Prof D van Rensburg	Centre for Health Systems Research and Development Free State University
Mr Phillip Vermeulen	King Finance

Fieldwork Coordinators

Dr Lucius Botes	Centre for Health Systems Research and Development Free State University
Mr Christo Heunis	Centre for Health Systems Research and Development Free State University

Fieldwork Teams

Eastern Cape

F Sykes	N Tuswa
XN Pongwana	N Mamve
C Show	C Thys,
N Ngwane	TS Kefile
N Nyikana	BD Kaismashe
Madikane	AB Mgidlana
NP Bethe	W Qamarwana
N Ndayi	DB Kentane
N Motaung	N Malindi
NB Mbatyoti	NL Tywakadi
CS Maqubela	TM Machesa
L Mziba	EL Grootboom
PS Williams	N Mbengashe
N Gcaza	DMA Foster
JV Summerton	HC Nosilela
NM Mkalipi	N Makamba
LR Pieters	

KwaZulu-Natal

NM Nala	ZN Lushaba
M Nkgadima	T Arntz
HN Mphalulo	K Moodley

Free State

PA Venter
C Vorster
LLA Ramncwana
KF Meteza
JA Pelser
N Redelinghuys
MA Menyatso
MC Janku
C Smith
GJJ Dippenaar
T Malakoane
IM Mohale
EC Le Roux
DV Rammile
NE Dakile
C Manzana

Gauteng

JA Heunis
AS Mathivha
AH Nkosi

N Shabane
S Seedat
LA Dladla
MV Oakes
MR Elliah
M Madela
SJ Sithole
NRZ Khoza
EC Ketzie
PJ Sithole
JC Nkwanyana
HN Mphalulo
T Naiker

DS Thaver
TE Tombe
MP Mngoma
NL Ndlovu
OR Naidoo
NC Nyawose
PN Majola
R Sims
LE Magasela
NKF Thusi
BQ Langeni
SK Nala

AT Cooper
AG Jooste
ME Masemola
MG Mokoboto
B Tshabalala
SM Nhlati
TRC Ntsonza
SP Makhathini
SM Sebopela
B Kekana

Mpumalanga

WJ Van Wyk
AW Sibiya
TF Khoza
AM Mawecele
EE Kubheka
AJ Van Wyk
TH Sibiya
LX Ndhlovu
SR Fakude
SL Lokothwayo
SD Naves
MJ Phetla
ZB Nkosi
PL Mthombeni
SE Thenjekwayo
AS Mhtombeni
NB Zondo
KJ Malopi

Northern

SR Maswanganye
TM Managa
TM Maponya
MJ Malotane
MJ Ntsoane
FM Letsoalo
ME Modiba
AM Mashangoane
MM Lestoalo
VA Mavhungu
E Negukhula
NP Siaga
SJ Kekana
R Ramorulane
RT Kgafela
RI Ralefe

North West

M Ramongala
LL Willard
C Mmatli
KR Gaetsewe
CM Van Wyk
MJ Jack
MH Maduna
AP Baholo
NG Willard
ML Tau
MA Lekhasane
BM Thoabala
DS Kalaote
ML Willard
ME Thoane
TG Sehole
A Aphane

Northern Cape

CGB Paterson JS Plaatjie
BM Shaw
BC Africa
SD Bailey
MJ Lecwidi
KI Gaonakala
JC West
JE Van der Straat
VH Bruce
A Theron
B Van Rhyn
LH Tau
L Strauss
B Smit
RM Mapalle

Western Cape

CJ Van der Walt
MA Filane
KP Lediga
Y Steyn
ME Fortuin
L Nokonongo
GA Rutowski
PN Cagwe
A Van Wyk
P Sipamla
LP Estherhuizen
RZS Steenkamp
TA Selana
G Montewa
AG Mgciza
NM Sishuba

Fieldwork Training

Dr Debbie Bradshaw
Dr Lucius Botes
Mr Christo Heunis
Ms Annie Cross
Medical Research Council Cape Town
Centre for Health Systems Research and Development Free State University
Centre for Health Systems Research and Development Free State University
Macro International Calverton Maryland US

Dr Pav Govindasamy	Macro International Calverton Maryland US
Ms Nolwazi Mbananga	Medical Research Council Pretoria
Dr Peggy Schrieber	Medical Research Council Pretoria (formerly)
Mr Johan van Zyl	Human Sciences Research Council Pretoria
Ms Poppy Nkai	Human Sciences Research Council Pretoria
Ms Pindiwe Tsebe	Human Sciences Research Council Pretoria
Dr Jonathan Levin	Medical Research Council Pretoria
Dr Rachel Jewkes	Medical Research Council Pretoria
Dr Krisela Steyn	Medical Research Council Cape Town
Ms Desiree Pieterse	Medical Research Council Cape Town
Ms Jean Fourie	Medical Research Council Cape Town
Ms Naeema Abrahams	Medical Research Council Cape Town
Ms Hanneke Truter	Medical Research Council Cape Town (formerly)
Prof Willie Molentze	Free State University
Ms Daleen Oosthuizen	Free State University



12/1/98

SOUTH AFRICAN DEMOGRAPHIC AND HEALTH SURVEY ADULT HEALTH QUESTIONNAIRE



IDENTIFICATION	
PROVINCE _____ DISTRICT _____ EA NUMBER EA TYPE SADHS CLUSTER NUMBER HOUSEHOLD NUMBER NAME AND LINE NUMBER OF ADULT _____ NAME OF HOUSEHOLD HEAD _____	

INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY _____ MONTH _____ YEAR _____
INTERVIEWER'S NAME	_____	_____	_____	NAME _____
RESULT*	_____	_____	_____	RESULT _____
NEXT VISIT: DATE	_____	_____		TOTAL NO. OF VISITS _____
TIME	_____	_____		
*RESULT CODES: 1 COMPLETED 4 REFUSED 7 OTHER _____ (SPECIFY) 2 NOT AT HOME 5 PARTLY COMPLETED 3 POSTPONED 6 INCAPACITATED				

LANGUAGE	
LANGUAGE OF QUESTIONNAIRE	
LANGUAGE OF INTERVIEW	
HOME LANGUAGE OF RESPONDENT	
TRANSLATOR USED (YES = 1, NO = 2)	
LANGUAGE CODES	
01 ENGLISH 04 isi ZULU 07 SePEDI 10 ZITSONGA	
02 AFRIKAANS 05 SeSOTHO 08 SiSWATI 11 isiNDEBELA	
03 isiXHOSA 06 SeTSWANA 09 TshiVENDA	

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____	NAME _____	_____	_____
DATE _____	DATE _____	_____	_____






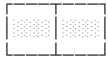



J	Home Based Care Services/House visits?	YES 1	NO 2 ↘	YES 1 ↘	NO 2	LONG WAIT 01 SHORT CONSULTATION 02 STAFF RUDE/UNKIND 03 DIDN'T SEE DOCTOR 04 OTHER 96 (SPECIFY)	
K	Dentist/Oral hygienist/Oral therapist?	YES 1	NO 2 ↘	YES 1 ↘	NO 2	LONG WAIT 01 SHORT CONSULTATION 02 STAFF RUDE/UNKIND 03 DIDN'T SEE DOCTOR 04 OTHER 96 (SPECIFY)	
L	Other? _____	YES 1	NO 2				
4.	Are you covered by a Medical Aid or Medical Benefit Scheme? (Any scheme that helps you pay for health/drug services)					YES 1 NO 2	→8
5.	Have you had your blood pressure measured in the past 12 months?					YES 1 NO 2	
6.	Do you know what your blood pressure is?					YES 1 NO 2	
7.	Is it high, normal or low?					HIGH 1 NORMAL 2 LOW 3 DON'T KNOW 8	

SECTION 2: FAMILY MEDICAL HISTORY





8	Now I would like to ask you about your family. Do you have a close blood relative (father, mother, brother, sister or child) who has ever had any of the following conditions:		
8A	High Blood Pressure?	YES 1 NO 2 DON'T KNOW 8	
8B	Heart attack or angina or chest pain when exerting himself/herself?	YES 1 NO 2 DON'T KNOW 8	↘ 8D
8C	IF "YES", was it before the age of 50 years?	YES 1 NO 2 DON'T KNOW 8	
8D	Stroke?	YES 1 NO 2 DON'T KNOW 8	
8E	High blood cholesterol or Fats?	YES 1 NO 2 DON'T KNOW 8	
8F	Diabetes or Blood Sugar?	YES 1 NO 2 DON'T KNOW 8	
8G	Cancer?	YES 1 NO 2 DON'T KNOW 8	

SECTION 3: CLINICAL CONDITIONS

9	Now I would like to ask you about your own health. Has a doctor or nurse or staff member at a clinic or at hospital told you that you had or have any of the following conditions:						
9A	High Blood Pressure?	YES 1 NO 2 DON'T KNOW 8	└─>9C				
9B	IF "YES", when was the first time that you were told you had high blood pressure?	IN THE LAST 12 MONTHS 1 MORE THAN A YEAR AGO 2					
9C	Heart attack or angina?	YES 1 NO 2 DON'T KNOW 8	└─>9E				
9D	IF "YES", when was your heart attack or angina?	IN THE LAST 12 MONTHS 1 MORE THAN A YEAR AGO 2					
9E	Stroke?	YES 1 NO 2 DON'T KNOW 8	└─>9G				
9F	IF "YES", when did you have your stroke?	IN THE LAST 12 MONTHS 1 MORE THAN A YEAR AGO 2					
9G	High blood cholesterol or fats?	YES 1 NO 2 DON'T KNOW 8	└─>9I				
9H	IF "YES", when was the first time that you were told that you had blood cholesterol or fats?	IN THE LAST 12 MONTHS 1 MORE THAN A YEAR AGO 2					
9I	Diabetes or Blood Sugar?	YES 1 NO 2 DON'T KNOW 8	└─>9K				
9J	IF "YES", when was the first time that you were told that you had diabetes or blood sugar?	IN THE LAST 12 MONTHS 1 MORE THAN A YEAR AGO 2					
9K	Emphysema/Bronchitis?	YES 1 NO 2 DON'T KNOW 8	└─>9M				
9L	IF "YES", when was the first time that you were told that you had emphysema or bronchitis?	IN THE LAST 12 MONTHS 1 MORE THAN A YEAR AGO 2					
9M	Asthma?	YES 1 NO 2 DON'T KNOW 8	└─>9O				
9N	IF "YES" when was the first time that you were told that you had asthma?	IN THE LAST 12 MONTHS 1 MORE THAN A YEAR AGO 2					
9O	TB?	YES 1 NO 2 DON'T KNOW 8	└─>9Q				
9P	IF "YES" when was the first time that you were told that you had TB?	IN THE LAST 12 MONTHS 1 MORE THAN A YEAR AGO 2					
9PP	How many episodes of TB have you ever been treated for?	<table border="1"> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>					
9Q	Cancer?	YES 1 NO 2 DON'T KNOW 8	└─>12				
9R	IF "YES", when was the first time that you were told that you had cancer?	IN THE LAST 12 MONTHS 1 MORE THAN A YEAR AGO 2					

10	Did the doctor/nurse/staff member at a hospital tell you what kind of cancer you have?	YES 1 NO 2 DON'T KNOW 8	 → 12
11	What kind of cancer were you told you had or have? DO NOT READ THE LIST OF CANCERS.	LUNG CANCER A CERVICAL/WOMB CANCER B SKIN CANCER C BREAST CANCER D PROSTATE CANCER E ESOPHAGEAL CANCER F OTHER _____ X (SPECIFY)	
12	Do you feel you have less breath when exerting yourself when compared to other people your age?	YES 1 NO 2 DON'T KNOW 8	
13	During the last year have you had wheezing or tightness of your chest.	YES 1 NO 2 DON'T KNOW 8	 → 16
14	If "YES" were you also short of breath?	YES 1 NO 2 DON'T KNOW 8	
15	Do you only get wheezing when you have a cold?	YES 1 NO 2 DON'T KNOW 8	
16	Is your sleep ever interrupted by you coughing?	YES 1 NO 2 DON'T KNOW 8	
17	Is your sleep ever interrupted by wheezing or a tight chest?	YES 1 NO 2 DON'T KNOW 8	
18	Do you usually cough?	YES 1 NO 2 DON'T KNOW 8	 → 21
19	When you cough, do you usually bring up phlegm from your chest?	YES 1 NO 2 DON'T KNOW 8	 → 21
20	If "yes", have you brought up phlegm every day for at least three months during the last year?	YES 1 NO 2 DON'T KNOW 8	 → 21
20A	If "yes" for how many years have you brought up phlegm in this way?		
21	IS THE RESPONDENT A MAN OR A WOMAN?	MAN  WOMAN 	 → 26
22	Now I am going to ask you some personal questions. Please remember that this information will be kept strictly confidential. Some men experience pain during urination or have a discharge from the penis. During the last 3 months, have you noticed any such pain or discharge?	YES 1 NO 2	
24	Some men experience sores in the genital area. During the last 3 months, have you noticed any such sores?	YES 1 NO 2	

SECTION 4: DENTAL HEALTH

26	Now I want to ask you about your teeth. Do you think that there is anything wrong in your mouth, teeth or gums?	YES 1 NO 2	→2 8
27	Which of the following items do you feel is a problem: Your Teeth? Your Gums? Ulcers/sores in the mouth? Dentures? Any other problems? RECORD ALL MENTIONED.	TEETH A GUMS B ULCERS/SORES IN THE MOUTH ... C DENTURES D OTHER _____ X (SPECIFY)	
28	Have you ever visited a dentist, an oral hygienist, or an oral therapist ?	YES 1 NO 2	
29	Have you lost any of your natural teeth?	YES 1 NO 2	→34
30	Do you have any of your natural teeth?	YES 1 NO 2	
31	Do you wear a denture (false teeth)?	YES, PARTIAL 1 YES, TOTAL/COMPLETE 2 NO 3	
32	CHECK 30: HAS NO NATURAL TEETH 	HAS NATURAL TEETH 	→ 34
33	Do you usually rinse or clean your mouth everyday?	YES 1 NO 2	→ 38
34	What do you do to look after your teeth. Do you Clean/Brush your teeth? Watch your diet/Eat special foods? Visit the dentist? Anything else?	YES NO CLEAN/BRUSH 1 2 DIET/FOOD 1 2 VISIT DENTIST 1 2 OTHER _____ 1 2 (SPECIFY)	
35	CHECK 34: CLEAN/BRUSH 	DOES NOT CLEAN/BRUSH 	→ 37
36	Do you usually brush/wash your teeth everyday?	YES 1 NO 2	
37	Do you own a toothbrush?	YES 1 NO 2	

38	<p>Some people say that fluoride mineral in the water makes the children and adults' natural teeth strong and healthy;</p> <p>Other people say it does not.</p> <p>What do you think?</p>	<p>MAKES TEETH STRONG 1</p> <p>DOES NOT MAKE TEETH STRONG . 2</p> <p>OTHER _____ 6</p> <p style="text-align: center;">(SPECIFY)</p> <p>DON'T KNOW 8</p>
----	---	---

SECTION 5: OCCUPATIONAL HEALTH

39	In the last 12 months, have you worked for payment?	YES 1 NO 2	→45A
40	In the last 12 months, have you had any injury or health problem related to your work?	YES 1 NO 2	→43
41	Did you stay away from work because of this injury or problem?	YES 1 NO 2	
42	What was the injury or health problem?	<div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div> 	
43	In the last 12 months, have you had an existing injury or health problem that was aggravated or became worse at work?	YES 1 NO 2	→45A
44	Did you stay away from work because of this injury or problem?	YES 1 NO 2	
45	What was the injury or health problem?	<div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div> 	
45A	Have you ever worked underground in a mine?	YES 1 NO 2	→46
45B	If "yes", what kind of mine was it? RECORD ALL	GOLD A COAL B ASBESTOS C OTHER _____ X (SPECIFY)	
45C	How many years in total did you work underground?	<div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div>	

SECTION 6: MEDICATION

46	Now I want to ask you about any medication you take. Do you use any medicine regularly that has been prescribed by a doctor or nurse?	YES 1 NO 2 DON'T KNOW 8	↘ →65
47	How many different medicines do you use regularly?	NUMBER <input type="text"/> <input type="text"/>	
48	Do you know what the medication is for?	YES 1 NO 2	→65
49	Is it for High Blood Pressure ?	YES 1 NO 2 DON'T KNOW 8	↘ →51
50	Can you name the medication? WRITE DOWN THE NAME(S) OF THE MEDICATION.	YES 1 NO 2 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	→51
51	Is it for Diabetes/Sugar ?	YES 1 NO 2 DON'T KNOW 8	↘ →53

52	<p>Can you name the medication?</p> <p>WRITE DOWN THE NAME(S) OF THE MEDICATION.</p>	<p>YES 1</p> <p>NO 2</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p>	<p>→53</p>
53	<p>Is it for High Blood Cholesterol?</p>	<p>YES 1</p> <p>NO 2</p> <p>DON'T KNOW 8</p>	<p>→55</p>
54	<p>Can you name the medication?</p> <p>WRITE DOWN THE NAME(S) OF THE MEDICATION.</p>	<p>YES 1</p> <p>NO 2</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p>	<p>→55</p>
55	<p>Is it for Angina/chestpain?</p>	<p>YES 1</p> <p>NO 2</p> <p>DON'T KNOW 8</p>	<p>→57</p>

56	<p>Can you name the medication?</p> <p>WRITE DOWN THE NAME(S) OF THE MEDICATION.</p>	<p>YES 1</p> <p>NO 2</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p>	→57
57	<p>Is it for any other Heart condition?</p>	<p>YES 1</p> <p>NO 2</p> <p>DON'T KNOW 8</p>	→59
58	<p>Can you name the medication?</p> <p>WRITE DOWN THE NAME(S) OF THE MEDICATION.</p>	<p>YES 1</p> <p>NO 2</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p>	→59
59	<p>Is it for Asthma, Emphysema or Bronchitis?</p>	<p>YES 1</p> <p>NO 2</p> <p>DON'T KNOW 8</p>	→61

60	<p>Can you name the medication?</p> <p>WRITE DOWN THE NAME(S) OF THE MEDICATION.</p>	<p>YES 1</p> <p>NO 2</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p>	<p>→61</p>
61	<p>Is it for Tuberculosis?</p>	<p>YES 1</p> <p>NO 2</p> <p>DON'T KNOW 8</p>	<p>→63</p>
62	<p>Can you name the medication?</p> <p>WRITE DOWN THE NAME(S) OF THE MEDICATION.</p>	<p>YES 1</p> <p>NO 2</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p> <p>[] _____ []</p>	<p>→63</p>
63	<p>Do you take it because you had a Stroke?</p>	<p>YES 1</p> <p>NO 2</p> <p>DON'T KNOW 8</p>	<p>→65</p>

64

Can you name the medication?

YES 1
NO 2

→65

WRITE DOWN THE NAME(S) OF
THE MEDICATION.

<input type="checkbox"/>	_____	<input type="checkbox"/>
<input type="checkbox"/>	_____	<input type="checkbox"/>
<input type="checkbox"/>	_____	<input type="checkbox"/>
<input type="checkbox"/>	_____	<input type="checkbox"/>
<input type="checkbox"/>	_____	<input type="checkbox"/>
<input type="checkbox"/>	_____	<input type="checkbox"/>

65

NOW, ASK THE RESPONDENT TO SHOW YOU ALL THE MEDICATION TAKEN EVERY DAY DURING THE LAST MONTH. THEN WRITE DOWN THE NAMES OF ALL THE MEDICATIONS BELOW.

NAME

_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MEDICATIONS ARE LISTED

YES.....1
NO.....2 →66

NUMBER OF MEDICATIONS LISTED

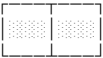









<input type="checkbox"/>	<input type="checkbox"/>
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65A

Who pays for most of the prescribed medication that you use?

- RESPONDENT 01
- FAMILY 02
- MEDICAL AID 03
- PROVIDED AT CLINIC OR PUBLIC HOSPITAL 04
- EMPLOYER 05
- OTHER _____ 96
(SPECIFY)

SECTION 7: HABITS AND LIFESTYLE

Now I would like to ask you a few questions about your diet and other habits.		
66	How old were you at your last birthday?	AGE IN COMPLETED YEARS 
66a	Which race group do you consider yourself?	BLACK/AFRICAN 1 COLOURED 2 WHITE 3 ASIAN/INDIAN 4
67	Do you usually eat your food very salty, lightly salted or not salted?	VERY SALTY 1 LIGHTLY SALTED 2 NOT SALTED 3 DON'T KNOW 8
68	Do you usually add salt or Aromat/Fondor to your serving of food? IF YES, Before or after tasting the food?	NO, I NEVER ADD SALT/AROMAT 1 YES, BUT I TASTE FIRST AND THEN ADD . . 2 YES, EVEN BEFORE HAVING TASTED FOOD 3 DON'T KNOW 8
69	Do you eat salty snacks more often than three times per week (Such as chips, nikhaks, salted peanuts, salty biscuits, biltong, dried sausage, dried fish)?	YES 1 NO 2
70	Do you personally think that you are underweight, normal weight or overweight?	UNDERWEIGHT 1 NORMAL WEIGHT 2 OVERWEIGHT.. . . . 3 DON'T KNOW 8
71	Have you ever smoked tobacco, used snuff or chewed tobacco?	YES 1 NO 2
		→81
72	Have you ever smoked at least 100 cigarettes (5 packets of 20 cigarettes) or the equivalent amount of tobacco in your lifetime?	YES 1 NO 2
73	Have you ever smoked daily?	YES 1 NO 2
74	On average, what number of the following items do or did you smoke or use per day? PROBE AND FILL IN NUMBER FOR EACH ITEM.	MANUFACTURED CIGARETTES  HAND-ROLLED CIGARETTES  PIPEFULS OF TOBACCO  CIGARS/CHEROOTS/CIGARILLOS  SNUFF  CHEWING TOBACCO/PRUIMPIE 
75	CHECK 74: EVER SMOKED CIGARETTES, PIPES OR CIGARS 	USES SNUFF OR CHEWING TOBACCO  → 81
76	How many years have you smoked or did you smoke on a daily basis? (IF RESPONDENT HAS STOPPED AND STARTED AGAIN, ASK FOR TOTAL YEARS)	NUMBER OF YEARS 

77	How old were you when you started smoking regularly?	AGE IN YEARS..... 	
78	Have you ever tried to quit smoking?	YES 1 NO 2	
79	Do you now smoke daily, occasionally or not at all?	DAILY 1 OCCASIONALLY 2 NOT AT ALL 3	→81
80	How long has it been since you last smoked daily?	LESS THAN (<)1 MONTH 01 1 MONTH TO < 6 MONTHS 02 6 MONTHS TO < 1 YEAR 03 1 YEAR TO < 5 YEARS 04 5 YEARS TO < 10 YEARS 05 10 YEARS OR MORE 06 NOT APPLICABLE 08	
81	Some people think that smoking is harmful to one's health; Other people think that smoking is good for your health; Some people think it does not matter to one's health whether one smokes or not. What do you think?	HARMFUL TO ONE'S HEALTH 1 GOOD FOR ONE'S HEALTH 2 DOES NOT MATTER 3	
82	Do you live in a house where other people smoke cigarettes regularly?	YES 1 NO 2	
83	Do you now work in a job where other people smoke cigarettes around you?	YES 1 NO 2 I DON'T WORK 8	
84	Have you ever worked in a job where you were regularly exposed to smoke, dust, fumes or strong smells?	YES 1 NO 2	→86
85	How long did you work in that job? IF LESS THAN 1 YEAR, WRITE '00'.	YEARS..... 	
86	Have you ever drunk alcohol?	YES 1 NO 2	→anthr o
87	Do you drink alcohol now?	YES 1 NO 2	→90
88	How much alcohol do you drink on average during the week?	NO DRINKING DURING THE WEEK 1 1-2 DRINKS PER DAY 2 3-4 DRINKS PER DAY 3 5 OR MORE DRINKS PER DAY 4 COMMUNAL DRINKING 5	
89	How much alcohol do you drink on average on weekends?	NO DRINKING DURING WEEKEND 1 1-2 DRINKS PER DAY 2 3-4 DRINKS PER DAY 3 5 OR MORE DRINKS PER DAY 4 COMMUNAL DRINKING 5	
90	Have you ever felt that you should cut down on your drinking?	YES 1 NO 2	
91	Have people annoyed you by criticizing your drinking?	YES 1 NO 2	
92	Have you ever felt bad or guilty about your drinking?	YES 1 NO 2	
93	Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover?	YES 1 NO 2	

ADULT DEMOGRAPHIC AND HEALTH SURVEY
ANTHROPOMETRIC DATA SHEET

94	DATE	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="1"/>	<input type="text" value="9"/>	<input type="text"/>	<input type="text"/>
		d	d	m	m	y	y	y	y
95	FIELDWORKER NUMBER	<input type="text"/>	<input type="text"/>	<input type="text"/>					
96	WEIGHT (KG)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
97	HEIGHT (CM)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
98	MID-UPPER-ARM CIRCUMFERENCE (CM)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
99	WAIST CIRCUMFERENCE (CM)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
100	HIP CIRCUMFERENCE (CM)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
101	SYSTOLIC BLOOD PRESSURE 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
102	DIASTOLIC BLOOD PRESSURE 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
103	PULSE 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
104	SYSTOLIC BLOOD PRESSURE 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
105	DIASTOLIC BLOOD PRESSURE 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
106	PULSE 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
107	SYSTOLIC BLOOD PRESSURE 3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
108	DIASTOLIC BLOOD PRESSURE 3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
109	PULSE 3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
110	PEAK EXPIRATORY FLOW RATE	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				

HOUSEHOLD SCHEDULE

* CODES FOR Q.3

RELATIONSHIP TO HEAD OF HOUSEHOLD:

- 01 = HEAD
- 02 = WIFE/HUSBAND/PARTNER
- 03 = SON OR DAUGHTER
- 04 = SON-IN-LAW OR DAUGHTER-IN-LAW
- 05 = GRANDCHILD
- 06 = PARENT
- 07 = PARENT-IN-LAW
- 08 = BROTHER OR SISTER
- 09 = NIECE/NEPHEW
- 10 = OTHER RELATIVE
- 11 = ADOPTED/FOSTER/STEP CHILD
- 12 = NOT RELATED
- 98 = DONT KNOW

** CODES FOR Q.10 (EDUCATION GRADE)

00 = LESS THAN 1 YEAR COMPLETED

- 71 = SUB A/CLASS 1
- 72 = SUB B/CLASS 2
- 01 = STANDARD 1
- 02 = STANDARD 2
- 03 = STANDARD 3
- 04 = STANDARD 4
- 05 = STANDARD 5
- 06 = STANDARD 6
- 07 = STANDARD 7
- 08 = STANDARD 8
- 09 = STANDARD 9
- 10 = STANDARD 10
- 11 = FURTHER STUDIES INCOMPLETE
- 12 = DIPLOMA/OTHER POSTSCHOOL COMPLETE
- 13 = FURTHER DEGREE COMPLETE
- 98 = DONT KNOW

*** CODES FOR Q.14

- 11 = ASSAULT IN HOME
- 12 = POLITICAL VIOLENCE
- 13 = OTHER ASSAULT OUTSIDE OF HOME
- 14 = SELF INFLICTED VIOLENCE
- 21 = TRAFFIC COLLISION
- 22 = ACCIDENT AT WORK
- 23 = SPORT
- 96 = OTHER UNINTENTIONAL

**** Q.15 THROUGH Q.18:

These questions refer to the biological parents of the child. Record 00 if parent not member of household.

Now we would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD*	RESIDENCE		SEX	AGE	GRANTS/PENSION	EDUCATION		WORK AGE 10+	INJURIES IN THE LAST MONTH		PARENTAL SURVIVORSHIP AND RESIDENCE FOR PERSONS LESS THAN 15 YEARS OLD****				ELIGIBILITY		
			Does (NAME) usually live here?	Did (NAME) stay here last night?				Is (NAME) male or female?	How old is (NAME)? (WRITE 00 IF UNDER 1 YEAR). IF 95 OR OVER, WRITE '95'		Does (NAME) receive a child maintenance grant, a disability grant or a pension from the government?	Has (NAME) ever been to school?	IF ATTENDED SCHOOL	IF AGE LESS THAN 25 YEARS	Did (NAME) work for pay during the last 7 days?	Did (NAME) have any injury that was treated by a doctor or nurse during the last 30 days?	IF INJURED IN LAST 1 MONTH	Is (NAME)'s natural mother alive?	IF ALIVE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
01			YES NO	YES NO	M F	IN YEARS	YES NO DK	YES NO	YES NO	YES NO	YES NO DK	YES NO DK	YES NO DK	YES NO DK	YES NO DK			01	01
02			YES NO	YES NO	M F	IN YEARS	YES NO DK	YES NO	YES NO	YES NO	YES NO DK	YES NO DK	YES NO DK	YES NO DK	YES NO DK			02	02
03			YES NO	YES NO	M F	IN YEARS	YES NO DK	YES NO	YES NO	YES NO	YES NO DK	YES NO DK	YES NO DK	YES NO DK	YES NO DK			03	03

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
04			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		04	04
05			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		05	05
06			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		06	06
07			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		07	07
08			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		08	08
09			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		09	09
10			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		10	10
11			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		11	11
12			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		12	12
13			1 2 1 2 1 2	1 2 1 2 1 2		1 2 8 1 2				1 2 1 2		1 2 8 GO TO (15)		1 2 8		1 2 8		13	13

TICK HERE IF CONTINUATION SHEET USED

Just to make sure that I have a complete listing:

- 1) Are there any other persons such as small children or infants that we have not listed? YES
- 2) In addition, are there any other people who may not be members of your family, such as domestic workers, lodgers or friends who usually live here? YES
- 3) Are there any guests or temporary visitors staying here, or anyone else who slept here last night that have not been listed? YES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
21	Has anyone in the household died in the last 12 months?	YES 1 NO 2	→ 25
22	In the last 12 months, how many people in your household died?	NUMBER OF PERSONS <input type="text"/>	
23	In the last 12 months, how many people in your household died from an injury sustained as a result of violence either between them and other people or from violence inflicted upon themselves?	NUMBER OF PERSONS <input type="text"/>	
24	In the last 12 months, how many persons in your household died from an unintentional injury they sustained such as from a traffic collision, or an injury (such as falls, burns or cuts) that happened at home/work/school/etc?	NUMBER OF PERSONS <input type="text"/>	
25	What is the main source of drinking water for members of your household?	PIPED WATER (TAP) IN DWELLING 11 PIPED WATER (TAP) IN SITE/YARD 12 PUBLIC TAP 13 WATER CARRIER/TANKER 21 BOREHOLE/WELL 31 DAM/RIVER/STREAM/SPRING 32 RAIN-WATER TANK 41 BOTTLED WATER 51 OTHER 96	→ 28 → 28 → 28
26	How long does it take you to get there, get water, and come back?	MINUTES <input type="text"/> ON PREMISES 996	
27	Who fetched the water yesterday? RECORD ALL MENTIONED.	FEMALE ADULT A MALE ADULT B FEMALE CHILD C MALE CHILD D DON'T KNOW Z	
28	What kind of toilet facility does your household have?	FLUSH TOILET (OWN) 11 FLUSH TOILET (SHARED) 12 BUCKET LATRINE 21 PIT LATRINE 22 NO FACILITY/BUSH/FIELD 31 OTHER 96	
29	Does your household have: Electricity? A radio? A television? A telephone? A refrigerator? A personal computer (PC)? A washing machine?	YES NO ELECTRICITY 1 2 RADIO 1 2 TELEVISION 1 2 TELEPHONE 1 2 REFRIGERATOR 1 2 PERSONAL COMPUTER 1 2 WASHING MACHINE 1 2	
30	What does your household use for cooking and heating? RECORD ALL MENTIONED.	ELECTRICITY A GAS B PARAFFIN C WOOD D COAL E ANIMAL DUNG F OTHER X	
31	How many rooms in your household are used for sleeping?	ROOMS <input type="text"/>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																		
32	MAIN MATERIAL OF THE FLOOR. RECORD OBSERVATION	EARTH/SAND/DUNG 11 BARE WOOD PLANKS 21 CEMENT 31 VINYL 32 CARPET 33 CERAMIC TILES 34 PARQUET OR POLISHED WOOD 35 OTHER 96																			
33	MAIN MATERIAL IN THE WALLS. RECORD OBSERVATION	PLASTIC/CARDBOARD 11 MUD 12 MUD AND CEMENT 13 CORRUGATED IRON/ZINC 21 PREFAB 22 BARE BRICK/CEMENT BLOCK 23 PLASTER/FINISHED 31 OTHER 96																			
34	Let us speak about the household and what it can afford. Would you say that the people here often, sometimes, seldom or never go hungry?	OFTEN 1 SOMETIMES 2 SELDOM 3 NEVER 4																			
35	Does any member of your household own: A bicycle? A motorcycle? A car? A donkey or a horse? Sheep or cattle?	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: center;">YES</th> <th style="width: 10%; text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>BICYCLE</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>MOTORCYCLE</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>CAR</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>DONKEY/HORSE</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>SHEEP/CATTLE</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	BICYCLE	1	2	MOTORCYCLE	1	2	CAR	1	2	DONKEY/HORSE	1	2	SHEEP/CATTLE	1	2	
	YES	NO																			
BICYCLE	1	2																			
MOTORCYCLE	1	2																			
CAR	1	2																			
DONKEY/HORSE	1	2																			
SHEEP/CATTLE	1	2																			



**SOUTH AFRICAN DEMOGRAPHIC AND HEALTH SURVEY
WOMEN QUESTIONNAIRE**



15/1/98

IDENTIFICATION	
PROVINCE _____ DISTRICT _____ EA NUMBER EA TYPE SADHS CLUSTER NUMBER HOUSEHOLD NUMBER NAME AND LINE NUMBER OF WOMAN _____ NAME OF HOUSEHOLD HEAD _____	

INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY MONTH YEAR
INTERVIEWER'S NAME	_____	_____	_____	NAME
RESULT*	_____	_____	_____	RESULT
NEXT VISIT: DATE	_____	_____		TOTAL NO. OF VISITS
TIME	_____	_____		
*RESULT CODES: 1 COMPLETED 4 REFUSED 7 OTHER _____ (SPECIFY) 2 NOT AT HOME 5 PARTLY COMPLETED 3 POSTPONED 6 INCAPACITATED				

LANGUAGE	
LANGUAGE OF QUESTIONNAIRE LANGUAGE OF INTERVIEW HOME LANGUAGE OF RESPONDENT TRANSLATOR USED (YES = 1, NO = 2)	
LANGUAGE CODES 01 ENGLISH 04 isi ZULU 07 SePEDI 10 ZITSONGA 02 AFRIKAANS 05 SeSOTHO 08 SiSWATI 11 isiNDEBELA 03 isiXHOSA 06 SeTSWANA 09 TshiVENDA	

SUPERVISOR NAME _____ 	FIELD EDITOR NAME _____ 	OFFICE EDITOR 	KEYED BY
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SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
DATE _____	DATE _____		

SECTION 1. RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR <input type="text"/> <input type="text"/> MINUTES <input type="text"/> <input type="text"/>	
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in a city, in a large town, on a farm or in rural areas?	CITY 1 TOWN 2 RURAL/FARM 3	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)? IF LESS THAN 1 YEAR, WRITE '00'	YEARS <input type="text"/> <input type="text"/> ALWAYS 95 VISITOR 96	→105
104	Just before you moved here, did you live in a city, in a town, or in the rural area /farm?	CITY 1 TOWN 2 RURAL/FARM 3	
105	In what month and year were you born?	MONTH <input type="text"/> <input type="text"/> DON'T KNOW MONTH 98 YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW YEAR 9998	
106	How old were you at your last birthday? COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS <input type="text"/> <input type="text"/>	
107	Have you ever attended school?	YES 1 NO 2	→114
109	What is the highest (standard/year) you completed ?	LESS THAN ONE YEAR COMPLETED 00 SUB A/CLASS 1 71 SUB B/CLASS 2 72 STANDARD 1 01 STANDARD 2 02 STANDARD 3 03 STANDARD 4 04 STANDARD 5 05 STANDARD 6 06 STANDARD 7 07 STANDARD 8 08 STANDARD 9 09 STANDARD 10 10 FURTHER STUDIES INCOMPLETE . 11 DIPLOMA/OTHER POSTSCHOOL COMPLETE 12 FURTHER DEGREE COMPLETE . . 13	
110	CHECK 106: AGE 24 OR BELOW <input type="text"/> AGE 25 OR ABOVE <input type="text"/>		→114
111	Are you currently attending school?	YES 1 NO 2	→114

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
112	What was the main reason you stopped attending school?	GOT PREGNANT 01 GOT MARRIED 02 TO CARE FOR YOUNGER CHILDREN 03 FAMILY NEEDED HELP ON FARM OR IN BUSINESS 04 COULD NOT PAY SCHOOL FEES . . . 05 NEEDED TO EARN MONEY 06 GRADUATED/HAD ENOUGH SCHOOLING 07 DID NOT PASS ENTRANCE EXAMS 08 DID NOT LIKE SCHOOL 09 SCHOOL NOT ACCESSIBLE/ TOO FAR 10 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
114	Can you read and understand a letter or newspaper in your home language easily, with difficulty, or not at all?	EASILY 1 WITH DIFFICULTY 2 NOT AT ALL 3	→116
115	Have you read a newspaper or magazine in the last week?	YES 1 NO 2	
116	Do you usually listen to a radio every day?	YES 1 NO 2	
117	Do you usually watch television at least once a week?	YES 1 NO 2	
119	Which race group do you consider yourself?	BLACK/AFRICAN 1 COLOURED 2 WHITE 3 ASIAN/INDIAN 4	
120	CHECK Q.4 IN THE HOUSEHOLD QUESTIONNAIRE THE WOMAN INTERVIEWED IS NOT A USUAL RESIDENT <input type="checkbox"/> THE WOMAN INTERVIEWED IS A USUAL RESIDENT <input type="checkbox"/>		→201
121	Now I would like to ask about the place in which you usually live. What is the name of the place in which you usually live? _____ (NAME OF PLACE) Is that a large city, town, or rural area /farm?	CITY 1 TOWN 2 RURAL/FARM 3	
122	In which PROVINCE is that located?	EASTERN CAPE 01 FREE STATE 02 GAUTENG 03 KWAZULU/NATAL 04 MPUMALANGA 05 NORTHERN CAPE 06 NORTHERN PROVINCE 07 NORTH WEST 08 WESTERN CAPE 09 OTHER COUNTRY 10	
123	Now I would like to ask about the household in which you usually live. What is the main source of drinking water for members of your household?	PIPED WATER (tap), IN DWELLING 11 PIPED WATER (tap), IN SITE/YARD 12 PUBLIC TAP 13 WATER CARRIER/ TANKER 21 BOREHOLE/WELL 31 DAM /RIVER/STREAM/SPRING 32 RAIN-WATER TANK 41 BOTTLED WATER 51 OTHER _____ 96 (SPECIFY)	
125	What kind of toilet facility does your household have?	FLUSH TOILET (OWN) 11 FLUSH TOILET (SHARED) 12 BUCKET LATRINE 21 PIT LATRINE 22 NO FACILITY/BUSH/FIELD 31 OTHER _____ 96 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																								
126	Does your household have: Electricity? A radio? A television? A telephone? A refrigerator? A personal computer (PC)? A washing machine?	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: center;">YES</th> <th style="width: 10%; text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>ELECTRICITY</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>RADIO</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>TELEVISION</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>TELEPHONE</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>REFRIGERATOR</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>PERSONAL COMPUTER</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>WASHING MACHINE</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	ELECTRICITY	1	2	RADIO	1	2	TELEVISION	1	2	TELEPHONE	1	2	REFRIGERATOR	1	2	PERSONAL COMPUTER	1	2	WASHING MACHINE	1	2	
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127	Could you describe the main material of the walls of your home?	<table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>PLASTIC/CARDBOARD</td> <td style="text-align: right;">11</td> </tr> <tr> <td>MUD</td> <td style="text-align: right;">12</td> </tr> <tr> <td>MUD AND CEMENT</td> <td style="text-align: right;">13</td> </tr> <tr> <td>CORRUGATED IRON/ZINC</td> <td style="text-align: right;">21</td> </tr> <tr> <td>PREFAB</td> <td style="text-align: right;">22</td> </tr> <tr> <td>BARE BRICK/CEMENT BLOCK</td> <td style="text-align: right;">23</td> </tr> <tr> <td>PLASTER/FINISHED</td> <td style="text-align: right;">31</td> </tr> <tr> <td>OTHER _____</td> <td style="text-align: right;">96</td> </tr> <tr> <td style="text-align: center;">(SPECIFY)</td> <td></td> </tr> </tbody> </table>	PLASTIC/CARDBOARD	11	MUD	12	MUD AND CEMENT	13	CORRUGATED IRON/ZINC	21	PREFAB	22	BARE BRICK/CEMENT BLOCK	23	PLASTER/FINISHED	31	OTHER _____	96	(SPECIFY)								
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SECTION 2. REPRODUCTION

	<p>Now I would like to ask you about all the pregnancies that you have had in your lifetime. By this I mean all the children born to you, whether they were born alive or dead, whether still living or not, whether living with you or elsewhere, and all the pregnancies that you have had that did not result in a live birth. I understand that it is not easy to talk about children who have died, or pregnancies that have terminated before full term, but it is extremely important that you tell us about <u>all</u> of them, so that we can develop programs that will help the Government of South Africa improve children's health in the future.</p>		
NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES 1 NO 2	→206
202	Do you have any sons or daughters to whom you have given birth who are living with you?	YES 1 NO 2	→204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME <input type="text"/> DAUGHTERS AT HOME .. <input type="text"/>	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES 1 NO 2	→206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE <input type="text"/> DAUGHTERS ELSEWHERE <input type="text"/>	
206	Have you ever given birth to a boy or girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but survived only a few hours or days?	YES 1 NO 2	→208
207	How many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD <input type="text"/> GIRLS DEAD <input type="text"/>	
208	Women sometimes have pregnancies that do not result in a live born child. That is, a pregnancy can end very early, in a miscarriage or an abortion or the child can be born dead. Have you had any such pregnancy that did not result in a live birth?	YES 1 NO 2	→210
209	In all, how many such pregnancies have there been?	PREGNANCY LOSSES ... <input type="text"/>	
210	SUM ANSWERS TO 203, 205, 207 AND 209, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL <input type="text"/>	
212	CHECK 210: ONE OR MORE PREGNANCIES <input type="checkbox"/> NO PREGNANCIES <input type="checkbox"/>		→234

213 Now I would like to ask you about all of your pregnancies, whether born alive, born dead, or lost before full term, starting with the first one you had.
 RECORD ALL THE PREGNANCIES. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.

214	215	216	217	218	219	220	221								
Think back to the time of your (first/next) pregnancy.	Was that a single or multiple pregnancy?	Was the baby born alive, born dead, or lost before full term?	Did that baby cry, move, or breathe when it was born?	What was the name given to that child?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday? OR: In what season was he/she born?	Is (NAME) still alive?								
01	SINGLE . . . 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES . . 1 NO . . . 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH . . . <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR . 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO . . 2 ↓ 224
02	SINGLE . . . 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES . . 1 NO . . . 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH . . . <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR . 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO . . 2 ↓ 224
03	SINGLE . . . 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES . . 1 NO . . . 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH . . . <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR . 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO . . 2 ↓ 224
04	SINGLE . . . 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES . . 1 NO . . . 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH . . . <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR . 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO . . 2 ↓ 224
05	SINGLE . . . 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES . . 1 NO . . . 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH . . . <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR . 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO . . 2 ↓ 224
06	SINGLE . . . 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES . . 1 NO . . . 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH . . . <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR . 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO . . 2 ↓ 224
07	SINGLE . . . 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES . . 1 NO . . . 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH . . . <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR . 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO . . 2 ↓ 224
08	SINGLE . . . 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES . . 1 NO . . . 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH . . . <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR . 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO . . 2 ↓ 224

IF BORN ALIVE AND STILL LIVING:		IF BORN ALIVE BUT NOW DEAD:		IF BORN ALIVE BUT NOW DEAD:		IF BORN DEAD OR LOST BEFORE FULL TERM:	
222	223	224	224A	225	226	228	229
How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	Is (NAME) living with you?	How old was (NAME) when he/she died? IF '1 YR.', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	Did (NAME) die from diarrhoea?	In what year and month did this pregnancy end?	How many months did the pregnancy last? RECORD IN COMPLETED MONTHS.	FROM YEAR OF THIS PREGNANCY SUBTRACT YEAR OF PREVIOUS PREGNANCY. IS THE DIFFERENCE 2 OR MORE YEARS?	Were there any other pregnancies between the previous pregnancy mentioned and this pregnancy?
01 AGE IN YEARS <input type="text"/>	YES 1 NO . 2 (NEXT PREG.)	DAYS .. 1 <input type="text"/> MONTHS 2 <input type="text"/> YEARS . 3 <input type="text"/>	YES 1 NO 2 DK 8 (NEXT PREG.)	MONTH <input type="text"/> YEAR 19 <input type="text"/>	MONTHS <input type="text"/> (next preg.)		
02 AGE IN YEARS <input type="text"/>	YES 1 NO . 2 (GO TO 228)	DAYS .. 1 <input type="text"/> MONTHS 2 <input type="text"/> YEARS . 3 <input type="text"/>	YES 1 NO 2 DK 8 (GO TO 228)	MONTH <input type="text"/> YEAR 19 <input type="text"/>	MONTHS <input type="text"/>	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
03 AGE IN YEARS <input type="text"/>	YES 1 NO . 2 (GO TO 228)	DAYS .. 1 <input type="text"/> MONTHS 2 <input type="text"/> YEARS . 3 <input type="text"/>	YES 1 NO 2 DK 8 (GO TO 228)	MONTH <input type="text"/> YEAR 19 <input type="text"/>	MONTHS <input type="text"/>	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
04 AGE IN YEARS <input type="text"/>	YES 1 NO . 2 (GO TO 228)	DAYS .. 1 <input type="text"/> MONTHS 2 <input type="text"/> YEARS . 3 <input type="text"/>	YES 1 NO 2 DK 8 (GO TO 228)	MONTH <input type="text"/> YEAR 19 <input type="text"/>	MONTHS <input type="text"/>	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
05 AGE IN YEARS <input type="text"/>	YES 1 NO . 2 (GO TO 228)	DAYS .. 1 <input type="text"/> MONTHS 2 <input type="text"/> YEARS . 3 <input type="text"/>	YES 1 NO 2 DK 8 (GO TO 228)	MONTH <input type="text"/> YEAR 19 <input type="text"/>	MONTHS <input type="text"/>	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
06 AGE IN YEARS <input type="text"/>	YES 1 NO . 2 (GO TO 228)	DAYS .. 1 <input type="text"/> MONTHS 2 <input type="text"/> YEARS . 3 <input type="text"/>	YES 1 NO 2 DK 8 (GO TO 228)	MONTH <input type="text"/> YEAR 19 <input type="text"/>	MONTHS <input type="text"/>	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
07 AGE IN YEARS <input type="text"/>	YES 1 NO . 2 (GO TO 228)	DAYS .. 1 <input type="text"/> MONTHS 2 <input type="text"/> YEARS . 3 <input type="text"/>	YES 1 NO 2 DK 8 (GO TO 228)	MONTH <input type="text"/> YEAR 19 <input type="text"/>	MONTHS <input type="text"/>	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
08 AGE IN YEARS <input type="text"/>	YES 1 NO . 2 (GO TO 228)	DAYS .. 1 <input type="text"/> MONTHS 2 <input type="text"/> YEARS . 3 <input type="text"/>	YES 1 NO 2 DK 8 (GO TO 228)	MONTH <input type="text"/> YEAR 19 <input type="text"/>	MONTHS <input type="text"/>	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2

214	215	216	217	218	219	220	221								
Think back to the time of your next pregnancy.	Was that a single or multiple pregnancy?	Was the baby born alive, born dead, or lost before full term?	Did that baby cry, move, or breathe when it was born?	What was the name given to that child?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday? OR: In what season was he/she born?	Is (NAME) still alive?								
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11	SINGLE ... 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES ... 1 NO ... 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH ... <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO .. 2 ↓ 224
12	SINGLE ... 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES ... 1 NO ... 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH ... <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO .. 2 ↓ 224
13	SINGLE ... 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES ... 1 NO ... 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH ... <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO .. 2 ↓ 224
14	SINGLE ... 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES ... 1 NO ... 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH ... <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO .. 2 ↓ 224
15	SINGLE ... 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES ... 1 NO ... 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH ... <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO .. 2 ↓ 224
16	SINGLE ... 1 MULTIPLE 2	BORN ALIVE 1 (SKIP TO 218)← BORN DEAD 2 LOST BEFORE FULL TERM 3 (SKIP TO 225)←	YES ... 1 NO ... 2 ↓ 225	_____ (NAME)	BOY . 1 GIRL . 2	MONTH ... <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEAR 19 <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									YES 1 NO .. 2 ↓ 224

IF BORN ALIVE AND STILL LIVING:		IF BORN ALIVE BUT NOW DEAD:	IF BORN ALIVE BUT NOW DEAD:	IF BORN DEAD OR LOST BEFORE FULL TERM:			
222	223	224	224A	225	226	228	229
How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	Is (NAME) living with you?	How old was (NAME) when he/she died? IF '1 YR.', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	Did (NAME) die from diarrhoea	In what year and month did this pregnancy end?	How many months did the pregnancy last? RECORD IN COMPLETED MONTHS.	FROM YEAR OF THIS PREGNANCY SUBTRACT YEAR OF PREVIOUS PREGNANCY. IS THE DIFFERENCE 2 OR MORE?	Were there any other pregnancies between the previous pregnancy mentioned and this pregnancy?
09 AGE IN YEARS 	YES 1 NO . 2 (GO TO 228)	DAYS 1 MONTHS ... 2 YEARS 3	YES 1 NO 2 DK 8 (GO TO 228)	MONTH YEAR 19	MONTHS 	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
10 AGE IN YEARS 	YES 1 NO . 2 (GO TO 228)	DAYS 1 MONTHS ... 2 YEARS 3	YES 1 NO 2 DK 8 (GO TO 228)	MONTH YEAR 19	MONTHS 	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
11 AGE IN YEARS 	YES 1 NO . 2 (GO TO 228)	DAYS 1 MONTHS ... 2 YEARS 3	YES 1 NO 2 DK 8 (GO TO 228)	MONTH YEAR 19	MONTHS 	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
12 AGE IN YEARS 	YES 1 NO . 2 (GO TO 228)	DAYS 1 MONTHS ... 2 YEARS 3	YES 1 NO 2 DK 8 (GO TO 228)	MONTH YEAR 19	MONTHS 	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
13 AGE IN YEARS 	YES 1 NO . 2 (GO TO 228)	DAYS 1 MONTHS ... 2 YEARS 3	YES 1 NO 2 DK 8 (GO TO 228)	MONTH YEAR 19	MONTHS 	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
14 AGE IN YEARS 	YES 1 NO . 2 (GO TO 228)	DAYS 1 MONTHS ... 2 YEARS 3	YES 1 NO 2 DK 8 (GO TO 228)	MONTH YEAR 19	MONTHS 	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
15 AGE IN YEARS 	YES 1 NO . 2 (GO TO 228)	DAYS 1 MONTHS ... 2 YEARS 3	YES 1 NO 2 DK 8 (GO TO 228)	MONTH YEAR 19	MONTHS 	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2
16 AGE IN YEARS 	YES 1 NO . 2 (GO TO 228)	DAYS 1 MONTHS ... 2 YEARS 3	YES 1 NO 2 DK 8 (GO TO 228)	MONTH YEAR 19	MONTHS 	YES 1 NO 2 (NEXT PREGNANCY)	YES 1 NO 2

SECTION 3. CONTRACEPTION

<p>Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy.</p> <p>CIRCLE CODE 1 IN 301 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 302, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 2 IF METHOD IS RECOGNIZED, AND CODE 3 IF NOT RECOGNIZED. THEN, FOR EACH METHOD WITH CODE 1 OR 2 CIRCLED IN 301 OR 302, ASK 303.</p>				
301	Which ways or methods have you heard about?	302 Have you ever heard of (METHOD)?		303 Have you ever used (METHOD)?
		SPONTANEOUS YES	PROBED YES	NO
01	PILL Women can take a pill every day.	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				YES 1 NO 2
02	IUD Women can have a loop or coil placed inside them by a doctor or a nurse.	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				YES 1 NO 2
03	INJECTIONS Women can have an injection by a doctor or nurse which stops them from becoming pregnant for several months.	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				YES 1 NO 2
04	DIAPHRAGM, FOAM, JELLY Women can place a sponge, suppository, diaphragm, jelly, or cream inside themselves before intercourse.	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				YES 1 NO 2
05	CONDOM Men can put a rubber sheath on their penis during sexual intercourse.	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				YES 1 NO 2
06	FEMALE STERILIZATION Tie the tubes. Women can have an operation to avoid having any more children.	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				Have you ever had an operation to avoid having any more children? YES 1 NO 2
07	MALE STERILIZATION Men can have an operation to avoid having any more children.	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				Have you ever had a partner who had an operation to avoid having children? YES 1 NO 2
08	RHYTHM, CALENDAR METHOD Every month that a woman is sexually active she can avoid having sexual intercourse on the days of the month she is most likely to get pregnant.	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				YES 1 NO 2
09	WITHDRAWAL Men can be careful and pull out before climax.	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				YES 1 NO 2
10	HERBS. Women use natural herbs or Dutch remedies to avoid pregnancy	1	2	3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				YES 1 NO 2
11	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	1		3

		(SPECIFY)		

		(SPECIFY)		
				YES 1 NO 2 YES 1 NO 2
304	<p>CHECK 303:</p> <p>NOT A SINGLE "YES" <input type="checkbox"/> (NEVER USED)</p> <p>AT LEAST ONE "YES" <input type="checkbox"/> (EVER USED) -----> SKIP TO 308</p>			

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
305	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES 1 NO 2	→331
307	What have you used or done? CORRECT 303 AND 304 (AND 302 IF NECESSARY).		
308	Now I would like to ask you about the first time that you did something or used a method to avoid getting pregnant. What was the first method you ever used?	PILL 01 IUD 02 INJECTIONS 03 DIAPHRAGM/FOAM/JELLY 04 CONDOM 05 FEMALE STERILIZATION 06 MALE STERILIZATION 07 RHYTHM/ CALENDER METHOD ... 08 WITHDRAWAL 09 HERB/REMEDIES 10 OTHER _____ 96 (SPECIFY)	
309	How many living children did you have at that time, if any? IF NONE, RECORD '00'.	NUMBER OF CHILDREN .. <input type="text"/> <input type="text"/>	
309A	How old were you when you first used something to avoid getting pregnant?	AGE <input type="text"/> <input type="text"/>	
309B	From whom did you first get information about methods to avoid pregnancy?	MOTHER A SISTER B FATHER C OTHER RELATIVE D FRIEND E TEACHER F NURSE G DOCTOR H POSTER/LEAFLET/MAGAZINE I RADIO/TELEVISION J OTHER _____ X (SPECIFY)	
309C	CHECK 309A: AGE LESS THAN 19 YEARS <input type="checkbox"/> AGE 19 YEARS OR OLDER <input type="checkbox"/>		→311
309E	Did your parent(s) or guardian give advice on contraceptives or explain how to use them?	YES 1 NO 2	
311	CHECK 303: WOMAN NOT STERILIZED <input type="checkbox"/> WOMAN STERILIZED <input type="checkbox"/>		→314A
312	CHECK 234: NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/>		→331
313	Are you currently doing something or using any method to delay or avoid getting pregnant?	YES 1 NO 2	→331
314	Which method are you using?	PILL 01 IUD 02 INJECTIONS 03 DIAPHRAGM/FOAM/JELLY 04 CONDOM 05	→328
314A	CIRCLE '06' FOR FEMALE STERILIZATION.	FEMALE STERILIZATION 06 MALE STERILIZATION 07 RHYTHM, CALENDER METHOD ... 08 WITHDRAWAL 09 HERB/REMEDIES 10 OTHER _____ 96 (SPECIFY)	→323 →332

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP						
318	<p>Where did the sterilization take place?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p>	<p>PUBLIC SECTOR</p> <p>GOVERNMENT HOSPITAL 11</p> <p>DAY HOSPITAL/CLINIC/</p> <p>COMMUNITY HEALTH CENTRE 12</p> <p>FAMILY PLANNING CLINIC 13</p> <p>OTHER PUBLIC _____16</p> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE HOSPITAL/CLINIC . . . 21</p> <p>PRIVATE DOCTOR 23</p> <p>OTHER PRIVATE</p> <p>MEDICAL _____26</p> <p>(SPECIFY)</p> <p>OTHER _____96</p> <p>(SPECIFY)</p> <p>DON'T KNOW 98</p>							
319	<p>Do you regret that (you/your partner) had the operation not to have any (more) children?</p>	<p>YES 1</p> <p>NO 2</p>	<p>→321</p>						
320	<p>Why do you regret the operation?</p>	<p>RESPONDENT WANTS ANOTHER</p> <p>CHILD 01</p> <p>PARTNER WANTS ANOTHER CHILD 02</p> <p>SIDE EFFECTS 03</p> <p>CHILD DIED 04</p> <p>OTHER _____96</p> <p>(SPECIFY)</p>							
321	<p>In what month and year was the sterilization performed?</p>	<p>MONTH <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table></p> <p>YEAR <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table></p>							<p>→335</p>
323	<p>How do you determine which days of your monthly cycle not to have sexual relations?</p>	<p>BASED ON CALENDAR 01</p> <p>BASED ON BODY TEMPERATURE . 02</p> <p>BASED ON CERVICAL MUCUS</p> <p>(BILLINGS METHOD) 03</p> <p>BASED ON BODY TEMPERATURE</p> <p>AND CERVICAL MUCUS 04</p> <p>NO SPECIFIC SYSTEM 05</p> <p>OTHER _____96</p> <p>(SPECIFY)</p>	<p>→332</p>						
328	<p>Where did you obtain (METHOD) the last time?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p>	<p>PUBLIC SECTOR</p> <p>GOVERNMENT HOSPITAL 11</p> <p>DAY HOSPITAL/CLINIC/</p> <p>COMMUNITY HEALTH CENTER 12</p> <p>FAMILY PLANNING CLINIC . . . 13</p> <p>MOBILE CLINIC 14</p> <p>COMMUNITY HEALTH WORKER 15</p> <p>OTHER PUBLIC _____16</p> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE HOSPITAL/CLINIC . . 21</p> <p>PHARMACY 22</p> <p>PRIVATE DOCTOR/</p> <p>GYNECOLOGIST 23</p> <p>OTHER PRIVATE</p> <p>MEDICAL _____26</p> <p>(SPECIFY)</p> <p>OTHER SOURCE</p> <p>SHOP 31</p> <p>CHURCH 32</p> <p>FRIEND/RELATIVE 33</p> <p>OTHER _____96</p> <p>(SPECIFY)</p>	<p>→330A</p>						

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP										
330	<p>Do you agree with the following statements about the family planning service you use?</p> <p>The staff shout and scold</p> <p>The staff do not explain much about the Family Planning method</p> <p>The staff ignore problems which you report</p> <p>The staff are unfriendly</p>	<table border="0"> <tr> <td>AGREE</td> <td>DISAGREE</td> </tr> <tr> <td>1</td> <td>2</td> </tr> <tr> <td>1</td> <td>2</td> </tr> <tr> <td>1</td> <td>2</td> </tr> <tr> <td>1</td> <td>2</td> </tr> </table>	AGREE	DISAGREE	1	2	1	2	1	2	1	2	
AGREE	DISAGREE												
1	2												
1	2												
1	2												
1	2												
330A	<p>People select the place where they get family planning services for various reasons.</p> <p>What were the reasons you went to (NAME OF PLACE IN Q.328) instead of some other place you know about?</p> <p>RECORD ALL RESPONSES AND CIRCLE CODES.</p> <p>What is the Main Reason?</p>	<p>ACCESS-RELATED REASONS</p> <p>CLOSER TO HOME A</p> <p>CLOSER TO MARKET/WORK .. B</p> <p>AVAILABILITY OF TRANSPORT C</p> <p>SERVICE-RELATED REASONS</p> <p>STAFF MORE COMPETENT/ FRIENDLY D</p> <p>CLEANER FACILITY E</p> <p>OFFERS MORE PRIVACY F</p> <p>SHORTER WAITING TIME G</p> <p>LONGER HRS. OF SERVICE ... H</p> <p>USE OTHER SERVICES AT THE FACILITY I</p> <p>LOWER COST/CHEAPER J</p> <p>WANTED ANONYMITY K</p> <p>OTHER _____X (SPECIFY)</p> <p>DON'T KNOW Z</p> <p style="text-align: right;"><input type="checkbox"/></p>											
330B	<p>Over the last 12 months have you had a break in your contraceptive use for any reason?</p>	<p>YES 1</p> <p>NO 2</p>	→335										
330C	<p>Over the last 12 months, why have you had a break in your contraceptive use?</p>	<p>WAS PREGNANT 01</p> <p>NO BOYFRIEND/ SEXUALLY INACTIVE 02</p> <p>WANTED TO SEE MENSTRUATION 03</p> <p>HEALTH REASONS 04</p> <p>OTHER _____ . 96 (SPECIFY)</p>	→335										
331	<p>What are the main reasons you are not using a method of contraception to avoid pregnancy?</p> <p>RECORD ALL MENTIONED</p> <p>What is the Main Reason?</p>	<p>NEVER HAD SEX A</p> <p>FERTILITY-RELATED REASONS</p> <p>NOT HAVING SEX B</p> <p>INFREQUENT SEX C</p> <p>MENOPAUSAL/HYSTERECTOMY D</p> <p>INFERTILE E</p> <p>POSTPARTUM/BREASTFEEDING F</p> <p>WANTS (MORE) CHILDREN ... G</p> <p>PREGNANT H</p> <p>OPPOSITION TO USE</p> <p>RESPONDENT OPPOSED I</p> <p>HUSBAND/PARTNER OPPOSED J</p> <p>OTHERS OPPOSED K</p> <p>RELIGIOUS PROHIBITION L</p> <p>LACK OF KNOWLEDGE</p> <p>KNOWS NO METHOD M</p> <p>KNOWS NO SOURCE N</p> <p>METHOD-RELATED REASONS</p> <p>HEALTH CONCERNS O</p> <p>FEAR OF SIDE EFFECTS P</p> <p>LACK OF ACCESS/TOO FAR ... Q</p> <p>COST TOO MUCH R</p> <p>INCONVENIENT TO USE S</p> <p>INTERFERES WITH BODY'S NATURAL PROCESSES .. T</p> <p>OUT OF STOCK U</p> <p>OTHER _____X (SPECIFY)</p> <p>DON'T KNOW Z</p> <p style="text-align: right;"><input type="checkbox"/></p>											
332	<p>Do you know of a place where you can obtain a method of family planning?</p>	<p>YES 1</p> <p>NO 2</p>	→335										

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
333	<p>Where is that?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p>	<p>PUBLIC SECTOR</p> <p>GOVERNMENT HOSPITAL 11</p> <p>DAY HOSPITAL/CLINIC/</p> <p>COMMUNITY HEALTH CENTER 12</p> <p>FAMILY PLANNING CLINIC . . . 13</p> <p>MOBILE CLINIC 14</p> <p>COMMUNITY HEALTH WORKER 15</p> <p>OTHER PUBLIC _____16</p> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE HOSPITAL/CLINIC . . 21</p> <p>PHARMACY 22</p> <p>PRIVATE DOCTOR/</p> <p>GYNCOLOGIST 23</p> <p>OTHER PRIVATE</p> <p>MEDICAL _____26</p> <p>(SPECIFY)</p> <p>OTHER SOURCE</p> <p>SHOP 31</p> <p>CHURCH 32</p> <p>FRIEND/RELATIVE 33</p> <p>OTHER _____96</p> <p>(SPECIFY)</p>	
335	<p>Have you visited any type of health facility for any reason in the last 12 months?</p>	<p>YES 1</p> <p>NO 2</p>	→337
336	<p>Did any staff member at the health facility speak to you about family planning methods?</p>	<p>YES 1</p> <p>NO 2</p>	
337	<p>During which times of the monthly cycle does a woman have the greatest chance of becoming pregnant?</p>	<p>DURING HER PERIOD 01</p> <p>RIGHT AFTER HER PERIOD HAS</p> <p>ENDED 02</p> <p>IN THE MIDDLE OF THE CYCLE . . . 03</p> <p>JUST BEFORE HER PERIOD BEGINS 04</p> <p>OTHER _____96</p> <p>(SPECIFY)</p> <p>DON'T KNOW 98</p>	
338	<p>I would like to ask you a question about the law on abortion in South Africa. Does the present law allow a woman in early pregnancy, which is up to 12 weeks, to have an abortion?</p>	<p>YES 1</p> <p>NO 2</p> <p>DON'T KNOW 8</p>	

SECTION 4A. PREGNANCY AND CHILD HEALTH

401	CHECK 233: ONE OR MORE BIRTHS SINCE JAN. 1993 <input type="checkbox"/>	NO BIRTHS SINCE JAN. 1993 <input type="checkbox"/>	(SKIP TO 465)
402	<p>ENTER THE NAME, LINE NUMBER, AND SURVIVAL STATUS OF EACH BIRTH SINCE JANUARY 1993 IN THE TABLE. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, USE ADDITIONAL QUESTIONNAIRES).</p> <p>Now I would like to ask you some questions about your pregnancies and the health of all your children born in the last five years. (We will talk about one child at a time.)</p>		
403	LINE NUMBER FROM Q214	LAST BIRTH LINE NUMBER <input type="text"/>	NEXT-TO-LAST BIRTH LINE NUMBER <input type="text"/>
404	FROM Q218 AND Q221	NAME _____ ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/>	NAME _____ ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/>
405	At the time you became pregnant with (NAME), did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you want <u>no (more)</u> children at all?	THEN 1 (SKIP TO 407) ← <input type="text"/> LATER 2 NO MORE 3 (SKIP TO 407) ← <input type="text"/>	THEN 1 (SKIP TO 407) ← <input type="text"/> LATER 2 NO MORE 3 (SKIP TO 407) ← <input type="text"/>
406	How much longer would you like to have waited?	MONTHS 1 <input type="text"/> YEARS 2 <input type="text"/> DON'T KNOW 998	MONTHS 1 <input type="text"/> YEARS 2 <input type="text"/> DON'T KNOW 998
407	When you were pregnant with (NAME), did you go for antenatal care for this pregnancy? IF YES: Whom did you see? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS SEEN.	HEALTH PROFESSIONAL DOCTOR A NURSE/MIDWIFE B OTHER PERSON TRADITIONAL BIRTH ATTENDANT D OTHER _____ X (SPECIFY) NO ONE Y (SKIP TO 410) ← <input type="text"/>	HEALTH PROFESSIONAL DOCTOR A NURSE/MIDWIFE B OTHER PERSON TRADITIONAL BIRTH ATTENDANT D OTHER _____ X (SPECIFY) NO ONE Y (SKIP TO 410) ← <input type="text"/>
407A	Where did you go the majority of times? PROBE FOR THE ONE PLACE VISITED MOST OFTEN	PUBLIC HOSPITAL 01 PRIVATE HOSPITAL 02 PUBLIC CLINIC 03 PRIVATE CLINIC/SURGERY 04 PRIVATE MIDWIFE'S OFFICE 05 OTHER _____ 96 (SPECIFY)	PUBLIC HOSPITAL 01 PRIVATE HOSPITAL 02 PUBLIC CLINIC 03 PRIVATE CLINIC/SURGERY 04 PRIVATE MIDWIFE'S OFFICE 05 OTHER _____ 96 (SPECIFY)
408	How many months pregnant were you when you first received antenatal care?	MONTHS <input type="text"/> DON'T KNOW 98	MONTHS <input type="text"/> DON'T KNOW 98
409	How many times did you receive antenatal care during this pregnancy?	NO. OF TIMES <input type="text"/> DON'T KNOW 98	NO. OF TIMES <input type="text"/> DON'T KNOW 98
410	When you were pregnant with (NAME) were you given an injection in the arm to prevent the baby from getting tetanus, that is, convulsions after birth?	YES 1 NO 2 DON'T KNOW 8	YES 1 NO 2 DON'T KNOW 8

412	Where did you give birth to (NAME)? _____ NAME OF PLACE	HOME 11 PUBLIC SECTOR GOVT. HOSPITAL 21 DAY HOSP/CLINIC COMMUNITY HEALTH CENTER 22 GOVT. MOU 23 OTHER PUBLIC 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC .. 31 OTHER PRIVATE MEDICAL 36 (SPECIFY) OTHER 96 (SPECIFY)	HOME 11 PUBLIC SECTOR GOVT. HOSPITAL 21 DAY HOSP/CLINIC/ COMMUNITY HEALTH CENTER 22 GOVT. MOU 23 OTHER PUBLIC 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ... 31 OTHER PRIVATE MEDICAL 36 (SPECIFY) OTHER 96 (SPECIFY)
413	Who assisted with the delivery of (NAME)? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS ASSISTING.	HEALTH PROFESSIONAL DOCTOR A NURSE/MIDWIFE B OTHER PERSON TRADITIONAL BIRTH ATTENDANT D RELATIVE/FRIEND E OTHER X (SPECIFY) NO ONE Y	HEALTH PROFESSIONAL DOCTOR A NURSE/MIDWIFE B OTHER PERSON TRADITIONAL BIRTH ATTENDANT D RELATIVE/FRIEND E OTHER X (SPECIFY) NO ONE Y
415	Was (NAME) delivered by caesarian section?	YES 1 NO 2	YES 1 NO 2
417	Was (NAME) weighed at birth?	YES 1 NO 2 (SKIP TO 419)←	YES 1 NO 2 (SKIP TO 420)←
418	How much did (NAME) weigh? RECORD WEIGHT FROM HEALTH CARD, IF AVAILABLE.	GRAMS FROM CARD .. 1 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> GRAMS FROM RECALL 2 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW 99998	GRAMS FROM CARD .. 1 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> GRAMS FROM RECALL 2 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW 99998
419	Has your period returned since the birth of (NAME)?	YES 1 (SKIP TO 421)← NO 2 (SKIP TO 422)←	
420	Did your period return between the birth of (NAME) and your next pregnancy?		YES 1 NO 2 (SKIP TO 424)←
421	For how many months after the birth of (NAME) did you <u>not</u> have a period?	MONTHS <input type="text"/> <input type="text"/> DON'T KNOW 98	MONTHS <input type="text"/> <input type="text"/> DON'T KNOW 98
422	CHECK 234: RESPONDENT PREGNANT?	NOT PREG- <input type="checkbox"/> PREGNANT <input type="checkbox"/> NANT OR UNSURE (SKIP TO 424)←	
423	Have you resumed sexual relations since the birth of (NAME)?	YES 1 NO 2 (SKIP TO 425)←	
424	For how many months after the birth of (NAME) did you <u>not</u> have sexual relations?	MONTHS <input type="text"/> <input type="text"/> DON'T KNOW 98	MONTHS <input type="text"/> <input type="text"/> DON'T KNOW 98
425	Did you ever breastfeed (NAME)?	YES 1 NO 2 (SKIP TO 431)←	YES 1 NO 2 (SKIP TO 431)←



426	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS. IF LESS THAN 24 HOURS, RECORD HOURS. OTHERWISE, RECORD DAYS.	IMMEDIATELY 000 HOURS 1 <input type="text"/> <input type="text"/> DAYS 2 <input type="text"/> <input type="text"/>	IMMEDIATELY 000 HOURS 1 <input type="text"/> <input type="text"/> DAYS 2 <input type="text"/> <input type="text"/>
427	CHECK 404: CHILD ALIVE?	ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> (SKIP TO 429) ←	ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> (SKIP TO 429) ←
428	Are you still breastfeeding (NAME)?	YES 1 (SKIP TO 432) ← NO 2	YES 1 (SKIP TO 432) ← NO 2
429	For how many months did you breastfeed (NAME)?	MONTHS <input type="text"/> <input type="text"/> DON'T KNOW 98	MONTHS <input type="text"/> <input type="text"/> DON'T KNOW 98
430	Why did you stop breastfeeding (NAME)?	MOTHER ILL/WEAK 01 CHILD ILL/WEAK 02 CHILD DIED 03 NIPPLE/BREAST PROBLEM . 04 NOT ENOUGH MILK 05 MOTHER WORKING 06 CHILD REFUSED 07 WEANING AGE/AGE TO STOP 08 BECAME PREGNANT 09 STARTED USING CONTRACEPTION 10 OTHER 96 (SPECIFY)	MOTHER ILL/WEAK 01 CHILD ILL/WEAK 02 CHILD DIED 03 NIPPLE/BREAST PROBLEM . 04 NOT ENOUGH MILK 05 MOTHER WORKING 06 CHILD REFUSED 07 WEANING AGE/AGE TO STOP 08 BECAME PREGNANT 09 STARTED USING CONTRACEPTION 10 OTHER 96 (SPECIFY)
431	CHECK 404: CHILD ALIVE?	ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> (SKIP TO 434) (GO BACK TO 405 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 440)	ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> (SKIP TO 434) (GO BACK TO 405 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 440)
432	How many times did you breastfeed last night between sunset and sunrise? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER	NUMBER OF NIGHTTIME FEEDINGS <input type="text"/> <input type="text"/>	NUMBER OF NIGHTTIME FEEDINGS <input type="text"/> <input type="text"/>
433	How many times did you breastfeed yesterday during the daylight hours? IF ANSWER IS NOT NUMERIC PROBE FOR APPROXIMATE NUMBER.	NUMBER OF DAYLIGHT FEEDINGS <input type="text"/> <input type="text"/>	NUMBER OF DAYLIGHT FEEDINGS <input type="text"/> <input type="text"/>
434	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES 1 NO 2 DON'T KNOW 8	YES 1 NO 2 DON'T KNOW 8

435	At any time yesterday or last night, was (NAME) given any of the following: Plain water? Sugar water/Juice Herbal tea/Rooibos? Baby formula? Any kind of milk? Any other liquid? Any food made from [MAIZE or RICE or WHEAT], such as PORRIDGE or BREAD Eggs, fish or poultry? Meat? Fruits or vegetables? Any other solid or semi-solid foods?	<p style="text-align: center;">YES NO DK</p> PLAIN WATER 1 2 8 SUGAR WATER/JUICE 1 2 8 HERBAL/ROOIBOS TEA 2 8 BABY FORMULA 1 2 8 ANY KIND OF MILK . . . 1 2 8 OTHER LIQUIDS 1 2 8 FOOD MADE FROM MAIZE/RICE/WHEAT 1 2 8 EGGS/FISH/POULTRY 1 2 8 MEAT 1 2 8 FRUITS OR VEG. . . . 1 2 8 OTHER SOLID/SEMI-SOLID FOODS . 1 2 8	<p style="text-align: center;">YES NO DK</p> PLAIN WATER 1 2 8 SUGAR WATER/JUICE 1 2 8 HERBAL/ROOIBOS TEA 2 8 BABY FORMULA 1 2 8 ANY KIND OF MILK . . . 1 2 8 OTHER LIQUIDS 1 2 8 FOOD MADE FROM MAIZE/RICE/WHEAT 1 2 8 EGGS/FISH/POULTRY 1 2 8 MEAT 1 2 8 FRUITS OR VEG. . . . 1 2 8 OTHER SOLID/SEMI-SOLID FOODS . 1 2 8
436	CHECK 435: FOOD OR LIQUID GIVEN YESTERDAY?	"YES" TO ONE MORE <input type="checkbox"/> "NO/DK" TO ALL <input type="checkbox"/> (SKIP TO 439)	"YES" TO ONE MORE <input type="checkbox"/> "NO/DK" TO ALL <input type="checkbox"/> (SKIP TO 439)
437	(Aside from breast-feeding,) how many times did (NAME) eat yesterday, including both meals and snacks? IF 7 OR MORE TIMES, RECORD '7'.	NUMBER OF TIMES <input type="checkbox"/> DON'T KNOW 8	NUMBER OF TIMES <input type="checkbox"/> DON'T KNOW 8
439		GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 440.	GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 440.

SECTION 4B: IMMUNIZATION AND HEALTH

440	ENTER THE NAME, LINE NUMBER, AND SURVIVAL STATUS OF EACH BIRTH SINCE JANUARY 1993 IN THE TABLE. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, USE ADDITIONAL QUESTIONNAIRES).																																																																																																																																																														
441	LINE NUMBER FROM Q214	LAST BIRTH LINE NUMBER <input type="text"/> <input type="text"/>	NEXT-TO-LAST BIRTH LINE NUMBER <input type="text"/> <input type="text"/>																																																																																																																																																												
442	FROM Q218 AND Q221	NAME _____ ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> (GO TO 442 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 465.)	NAME _____ ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> (GO TO 442 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 465.)																																																																																																																																																												
443	Do you have a card where (NAME'S) vaccinations are written down? IF YES: May I see it please?	YES, SEEN 1 (SKIP TO 445) ← YES, NOT SEEN 2 (SKIP TO 447) ← NO CARD 3	YES, SEEN 1 (SKIP TO 445) ← YES, NOT SEEN 2 (SKIP TO 447) ← NO CARD 3																																																																																																																																																												
444	Did you ever have a vaccination card for (NAME)?	YES 1 (SKIP TO 447) ← NO 2	YES 1 (SKIP TO 447) ← NO 2																																																																																																																																																												
445	(1) COPY VACCINATION DATE FOR EACH VACCINE FROM THE CARD (2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A VACCINATION WAS GIVEN, BUT NO DATE IS RECORDED BCG Polio 0 (at birth) Polio 1 Polio 2 Polio 3 DPT 1 DPT 2 DPT 3 Hep. B 1 Hep. B 2 Hep. B 3 Measles	<table border="0"> <tr> <td></td> <td></td> <td>DAY</td> <td>MO</td> <td>YR</td> <td></td> </tr> <tr> <td>BCG</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>P0</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>P1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>P2</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>P3</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>D1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>D2</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>D3</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>H1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>H2</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> <tr> <td>H3</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>19</td> <td><input type="checkbox"/></td> </tr> 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446	Did (NAME) receive any vaccinations that are not recorded on this card? RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, POLIO 0-3, DPT 1-3, AND/OR MEASLES VACCINE(S).	YES 1 (PROBE FOR VACCINATIONS) ← AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 445) ← NO 2 DON'T KNOW 8 (SKIP TO 450) ←	YES 1 (PROBE FOR VACCINATIONS) ← AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 445) ← NO 2 DON'T KNOW 8 (SKIP TO 450) ←																																																																																																																																																												
447	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases?	YES 1 NO 2 (SKIP TO 450) ← DON'T KNOW 8	YES 1 NO 2 (SKIP TO 450) ← DON'T KNOW 8																																																																																																																																																												

448	Please tell me if (NAME) received any of the following vaccinations:		
448A	A BCG vaccination against tuberculosis, that is, an injection in the left arm or shoulder that caused a scar?	YES 1 NO 2 DON'T KNOW 8	YES 1 NO 2 DON'T KNOW 8
448B	Polio vaccine, that is, drops in the mouth?	YES 1 NO 2 (SKIP TO 448E) ← DON'T KNOW 8	YES 1 NO 2 (SKIP TO 448E) ← DON'T KNOW 8
448C	How many times?	NUMBER OF TIMES <input type="text"/> DON'T KNOW 8	NUMBER OF TIMES <input type="text"/> DON'T KNOW 8
448D	When was the first polio vaccine given, just after birth or later?	JUST AFTER BIRTH 1 LATER 2	JUST AFTER BIRTH 1 LATER 2
448E	DPT vaccination, that is, an injection usually given at the same time as polio drops?	YES 1 NO 2 (SKIP TO 448G) ← DON'T KNOW 8	YES 1 NO 2 (SKIP TO 448G) ← DON'T KNOW 8
448F	How many times?	NUMBER OF TIMES <input type="text"/> DON'T KNOW 8	NUMBER OF TIMES <input type="text"/> DON'T KNOW 8
448G	An injection to prevent measles?	YES 1 NO 2 DON'T KNOW 8	YES 1 NO 2 DON'T KNOW 8
448H	An injection to prevent hepatitis B?	YES 1 NO 2 (SKIP TO 450) ← DON'T KNOW 8	YES 1 NO 2 (SKIP TO 450) ← DON'T KNOW 8
448I	How many times?	NUMBER OF TIMES <input type="text"/> DON'T KNOW 8	NUMBER OF TIMES <input type="text"/> DON'T KNOW 8
450	Has (NAME) been ill or feverish with a cough at any time in the last 2 weeks?	YES 1 NO 2 (SKIP TO 454) ← DON'T KNOW 8	YES 1 NO 2 (SKIP TO 454) ← DON'T KNOW 8
451	When (NAME) was ill with a cough, did he/she breathe with difficulty or faster than usual with short, fast breaths?	YES 1 NO 2 DON'T KNOW 8	YES 1 NO 2 DON'T KNOW 8
452	Did you seek advice or treatment for the illness?	YES 1 NO 2 (SKIP TO 454) ←	YES 1 NO 2 (SKIP TO 454) ←
453	Where did you seek advice or treatment? Anywhere else? RECORD ALL MENTIONED. _____ NAME OF PLACE	PUBLIC SECTOR GOVT. HOSPITAL A DAY HOSP/CLINIC/ COMMUNITY HEALTH CENTER B MOBILE CLINIC D COMM. HEALTH WORKER .. E OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ... G PHARMACY H PRIVATE DOCTOR I OTHER PRIVATE MEDICAL _____ J (SPECIFY) OTHER SOURCE SHOP K TRAD. HEALER L OTHER _____ X (SPECIFY)	PUBLIC SECTOR GOVT. HOSPITAL A DAY HOSP/CLINIC/ COMMUNITY HEALTH CENTER B MOBILE CLINIC D COMM. HEALTH WORKER . E OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ... G PHARMACY H PRIVATE DOCTOR I OTHER PRIVATE MEDICAL _____ J (SPECIFY) OTHER SOURCE SHOP K TRAD. HEALER L OTHER _____ X (SPECIFY)

454	Has (NAME) had diarrhoea in the last 2 weeks?	YES 1 NO 2 (SKIP TO 464)←----- DON'T KNOW 8	YES 1 NO 2 (SKIP TO 464)←----- DON'T KNOW 8
455	Was there any blood in the stools?	YES 1 NO 2 DON'T KNOW 8	YES 1 NO 2 DON'T KNOW 8
456	On the worst day of the diarrhoea, how many bowel movements did (NAME) have?	NUMBER OF BOWEL MOVEMENTS  DON'T KNOW 98	NUMBER OF BOWEL MOVEMENTS  DON'T KNOW 98
457	Was he/she given the same amount to drink as before the diarrhoea, or more, or less?	SAME 1 MORE 2 LESS 3 DON'T KNOW 8	SAME 1 MORE 2 LESS 3 DON'T KNOW 8
458	Was he/she given the same amount of food to eat as before the diarrhoea, or more, or less?	SAME 1 MORE 2 LESS 3 DON'T KNOW 8	SAME 1 MORE 2 LESS 3 DON'T KNOW 8
459	When (NAME) had diarrhoea, was he/she given any of the following to drink: A fluid, made from a special rehydration packet? Thin watery porridge? Soup? Home-made sugar-salt-water solution? Milk or infant formula? Yoghurt-based drink? Black Tea? Water? Coke? Any other liquid?	YES NO DK FLUID FROM ORS PKT 1 2 8 THIN WATERY PORRIDGE 1 2 8 SOUP 1 2 8 SUG.-SALT-WAT. SOL. 1 2 8 MILK/INFANT FORM. . . 1 2 8 YOGHURT-BASED DR. 1 2 8 BLACK TEA 1 2 8 WATER 1 2 8 COKE 1 2 8 OTHER LIQUID 1 2 8	YES NO DK FLUID FROM ORS PKT 1 2 8 THIN WATERY PORRIDGE 1 2 8 SOUP 1 2 8 SUG.-SALT-WAT. SOL. 1 2 8 MILK/INFANT FORM. . . 1 2 8 YOGHURT-BASED DR. 1 2 8 BLACK TEA 1 2 8 WATER 1 2 8 COKE 1 2 8 OTHER LIQUID 1 2 8
460	Was anything (else) given to treat the diarrhoea?	YES 1 NO 2 (SKIP TO 462)←----- DON'T KNOW 8	YES 1 NO 2 (SKIP TO 462)←----- DON'T KNOW 8
461	What was given to treat the diarrhoea? Anything else? RECORD ALL MENTIONED.	HOMEMADE SUGAR-SALT-WATER SOLUTION A PILL OR SYRUP B INJECTION C (I.V.) INTRAVENOUS D HOME REMEDIES/ HERBAL MEDICINES E OTHER _____X (SPECIFY)	HOMEMADE SUGAR-SALT-WATER SOLUTION A PILL OR SYRUP B INJECTION C (I.V.) INTRAVENOUS D HOME REMEDIES/ HERBAL MEDICINES E OTHER _____X (SPECIFY)
462	Did you seek advice or treatment for the diarrhoea?	YES 1 NO 2 (SKIP TO 464)←-----	YES 1 NO 2 (SKIP TO 464)←-----

463	<p>Where did you seek advice or treatment?</p> <p>Anywhere else?</p> <p>RECORD ALL MENTIONED.</p>	<p>PUBLIC SECTOR GOVT. HOSPITAL A DAY HOSP/CLINIC/ COMMUNITY HEALTH CENTER B MOBILE CLINIC D COMM. HEALTH WORKER .. E OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ... G PHARMACY H PRIVATE DOCTOR I OTHER PRIVATE MEDICAL _____ J (SPECIFY) OTHER SOURCE SHOP K TRAD. HEALER L OTHER _____ X (SPECIFY)</p>	<p>PUBLIC SECTOR GOVT. HOSPITAL A DAY HOSP/CLINIC/ COMMUNITY HEALTH CENTER B MOBILE CLINIC D COMM. HEALTH WORKER . E OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ... G PHARMACY H PRIVATE DOCTOR I OTHER PRIVATE MEDICAL _____ J (SPECIFY) OTHER SOURCE SHOP K TRAD. HEALER L OTHER _____ X (SPECIFY)</p>
464		GO BACK TO 442 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 465.	GO BACK TO 442 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 465.
465	<p>Now I am going to ask you some general questions about caring for children with diarrhoea and cough.</p> <p>When a child has diarrhoea, should he/she be given less to drink than usual, about the same amount, or more than usual?</p>	<p>LESS TO DRINK 1 ABOUT SAME AMOUNT TO DRINK . 2 MORE TO DRINK 3 DON'T KNOW 8</p>	
466	<p>When a child has diarrhoea, should he/she be given less to eat than usual, about the same amount, or more than usual?</p>	<p>LESS TO EAT 1 ABOUT SAME AMOUNT TO EAT ... 2 MORE TO EAT 3 DON'T KNOW 8</p>	
467	<p>When a child is sick with diarrhoea, what signs of illness would tell you that he or she should be taken to a health facility or health worker?</p> <p>RECORD ALL MENTIONED. DO NOT PROBE</p>	<p>REPEATED WATERY STOOLS A ANY WATERY STOOLS B REPEATED VOMITING C ANY VOMITING D BLOOD IN STOOLS E FEVER F MARKED THIRST G NOT EATING/NOT DRINKING WELL . H GETTING SICKER/VERY SICK I NOT GETTING BETTER J SUNKEN FONTANELLE K OTHER _____ X (SPECIFY) DON'T KNOW Z</p>	
468	<p>CHECK 459, ALL COLUMNS:</p> <p>NO CHILD RECEIVED ORS <input type="checkbox"/> ANY CHILD RECEIVED ORS <input type="checkbox"/></p>		→470
469	<p>Have you ever heard of a special product called ORSOL OR SOROL that you can get for the treatment of diarrhoea?</p>	<p>YES 1 NO 2</p>	
470	<p>When a child is sick with a cough, what signs of illness would tell you that he or she should be taken to a health facility or health worker?</p> <p>RECORD ALL MENTIONED.</p>	<p>FAST BREATHING A DIFFICULT BREATHING B NOISY BREATHING C FEVER/HIGH TEMPERATURE D UNABLE TO DRINK E NOT EATING/NOT DRINKING WELL . F GETTING SICKER/VERY SICK G NOT GETTING BETTER H COUGHING A LOT I OTHER _____ X (SPECIFY) DON'T KNOW Z</p>	

SECTION 5. MARITAL AND SEXUAL RELATIONS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																
501	PRESENCE OF OTHERS AT THIS POINT.	<table border="0"> <tr> <td></td> <td align="right">YES</td> <td align="right">NO</td> </tr> <tr> <td>CHILDREN UNDER 10</td> <td align="right">1</td> <td align="right">2</td> </tr> <tr> <td>HUSBAND/PARTNER</td> <td align="right">1</td> <td align="right">2</td> </tr> <tr> <td>OTHER MALES</td> <td align="right">1</td> <td align="right">2</td> </tr> <tr> <td>OTHER FEMALES</td> <td align="right">1</td> <td align="right">2</td> </tr> </table>		YES	NO	CHILDREN UNDER 10	1	2	HUSBAND/PARTNER	1	2	OTHER MALES	1	2	OTHER FEMALES	1	2		
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CHILDREN UNDER 10	1	2																	
HUSBAND/PARTNER	1	2																	
OTHER MALES	1	2																	
OTHER FEMALES	1	2																	
Now I am going to ask you some sensitive questions about your marital and sexual relations. All information you give me is completely confidential.																			
502	Are you currently married or living with a man?	<table border="0"> <tr> <td>YES, CURRENTLY MARRIED</td> <td align="right">1</td> </tr> <tr> <td>YES, LIVING WITH A MAN</td> <td align="right">2</td> </tr> <tr> <td>NO, NOT IN UNION</td> <td align="right">3</td> </tr> </table>	YES, CURRENTLY MARRIED	1	YES, LIVING WITH A MAN	2	NO, NOT IN UNION	3	→507										
YES, CURRENTLY MARRIED	1																		
YES, LIVING WITH A MAN	2																		
NO, NOT IN UNION	3																		
503	Do you currently have a regular sexual partner, an occasional sexual partner, or no sexual partner at all?	<table border="0"> <tr> <td>REGULAR SEXUAL PARTNER</td> <td align="right">1</td> </tr> <tr> <td>TWO OR MORE REGULAR PARTNERS ...</td> <td align="right">2</td> </tr> <tr> <td>OCCASIONAL SEXUAL PARTNER</td> <td align="right">3</td> </tr> <tr> <td>NO SEXUAL PARTNER</td> <td align="right">4</td> </tr> </table>	REGULAR SEXUAL PARTNER	1	TWO OR MORE REGULAR PARTNERS ...	2	OCCASIONAL SEXUAL PARTNER	3	NO SEXUAL PARTNER	4									
REGULAR SEXUAL PARTNER	1																		
TWO OR MORE REGULAR PARTNERS ...	2																		
OCCASIONAL SEXUAL PARTNER	3																		
NO SEXUAL PARTNER	4																		
504	Have you ever been married or lived with a man?	<table border="0"> <tr> <td>YES, FORMERLY MARRIED</td> <td align="right">1</td> </tr> <tr> <td>YES, LIVED WITH A MAN</td> <td align="right">2</td> </tr> <tr> <td>NO</td> <td align="right">3</td> </tr> </table>	YES, FORMERLY MARRIED	1	YES, LIVED WITH A MAN	2	NO	3	→511 →514										
YES, FORMERLY MARRIED	1																		
YES, LIVED WITH A MAN	2																		
NO	3																		
506	What is your marital status now: are you widowed, divorced, or separated?	<table border="0"> <tr> <td>WIDOWED</td> <td align="right">1</td> </tr> <tr> <td>DIVORCED</td> <td align="right">2</td> </tr> <tr> <td>SEPARATED</td> <td align="right">3</td> </tr> </table>	WIDOWED	1	DIVORCED	2	SEPARATED	3	→511										
WIDOWED	1																		
DIVORCED	2																		
SEPARATED	3																		
507	Is your husband/partner living with you now or is he staying elsewhere?	<table border="0"> <tr> <td>LIVING WITH HER</td> <td align="right">1</td> </tr> <tr> <td>STAYING ELSEWHERE</td> <td align="right">2</td> </tr> </table>	LIVING WITH HER	1	STAYING ELSEWHERE	2													
LIVING WITH HER	1																		
STAYING ELSEWHERE	2																		
508	Does your husband have any other wives besides yourself?	<table border="0"> <tr> <td>YES</td> <td align="right">1</td> </tr> <tr> <td>NO</td> <td align="right">2</td> </tr> <tr> <td>DON'T KNOW</td> <td align="right">8</td> </tr> </table>	YES	1	NO	2	DON'T KNOW	8	→511										
YES	1																		
NO	2																		
DON'T KNOW	8																		
509	How many other wives does he have?	<table border="0"> <tr> <td>NUMBER OF OTHER WIVES</td> <td align="right"> <input type="text"/> <input type="text"/> </td> </tr> <tr> <td>DON'T KNOW</td> <td align="right">.98</td> </tr> </table>	NUMBER OF OTHER WIVES	<input type="text"/> <input type="text"/>	DON'T KNOW98													
NUMBER OF OTHER WIVES	<input type="text"/> <input type="text"/>																		
DON'T KNOW98																		
511	Have you been married or lived with a man only once, or more than once?	<table border="0"> <tr> <td>ONCE</td> <td align="right">1</td> </tr> <tr> <td>MORE THAN ONCE</td> <td align="right">2</td> </tr> </table>	ONCE	1	MORE THAN ONCE	2													
ONCE	1																		
MORE THAN ONCE	2																		
512	<p>CHECK 511:</p> <table border="0"> <tr> <td>MARRIED/LIVED WITH A MAN ONLY ONCE <input type="text"/></td> <td>MARRIED/LIVED WITH A MAN MORE THAN ONCE <input type="text"/></td> </tr> <tr> <td>In what month and year did you start living with your husband/partner?</td> <td>Now we will talk about your first husband/partner. In what month and year did you start living with him?</td> </tr> </table>	MARRIED/LIVED WITH A MAN ONLY ONCE <input type="text"/>	MARRIED/LIVED WITH A MAN MORE THAN ONCE <input type="text"/>	In what month and year did you start living with your husband/partner?	Now we will talk about your first husband/partner. In what month and year did you start living with him?	<table border="0"> <tr> <td>MONTH</td> <td align="right"> <input type="text"/> <input type="text"/> </td> </tr> <tr> <td>DON'T KNOW MONTH</td> <td align="right">98</td> </tr> <tr> <td>YEAR</td> <td align="right"> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> </td> </tr> <tr> <td>DON'T KNOW YEAR</td> <td align="right">9998</td> </tr> </table>	MONTH	<input type="text"/> <input type="text"/>	DON'T KNOW MONTH	98	YEAR	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	DON'T KNOW YEAR	9998	→514				
MARRIED/LIVED WITH A MAN ONLY ONCE <input type="text"/>	MARRIED/LIVED WITH A MAN MORE THAN ONCE <input type="text"/>																		
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MONTH	<input type="text"/> <input type="text"/>																		
DON'T KNOW MONTH	98																		
YEAR	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																		
DON'T KNOW YEAR	9998																		
513	How old were you when you started living with him?	AGE	<input type="text"/> <input type="text"/>																
514	How old were you when you had your first period?	AGE	<input type="text"/> <input type="text"/>																
515	<p>Now I need to ask you some questions about sexual activity in order to gain a better understanding of some health and family planning issues.</p> <p>When was the last time you had sexual intercourse (if ever)?</p>	<table border="0"> <tr> <td>NEVER</td> <td align="right">000</td> </tr> <tr> <td>DAYS AGO</td> <td align="right">1</td> <td align="right"> <input type="text"/> <input type="text"/> </td> </tr> <tr> <td>WEEKS AGO</td> <td align="right">2</td> <td align="right"> <input type="text"/> <input type="text"/> </td> </tr> <tr> <td>MONTHS AGO</td> <td align="right">3</td> <td align="right"> <input type="text"/> <input type="text"/> </td> </tr> <tr> <td>YEARS AGO</td> <td align="right">4</td> <td align="right"> <input type="text"/> <input type="text"/> </td> </tr> <tr> <td>BEFORE LAST BIRTH</td> <td align="right">996</td> </tr> </table>	NEVER	000	DAYS AGO	1	<input type="text"/> <input type="text"/>	WEEKS AGO	2	<input type="text"/> <input type="text"/>	MONTHS AGO	3	<input type="text"/> <input type="text"/>	YEARS AGO	4	<input type="text"/> <input type="text"/>	BEFORE LAST BIRTH	996	→608 →517
NEVER	000																		
DAYS AGO	1	<input type="text"/> <input type="text"/>																	
WEEKS AGO	2	<input type="text"/> <input type="text"/>																	
MONTHS AGO	3	<input type="text"/> <input type="text"/>																	
YEARS AGO	4	<input type="text"/> <input type="text"/>																	
BEFORE LAST BIRTH	996																		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
515A	Can you describe your relationship with the person you last had sexual intercourse with?	MARITAL PARTNER 01 OTHER REGULAR PARTNER 02 CASUAL ACQUAINTANCE 03 SOMEONE JUST MET 04 COMMERCIAL SEX WORKER 05 OTHER _____ 96 (SPECIFY)	
516	CHECK 301 AND 302: KNOWS CONDOM <input type="checkbox"/> ↓ The last time you had sex, was a condom used? DOES NOT KNOW CONDOM <input type="checkbox"/> ↓ Some men use a condom, which means that they put a rubber sheath on their penis during sexual intercourse. The last time you had sex, was a condom used?	YES 1 →516B NO 2 →516B DON'T KNOW 8	
516A	If not, what are the reasons why you didn't use one? RECORD ALL MENTIONED What is the Main Reason? <input type="checkbox"/>	WANTS CHILDREN A PERCEIVED LOW OR NO RISK OF STD/HIV B RESPONDENT DISLIKE C PARTNER DISLIKE D CULTURAL/RELIGIOUS PROHIBITION E DID NOT KNOW CONDOMS F DID NOT KNOW HOW TO USE CONDOM G BAD PREVIOUS EXPERIENCE WITH CONDOM H INCONVENIENT TO USE I LACK OF SPONTANEITY J DID NOT KNOW SOURCE OF CONDOMS K EMBARRASSED TO GET L INCONVENIENT TO GET M DIDN'T HAVE A CONDOM N COST TOO MUCH O NO/LESS SENSATION WITH CONDOM P SUGGESTS LACK OF TRUST OF PARTNER Q SUGGESTS LACK OF LOVE OF PARTNER R FEAR OF LOSING IT INSIDE S WASTES SPERM T RUBBER SMELL U PARTNER OR SELF HAS BURNING/DISCOMFORT WHEN USING CONDOM V PREFER SEX 'FLESH TO FLESH' W CONDOM USE NOT COOL/MANLY/TRENDY Y OTHER _____ X (SPECIFY) DON'T KNOW Z <input type="checkbox"/>	
516B	In the last 12 months, with how many different men have you had sexual intercourse?	NUMBER <input type="checkbox"/>	
517	Do you know of a place where you can get condoms?	YES 1 NO 2	→519

518	<p>Where is that?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p>	<p>PUBLIC SECTOR</p> <p>GOVERNMENT HOSPITAL 11</p> <p>DAY HOSP/CLINIC</p> <p>COMMUNITY HEALTH CENTER 12</p> <p>FAMILY PLANNING CLINIC 13</p> <p>MOBILE CLINIC 14</p> <p>COMMUNITY HEALTH WORKER . . 15</p> <p>OTHER PUBLIC 16</p> <p>_____</p> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE HOSPITAL/CLINIC 21</p> <p>PHARMACY 22</p> <p>PRIVATE DOCTOR 23</p> <p>OTHER PRIVATE</p> <p>MEDICAL 26</p> <p>_____</p> <p>(SPECIFY)</p> <p>OTHER SOURCE</p> <p>SHOP 31</p> <p>CHURCH 32</p> <p>FRIENDS/RELATIVES 33</p> <p>OTHER _____ 36</p> <p>(SPECIFY)</p>	
519	<p>How old were you when you first had sexual intercourse?</p>	<p>AGE <input type="text"/></p> <p>FIRST TIME WHEN MARRIED 96</p>	



SECTION 6. FERTILITY PREFERENCES




NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	CHECK 314: NEITHER STERILIZED <input type="checkbox"/> HE OR SHE STERILIZED <input type="checkbox"/>		→612
602	CHECK 234: NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/> Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children? Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE (A/ANOTHER) CHILD 1 NO MORE/NONE 2 SAYS SHE CAN'T GET PREGNANT .. 3 UNDECIDED/DON'T KNOW 8	→604 →606 →604
603	CHECK 234: NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/> How long would you like to wait from now before the birth of (a/another) child? After the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS 1 <input type="checkbox"/> YEARS 2 <input type="checkbox"/> SOON/NOW 993 SAYS SHE CAN'T GET PREGNANT 994 AFTER MARRIAGE 995 OTHER 996 (SPECIFY) DON'T KNOW 998	→606
604	CHECK 234: NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/>		→607
605	If you became pregnant in the next few weeks, would you be <u>happy</u> , <u>unhappy</u> , or would it <u>not matter</u> very much?	HAPPY 1 UNHAPPY 2 WOULD NOT MATTER 3	
606	CHECK 313: USING A METHOD? NOT ASKED <input type="checkbox"/> NOT CURRENTLY USING <input type="checkbox"/> CURRENTLY USING <input type="checkbox"/>		→612
607	Do you think you will use a method to delay or avoid pregnancy within the next 12 months?	YES 1 NO 2 DON'T KNOW 8	→609
608	Do you think you will use a method to delay or avoid pregnancy at any time in the future?	YES 1 NO 2 DON'T KNOW 8	→610
609	Which method would you prefer to use?	PILL 01 IUD 02 INJECTIONS 03 DIAPHRAGM/FOAM/JELLY 04 CONDOM 05 FEMALE STERILIZATION 06 MALE STERILIZATION 07 CALENDER/RHYTHM 08 WITHDRAWAL 09 HERB/REMEDIES 10 OTHER 96 (SPECIFY) UNSURE 98	→612


NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																								
610	<p>What is the main reason that you think you will never use a method?</p>	<p>FERTILITY-RELATED REASONS INFREQUENT SEX 22 MENOPAUSAL/HYSTERECTOMY 23 INFERTILE 24 WANTS MORE CHILDREN 26</p> <p>OPPOSITION TO USE RESPONDENT OPPOSED 31 HUSBAND/PARTNER OPPOSED . 32 OTHERS OPPOSED 33 RELIGIOUS PROHIBITION 34</p> <p>LACK OF KNOWLEDGE KNOWS NO METHOD 41 KNOWS NO SOURCE 42</p> <p>METHOD-RELATED REASONS HEALTH CONCERNS 51 FEAR OF SIDE EFFECTS 52 LACK OF ACCESS/TOO FAR 53 COST TOO MUCH 54 INCONVENIENT TO USE 55 INTERFERES WITH BODY'S NORMAL PROCESSES 56</p> <p>OTHER _____ 96 (SPECIFY)</p> <p>DON'T KNOW 98</p>																									
612	<p>CHECK 216:</p> <p>HAS LIVING CHILDREN <input type="checkbox"/> NO LIVING CHILDREN <input type="checkbox"/></p> <p>If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?</p> <p>If you could choose exactly the number of children to have in your whole life, how many would that be?</p> <p>PROBE FOR A NUMERIC RESPONSE.</p>	<p>NUMBER <input type="text"/></p> <p>OTHER _____ 96 (SPECIFY)</p>																									
614	<p>Would you say that you approve or disapprove of couples using a method to avoid getting pregnant?</p>	<p>APPROVE 1 DISAPPROVE 2 NO OPINION 3</p>																									
615	<p>Is it acceptable or not acceptable to you for information on family planning to be provided:</p> <p>On the radio? On the television?</p>	<table border="0"> <tr> <td></td> <td></td> <td>NOT</td> <td></td> </tr> <tr> <td></td> <td>ACCEPT-</td> <td>ACCEPT-</td> <td></td> </tr> <tr> <td></td> <td>ABLE</td> <td>ABLE</td> <td>DK</td> </tr> <tr> <td>RADIO</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>TELEVISION</td> <td>1</td> <td>2</td> <td>8</td> </tr> </table>			NOT			ACCEPT-	ACCEPT-			ABLE	ABLE	DK	RADIO	1	2	8	TELEVISION	1	2	8					
		NOT																									
	ACCEPT-	ACCEPT-																									
	ABLE	ABLE	DK																								
RADIO	1	2	8																								
TELEVISION	1	2	8																								
616	<p>In the last few months have you heard about family planning and sterilization:</p> <p>On the radio? On the television? In a newspaper or magazine? From a poster? From leaflets or brochures?</p>	<table border="0"> <tr> <td></td> <td></td> <td>YES</td> <td>NO</td> </tr> <tr> <td>RADIO</td> <td>1</td> <td>1</td> <td>2</td> </tr> <tr> <td>TELEVISION</td> <td>1</td> <td>1</td> <td>2</td> </tr> <tr> <td>NEWSPAPER OR MAGAZINE .</td> <td>1</td> <td>1</td> <td>2</td> </tr> <tr> <td>POSTER</td> <td>1</td> <td>1</td> <td>2</td> </tr> <tr> <td>LEAFLETS OR BROCHURES .</td> <td>1</td> <td>1</td> <td>2</td> </tr> </table>			YES	NO	RADIO	1	1	2	TELEVISION	1	1	2	NEWSPAPER OR MAGAZINE .	1	1	2	POSTER	1	1	2	LEAFLETS OR BROCHURES .	1	1	2	
		YES	NO																								
RADIO	1	1	2																								
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POSTER	1	1	2																								
LEAFLETS OR BROCHURES .	1	1	2																								
618	<p>In the last few months have you discussed the practice of family planning with your friends, neighbours, or relatives?</p>	<p>YES 1 NO 2</p>	<p>→620</p>																								
619	<p>With whom?</p> <p>Anyone else?</p> <p>RECORD ALL MENTIONED.</p>	<p>HUSBAND/PARTNER A MOTHER B FATHER C SISTER(S) D BROTHER(S) E DAUGHTER F MOTHER-IN-LAW G FRIENDS/NEIGHBOURS H</p> <p>OTHER _____ X (SPECIFY)</p>																									

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
620	CHECK 502: YES, <input type="checkbox"/> YES, <input type="checkbox"/> NO, <input type="checkbox"/> CURRENTLY MARRIED WITH A MAN LIVING WITH A MAN NOT IN UNION		→701
621	Spouses/partners do not always agree on everything. Now I want to ask you about your husband's/partner's views on family planning. Do you think that your husband/partner approves or disapproves of couples using a method to avoid pregnancy?	APPROVES 1 DISAPPROVES 2 DON'T KNOW 8	
622	How often have you talked to your husband/partner about family planning in the past year?	NEVER 1 ONCE OR TWICE 2 MORE OFTEN 3	
623	Do you think your husband/partner wants the same number of children that you want, or does he want more or fewer than you want?	SAME NUMBER 1 MORE CHILDREN 2 FEWER CHILDREN 3 DON'T KNOW 8	
624	Who makes the decisions about using methods to avoid pregnancy?	REPONDENT DECIDES 01 HUSBAND/PARTNER DECIDES 02 JOINTLY 03 OTHER _____ 96 (SPECIFY)	

SECTION 7: TREATMENT OF WOMEN IN THE HOUSEHOLD

Now I would like to ask you some difficult questions about how you have been treated in your life by other people.			
NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	CHECK 502: MARRIED, LIVING WITH A MAN 	NO UNION 	→703
702	Within the last year, has your partner/husband regularly not provided money you need for food, rent or bills but has money for other things?	YES 1 NO 2	
703	Over the last year, has anyone ever kicked, bitten, slapped, hit you with a fist, threaten you with a weapon, such as a knife, a stick, or a gun, or thrown something at you?	YES 1 NO 2 NO ANSWER 3	→705
704	Have any of your boyfriends or husbands ever kicked, bitten, slapped, hit you with a fist, threaten you with a weapon, such as a knife, a stick, or a gun, or thrown something at you?	YES 1 NO 2 NO ANSWER 3	→707 └→712
705	Can you tell me who has done this to you? Anyone else? RECORD ALL MENTIONED PROBE IF NOT MENTIONED	CURRENT HUSBAND/PARTNER A FORMER HUSBAND/PARTNER B BOYFRIEND C FATHER D BROTHER E SON F DAUGHTER G MOTHER H FATHER-IN-LAW I MOTHER-IN-LAW J OTHER MALE RELATIVE K OTHER FEMALE RELATIVE L MANAGER/FOREMAN/EMPLOYER M ASSAILANT N OTHER _____ X (SPECIFY) NO ANSWER Y	
706	Who is the person who did or does beat you most often?	CURRENT HUSBAND/PARTNER 01 FORMER HUSBAND/PARTNER 02 BOYFRIEND 03 FATHER 04 BROTHER 05 SON 06 DAUGHTER 07 MOTHER 08 FATHER-IN-LAW 09 MOTHER-IN-LAW 10 OTHER MALE RELATIVE 11 OTHER FEMALE RELATIVE 12 MANAGER/FOREMAN/EMPLOYER 13 OTHER _____ 96 (SPECIFY) NO ANSWER 98	
707	Is or was this person always, sometimes or never "on something" (drugs or alcohol) when he/she did this to you?	ALWAYS 1 SOMETIMES 2 NEVER 3 NO ANSWER 8	



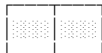











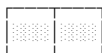



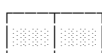







708	In the past one year, approximately how many times did this happen to you? IF NONE WRITE '00'	TIMES  NO ANSWER 96	
709	Have you ever left a husband/partner because you were being beaten?	YES 1 NO 2	
710	When you were pregnant, has anyone ever kicked, bitten, slapped, hit you with a fist, threaten you with a weapon, such as a knife, a stick, or a gun, or thrown something at you?	YES 1 NO 2 NEVER BEEN PREGNANT 3	
711	In the past year, have you ever been so seriously hurt during a beating that you needed medical attention even if you did not see a doctor?	YES 1 NO 2 NO ANSWER 3	
712	Has anyone ever forced you to have sexual intercourse against your will by threatening, holding you down or hurting you in some way?	YES 1 NO 2	→715
713	Has anyone ever persuaded you to have sexual intercourse when you did not want to?	YES 1 NO 2	→718
715	Did this happen before you were 15 years old?	YES 1 NO 2 NO ANSWER 3	└→718
716	How old were you when this first happened?	AGE 	
717	Who did this to you?	FATHER 01 OTHER MALE RELATIVE 02 BROTHER 03 FAMILY FRIEND/LODGER 04 LANDLORD/FARMER 05 SCHOOL TEACHER/PRINCIPAL 06 MAN/BOY FROM NEIGHBOURHOOD/ SCHOOL/CHURCH 07 MANAGER/FOREMAN/EMPLOYER . . . 08 STEPFATHER/MOTHER'S BOYFRIEND 09 BOYFRIEND/HUSBAND 10 STRANGER/RECENT ACQUAINTANCE 11 OTHER _____ 96 (SPECIFY)	└→724
718	Before you were 15 years old, did any man touch you against your will in a sexual way, such as unwanted touching, kissing, grabbing or fondling?	YES 1 NO 2 NO ANSWER 3	└→721
719	How old were you when this first happened?	AGE 	
720	Who did this to you?	FATHER 01 OTHER MALE RELATIVE 02 BROTHER 03 FAMILY FRIEND/LODGER 04 LANDLORD/FARMER 05 SCHOOL TEACHER/PRINCIPAL 06 MAN/BOY FROM NEIGHBOURHOOD/ SCHOOL/CHURCH 07 MANAGER/FOREMAN/EMPLOYER . . . 08 STEPFATHER/MOTHER'S BOYFRIEND 09 BOYFRIEND/HUSBAND 10 STRANGER/RECENT ACQUAINTANCE 11 OTHER _____ 96 (SPECIFY)	





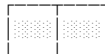

721	Before you were 15 years old, did any man force you to touch his private parts against your will?	YES 1 NO 2 NO ANSWER 8	→724
722	How old were you when this first happened	AGE 	
723	Who did this to you?	FATHER 01 OTHER MALE RELATIVE 02 BROTHER 03 FAMILY FRIEND/LODGER 04 LANDLORD/FARMER 05 SCHOOL TEACHER/PRINCIPAL 06 MAN/BOY FROM NEIGHBOURHOOD/ SCHOOL/CHURCH 07 MANAGER/FOREMAN/EMPLOYER 08 STEPFATHER/MOTHER'S BOYFRIEND 09 BOYFRIEND/HUSBAND 10 STRANGER/RECENT ACQUAINTANCE 11 OTHER _____ 96 (SPECIFY)	
724	Have you tried to get help from services of any kind because of beatings or other bad treatment?	YES 1 NO 2	→726
725	What do or did you use?	SHELTER A COUNSELLING B WOMEN'S CENTRE C SOCIAL WORKER D POLICE E CLINIC/HOSPITAL F OTHER _____ X (SPECIFY)	
726	Would you have liked to have had help from a service that was not available?	YES 1 NO 2	→801
727	What service would have been helpful to you?	SHELTER A COUNSELLING B WOMEN'S CENTRE C SOCIAL WORKER D POLICE E CLINIC/HOSPITAL F OTHER _____ X (SPECIFY)	

SECTION 8: AIDS










NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801	Have you ever heard of an illness called AIDS?	YES 1 NO 2	→901
802	How much information about HIV/AIDS did you obtain from each of the following sources: Answer each question with a lot, some or none a) TV? b) Radio? c) Newspaper? d) Pamphlets? e) Health Workers? f) Friends? g) Partner(s)? h) Relatives?	A LOT SOME NONE TV 1 2 3 RADIO 1 2 3 NEWSPAPER 1 2 3 PAMPHLETS 1 2 3 HEALTH WORKERS 1 2 3 FRIENDS 1 2 3 PARTNER(S) 1 2 3 RELATIVES 1 2 3	
803	I am going to read out some statements about protection against HIV/AIDS. For each statement, please tell me whether you think it is true or not. People can protect themselves from HIV/AIDS by: a) having a good diet b) staying with one faithful partner c) avoiding public toilets d) using condoms during sexual intercourse e) avoiding touching a person who has AIDS f) avoiding sharing food with a person who has AIDS g) avoiding being bitten by mosquitos or similar insects h) making sure any injection they have is done with a clean needle l) avoid sharing razor blades	TRUE NOT TRUE DON'T KNOW DIET 1 2 8 FAITHFUL 1 2 8 AVOID TOILETS 1 2 8 CONDOMS 1 2 8 AVOID TOUCH 1 2 8 AVOID SHARED FOOD 1 2 8 AVOID MOSQUITOS 1 2 8 CLEAN INJECTION 1 2 8 AVOID RAZOR 1 2 8	
804	Do you think that a person infected with the AIDS virus always shows symptoms or can such a person look perfectly healthy?	ALWAYS SHOWS SYMPTOMS 1 CAN LOOK HEALTHY 2 DON'T KNOW 8	
804A	I am going to ask you some questions about the need for people to be informed about their HIV/AIDS status: a) should people with AIDS be told about their status? b) should people diagnosed HIV positive be told about their status? c) should HIV/AIDS patients tell their partner(s) about their status? d) should the reporting of AIDS status to health authorities be made mandatory by law? e) should the reporting of HIV status to health authorities be made mandatory by law?	TRUE NOT TRUE DON'T KNOW TOLD ABOUT AIDS 1 2 8 TOLD ABOUT HIV 1 2 8 TELL PARTNERS 1 2 8 REPORT AIDS 1 2 8 REPORT HIV 1 2 8	
805	Do you personally know someone who has been diagnosed with HIV/AIDS or who has died of AIDS?	YES 1 NO 2	→901
805A	How much assistance and support do you think AIDS patients receive from each of the following: Answer the questions with a lot, some or none. a) employers? b) co-workers? c) insurance companies? d) health workers? e) friends? f) partner(s)? g) relatives?	A LOT SOME NONE A) EMPLOYERS 1 2 3 B) CO-WORKERS 1 2 3 C) INSURANCE C. 1 2 3 D) HEALTH WORKERS 1 2 3 E) FRIENDS 1 2 3 F) PARTNER(S) 1 2 3 G) RELATIVES 1 23	

SECTION 9 - MATERNAL MORTALITY

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP			
901	Now I would like to ask some questions about your brothers and sisters, that is, all of the children born to your natural mother, including those who are living with you, those living elsewhere and those who have died. How many children did your mother give birth to, including you?					
	NUMBER OF BIRTHS TO NATURAL MOTHER					
902 CHECK 901: TWO OR MORE BIRTHS ONLY ONE BIRTH (RESPONDENT ONLY)						
903	How many of these births did your mother have before you were born?	NUMBER OF PRECEDING BIRTHS				
904	905	906	907	908	909	910
What was the name given to your eldest (next oldest) brother or sister? [1] _____	Is (NAME) male or female? MALE 1 FEMALE ... 2	Is (NAME) still alive? YES 1 NO 2 GO TO 908 DK 8 GO TO [2]	How old is (NAME)?  GO TO [2]	In what year did (NAME) die?  GO TO 910 DK 9998	How many years ago did (NAME) die? 	How old was (NAME) when she/he died?  IF MALE OR DIED BEFORE AGE 12 GO TO [2]
[2] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 DK 8 GO TO [3]	 GO TO [3]	 GO TO 910 DK 9998		 IF MALE OR DIED BEFORE AGE 12 GO TO [3]
[3] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 DK 8 GO TO [4]	 GO TO [4]	 GO TO 910 DK 9998		 IF MALE OR DIED BEFORE AGE 12 GO TO [4]
[4] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 DK 8 GO TO [5]	 GO TO [5]	 GO TO 910 DK 9998		 IF MALE OR DIED BEFORE AGE 12 GO TO [5]
[5] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 DK 8 GO TO [6]	 GO TO [6]	 GO TO 910 DK 9998		 IF MALE OR DIED BEFORE AGE 12 GO TO [6]
[6] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 DK 8 GO TO [7]	 GO TO [7]	 GO TO 910 DK 9998		 IF MALE OR DIED BEFORE AGE 12 GO TO [7]

911 Was (NAME) pregnant when she died?	912 Did (NAME) die during childbirth?	913 Did (NAME) die within two months after the end of a pregnancy or childbirth?	914 Was her death due to complications of pregnancy or childbirth?	915 How many children did (NAME) give birth to during her lifetime?
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [2]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [3]
YES 1] GOT TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [4]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [5]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [6]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [7]

904 What was the name given to your eldest (next oldest) brother or sister?	905 Is (NAME) male or female?	906 Is (NAME) still alive?	907 How old is (NAME)?	908 In what year did (NAME) die?	909 How many years ago did (NAME) die?	910 How old was (NAME) when she/he died?
[7] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 ↙ DK 8 ↘ GO TO [8] ↙	<input type="text"/> GO TO [8]	<input type="text"/> GO TO 910 ↙ DK 9998	<input type="text"/>	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 GO TO [8]
[8] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 ↙ DK 8 ↘ GO TO [9] ↙	<input type="text"/> GO TO [9]	<input type="text"/> GO TO 910 ↙ DK 9998	<input type="text"/>	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 GO TO [9]
[9] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 ↙ DK 8 ↘ GO TO [10] ↙	<input type="text"/> GO TO [10]	<input type="text"/> GO TO 910 ↙ DK 9998	<input type="text"/>	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 GO TO [10]
[10] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 ↙ DK 8 ↘ GO TO [11] ↙	<input type="text"/> GO TO [11]	<input type="text"/> GO TO 910 ↙ DK 9998	<input type="text"/>	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 GO TO [11]
[11] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 ↙ DK 8 ↘ GO TO [12] ↙	<input type="text"/> GO TO [12]	<input type="text"/> GO TO 910 ↙ DK 9998	<input type="text"/>	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 GO TO [12]
[12] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 ↙ DK 8 ↘ GO TO [13] ↙	<input type="text"/> GO TO [13]	<input type="text"/> GO TO 910 ↙ DK 9998	<input type="text"/>	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 GO TO [13]
[13] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 ↙ DK 8 ↘ GO TO [14] ↙	<input type="text"/> GO TO [14]	<input type="text"/> GO TO 910 ↙ DK 9998	<input type="text"/>	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 GO TO [14]
[14] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 ↙ DK 8 ↘ GO TO [15] ↙	<input type="text"/> GO TO [15]	<input type="text"/> GO TO 910 ↙ DK 9998	<input type="text"/>	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 GO TO [15]
[15] _____	MALE 1 FEMALE ... 2	YES 1 NO 2 GO TO 908 ↙ DK 8 ↘ GO TO [16] ↙	<input type="text"/> GO TO [16]	<input type="text"/> GO TO 910 ↙ DK 9998	<input type="text"/>	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 GO TO [16]

911 Was (NAME) pregnant when she died?	912 Did (NAME) die during childbirth?	913 Did (NAME) die within two months after the end of a pregnancy or childbirth?	914 Was her death due to complications of pregnancy or childbirth?	915 How many children did (NAME) give birth to during her lifetime?
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [8]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [9]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [10]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [11]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [12]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [13]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [14]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [15]
YES 1] GO TO 914 ↓] NO 2	YES 1] GO TO 915 ↓] NO 2	YES 1 NO 2] GO TO 915 ↓]	YES 1 NO 2	 GO TO [16]

SECTION 10. HUSBAND'S BACKGROUND, WOMAN'S WORK AND RESIDENCE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1001	CHECK 502 AND 504: CURRENTLY MARRIED/ LIVING WITH A MAN <input type="checkbox"/> FORMERLY MARRIED/ LIVED WITH A MAN <input type="checkbox"/> NEVER MARRIED AND NEVER IN UNION <input type="checkbox"/>		→1003 →1009
1002	How old was your husband/partner on his last birthday?	AGE <input type="text"/>	
1003	Did your (last) husband/partner ever attend school?	YES 1 NO 2	→1005
1004	What was the highest (standard/year) he completed at school?	LESS THAN 1 YEAR COMPLETED . 00 SUB A/CLASS 1 71 SUB B/CLASS 2 72 STANDARD 1 01 STANDARD 2 02 STANDARD 3 03 STANDARD 4 04 STANDARD 5 05 STANDARD 6 06 STANDARD 7 07 STANDARD 8 08 STANDARD 9 09 STANDARD 10 10 FURTHER STUDIES INCOMPLETE . 11 DIPLOMA/OTHER POSTSCHOOL COMPLETE 12 FURTHER DEGREE COMPLETE . . 13 DON'T KNOW 98	
1005	Does your husband/partner currently work?	YES 1 NO 2 DON'T KNOW 8	
1006	What (is/was) your (last) husband/partner's occupation? That is, what kind of work (does/did) he mainly do?	<input type="text"/> <hr/> <hr/> <hr/>	
1009	Aside from your own housework, are you currently working for money?	YES 1 NO 2	→101 2
1010	As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. Are you currently doing any of these things or any other work?	YES 1 NO 2	→101 2
1011	Have you done any work in the last 12 months?	YES 1 NO 2	→102 6
1012	What is your occupation, that is, what kind of work do you mainly do?	<input type="text"/> <hr/> <hr/> <hr/>	
1015	Do you do this work for a family business, are you employed by someone outside the family or are you self-employed?	FOR FAMILY MEMBER 1 FOR SOMEONE ELSE 2 SELF-EMPLOYED 3	
1016	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR 1 SEASONALLY/PART OF THE YEAR . 2 ONCE IN A WHILE 3	→1018 →1019

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1017	During the last 12 months, how many months did you work?	NUMBER OF MONTHS ... <input type="text"/>	
1018	During the last 12 months, how many days a week did you usually work (in the months that you worked) ?	NUMBER OF DAYS <input type="text"/>	→1020
1019	During the last 12 months, approximately how many days did you work?	NUMBER OF DAYS .. <input type="text"/>	
1020	Do you earn cash for your work? PROBE: Do you make money for working?	YES 1 NO 2	→1023
1021	How much do you usually earn for this work? PROBE: Is this by the day, by the week, or by the month?	PER HOUR 1 <input type="text"/> PER DAY . 2 <input type="text"/> PER WEEK 3 <input type="text"/> PER MONTH 4 <input type="text"/> PER YEAR 5 <input type="text"/> OTHER _____ 9999996 (SPECIFY)	
1022	CHECK 502: YES, <input type="checkbox"/> CURRENTLY MARRIED YES, LIVING WITH A MAN <input type="checkbox"/> Who mainly decides how the money you earn will be used: you, your husband/partner, you and your husband/partner jointly, or someone else?	O, NOT IN UNION <input type="checkbox"/> Who mainly decides how the money you earn will be used: you, someone else, or you and someone else jointly? RESPONDENT DECIDES 1 HUSBAND/PARTNER DECIDES 2 JOINTLY WITH HUSBAND/PARTNER 3 SOMEONE ELSE DECIDES 4 JOINTLY WITH SOMEONE ELSE ... 5	
1023	Do you usually work at home or away from home?	HOME 1 AWAY 2	
1024	CHECK 222 AND 223: IS A CHILD LIVING AT HOME WHO IS AGE 5 OR LESS? YES <input type="checkbox"/> NO <input type="checkbox"/>	→1026	
1025	Who usually takes care of (NAME OF YOUNGEST CHILD AT HOME) while you are working?	RESPONDENT 01 HUSBAND/PARTNER 02 OLDER FEMALE CHILD 03 OLDER MALE CHILD 04 OTHER RELATIVES 05 NEIGHBORS 06 FRIENDS 07 SERVANTS/HIRED HELP 08 CHILD IS IN SCHOOL 09 INSTITUTIONAL CHILD CARE 10 HAS NOT WORKED SINCE LAST BIRTH 95 OTHER _____ 96 (SPECIFY)	
1026	RECORD THE TIME	HOURS <input type="text"/> MINUTES <input type="text"/>	

INTERVIEWERS OBSERVATION

Comments about the respondent/s:

Comments on Specific Questions:

Any other comments:

SUPERVISOR'S OBSERVATION

Name of Supervisor: -----

Date: -----

EDITOR'S OBSERVATIONS

Name of Editor: -----

Date: -----