

## Foreword from the Minister of Education

In 2002, my Department in partnership with the Department of Health, commissioned the Medical Research Council to undertake the Youth Risk Behaviour Survey. The survey was undertaken to provide us with data on the prevalence of the behaviour that places school going children at risk and to advise on programmes for intervention.

This is the first national survey of its kind that has been conducted in South Africa. Other countries, like the United States of America have been conducting such surveys since 1990.

In 1999 my Ministry launched a five-year plan, *Tirisano*, to transform the education system in South Africa. This programme aims to address educational, health and social needs of learners and includes programmes of sexuality, gender, school safety, health and skills. This programme, like everything else we do in the Ministry of Education is based on two key principles. Firstly, it is guided by the fundamental belief system laid down in the Constitution, and, in particular the principle of freedom, justice and democracy. Secondly, it is based on the principle of doing everything that is in the best interest of the child.

To do this, we have committed ourselves to working strenuously and in partnership with others towards achieving the mission of establishing a caring and responsive education and training system of the 21st Century. Our motto of *Tirisano* is not an empty slogan. We have witnessed increasing partnerships between the Department of Education and other role players in both the public and private sector and this report indicates the fruits of *Tirisano*. It is our belief that only in this way can we move towards an education and training system, which empowers children to reach the ideal promised in the Constitution to 'free the potential of all our people'.

You will note from the report that the survey focuses on a number of behavioural patterns which affect young people. These include suicide, substance abuse and sexual behaviour. The safety of schools and the prevention of crime and violence are enormous challenges facing schools and communities. The 'Safe Schools' initiative of the Department of Education is aimed, not only at freeing the community from fear of victimisation, but also at the realisation of the potential of all our youth. Its focused drive is aimed at developing an environment in which the sharing of knowledge is enabled. Schools can influence childrens' ideas about sex and relationships even before the onset of intimate encounters and they play an important role in imparting the fundamental values of our Constitution. Our Safe Schools initiative invites the inclusion of all those who believe in the normalisation of the learning environment as a place of freedom and respect, and as the nerve centre of a community at peace with itself.

It therefore gives me great pleasure to commend this report, which gives a detailed account of risk-taking behaviours that young people engage in. Most importantly, this report provides important data that will assist in the development of evidence-based intervention. As the Nguni idiom says, *Ligotshwa lisemanzi*. It is easier to bend a stick whilst it is still wet. Early intervention is the most cost effective and reliable way to support and guide young people to self-fulfilment through education. As the age at which young people experience their first intimate relations steadily falls, dealing with HIV/AIDS and nurturing a culture of sexual and social responsibility requires very serious and decisive intervention and attention from all of us.



PROF KADER ASMAL, MP

Minister of Education



*“A passion for the possible”*

(Søren Kierkegaard 1813 – 1855)

## EXECUTIVE SUMMARY

This Youth Risk Behaviour Survey is one of the first studies undertaken in South Africa, and possibly in Africa, to establish the prevalence of key risk behaviours, namely: intentional and unintentional injuries, violence and traffic safety, suicide-related behaviours, behaviours related to substance abuse (tobacco, alcohol and other drugs), sexual behaviour, nutrition and dietary behaviours, physical activity and hygiene related behaviours.

The Medical Research Council was commissioned by the National Department of Health of South Africa to undertake the Youth Risk Behaviour Survey of 2002. It consisted of sampling 23 schools per province, within which 14 766 learners were sampled and 10 699 participated. The terms of reference were to provide nationally and provincially representative data on the prevalence of the above behaviours that place school-going learners at risk.

The South African Youth Risk Behaviour Survey was adapted from the youth risk behaviour surveillance system (YRBSS) which was developed by the Centers for Disease Control and Prevention (CDC), in the United States in 1990. Its aim is to monitor priority health risk behaviours that contribute to morbidity, mortality and social problems among youth and adults.

Children and adolescents below the age of 19 years make up half of the South African population of 44.8 million. <sup>(1)</sup> Following a history of marginalisation, South African youth are experiencing a transition in their political, social, demographic and economic environment as the country moves from an authoritarian to a democratic state. The transition to democracy has made schooling compulsory, which means large numbers of young people are now engaged in the process of education. <sup>(2)</sup> Almost 12 million children are enrolled in schools and they account for 28% of the total population. <sup>(3)</sup> The school setting therefore provides an ideal social context to obtain information about young people and their behaviours.

Over the last decade the South African Government adopted several global legislative and policy initiatives to promote the health and well-being of young people, firmly establishing a sound constitutional, legislative and policy foundation for the social development of youth. During this decade a substantial number of social and development programmes have been implemented. These provide the milieu within which school-based education relating to health and development issues might take place effectively. All these policies and programmes face critical challenges in terms of the risk transition that youth are undergoing.

It is therefore important to initiate systematic monitoring of behaviours that place young people at risk, so as to develop an evidence base for intervention planning. Additionally, such a database will contribute towards tracking the youth as the transition continues. The objectives of the study therefore were to provide provincially and nationally representative data, inform intervention development, inform health policy development and adaptation, establish baseline data to assess and project how risk behaviours change over time, and provide an early warning system for future epidemics related to risk behaviour.

The Health Promotion Matrix provides a basis for the various strategies and levels of impact of health promotion activities, and can be applied to any single behaviour or cluster of behaviours that place young people at increased risk of morbidity and mortality. The strategies include health education and health information, provisions and facilities, and legislation and biotechnological interventions, while the levels of impact range are the primary prevention level, the early detection level and the patient care level. Such a framework will contribute to a sustained package of interventions to promote behaviour change, including the management of research and capacity development activities.

This survey was a cross-sectional national prevalence study among secondary school learners in South Africa. The study sample comprised of grades 8, 9, 10 and 11 learners selected from Government schools in the nine provinces of South Africa. The survey was planned for all nine provinces of South Africa using a two-stage cluster sample design so as to ensure nationally and provincially representative data.

Data were collected through self-administered questionnaires as well as by taking measures of height and weight of each learner. The data collection period extended from August to October 2002. Before data collection commenced networking occurred with the schools, provincial Departments of Health and Education and other stakeholders to obtain their endorsement and support for the

study. A range of individuals from various sectors such as health, education and community structures, for example the Youth Commission and universities, were invited to undergo specialised training in order to be selected to work as survey administrators and anthropometric data collectors.

Standardised methods for conducting the study (preparing packages for schools, couriering the packages, couriering equipment for taking height and weight measurements, procedures for supervising the answering of the questionnaires in the schools, collecting the questionnaires and answer sheets, taking of anthropometric measures and couriering the data and anthropometric equipment back to MRC in Cape Town) were developed. Data analysis was undertaken using the Epi-info program and ethical approval for the study was obtained from the South African Medical Association.

The overall response rate was 68%. In summary, there were considerable variations across age, gender, grade, race and province for each of the risk behaviours, and in the absence of good-quality representative national data for this age cohort, it is difficult to comment on trends – besides providing the actual prevalence of each behaviour. This landmark study has established a baseline for future studies and analysis of risk behaviours among youth.

With regard to behaviours related to intentional and unintentional injuries, over 17% of learners carried weapons and 41% had been bullied in the past month, 14% belonged to gangs during the past six months, and 10% had been forced to have sex. On school property during the past month 9% of learners carried weapons, 15% were threatened or injured and 19% were injured in physical fights, while a third (32%) felt unsafe at school.

Over one-third of learners (35%) had ever been driven by someone who had been drinking, while 8% had ever driven after drinking.

In the past six months a quarter of learners (25%) had experienced feelings of sadness or hopelessness, 19% had considered suicide and 17% had attempted suicide; 28% of those who attempted suicide required treatment.

Substance abuse was also investigated. Alcohol consumption ranged from 49% for ever having used it, 32% for drinking in the past month, and 23% had engaged in binge drinking in the past month.

With regard to smoking 31% had ever smoked. Among current smokers, 84% had been exposed to passive smoking in the past week and 48% of them had a parent or guardian that smoked. Among never smokers, 56% had been exposed to passive smoking in the past week, and 30% of them had a parent or guardian that smoked. Drug consumption varied from 13% for ever having using dagga, 12% for heroin, 11% for inhalants and 6% for Mandrax.

With regard to sexual behaviour, 41% of learners had had sex, and the age of initiation of sexual activity was under 14 years for 14% of them. Among the learners that had ever had sex, 54% had more than one past sexual partner, 70% had had sex in the past three months, 14% had had sex after consuming alcohol or drugs, only 29% practiced consistent condom usage, 16% had been pregnant, and overall 72% had received education regarding HIV and AIDS.

Anthropometric analysis of nutritional status with respect to undernutrition revealed stunting (low height for age) in 11% of learners, while 9% were underweight (low weight for age), and 4% had wasting (low weight for height). With regard to overnutrition, the prevalence of being overweight was 17% and the prevalence of obesity was 4%.

With regard to physical activity, 29% had no physical education classes in schools and 25% watched TV for over 3 hours per day. With regard to hygienic practices among learners, 89% brushed their teeth daily, 89% had their own toothbrushes and 76% washed their hands after going to the toilet.

The survey generated both general and specific recommendations. The key general recommendation acknowledged the need to repeat the Youth Risk Behaviour Survey on a triennial basis. This will provide a long-term mechanism to monitor the socio-demographic transition experienced by the youth, and the impact of youth-targeted interventions. Secondly, it is recommended that a Youth Development Programme (YDP) be set up. The YDP in collaboration with the National Youth Commission, Government departments and all other stakeholders will be responsible for the health and social development programming for youth across social clusters. Specific recommendations were made to address the clusters of behaviours covered in this survey, based on the concept of intersectoral intervention development to limit behaviours that place young people at risk.

# SECTION A INTRODUCTION



# CHAPTER 1

## Introduction and Background

### 1.1. Introduction

The Medical Research Council was commissioned by the National Department of Health of South Africa to undertake the Youth Risk Behaviour Survey in 2002. The terms of reference were to provide national and provincial representative data on the prevalence of behaviours that place school-going learners at risk. The Youth Risk Behaviour Survey is the first national survey of a cluster of behaviours conducted since the emergence of a single democratic school system in South Africa. It consisted of sampling 23 schools per province, within which 14 766 learners in grades 8, 9, 10 and 11 were sampled and 10 699 participated.

The Youth Risk Behaviour Surveillance System (YRBSS) was developed by the Centers for Disease Control (CDC) in the United States of America (USA) in 1990 with the aim of monitoring priority health risk behaviours that impact on the main causes of morbidity, mortality and social problems among youth and adults. In the USA the survey is conducted every two years among grade 9-12 learners. The data are used to design and evaluate programmes to combat the effects of high-risk behaviours. Examples are New York City, where data on unintentional injuries led to the development of the "Safety Makes Sense" programme, while in Tennessee state legislators used YRBSS data to support the School Health Improvement Act, and in Washington DC the data were used to raise funding for a school health clinic.<sup>(4)</sup>

Children and adolescents below the age of 19 years make up half of South Africa's population.<sup>(5)</sup> Following a history of marginalisation, South African youth are experiencing a transition in their political, social and economic environment as the country moves from an authoritarian to a democratic state. The transition to democracy has made schooling compulsory, which means large numbers of young people are now engaged in the process of education.<sup>(2)</sup> The school setting therefore provides an appropriate social context to obtain information about young people and their behaviours, and this setting is also ideal for future health interventions.

The objectives of the study were to:

- provide provincially and nationally representative data
- inform intervention development
- inform health policy development and adaptation
- establish baseline data to assess and project how risk behaviours change over time, and to provide an early warning system for future epidemics.

In this survey, data on the following behaviours were collected from school learners:

- Intentional and unintentional injuries: violence, traffic safety and suicide-related behaviours
- Substance abuse: tobacco, alcohol and other drugs
- Sexual behaviour
- Nutrition and dietary behaviours
- Physical activity and
- Hygiene-related behaviours.

### 1.2. Background

South Africa is an upper-middle-income developing country, with a mix of First World and Third World economies, and a large gap between rich and poor. These extremes of wealth and poverty

are due to 350 years of colonialism and apartheid<sup>a</sup>. Almost 78% of the population is "Black/African" and the prevalence of poverty is higher among the "Black/African" population with 72% of the poor living in rural areas. South Africa has rich cultural traditions with eleven official languages.<sup>(6)</sup>

Almost 12 million children are enrolled in schools and they account for 28% of the total population.<sup>(3)</sup> The South African Schools Act of 1996 makes schooling compulsory for all 7 to 15-year-olds.<sup>(2)</sup> The school therefore facilitates access to a large number of young people. Furthermore, schools in SA provide a relatively stable environment that can influence the lives of a wide array of people, such as learners, educators, parents and the community. In addition, many schools have the infrastructure to support health promotion interventions, making them ideal centres for community development.

Since 1994 the South African Government has undertaken several international legislative and country-level policy initiatives to promote the health and well-being of young people, for example, internationally the signing of the World Summit Declaration and the ratification of the Convention on the Rights of the Child,<sup>(7)</sup> and of the Framework Convention for Tobacco Control.<sup>(8)</sup> At a country level, the National Plan of Action for Children is a further illustration of existing commitments to improving the health of the youth in South Africa.<sup>(9)</sup> The Human Immunodeficiency Virus (HIV), Acquired Immune Deficiency Syndrome (AIDS) and Sexually Transmitted Infection (STI) Strategic Plan For South Africa 2000-2005 highlights youth and their sexual behaviour as a priority both for research and service delivery.<sup>(10)</sup> In particular, the Ministry of Education has also launched a five year plan entitled "The Tirisano programme" to transform the education and training system in South Africa from one of segregation and disparity to one of equal opportunity for all South Africans.<sup>(11)</sup> This programme spans both the educational and health needs of learners to include sexuality, gender, substance misuse and HIV and AIDS. Additionally, a Drug Policy that bans the use, distribution, and possession of both legal and illegal drugs has been implemented within the school system.<sup>(12)</sup> The above policies have established a constitutional and legislative foundation, which in turn creates the milieu needed to promote health and development interventions for young people.

Concomitant with the democratic transition affecting all sectors of society, South Africa is also undergoing an epidemiological transition. This is characterised by a triple burden of disease, namely infectious diseases underpinned by poverty and underdevelopment; chronic diseases associated with urbanisation and industrialisation, and intentional and unintentional injuries that are closely associated with high levels of violence. The growing HIV/AIDS and tuberculosis (TB) epidemics exacerbate this burden of disease. Furthermore, the top ten risks in the global burden of disease, namely underweight, unsafe sex, high blood pressure, tobacco consumption, alcohol consumption, unsafe water, sanitation and hygiene, iron deficiency, indoor smoke from solid fuels, high cholesterol and obesity, have links to both poverty and industrialisation, which co-exist in South Africa.<sup>(13)</sup>

Historically, public health decisions in South Africa focused mainly on reducing mortality rates. This can be problematic because such decisions miss important changes in risks for disease as well as changes in disease profiles, which precede mortality rate increases by decades: the time from which risk behaviours start to occur in a few individuals in a population to the time when changes in death rates become obvious, to ill health and disability. For example, the lag between exposure to risk and disease manifestation as in the case of smoking behaviour and lung cancer is 15 to 25 years. In the case of smoking in South Africa, age-standardised lung cancer death rates for 45 to 75-year-olds for the period of 1968 to 1988 show a 100% increase in lung cancer for "Coloured" men and 300% among "Coloured" women.<sup>(14)</sup> These sharp increases in lung cancer prevalence reflect the smoking pattern in this population of a decade or two previously. The Youth Risk Behaviour Survey therefore aims to provide data to help estimate the extent of *future* potential epidemics and contribute to the development of evidence-based interventions.

a. During the Apartheid years all South Africans were classified in accordance with the Population Registration Act of 1950 into "racial groups" viz. "Black/African" (people mainly of African descent), "Coloured" (people of mixed descent), "White" (people mainly of European descent) or "Indian" (people mainly of Indian descent). The provision of services occurred along these "racially" segregated lines. The disproportionate provision of services to different "race groups" led to inequities. Information is still collected along these "racial" divisions in order to redress these inequities. In no way do the authors subscribe to this classification.

While adolescence is a period associated with lower rates of morbidity and mortality due to disease, it is prone to a higher prevalence of risk taking behaviours, since adolescents may be exposed to high-risk environments and be vulnerable to experimentation.<sup>(15-18)</sup> An evaluation of existing South African data on behaviours which place young people at risk reveals that young people use alcohol, tobacco and other drugs, engage in unprotected sex, have unhealthy dietary behaviours and are both perpetrators and victims of violence.<sup>(19-34)</sup>

Unhealthy ways of living, for example smoking, alcohol and other drug use, high-fat diets and sedentary behaviours, often initiated during the youthful years, when practised for an extended period of time lead to a range of chronic diseases later in life. Conditions like cardiovascular disease, diabetes and cancer contribute to significant human and economic costs through premature death and increased expenditure on health care. Additionally, many risk-taking behaviours lead to psychological and social problems. For example, alcohol and drug use are often accompanied by violent behaviour and family instability.<sup>(13)</sup> Thus, focusing on the establishment of a healthy way of life among the youth will ensure healthier older people, with resultant financial and human benefits. However, a focus on health related education requires a systematic planned approach to intervention development, implementation and evaluation.<sup>(35-36)</sup>

### 1.3. Conceptual model for behaviour change interventions

Effective development, implementation and evaluation of behaviour change interventions involve a systematic, stepwise planning and evaluation process.

Application of the above model for planning and evaluation of interventions requires that several questions be addressed (see Figure I).

The planning questions are:

- Step 1: How serious is the health, social or developmental problem?
- Step 2: Which health related and social behaviours are involved?
- Step 3: What are the determinants of those behaviours?
- Step 4: Which interventions might change the behaviours?
- Step 5: How can the intervention be implemented?

The evaluation questions are:

- Step 6: Has the implementation been carried out as expected?
- Step 7: Has the intervention been received as planned?
- Step 8: Have the determinants of the behaviour changed?
- Step 9: Has the behaviour changed?
- Step 10: Has the problem been reduced?

With regard to applying the model for planning and evaluating interventions for the youth of South Africa, the Youth Risk Behaviour Survey contributes to the second step of planning, namely identifying which health related and social behaviours place young people at risk in the school context, and measuring the prevalence of these behaviours.

In addition to applying the model for planning and evaluating interventions, it is necessary to identify a variety of health promotion strategies that intervene at various levels of care and prevention. The various strategies and levels of impact of health promotion activities can be represented in the form of a Health Promotion Matrix. The strategies include health education and health information, provisions and facilities, legislation, and economic and biotechnological interventions, while the levels of impact range from the primary prevention level to the early detection level and the patient care level.

Such a framework will result in a sustained package of interventions that aim to promote behaviour change, including the management of research and capacity development activities. Figure II presents an example of applying the matrix to focus on one behaviour, namely tobacco use.<sup>(37)</sup> The Health Promotion Matrix may be applied to any single behaviour or cluster of behaviours that place young people at risk of morbidity and mortality.

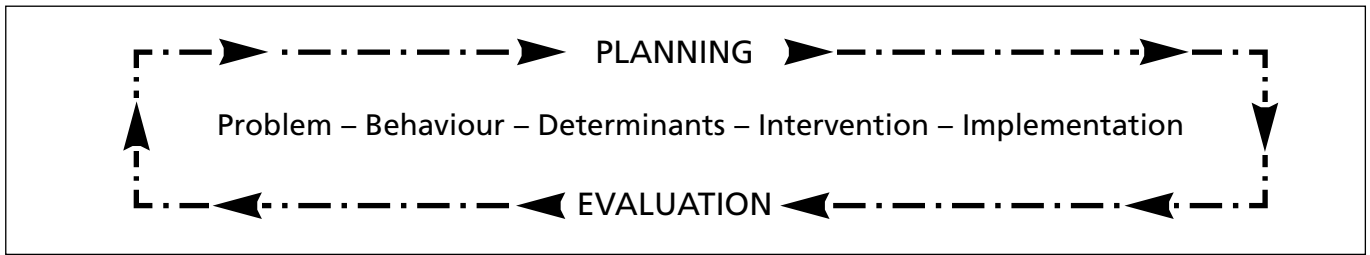


Figure I: A model for planning and evaluation of interventions

A FRAMEWORK FOR ACTION ON RISK-TAKING BEHAVIOURS			
Health Promotion Strategies	LEVELS OF HEALTH PROMOTION IMPACT		
	Primary Prevention Level	Early Detection Level	Patient Care Level
<b>Health Education and Information</b>	<p>Education to improve knowledge about the adverse effects of tobacco use, the development of refusal skills and the recognition of exposure to passive smoking, eg. School Programmes.</p> <p>Mass communication programmes that create an awareness of health threats and improve health literacy, thereby prompting pro-health actions.</p> <p>Telehealth education</p>	<p>Identify smokers and promote the development and uptake of smoking cessation programmes.</p> <p>Identify people at risk such as the unborn babies of pregnant smokers</p>	<p>Education for recognition of being a passive smoker.</p> <p>Education and skills to cope with:</p> <ul style="list-style-type: none"> <li>- cardiovascular disease</li> <li>- respiratory disease</li> <li>- cancer</li> </ul>
<b>Provisions and Facilities</b>	<p>Provision of smoke-free environments for the general public.</p>	<p>Access to medication such as:</p> <ul style="list-style-type: none"> <li>• Nicotine replacement therapy (NRT)</li> <li>• Bupropion</li> </ul>	<p>Provision of support, primary treatment and rehabilitation facilities.</p>
<b>Legislation</b>	<p><b>Global</b></p> <ul style="list-style-type: none"> <li>• Framework Convention on Tobacco Control</li> </ul> <p><b>International</b></p> <ul style="list-style-type: none"> <li>• Consensus on trade agreements for developed and developing countries</li> </ul> <p><b>Regional</b></p> <ul style="list-style-type: none"> <li>• Legislation to support consensus on trade agreements to promote health in neighbouring countries</li> </ul> <p><b>National</b></p> <ul style="list-style-type: none"> <li>• Legislation to protect public health such as banning tobacco advertising, promotion and sponsorship</li> <li>• Legislation on smoking in public places and work sites</li> <li>• Special legislation to protect children</li> </ul> <p><b>Local</b></p> <ul style="list-style-type: none"> <li>• Local legislation to ensure enforcement</li> </ul>	<ul style="list-style-type: none"> <li>• Regulations for mandatory screening of general public</li> <li>• Counselling toward smoking cessation</li> </ul>	<p>Medical care and psychosocial support</p>
<b>Economic Intervention</b>	<ul style="list-style-type: none"> <li>• Proportion of cigarette taxes should be increased annually</li> <li>• Annual price increase of cigarettes should be above inflation</li> </ul>	<ul style="list-style-type: none"> <li>• Use tobacco tax to reimburse the public health sector for screening programmes and for Health Promotion activities</li> <li>• Increase the affordability and thereby access to NRT and other medication</li> </ul>	<p>Use tobacco tax to reimburse the public health sector for primary care and rehabilitation.</p>
<b>Biotechnology</b>	<ul style="list-style-type: none"> <li>• Identify during childhood genetic predisposition to nicotine addiction</li> <li>• Nicotine vaccine</li> <li>• Improved workplace extractor fans</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying genetic predisposition to pulmonary damage from smoking, e.g. alpha antitrypsin deficiency; or cardiovascular disease</li> </ul>	<p>Drugs and devices to treat the sequelae of smoking-related diseases</p>

Figure II: The Health Promotion Matrix

# CHAPTER 2

## Methodology

### 2.1. Study design

This was a cross sectional national prevalence study among secondary school learners attending public schools in South Africa.

### 2.2. Ethical approval

Ethical Approval for the study was obtained from the South African Medical Association.

### 2.3. Sampling

#### 2.3.1. STUDY POPULATION

The study population comprised of grades 8, 9, 10 and 11 public school learners in the nine provinces. The sampling frame was defined using learner enrolment numbers for each public school in the country, obtained from the national schools database of 1999 from the School Information Services Directorate, National Department of Education.

Independent or private schools were excluded from the study population. Learners in these schools accounted for 2.2% of South Africa's total learner population.<sup>(38)</sup> Grade 12 learners were excluded from the study as per the tender for the Youth Risk Behaviour Survey. This precaution was taken to avert a possible conflict between their busy examination schedule and the time required to complete the survey.

#### 2.3.2. SAMPLING STRATEGY

The sampling strategy consisted of a stratified, two-stage cluster sample design to ensure the collection of nationally and provincially representative data from a population arranged into school and class-level clusters.

The sole stratum for sampling was the Province, which is consistent with the technique adopted by the CDC, where the key level for stratification is the State. At the first stage of sampling, schools were the primary sampling units (PSUs) and were selected with a probability proportional to school learner enrolment size in grades 8 to 11. At the second stage of sampling, classes within each participating school were selected systematically with equal probability sampling (with a random start). All learners in the selected classes were eligible to participate.

It was determined that 1200 learners in each province were to be selected, and it was assumed that each class would have approximately 40 learners. A school and learner participation rate of 80% was expected, based on the experience of a similar recent national school-based survey.<sup>(20)</sup> In order to achieve the desired sample size, 207 schools were selected in the first stage of sampling (see GIS Map in Appendix I), or 23 in each province, and on average 2 classes per school were selected in the second stage.

The Eastern Cape has a large number of schools of small size. Consequently, 18 of the 23 schools selected had enrolments below the target school sample size. Therefore, all of the classes in Eastern Cape schools were sampled to ensure an adequate sized sample of Eastern Cape learners.

## 2.4. Study instruments

### 2.4.1. QUESTIONNAIRE DEVELOPMENT AND ADAPTATION

The questionnaire was designed to obtain prevalence data from young people on behaviours that affect their health profile, such as intentional and unintentional injury, substance use, sexual behaviour, nutrition and weight perception, physical activity and hygiene. The South African Youth Risk Behaviour survey draws from the experience of the YRBSS of the CDC. However, the CDC questionnaire required varying degrees of adaptation, ranging from the addition of new questions, to questions being changed completely, to minor alterations in questions in order to ensure relevance to the South African learners' particular risk-taking behaviour and context of exposure, as well as comparability to surveys conducted locally and internationally.

Additional questions developed from the domains produced at the Mega-Country Initiative, a World Health Organisation (WHO) intended multi-risk survey for schools, were incorporated into the South African version of the questionnaire. Other questions that were added addressed specific issues regarding the use of contemporary drugs, and drugs specific to South Africa (e.g. Mandrax, "club drugs", over-the-counter and prescription drugs); physical inactivity during physical education class at school, as well as reported reasons for inactivity; prevalence and location of abortions; prevalence and treatment of sexually transmitted infections, and awareness of HIV and AIDS; and pedestrian and vehicular traffic safety.

The data collection began in August 2002, the eighth month of the academic year in South Africa. Questions from the CDC questionnaire referring to behaviour in the past 12 months were changed to refer to only the past 6 months so as not to confound the grade-specific results from the study with behaviour of learners moving through different grades. The pilot study, which is discussed below in Section 2.5, revealed problems with the understanding of some words and response options. In several cases questions were rephrased when the pilot study revealed confusion about the meaning of certain words. For example, there was some confusion about the meaning of the word "sex", and "school property" was taken by some learners to denote school furniture.

When asked about the frequency of certain behaviours, learners revealed through their answers in the pilot study that a combination of qualitative and quantitative response options for frequencies would be better understood. In other words, learners responded most clearly when the response option was for example "Often (6-7 times per week)".

The questionnaire included only close-ended questions, without skip patterns or multiple response questions. Long lists of response options were collapsed in some cases, where it was felt that the level of detail being captured could be reduced without material loss to the findings from the survey. The shortening of the list of response options also contributed to making the 96-question instrument easier to complete.

The questionnaire was developed in English and pre-tested for face and construct validity. Thereafter, groups of three first-language students translated the questionnaire into the remaining 10 official languages and back-translated it in preparation for the pilot study, after which the final adjustments to the questionnaire were made.

### 2.4.2. ANTHROPOMETRIC INSTRUMENTS

For measuring heights and weights appropriate equipment such as free-standing stadiometers for measuring heights and electronic scales for measuring weights had to be acquired. Each scale was calibrated using two 10 kg weights.

## 2.5. Pilot study

A pilot study was conducted in May 2002 among grade 8 learners in five provinces, namely the Western Cape, KwaZulu-Natal, Gauteng, Limpopo Province and Mpumalanga. The sample consisted of 534 learners in 11 schools, 49% of whom were male and 51% female. The selection of these five provinces enabled the full questionnaire to be tested in each of the 11 official languages, obtaining face and construct validity of the questionnaire. Additionally, the pilot study facilitated an assessment of the logistical and technical procedures for data collection.

The time taken for a class to complete a questionnaire ranged from 30 minutes to one hour. After this, a half an hour discussion was held between the learners and the survey administrators to provide information on the meaning and clarity of the questions from the learners' perspective, as well as to provide information on the learners' comprehension of the procedure of filling in the questionnaire.

The study instrument and procedural techniques were adapted and refined according to the findings of the pilot study. Changes to the questionnaire are described more fully in section 2.4.1.

## **2.6. Consent**

Active informed consent to conduct the study was obtained from the National Department of Education, school principals, parents and learners. In addition, assent was also obtained from learners on the day of the study. Learners were requested not to write their names on the answer sheet to ensure their anonymity. To increase the confidentiality of the learners trained fieldworkers conducted the survey and educators were requested to leave the classroom during data collection. Further, learners were requested not to communicate with each other or to look at the answer sheets of their peers during the completion of the survey.

The consent forms were compiled, packaged and couriered to each of the selected schools. Schools were telephoned to confirm receipt of the consent forms. A letter was sent to the school principal confirming the classes that were selected for the study and requesting that the parent and learner consent forms be distributed to the learners in the selected classes. The principals were also requested to collect the completed consent forms and hand them to the survey administrator on the day that the survey was conducted.

## **2.7. Data collection**

Data were collected through self-administered questionnaires as well as taking height and weight measures of each learner. The data collection period extended from August to October 2002. Before data collection commenced, networking occurred with the schools, Departments of Health and Education and other stakeholders to obtain their endorsement and support for the study. Additionally, data collectors had to be identified and trained.

### **2.7.1. PREPARATION FOR DATA COLLECTION**

The selected schools were invited to participate in the study, both in writing and by telephone, and where this was not possible due to infrastructure limitations the Department of Education District Offices and the South African Police Services in the nearest towns and villages were approached to assist with establishing contact with the schools. Thereafter permission for participation was sought from principals and from learners in the selected classes as well as their parents. Also, numbers and language preference of the learners in each of the selected classes was ascertained.

A folder containing a covering letter to the principal, parent consent forms, learner consent forms, and labelled envelopes for completed consent forms was couriered to each school. The principal was requested to distribute the forms to learners in the selected classes and to collect all completed forms, place them in the labelled envelopes and hand the envelopes to the survey administrators on the day of data collection. Also, stadiometers and scales were couriered to each of the schools, along with two extra batteries, disinfecting solutions and black bags.

Clearly labelled folders for each class were sent to the survey administration teams, containing the questionnaires, answer sheets, 2 additional English questionnaires, a labelled envelope for answer sheets, a completed learner consent form envelope, a completed parent consent form envelope, pencils, a script for the survey administrator (in English), a script for the survey administrator in the language of the questionnaires, notes about taking height measurements and a class tracking form.

### **2.7.2. SELECTION AND TRAINING OF DATA COLLECTORS**

A range of individuals from various sectors such as health, education and community structures, for example the Youth Commission, were invited to undergo specialised training in order to be

Province	No. of workshops
Western Cape	3 workshops
Eastern Cape	3 workshops
North West	2 workshops
Limpopo	2 workshops
Mpumalanga	2 workshops
Free State	2 workshops
Gauteng	2 workshops
Northern Cape	1 workshop
KwaZulu-Natal	1 workshop
<b>Total</b>	<b>18 workshops</b>

**Figure III: Number of training workshops conducted in each of the nine provinces**

selected to work as survey administrators. This training enabled them to become competent in taking anthropometric measures as well as co-ordinating and supervising the administration of the survey at school level.

Two MRC staff members were trained in taking height and weight measurements by an anthropometrist. They thereafter conducted a total of 18 training workshops across the country (see Figure III). In total, 510 survey administrators were trained and of them 377 were qualified as competent to work as data collectors (see Figure VI in Appendix I).

At the training workshops each person was allocated to serve either as a survey administrator or to measure the heights and weights of learners. Heights and weights were measured in all the provinces according to standard procedures suggested by the International Society for the Advancement of Kinanthropometry (ISAK). Where possible, nutritionists, dieticians and school nurses were allocated to measure heights and weights. Survey administrators gained practical experience in measuring the heights and weights by taking the measurements of twenty learners. In addition, the survey administrators' technical error of measurement (TEM), an indicator of the accuracy of height measurement, was established and monitored by a qualified kinanthropometrist, and only those survey administrators with a TEM percentage of 0.5% or lower were allowed to take height measurements.<sup>(39)</sup>

Following the training, teams with a minimum of 3 members were established for each school. The team was made up of 1 survey administrator, 1 person to adjust and maintain the posture of the learner for height and weight measurements, and 1 person to read and record the height and weight measurements. A member of the team was appointed as the team leader and was required to negotiate an appointment with the school and serve as the co-ordinator for school visits.

Standardised methods for conducting the study (preparing packages for schools, couriating the packages, couriating equipment for taking height and weight measurements, procedures for supervising the answering of the questionnaires in the schools, collecting the questionnaires and answer sheets, taking of anthropometric measures and couriating the data and anthropometric equipment back to MRC in Cape Town) were developed.

### **2.7.3. ADMINISTERING THE SURVEY**

After ensuring that all the consent procedures were completed each learner was issued a questionnaire, an answer sheet and an HB pencil. To ensure anonymity the learners were instructed not to write their names on the questionnaires by the survey administrator. The learners completed the answer sheets, which were collected, placed in a sealed envelope, and couriered back to the MRC.

In addition, accurate height and weight measures had to be recorded for each learner. In order to ensure confidentiality, one learner was requested to come forward at a time to have their height and weight measurements taken. Learners were required to remove their socks, shoes, jacket, any heavy items and lower their hair, if necessary, before height and weight readings were taken. Height measurements were taken using the stretch technique, recording the maximum distance from the floor to the vertex of the head. Technically, the vertex is defined as the highest point on the skull when the head is held in the Frankfort plane, a position which corresponds almost

exactly to the visual axis when the subject is looking directly ahead. Two survey administrators took each height measurement, so that learners' posture, as well as heel and arm positions could be monitored while the height measurement was being read from the stadiometer. Two height readings were recorded for each learner. The height readings had to be within 0.005 m of each other, failing which the measurements had to be repeated. Weight was recorded to the nearest 0.01 kg and height to the nearest 0.001 m. The survey administrator recorded the height and weight measurements on the learner's answer sheet.

Extensive telephonic support was provided to the 377 survey administrators spread across the country during the data collection period.

#### 2.7.4. DATA MANAGEMENT AND CAPTURING

This study provided an opportunity to develop local capacity in data management, data capturing and analysis. A local company was selected to design the answer sheet and capture the data. They also provided expert training to MRC staff in the utilisation of "OpScan" technology, which was used to capture the data from the answer sheets directly into a spreadsheet. Due to the electronic method of data capturing, an HB pencil with a white eraser was purchased for each respondent.

Each batch of completed answer sheets for each participating class was carefully checked against the information filled onto the class tracking form by the survey administrator (the number of learners enrolled per class, the number of learners present, number of learners who participated, number of learners who refused to participate). The number of completed answer sheets that were scanned was cross-checked against the number of completed answer sheets that were received.

## 2.8. Data Analysis

### 2.8.1. OVERVIEW OF DATA ANALYSIS

Epi-Info 2002 was used to analyse the data.<sup>(40)</sup> After capturing the data electronically, they were checked to ensure that all respondents in the same class reported the correct grade, date of fieldwork, school and province. The 150 respondents who had not identified their gender as male or female were removed from the analysis.

The data were analysed in such a way that national prevalence is representative of learners in grades 8-11 in public schools in the nine provinces of South Africa. To this end, a weighting factor was calculated for each learner record to adjust for different probabilities of selection, non-response and post-stratification by grade and gender. Weights were scaled so that the weighted count of students was equal to the total population size, and the weighted proportion of learners in each grade and gender combination matched the provincial population proportions. Each province was to be represented equally in the sample, though provinces are known to have different total learner populations. To account for this feature, respondents in highly populated provinces had to have higher weights than respondents from less populated provinces. For more detail on the calculation of weights, see section 2.8.2.

The data were recoded from question responses into meaningful prevalence variables. Prevalence rates and 95% confidence intervals were computed. Differences between prevalence estimates were considered statistically significant if the 95% confidence intervals did not overlap, that is, differences were considered significant at the  $p < 0.05$  level.

For undernutrition analysis, measures of height for age, weight for age, and weight for height were calculated and expressed as numbers of standard deviations away from the mean (Z-scores) as modelled in the United States National Health and Nutritional Examination Survey III (NHANES) samples using the Nutrition module of Epi-Info, due to lack of equivalent South African reference data.<sup>(41)</sup> Z-score values of less than -2 for weight-for-age, height-for-age and weight-for-height were used as thresholds to determine the prevalence of underweight, stunting and wasting respectively.<sup>(42)</sup>

For overnutrition analysis, body mass index (BMI) was calculated for each respondent, and the age-dependent BMI cut-off points recommended by Cole for overweight (25 kg/m<sup>2</sup> by the age of 18 years) and obesity (30 kg/m<sup>2</sup> by the age of 18 years) were used to determine whether a learner was overweight or overweight and obese.<sup>(43)</sup>

## 2.8.2. CALCULATION OF SAMPLING WEIGHTS

A weight has been associated with each respondent in the sample to allow for the likelihood of sampling that respondent, to reduce bias by compensating for non-response, and to post-stratify according to the grade and gender distributions of the study population in each province. The weight is given by:

$$W = W1 \times W2 \times F1 \times F2 \times F3 \times F4$$

$$W1 - \text{school selection weight} = \frac{\text{Number of learners enrolled in province}}{\text{number of learners enrolled in school}}$$

The school selection weight is the inverse of the probability of selecting a school. Schools were selected with probability proportional to enrolment in grades 8, 9, 10 and 11. Each school therefore has a different school selection weight.

$$W2 - \text{within-school weight} = \frac{\text{Number of learners enrolled in school}}{\text{number of learners selected in school}}$$

The within-school weight is the inverse of the probability of selecting a class within the school. Since all learners in a selected class are selected, this is the same as the probability of selecting a learner. Classes were selected randomly, so this weight is the same for all learners in the same school.

$W1 \times W2$  is known as the school baseweight. Each selected school has a distinct school baseweight. However, assuming that the number of classes in a school is directly proportional to the school's enrolment, all schools in the same province have the same school baseweight.

$$F1: \text{school non-response adjustment factor} = \frac{\text{Sum over the selected schools of} \\ (\text{school baseweight} \times \text{school enrolment})}{\text{sum over the participating schools of} \\ (\text{school baseweight} \times \text{school enrolment})}$$

Each of the nine provinces has a distinct value for F1.

$$F2: \text{class non-response adjustment factor} = \frac{\text{Number of classes selected}}{\text{number of classes participated.}}$$

Each school that participated in the sample has a distinct value for F2.

$$F3: \text{learner non-response adjustment factor} = \frac{(\text{School baseweight} \times \text{class enrolment})}{(\text{school baseweight} \times \text{number of} \\ \text{completed questionnaires from that class})}$$

Each class that participated in the sample has a distinct value for F3.

$$W1 \times W2 \times F1 \times F2 \times F3 \text{ is known as the adjusted weight.}$$

$$F4: \text{post-stratification adjustment factor} = \frac{\text{Number of learners in grade-gender category} \\ \text{in province}}{\text{sum of adjusted weights in grade-} \\ \text{gender category in the sample in that province.}}$$

Each combination of grade and gender and province has a distinct value for F4.

## 2.9. Limitations

While cluster sampling is substantially more cost-effective than simple random sampling and reduces the sampling frame data requirements, the main disadvantage is that estimates are less precise than from a simple random sample of the same size. In theory, clusters should be designed such that participants within each cluster are diverse and each cluster is somewhat representative of the population as a whole, so that a maximum amount of variability can be captured from sampling a small number of clusters. However, in practice the structure of the clusters is determined by cost- and time-efficiency factors.<sup>(44)</sup> Due to the unevenness of the geopolitical and social distribution of post-apartheid South Africa's population, clusters at both stages of sampling (schools and classes) do not show this desired property of being representative of the population as a whole.

Given a sample size that is sufficiently large, in terms of numbers of clusters and subjects selected, to attain the desired margin of error, the above limitations are allowed for.



# SECTION B RESULTS



# CHAPTER 3

## Response Rates and Socio-Demographic Characteristics

This chapter covers the survey response rates, the demographic characteristics of the sample obtained, and the presentation of findings by individual behaviour.

### 3.1. Response rates

The sample was stratified by province, and clusters of learners were selected in two stages – the first stage was school selection and the second stage was class selection.

Initially 207 schools, that is 23 schools from each province, formed the primary sampling units. The schools were selected without replacement, with probability proportional to the schools' size in terms of learner enrolment in grades 8, 9, 10 and 11. On physically contacting the selected schools, one was found not to exist, so the realised sample size was 206. Of the 206 schools so selected, 188 participated in the survey (Table 1). The national weighted school response rate was 94.2%.

	Number of schools		Number of learners		Unweighted Response Rates			Weighted Response Rates		
	SAMPLED	PARTICIPATED	SAMPLED	PARTICIPATED	SCHOOL	LEARNERS	OVERALL	SCHOOL	LEARNERS	OVERALL
<b>NATIONAL</b>	<b>206</b>	<b>188</b>	<b>14 766</b>	<b>10 699</b>	<b>91.3%</b>	<b>72.5%</b>	<b>66.1%</b>	<b>94.2%</b>	<b>72.5%</b>	<b>68.3%</b>
Eastern Cape	23	20	1 532	1 149	87.0%	75.0%	65.2%	93.3%	75.0%	70.0%
Free State	23	23	1 482	1 136	100.0%	76.7%	76.7%	100.0%	76.7%	76.7%
Gauteng	22	20	1 548	1 166	90.9%	75.3%	68.5%	96.3%	75.3%	72.5%
KwaZulu-Natal	23	20	1 818	1 200	87.0%	66.0%	57.4%	88.3%	66.0%	58.3%
Limpopo	23	21	1 378	1 079	91.3%	78.3%	71.5%	94.4%	78.3%	73.9%
Mpumalanga	23	21	1 708	1 269	91.3%	74.3%	67.8%	94.8%	74.3%	70.4%
Northern Cape	23	20	1 774	1 066	87.0%	60.1%	52.3%	86.8%	60.1%	52.2%
North West	23	21	1 709	1 202	91.3%	70.3%	64.2%	94.5%	70.3%	66.5%
Western Cape	23	22	1 817	1 432	95.7%	78.8%	75.4%	95.6%	78.8%	75.3%

Table 1: Unweighted and weighted response rates

At the second stage of cluster sampling, 364 classes in which 14 766 learners were enrolled (41 learners per class) were selected randomly from the grade 8-11 classes in the 188 participating schools. Of the learners selected, 10 699 in 345 classes submitted completed questionnaires. The weighted learner response rate was 72.5%, and hence the overall response rate was 68.3%.

The weighted school response rate for the nine provinces varied between 86.8% in the Northern Cape and 100.0% in the Free State. The weighted learner response rates ranged from 60.1% in the Northern Cape to 78.8% in the Western Cape. The weighted overall provincial response rate varied from 52.2% in the Northern Cape to 76.7% in the Free State.

A respondent was excluded from anthropometric analysis if any one of age, weight or height was missing, or if the respondent's age fell outside of the range 11 to 20 years, since the nutritional status analysis software being used was designed for this age range.

Each respondent's height was measured and recorded twice, and the exact weight was measured and recorded. The average of the two height measurements was used as the best indication of the learner's true height. However, where only one height measure was recorded, which was the case for 1025 respondents, the one measurement was used. In 582 cases learners' age could not be calculated because of missing data on date of birth, and a further 687 respondents were 20 years old and above, thus excluding them from nutritional status analysis. In 255 cases no height could be calculated and in 175 cases weight was not recorded. Of the 10 699 respondents, anthropometric analysis was in this way limited to 9 054 cases.

Of the 18 schools that did not participate, 14 schools either refused to participate, could not be contacted, or did not respond; the data of 3 schools could not be used due to lack of adherence to the data collection protocol, and one school that agreed to participate was not available due to examinations at the time the survey was conducted. The Northern Cape had the lowest school (86.8%) and the lowest learner (59.8%) response rates. It is noteworthy that 65% of the survey administrators for this province were community members who had to travel long distances to reach outlying schools (see Figure VII in Appendix I).

## 3.2. Socio-demographic characteristics

The socio-demographic data were analysed using weights that have not yet allowed for post-stratification, because using post-stratified weights would yield characteristics reflective of the population being modelled, as opposed to those of the sample respondents.

Overall, the sample consisted of 54.0% females and 46.0% males (Table 2). The majority of the sample classified themselves as "Black" (79.5%), 9.0% as "Coloured", 8.9% as "White", and 1.4% as "Indian".

Grade 8 and 9 learners constituted 61.6% of the sample. The majority of the sample (78.7%) was between the ages of 14 and 18 years inclusive, with 8.4% aged below this range, and 12.9% above; 93.1% of those 19 years and older were "Black". Notably, in grade 8 and 9 learners aged 19 years and older made up 5.8% of the sample.

## 3.3. Presentation of results by behaviour

The full results of the analysis are presented in tables in Appendix II at a national level and by "race", grade, age and province. These results are shown for the total population, as well as separately for males and females. The cell sample size, percentage prevalence estimate, and upper and lower confidence limits are presented in each instance. It is common scientific practice to exercise caution when making inferences based on cell sample sizes smaller than 35 respondents.<sup>(45)</sup> The cell sample sizes are labelled "*n*" in the Appendix II tables.

The chapters that follow present a synopsis of the results for each of the behaviours investigated by the Youth Risk Behaviour Survey, concentrating on those that show statistically significant differences between subpopulations. Both the estimated prevalence and the 95% confidence interval are shown. In particular, it should be noted that differences between the prevalence estimates of mutually exclusive subpopulations were considered statistically significant if the confidence intervals did not overlap, that is, differences were considered significant at the  $p < 0.05$  level. Section 2.8. (data analysis) gives more background detail to the analysis.

	GENDER		RACE						GRADE				AGE (YEARS)						
	TOTAL	M	F	"Black"	"Col'd"	"Indian"	Other	"White"	08	09	10	11	<=13	14	15	16	17	18	>=19
<b>NATIONAL</b>																			
n	10 699	4 929	5 620	7 740	1 571	136	99	904	2 926	3 618	2 433	1 722	816	1 601	1 829	1 962	1 614	909	1 288
%	100.0	46.0	54.0	79.5	9.0	1.4	1.3	8.9	31.4	30.2	22.6	15.9	8.4	15.3	17.7	20.1	16.5	9.1	12.9
<b>Eastern Cape Province</b>																			
n	1 149	486	652	807	86	5	3	229	379	413	161	196	87	168	233	255	180	77	84
%	100.0	42.9	57.1	69.9	7.5	0.5	0.3	21.8	31.0	36.8	15.3	16.9	7.2	14.8	21.9	24.1	17.0	7.0	8.0
<b>Free State Province</b>																			
n	1 136	549	582	1 018	25	3	11	71	445	189	359	143	101	142	184	217	185	115	172
%	100.0	48.1	51.9	84.2	2.2	0.3	1.0	12.3	38.3	16.7	32.9	12.1	8.5	11.8	18.1	21.7	16.1	9.9	13.9
<b>Gauteng Province</b>																			
n	1 166	538	622	945	94	39	8	64	198	477	133	358	44	171	235	215	213	115	136
%	100.0	46.5	53.5	85.0	7.3	2.8	0.7	4.2	18.3	40.1	9.6	32.0	4.6	15.7	20.3	18.2	18.1	10.1	13.0
<b>Kwazulu-Natal Province</b>																			
n	1 200	540	645	1 045	28	28	30	37	326	275	427	172	95	140	121	189	163	102	183
%	100.0	45.3	54.8	89.9	2.5	2.1	2.9	2.7	30.7	20.5	34.1	14.7	10.0	15.2	11.8	19.1	16.5	10.2	17.2
<b>Limpopo Province</b>																			
n	1 079	476	527	958	25	3	6	4	288	346	313	132	111	134	167	185	152	84	104
%	100.0	46.3	53.7	96.2	2.5	0.3	0.6	0.4	51.6	21.0	18.8	8.6	13.7	13.4	17.7	19.1	15.9	9.0	11.2
<b>Mpumalanga Province</b>																			
n	1 269	601	658	1 075	38	26	18	86	221	504	383	161	85	166	213	241	197	119	201
%	100.0	47.3	52.7	84.3	3.2	2.1	1.8	8.5	14.8	40.8	29.7	14.6	6.1	12.9	16.4	19.9	17.3	10.2	17.4
<b>North West Province</b>																			
n	1 066	483	577	497	436	8	11	97	336	311	248	171	78	170	156	165	153	96	158
%	100.0	44.2	55.8	40.5	44.6	0.8	1.1	13.0	30.2	28.1	24.4	17.2	7.5	18.0	15.8	17.3	19.0	8.7	13.7
<b>Northern Cape Province</b>																			
n	1 202	617	572	947	39	13	7	173	344	628	134	96	67	214	279	237	157	80	131
%	100.0	51.8	48.2	76.7	3.1	1.0	0.5	18.7	25.9	49.0	15.1	10.0	5.7	17.1	22.9	20.9	14.4	7.0	11.9
<b>Western Cape Province</b>																			
n	1 432	639	785	448	800	11	5	143	389	475	275	293	148	296	241	258	214	121	119
%	100.0	45.0	55.0	31.0	56.0	0.9	0.4	11.7	24.5	34.8	21.3	19.4	9.4	21.0	18.2	19.3	15.0	8.6	8.5

**Table 2: Socio-demographic characteristics**

# CHAPTER 4

## Behaviours related to intentional and unintentional injury

This chapter presents findings on intentional and unintentional injury related behaviours, in particular behaviours related to violence, road traffic safety, and suicide.

### 4.1. Violence

#### 4.1.1. INTRODUCTION

This section reports on the following aspects of violence-related behaviours:

- Carrying a weapon in the past month – both in general and while on school property
- Carrying a gun in the past month
- Carrying a knife in the past month
- Having been bullied in the past month
- Having been involved in a physical fight in the past six months – both in general and while on school property
- Having sustained injuries requiring medical treatment in a physical fight in the past six months
- Gang membership over the past six months
- Ever having been assaulted by a girlfriend or boyfriend
- Ever having assaulted a girlfriend or boyfriend
- Ever having been forced to have sex
- Ever having forced someone else to have sex
- Having been threatened or injured by someone with a weapon at school over the past six months
- Having threatened or injured someone else with a weapon at school over the past six months
- Having felt unsafe while en route to or from school in the past six months
- Having felt unsafe while at school in the past six months

Violence can be described as the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation. Violence is characterised by an uneven distribution by gender and age groups. The global homicide rate in 2000 showed that the rate for males was more than three times that of females and highest in the 15–29-year age category. Developing countries and economies in transition have shown an increase in their homicide rate, and these have been associated with increases in the use of guns as a method of attack. Globally, an average of 565 children, adolescents and young adults between the ages of 10–29 years die every day through interpersonal violence. It is also known that the severity of interpersonal violence increases with age, which poses the danger that children exposed to violence at younger ages are at greater risk of violence at later stages.<sup>(46)</sup>

Non-fatal violence, that is violence that does not result in death but in youth needing treatment at a hospital, is reported as being 20–40 times higher than homicide rates, and increases greatly in mid-adolescence and young adulthood. A South African study revealed that 3.5% of victims of violence were younger than 14 years compared to 21.9% aged 14–21 years.<sup>(47)</sup> Injuries resulting from non-fatal violence are less the result of firearm attacks, and more frequently involve

physical fights using fists and feet and weapons such as knives or clubs. Participating in physical fights, bullying and carrying of weapons are important risk behaviours for youth violence, with physical fighting and bullying being a common phenomenon among school-age children which can also lead to more serious forms of violence. Carrying weapons, in particular knives, is reported as a predominantly male activity among school-age children. A study in Cape Town reported that 9.8% of males and 1.3% of females in secondary schools reported carrying knives to school during the previous four weeks.<sup>(48-50)</sup> Another feature of violent behaviour is the association with gang membership that is again reported as a predominantly male and middle-teens phenomenon, with gang-violence accounting for approximately 10% of fatal assault cases.<sup>(51)</sup>

Another South African cross-sectional study revealed that more than 50% of all boys and girls had experienced violence, either as victims or perpetrators.<sup>(52)</sup> Additionally, a significant number of participants, especially males, believed that violence was a normal component of relationships, particularly those who had witnessed domestic violence. Substance use and abuse were also cited as significant reasons for experiencing violence as either victim or perpetrator. These are consistent with other findings that suggested that alcohol was a significant factor in different types of homicide in South Africa.<sup>(53)</sup>

#### 4.1.2. RESULTS

##### Carried any weapon - See Table 3

Nationally 16.7% [15.2 - 18.2] of learners had carried a weapon such as a gun, knife, "panga" or "kierrie" (South African expressions for long knives or sticks respectively) on one or more days in the past month. Significantly more male learners (28.2% [26.2 - 30.3]) than female learners (7.6% [6.3 - 8.9]) had carried a weapon in the past month.

This feature of the data persisted within all the "race" groups. That is to say, significantly more "Indian" (45.8% [34.2 - 57.5]), "Coloured" (38.5% [33.7 - 43.3]), "White" (32.6% [25.7 - 39.5]) and "Black" (25.9% [23.4 - 28.4]) males than "Indian" (7.4% [2.7 - 12.0]), "Coloured" (7.0% [4.7 - 9.4]), "White" (8.0% [5.3 - 10.8]) and "Black" (7.6% [6.2 - 9.1]) females respectively had carried a weapon in the past month.

Significantly more "Coloured" (21.7% [18.3 - 25.2]) and "Indian" (26.2% [17.9 - 34.4]) learners than "Black" learners (15.6% [14.0 - 17.3]) had carried a weapon in the past month. Significantly more grade 9 learners (19.4% [17.3 - 21.4]) had carried a weapon in the past month than grade 10 (13.6% [10.3 - 16.9]) and grade 11 (13.5% [10.1 - 16.9]) learners.

There was an increase in the prevalence of learners who had carried a weapon as age increased. Significantly fewer learners 13 years of age and younger (11.0% [8.3 - 13.6]) had carried a weapon in the past month when compared to 16-year-olds (17.4% [14.6 - 20.2]), 17-year-olds (18.0% [14.2 - 21.7]), 18-year-olds (17.7% [14.4 - 21.1]), and those of 19 years and older (19.8% [16.1 - 23.5]).

Western Cape (20.2% [18.3 - 22.1]) had the highest provincial prevalence of learners who had carried a weapon in the past month, while Gauteng (12.9% [10.9 - 15.0]) had the lowest provincial prevalence (see Graph 1).

##### Carried a gun - See Table 3

The national prevalence of learners who had carried a gun on one or more days in the month preceding the survey was 8.5% [7.2 - 9.8]. Significantly more males (12.2% [10.5 - 13.9]) than females (5.5% [4.2 - 6.9]) had carried a gun in the past month. There was no significant variation in the prevalence of learners who had carried a gun in the past month by "race" or by grade.

Older learners had a higher prevalence of having carried a gun in the past month than younger learners. Significantly fewer learners aged 13 years and younger (4.4% [2.8 - 6.0]) had carried a gun when compared to 17-year-olds (9.7% [7.1 - 12.4]), 18-year-olds (11.5% [8.1 - 14.9]) and those of 19 years and older (12.3% [9.7 - 15.0]).

Mpumalanga (11.2% [6.7 - 15.7]) had the highest provincial prevalence of learners who had carried a gun in the past month while Northern Cape (7.2% [6.1 - 9.1]) had the lowest provincial prevalence (see Graph 1).

##### Carried a knife - See Table 3

Nationally 17.8% [16.0 - 19.7] of learners had carried a knife on one or more days in the past

month. Significantly more males (25.9% [23.7 - 28.2]) than females (11.4% [9.3 - 13.5]) had carried a knife in the past month. There was no significant variation in the prevalence of learners who had carried a knife in the past month by "race" or by age.

Significantly fewer learners in grade 11 (11.4% [8.6 - 14.2]) than learners in grade 9 (21.5% [19.0 - 24.0]) and grade 8 (20.9% [17.7 - 24.1]) had carried a knife.

Eastern Cape (25.7% [19.4 - 31.9]) had the highest provincial prevalence of learners who had carried a knife in the past month, while Gauteng (12.5% [9.2 - 15.7]) had a significantly lower rate of learners who had carried a knife in the past month when compared to the national average of 17.8% [16.0 - 19.7] (see Graph 1).

#### **Was bullied - See Table 4**

During the 30 days preceding the survey (i.e. in the past month), 41.0% [38.4 - 43.6] of learners had been bullied. There were no significant differences in the prevalence of having been bullied in the past month between male and female learners, with the exception being that more "White" female learners (54.5% [49.4 - 59.6]) reported being bullied than "White" male learners (43.0% [36.7 - 49.3]). Significantly more "White" (49.4% [45.3 - 53.5]) and "Coloured" learners (49.5% [43.7 - 55.3]) had been bullied when compared to "Black" learners (39.2% [36.5 - 42.0]).

There was no significant variation in the prevalence of having been bullied in the past month by grades and by age.

The Northern Cape (56.7% [40.8 - 72.5]) and Free State (49.3% [46.2 - 52.4]) had the highest provincial prevalences of learners who had been bullied in the past month, while KwaZulu-Natal (35.6% [27.1 - 44.2]) had the lowest provincial prevalence (see Graph 1).

#### **Was involved in a physical fight - See Table 4**

Nationally 30.2% [28.5 - 31.8] of learners had been involved in a physical (e.g. punching or hitting) fight one or more times in the past six months. Significantly more males (37.3% [35.2 - 39.5]) than females (24.5% [22.5 - 26.5]) had been involved in a physical fight in the past six months. This feature of the data persisted within all the "race" groups. That is to say, significantly more "Indian" (52.9% [37.8 - 68.0]), "Coloured" (47.4% [40.3 - 54.6]), "White" (39.1% [30.7 - 47.4]) and "Black" (35.9% [33.5 - 38.3]) males than "Indian" (21.3% [11.7 - 31.0]), "Coloured" (28.1% [21.8 - 34.5]), "White" (19.9% [14.3 - 25.5]) and "Black" (25.0% [22.9 - 27.0]) females had been involved in a physical fight in the past six months. There was no significant variation in the prevalence of learners who had been involved in a physical fight in the past six months by "race" or by age.

Learners in lower grades were more likely to have been involved in a physical fight in the past six months than learners in higher grades. Significantly more learners in grade 8 (32.5% [29.3 - 35.6]) than in grade 11 (23.1% [19.7 - 26.5]) had been involved in a physical fight. There were no significant differences in the prevalence of having been involved in a physical fight in the past month between learners of different ages.

The high prevalence of learners in the Free State (36.2% [31.4 - 41.1]) who had been involved in a physical fight in the past six months was significant when compared to KwaZulu-Natal (25.1% [21.9 - 28.3]), which had the lowest provincial prevalence (see Graph 1).

#### **Was injured in a physical fight - See Table 4**

Nationally among those who were involved in a physical fight on one or more days in the six months preceding the survey, 29.3% [25.5 - 33.1] sustained consequential injuries that required treatment from a doctor or nurse (i.e. required medical treatment), with no significant variation by gender. Significantly fewer "White" learners (15.3% [9.1 - 21.6]) who were involved in a physical fight had required medical treatment when compared to "Black" learners (30.8% [26.5 - 35.0]).

There was no significant variation in the prevalence of learners who had required medical treatment after being injured in a physical fight in the past six months by grade. Significantly fewer learners who were 13 years and younger (18.5% [11.5 - 25.6]) had required medical treatment after being injured in a physical fight when compared to 18-year-olds (41.8% [30.9 - 52.6]) and those of 19 years and older (39.5% [33.3 - 45.6]).

Mpumalanga learners (39.5% [26.6 - 52.3]) reported the highest provincial prevalence of

having required medical treatment after being involved in a physical fight in the past six months, while significantly fewer learners in Gauteng (19.7% [16.1 - 23.4]) had required medical treatment after being involved in a physical fight when compared to the national average of 29.3% [25.5 - 33.1].

#### **Member of a gang - See Table 4**

During the six months preceding the survey, 14.3% [12.6 - 16.0] of learners had been members of a gang. Analysis by gender revealed that significantly more males (18.1% [16.2 - 19.9]) than females (11.4% [9.4 - 13.4]) had been members of a gang in the past six months. Significantly more "Coloured" (18.4% [13.1 - 23.8]) and "Black" males (18.0% [15.9 - 20.1]) had been members of a gang when compared to "Coloured" (7.8% [4.1 - 11.5]) and "Black" females (11.9% [9.4 - 14.4]) respectively.

There was no significant variation in the prevalence of having been a member of a gang in the past six months by age. There was a decrease in the prevalence of learners who had been members of a gang in the past six months with an increase in grade. Significantly more grade 8 learners (18.0% [15.1 - 21.0]) had been members of a gang when compared to grade 11 learners (11.8% [9.6 - 14.1]).

Mpumalanga (20.9% [16.4 - 25.4]) had a provincial prevalence of learners who had been members of a gang in the past six months that was significantly higher than the national average, while the Eastern Cape (9.0% [5.0 - 13.0]) had the lowest provincial prevalence (see Graph 1).

#### **Was assaulted by boyfriend/girlfriend - See Table 5**

Nationally 13.6% [11.8 - 15.4] of learners reported having been hit, smacked (slapped) or physically hurt by their boyfriend/girlfriend in the past six months. Note that males (14.4% [12.4 - 16.3]) and females (12.9% [10.8 - 15.1]) had no significant difference in reporting being assaulted by their partner. Significantly fewer "White" learners (5.8% [3.9 - 7.8]) had been assaulted by their boyfriend/girlfriend in the past six months when compared to "Black" (14.4% [12.4 - 16.4]) and "Coloured" learners (13.6% [10.7 - 16.5]).

There was no significant variation in the prevalence of learners who had been assaulted by their boyfriend/girlfriend in the past six months by grade.

There was an increase in the prevalence of learners who reported having been assaulted by their boyfriend/girlfriend in the past six months from age 15 years to 19 years or over. Significantly fewer 13 years and younger learners (11.9% [9.4 - 14.4]) had been assaulted by their boyfriend/girlfriend when compared to those of 19 years and older (20.2% [16.0 - 24.5]).

The highest provincial prevalence of learners who had been assaulted by their boyfriend/girlfriend in the past six months was observed in Limpopo Province (18.0% [11.9 - 24.0]), while North West Province (10.2% [6.7 - 13.8]) had the lowest provincial prevalence (see Graph 2).

#### **Assaulted boyfriend/girlfriend - See Table 5**

Nationwide, 13.2% [11.6 - 14.8] of learners reported ever hitting, smacking (slapping) or physically hurting their boyfriend/girlfriend, with no significant difference between male and female learners at the national level. However, among the "Black" learners, significantly more males (16.6% [14.6 - 18.7]) than females (12.3% [10.1 - 14.5]) reported assaulting their partner. Significantly fewer "White" learners (5.8% [3.5 - 8.1]) reported having assaulted their boyfriend/girlfriend in the past six months when compared to "Black" (14.2% [12.5 - 15.9]) and "Coloured" (11.7% [9.4 - 13.9]) learners.

Significantly more grade 9 male learners (17.2% [13.8 - 20.6]) reported having assaulted their partner in the past six months than grade 9 females (10.3% [7.7 - 12.9]). There was an increase in the prevalence of learners who had assaulted their partner in the past six months with age from 14 years to 19 years or over. Significantly fewer 14-year-old learners (9.2% [6.9 - 11.5]) assaulted their boyfriend/girlfriend when compared to 17-year-olds (14.9% [12.2 - 17.7]), 18-year-olds (16.6% [13.2 - 20.1]) and those of 19 years or older (19.1% [14.9 - 23.4]).

The highest provincial prevalence of learners who had assaulted their boyfriend/girlfriend was seen in Limpopo Province (19.1% [13.4 - 24.8]), while North West Province (9.5% [6.0 - 13.1]) had the lowest provincial prevalence (see Graph 3).

**Coerced sex: Was ever forced to have sex - See Table 5**

Nationally 9.8% [8.3 - 11.3] of learners reported ever having been forced to have sex. Significantly fewer "White" learners (5.0% [3.2 - 6.8]) reported having been forced to have sex than "Black" learners (10.4% [8.7 - 12.0]).

Nationally within "race" groups (apart from "Indian" learners), grades, and age groups (apart from 14-year-olds), more females reported being forced to have sex than males – this is significant for "White" male learners (2.4% [0.9 - 3.8]) and female learners (7.1% [4.1 - 10.2]), grade 11 males (3.7% [2.0 - 5.5]) and females (10.0% [7.3 - 12.6]), and 19 years and older males (8.1% [5.6 - 10.7]) and females (16.0% [12.6 - 19.3]). There was no significant variation in the prevalence of learners who had been forced to have sex by age or by grade.

Limpopo Province had the highest provincial prevalence of learners who had been forced to have sex (12.8% [7.1 - 18.5]), followed by Mpumalanga (12.2% [10.1 - 14.2]). North West Province (6.0% [3.1 - 8.9]) had the lowest provincial prevalence of learners who had been forced to have sex (see Graph 4).

**Coerced sex: Ever forced someone else to have sex - See Table 5**

Across the country, 8.3% [6.8 - 9.9] of learners reported having forced someone to have sex, with no significant difference in the prevalence between male and female learners at national level. Significantly fewer "White" learners (2.6% [1.0 - 4.2]) than "Black" learners (9.0% [7.3 - 10.8]) forced someone else to have sex. Three times more "Coloured" males (9.2% [5.7 - 12.7]) than "Coloured" females (3.1% [2.0 - 4.3]) had forced someone else to have sex.

There was an increase in the proportion of learners who forced someone to have sex with age from 15 years to 18 years – fewer of those learners aged 15 years (6.2% [4.3 - 8.1]) had forced someone to have sex than those aged 19 years and older (10.9% [8.9 - 12.9]).

Limpopo Province (13.0% [6.0 - 20.0]) had the highest provincial prevalence of learners who forced someone to have sex, while North West Province (5.1% [2.1 - 8.1]) had the lowest provincial prevalence (see Graph 5).

Note that the differences across grade, age and province, mentioned above regarding ever having forced someone else to have sex are not statistically significant using 95% confidence intervals.

**VIOLENCE-RELATED BEHAVIOURS ON SCHOOL PROPERTY****Carried any weapon at school - See Table 6**

Nationally 9.2% [8.0 - 10.5] of learners had carried a weapon such as a gun, knife, panga or kierrie on school property during the month preceding the survey. Significantly more males (13.0% [11.5 - 14.5]) than females (6.3% [4.8 - 7.7]) had carried a weapon on school property in the past month. Significantly fewer "White" learners (5.6% [3.3 - 7.9]) had carried a weapon on school property when compared to "Black" learners (9.4% [8.1 - 10.6]).

There was a decrease in the prevalence of learners who had carried a weapon on school property in the past month with an increase in grade. Significantly more grade 8 (11.5% [9.0 - 13.9]) and grade 9 (11.5% [9.3 - 13.6]) learners than grade 10 (6.4% [4.6 - 8.2]) and grade 11 (6.2% [4.4 - 7.9]) learners had carried a weapon on school property.

Older learners were more likely to have carried a weapon on school property in the past month than younger learners. Significantly fewer 15-year-olds (7.7% [5.9 - 9.4]) had carried a weapon on school property than those of 19 years and older (12.4% [9.7 - 15.2]).

Significantly fewer learners in Gauteng (5.8% [4.4 - 7.2]) had carried a weapon on school property when compared to the national average of 9.2% [8.0 - 10.5]. Mpumalanga (12.0% [7.4 - 16.6]) had the highest provincial prevalence.

**Was threatened/injured by someone with a weapon at school - See Table 6**

Nationally 14.9% [13.5 - 16.4] of learners had been threatened or injured by someone with a weapon such as a gun, knife, panga or kierrie on school property during the six months preceding the survey. Significantly more males (19.1% [17.0 - 21.2]) than females (11.6% [9.5 - 13.7]) had been threatened or injured by someone with a weapon.

Significantly fewer "White" learners (6.6% [3.9 - 9.2]) had been threatened or injured by