

AN OVERVIEW OF CHRONIC DISEASES OF LIFESTYLE

DEFINITION OF CHRONIC DISEASES OF LIFESTYLE

Chronic diseases of lifestyle are a group of diseases that share similar risk factors as a result of exposure, over many decades, to unhealthy diets, smoking, lack of exercise and possibly stress.

The major risk factors include high blood pressure, tobacco addiction, high blood cholesterol, diabetes and obesity. These result in various disease processes such as strokes, heart attacks, tobacco- and nutrition-induced cancers, chronic bronchitis, emphysema and many others that culminate in high mortality and morbidity rates.

Internationally, these diseases are also called 'noncommunicable diseases' or 'degenerative diseases'.

INTERNATIONAL PERSPECTIVE ON CHRONIC DISEASES OF LIFESTYLE IN THE 21ST CENTURY

It is predicted that globally, deaths from noncommunicable diseases (NCD) will increase by 77% between 1990 and 2020 and that most of these deaths will occur in the developing regions of the world.ⁱ These conditions not only cause enormous human suffering, they threaten the economies of many countries as they impact on the older and experienced members of the workforce..

At the 53rd World Health Assembly in May 2000 the resolution on Prevention and control on noncommunicable diseases (WHA53.17) was adopted that urged WHO Member States:

- to develop, "A national policy framework taking into account healthy public policies creating a conducive environment for healthy lifestyles; fiscal and taxation policies towards healthy and unhealthy goods and services";
- to establish programmes for the prevention and control of noncommunicable diseases;

i). Murray CJL, Lopez AD. The global burden of disease: a comprehensive assessment of Mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Published by the Harvard School of Public health on behalf of the WHO and World Bank and distributed by Harvard University Press in 1996.

- to assess and monitor mortality and morbidity attributable to noncommunicable disease; and
- to promote the effectiveness of secondary and tertiary prevention and support the development of guidelines of cost-effective screening, diagnosis and treatment for NCDs.

The resolution requests the WHO Director-General to place special emphasis on NCD prevention and control "in developing countries and other deprived populations".

However, despite these explicit recommendations, the multiple burdens of disease in the developing region of the world needs to be considered. Characterised by a combination of poverty-related diseases together with the emerging chronic diseases associated with industrialisation and a westernized lifestyle, developing countries often experience a double burden, and in some cases where there are high injury rates a triple burden.ⁱⁱ Even in developing countries, life expectancy has been increasing due to improvements in child mortality and adult life expectancy. However, the rapid spread of HIV/AIDS on the African continent and also emerging in Asia is changing the health profile and mortality patterns at an unprecedented pace. This multiple burden represents a demand on the health services of developing countries, far beyond that experienced in developed countries and far beyond what the limited resources can accommodate. It is, therefore, critical that developing countries utilize their limited resources optimally and implement cost-effective interventions.

One of the international initiatives to address the health of the developing nations, the Global Forum for Health Research, addresses the 10/90 distribution¹ of resources for health research and development in the world. Their activities focus on chronic diseases and include a major subcommittee on cardiovascular diseases in the developing world and strong support for the World Health

ii). Bradshaw D, Buthelezi G. Health Status. In HST: South African Health Review, 1996. Health Systems Trust and Kaiser Family Foundation: Durban 1997.

Organization's Tobacco Free Initiative.

The global burden of diseases study of the WHO, the World Bank and Harvard University showed that in 1990, of all people who died, 55.8% died from noncommunicable diseases. In the richest 20% of countries this figure rose to 85%, and in the poorest 20% the figure was 35%. In the calculations of disability-adjusted life years (DALYs), which also take morbidity of conditions into account, the global pattern for noncommunicable diseases was 40.9% for all diseases in 1990 and projected to be 59.7% by 2020. Furthermore, it has been shown that more than half of the noncommunicable diseases occurring in the world are in the developing countries.

Early in the 20th century these conditions occurred more frequently among affluent people, a situation that has undergone profound change during the last quarter of this century. At the end of the 20th century these noncommunicable diseases were very common in the poorest sectors of communities with typical westernised lifestyles.

CONTEXT OF CHRONIC DISEASES OF LIFESTYLE IN SOUTH AFRICA

The pattern of diseases in South Africa is one with a triple burden of disease, which is exacerbated by an exploding epidemic of HIV/AIDS. The complex disease pattern places high demands on health services undergoing transformation in the face of shrinking budgets and other infrastructure development demands. These include the provision of primary health care services for the majority of the population who were neglected by the previous regime.

The consequences of these competing priorities are that there is little recognition of the magnitude of the burden of noncommunicable diseases in South Africa, where 41% of the reported mortality was due to noncommunicable diseases in 1996 (the most recent analysis of mortality patterns). Use of the Actuarial Society of South Africa's Demographic and Health model suggested that in 1996 487 people 1 The 10/90 distribution states that 10% of research resources are spent in developing countries where 90% of the people are found.

died per day due to noncommunicable diseases in South Africa, this figure rose to 536 deaths per day in 2001 and should reach 563 deaths per day in 2010. This pattern of NCD death occurs in the face of the emerging AIDS epidemic, where the model estimated that 77 people died of AIDS per day in 1996 in South Africa, while this figure increased to 628 AIDS deaths per day in 2001 and is estimated at 2184 deaths a day in 2010. (Bradshaw et al., unpublished data). Many of these deaths occur in middle-aged members of the workforce, and constitute an enormous financial burden to the country because of premature loss of life in this sector, which plays a major role in the country's economy.

Provision for the prevention, early detection, and cost-effective management of noncommunicable diseases is generally inadequate. It is, therefore, not surprising that these chronic conditions are poorly diagnosed and managed. In South Africa the burden for noncommunicable-disease risk factors is high: approximately 6 million people have hypertension, 4 million have diabetes, 7 million smoke and 4 million have hyperlipidaemia. About 56% of the population has at least one of these risk factors and about 20% is at a high level of risk for

noncommunicable diseases. Clearly, these poorly treated risk factors require lifestyle changes and medical care to reduce the projected burden of these diseases.

Compounding the problems of inadequate diagnosis and poor management of noncommunicable diseases and their risk factors is the multicultural background of patients in South Africa. Therefore, the use of intervention models and materials developed in Western societies is frequently inappropriate for those people with different lifestyles, habits and practices. This implies the need to develop and test culturally-appropriate intervention and patient education materials for the specific target groups and situations in South Africa.

HISTORY OF CHRONIC DISEASES OF LIFESTYLE (CDL) RESEARCH AND THE CDL UNIT

Community health research on chronic diseases of lifestyle in the MRC was initiated in 1975 at the then National Research Institute of Nutritional Diseases. This initiative was prompted by the high ischaemic heart disease mortality rates in the white community. This research programme was led by Dr Jacques Rossouw and initially included community-based surveys to determine the risk factor and disease profiles of those groups in the country with high or increasing cardiovascular mortality rates.

In line with international developments in cardiovascular disease (CVD) epidemiology a major community-based CVD risk factor intervention project, CORIS, was launched in three districts of the southwestern Cape in 1979. From the beginning this initiative was a trans-disciplinary and multisectoral research initiative of the National Department of Health, the Human Sciences Research Council and the MRC. Other collaborators included the Universities of Cape Town and Stellenbosch. The research team included physicians, epidemiologists, sociologists, psychologists, dieticians, sports scientists, epidemiologists, biochemists, physiologists and communication health experts.

The CORIS study was one of only two studies internationally that successfully showed that communitybased intervention reduces CVD risk. The public health and policy implications of this and related projects were enormous and included the founding of the Heart Foundation of Southern Africa, National Department of Health's nutrition education programmes for westernised people, food labeling programmes for South Africa showing the major nutrients of products, and prudent diet and obesity management pamphlets for medical practitioners developed by the Nutrition Institute. With the new Heart Foundation many community education activities were initiated. These included formulating criteria for meat classification by the Meat Board adapted to improve quality of meat products sold to the public. Therapeutic consensus guideline meetings were held on hypertension and hypercholesterolaemia. Based on the latter, a cholesterol education programme for general practitioners was launched. This educational programme was funded by the pharmaceutical industry and large insurance companies.

Risk factor surveys were conducted in the coloured community in 1983 and in the Indian community in 1987. These revealed that considerably more South Africans are at high risk for developing CVD than previously realised, and the need for group appropriate interventions was identified.

By the end of 1987 Dr Rossouw left the MRC and activities at the Nutrition Institute shifted its focus to undernutrition in South African communities. The CVD research programme of the MRC underwent major downsizing and in 1988, when the Centre for Epidemiological Research in Southern Africa (CERSA) was created under the leadership of Dr Derek Yach, only two staff members (one researcher) joined this vibrant young group of CERSA researchers as the division of Cardiovascular Diseases. This small division was to become the core group of the Chronic Diseases of Lifestyle Programme of the MRC at that time.

Cardiovascular Diseases, as a division of CERSA, focussed on studies in disadvantaged South African communities. The successful intervention models developed in the CORIS study were transferred to the working class community of Mamre. Collaboration with this community formed the basis of a transdisciplinary, multi-sectoral intervention study. In addition, the focus of the CVD surveys was directed at black African communities, in which surprisingly high levels of CVD risk factors were identified in face of relatively low, but rising, CVD mortality rates.

All the cross-sectional studies showed a relatively low level of diagnosis and inadequate levels of control of the CVD risk factors, such as hypertension and diabetes. By 1995 the CVD division's strategic planning meetings identified this problem as the new area of research that should be included in its research repertoire. Since then the area of health service development and intervention research became a major focus of the CVD division.

During 1995 a decision was made to separate the Cardiovascular Disease division of CERSA and create an independent Programme, with Dr Krisela Steyn as the Leader. A second specialist researcher was transferred to the programme and in 1998 a third senior specialist was appointed.

The name of this research programme as part of the Community Health Group of the MRC was changed to that of 'Chronic Diseases of Lifestyle' to reflect the broader complex of unhealthy lifestyles, emerging risk factors and, eventually, interrelated outcomes.

The CDL Programme expanded its activities, not particularly in terms of full-time staff, but by collaborating with many institutions nationally and internationally. By appointing a few part-time consultants with a high research profile, the activities of the Programme have also been increased. The Programme took on the management of the MRC's thrust on 'Chronic Diseases, Cancer and Ageing'. The research staff for many years has been active in many professional associations, often as executive committee members and on Editorial Boards of scientific journals. They act as consultants on a variety of professional committees nationally and internationally, and since 1994 in many policy development activities with the national and local Departments of Health.

Two reciprocal exchange visits of experts on "hypertension in black people" took place between South Africa and the USA in 1998 and 2000. These visits took place under the auspices of the Bi-national Agreements on Technical Collaboration between the two countries. The CDL Programme and National Heart Lung and Blood Institute of the NIH arranged the visits with Dr Krisela Steyn and Prof Lionel Opie as leaders of the South African delegation. In June 1999 the first of these exchange visits occurred between the CDL Programme and Wayne State University.

An application to SAREC/SIDA in Sweden by Prof Stig Wall of UmeD University, Sweden and Dr Steyn of the CDL Programme generated funding for three years. This allows exchange visits between the two countries' scientists for collaborative research to develop protocols on chronic disease of lifestyle that are suitable to submit for funding.

In 2001 during the restructuring of the MRC the CDL Programme became a Unit with Dr Krisela Steyn as the Director.

PUBLIC HEALTH IMPACT IN SOUTH AFRICA UP TO 2005

\$ The CDL Programme has played a major role in working with organisations, such as the Heart Foundation of Southern Africa, the South African Medical Association, and the National Department of Health, to set up consensus therapeutic guidelines for the following conditions: hypertension at primary and secondary care level, diabetes at primary and secondary care level, hyperlipidaemia, familial hyperlipidaemia, stroke management and a variety of others, including

the Guidelines of the Directorate of Chronic Diseases, Ageing and Rehabilitation of the National Department of Health.

\$ The data on tobacco control from CDL projects were used during the lobbying for the South African tobacco control legislation. In addition, the Programme was deeply involved with many anti-tobacco lobbies to contribute to the passing of the tobacco control legislation and amendments in South Africa

\$ A large variety of the Heart Foundation of Southern Africa's projects were developed in collaboration with the CDL Programme. The Programme constantly worked with the Foundation to provide information and technical assistance for their projects.

\$ The Edutainment organisation, Soul City, developed their 4th television series with a hypertension theme, over a 3-year period in collaboration with the CDL Programme. This highly successful 13-series programme was aired in 1999 and 2000. A 60-episode radio story and an educational supplement on hypertension, incorporated in more than 2 million newspapers in South Africa, also developed with CDL's collaboration.

\$ The CDL Unit worked with the Directorate for Health Promotion to provide the South African Medical Schools with teaching materials for the medical students and other members of the health care team on tobacco control.

\$ A constant flow of enquiries from the media and other groups on research results or other chronic diseases of lifestyle information is addressed.

\$ The Director of the CDL Unit is appointed as informal consultant to the National Department of Health's Director for Chronic Diseases, Aging and Rehabilitation.