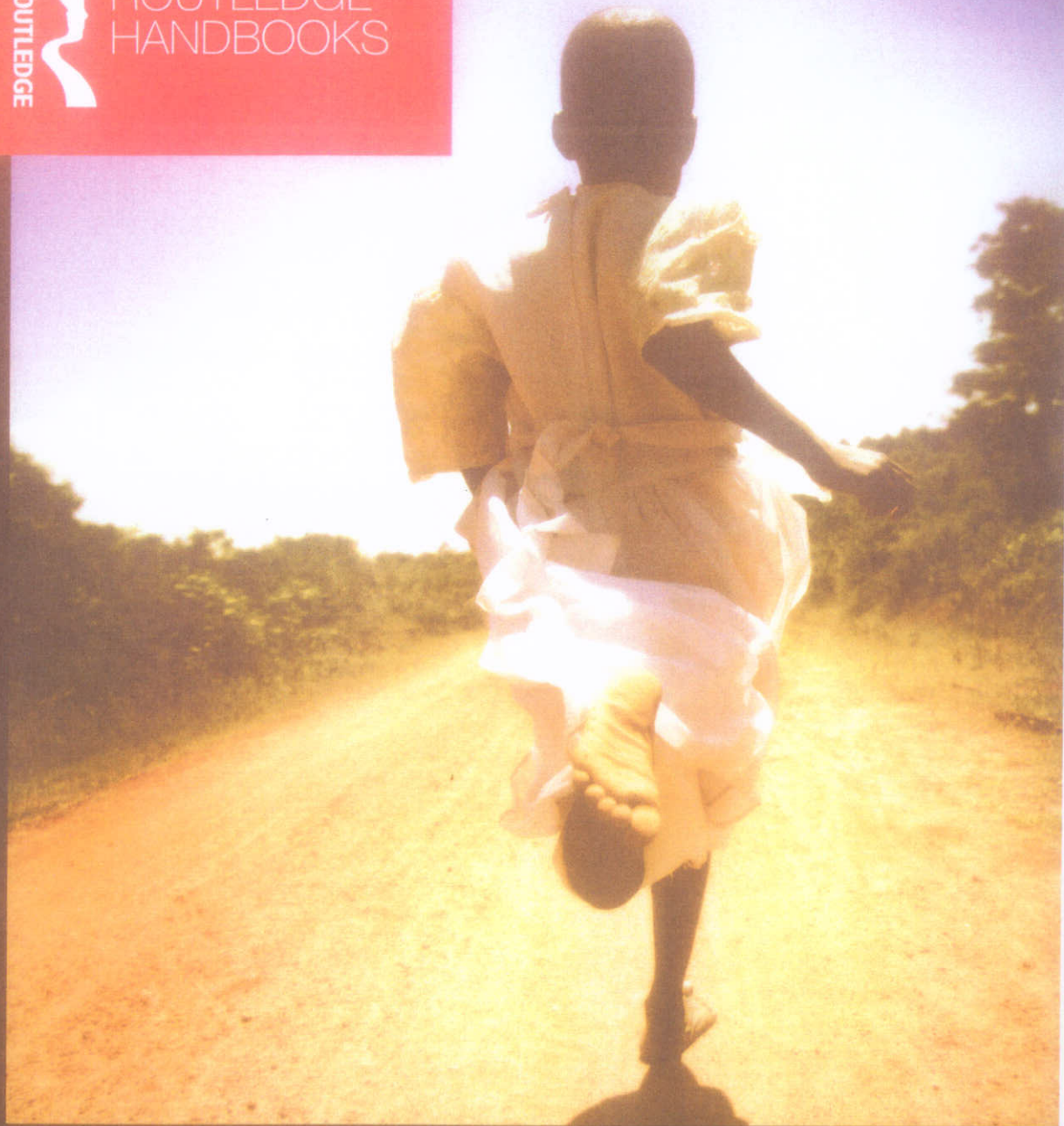


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Chronic Diseases

The Urgent Need for Action

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The overarching problems of chronic disease

Chronic diseases, including CVDs such as coronary heart disease, stroke, and hypertension, as well as cancer, lung disease, and diabetes mellitus, account for most deaths in nearly all regions of the world except sub-Saharan Africa. The peak mortality from CVD occurred in the 1960s in the United States, in the 1970s in Western Europe, and in the 1980s and 1990s in Eastern Europe. While infectious diseases, lack of nutrition, and poor childbearing practices are claiming fewer lives in developing countries, deaths attributable to chronic diseases are rising (Levenson *et al.* 2002; Yusuf *et al.* 2001). This current epidemiologic transition in developing countries, a collision of emerging epidemics of non-communicable diseases and injury, with existing epidemics of infectious diseases, malnutrition, and complications of childbirth, creates complexity in countries where health infrastructure is often inadequate to deal with already existing health challenges and needs, and where health systems are often not agile enough to respond with the development of preventive and cost-effective interventions. This chapter provides an overview of the problem of chronic disease, and the urgent need for action globally, with a specific focus on CVD, a term we will use to encompass coronary artery disease, hypertension, stroke, and diabetes.

The steady global rise of non-communicable disease has occurred in parallel with changing social and economic circumstances. A massive migratory movement is occurring with the shift of populations from rural settings to cities. The movement is complicated because many cities are not citadels of shining affluence, and contain pockets of poverty, especially around the edges. Likewise, the features of city living that create the greatest cause for concern when it comes to contributing to chronic disease, such as easy availability of cheap, processed, high-fat, high-salt, and calorie-dense foods and beverages, including alcohol, and the loss of opportunities for incidental physical activity, are realities that are also beginning to permeate rural life.

These changes in the environment in which hundreds of millions of people live, combined with a simultaneously relentless effort by the tobacco industry to recruit smokers among people in developing economies as industry markets shrivel in more developed, health-conscious countries, suggest the need for preventive programmes aimed not only at high-risk individuals,

but at entire populations who stand at heightened risk of chronic disease, especially diabetes mellitus and cardiovascular disorders (CVD).

The subsequent economic effects of non-communicable chronic disease are especially damaging in developing countries, in large part because many of the chronically ill are of working age. For instance, it is estimated that globally the greatest cumulative proportion of CVD deaths in the next 20 years will occur in those 65 years and over (Leeder *et al.* 2004). However, what is perhaps more striking is that the comparative cumulative CVD death percentage for those between 35 and 64 will increase dramatically. This will affect the economic 'bottom line' at both a macro- and micro- level, decreasing the national productivity of affected countries, while also bankrupting individuals and their families because they cannot work and are unable to afford their out-of-pocket health care expenses (Leeder *et al.* 2004).

Four decades of focus on reproductive maternal health have tightly bound the concept of 'women's health' to that of childbearing and motherhood. These remain, of course, important dimensions, but they are no longer (if they ever were), the only ones critical for addressing women's health needs in emerging economies, especially during the years of family formation. In fact, chronic diseases like CVD exact a much higher mortality toll among women in their reproductive and motherhood years than reproductive-related causes that receive the largest share of research, funding, and policy attention.

Chronic disease is often thought of as a disease of the elderly. For women in particular, it is not that simple. In Latin America, for women aged 35 to 44, an estimated 40 to 55 per cent of mortality is attributable to non-communicable chronic diseases (such as CVD), compared to less than 10 per cent of mortality attributable to causes associated with childbearing and HIV/AIDS combined (Raymond *et al.* 2005). In South Africa and China, non-communicable chronic diseases account for a much higher proportion of deaths among women of late childbearing or early motherhood ages, compared to mortality attributable to causes associated with childbearing (Raymond *et al.* 2005).

The burden of non-communicable chronic diseases is matched by highly prevalent antecedents such as obesity. While the impact of low-cost, high-fat, high-salt, calorie-dense food and reduced physical activity are first manifest among the newly affluent in developing economies, this group can alter its lifestyle. The educated and well-to-do in developing countries are likely to be the first to realise the need for behavioural and other changes to reverse their risk, based on the experiences from high-income countries. Those who are less educated and less wealthy will be more likely to keep smoking, eat high-fat food, and not act to protect their health. The less affluent or overtly poor acquire these behaviours, but lack the education and affluence to get rid of them. The ongoing burden of death and disability from chronic disease is likely, therefore, to fall on the poorer (although possibly not the very poorest) sections of society, as it continues to do in more-developed countries (Leeder *et al.* 2004).

Obesity is also a phenomenon that must be disaggregated by gender. In the Middle East, the proportion of women who are obese far exceeds that of men in all countries. This is exemplified by Egypt, where 45 per cent of women are obese (BMI $\geq 30\text{kg/m}^2$), and Kuwait and Bahrain, where 30 per cent of women are obese (WHO 2010a). Also in Egypt, deaths from CVD and/or diabetes are 15 times more common than deaths from reproductive health causes in women aged 35–44. Illustrating a health differential across the globe, CVD death rates for women aged 55 in Egypt are ten times those in the US (WHO 2010b). Living in low-income countries certainly does not immunise women against non-communicable chronic disease mortality at relatively young ages. In fact, the exact opposite has shown to be true.

The narrow definition of 'women's health' in global public health that has long focused on reproductive conditions and diseases needs to reflect this changed epidemiology. Likewise, with

rising levels of obesity among children and adolescents, non-communicable chronic diseases must become part of a global definition of women's and children's health that matches a changing epidemiological reality.

Responses to non-communicable chronic disease

To combat non-communicable chronic disease in vulnerable populations requires a focus on prevention at the level of the population, supplemented by efforts to detect and treat early those at special risk, including children (Leeder *et al.* 2004). The potential benefits associated with this course of action, such as helping those with pre-diabetes to reduce their risk of developing diabetes and CVD, and reducing children's exposure to tobacco advertising, are not yet fully appreciated, especially in low- and middle-income countries.

When we consider the implementation of population-based approaches to prevention, it is easy to see why spirits fail and enthusiasm evaporates given the magnitude of the challenge – not unlike that of addressing climate change. First, there is the likely extended future duration of required action to effect change. Second, the necessary strategies, learned from efforts over the last few decades in developed countries – inter-sectoral action, political persuasion, battle with vested commercial interests and greed, social marketing of uncomfortable messages about what we eat and how much exercise we take – are also daunting. Third, and crucial to the success of any social change that might diminish the risk of chronic disease, is recruitment of the population to healthier lifestyles. Fourth – and this should never be discounted – the experience of many millions of people is that trade and commerce, and the move to the cities that economic progress has enabled, have made a massive, positive contribution to their quality of life and to chances of their children surviving, receiving an education, and progressing to a better life. The cards, therefore, are stacked against those favouring, as the late Professor Geoffrey Rose put it so memorably, 'sick population' approaches to prevention (Rose 1985: 1).

Unfortunately, the population-based prevention strategies, such as immunisation and attempts to change lifestyle characteristics, of enormous potential importance to the population as a whole, offer only a small benefit to each individual, since most of them were going to be all right anyway, at least for many years (Rose 1985).

Therefore, it would seem preferable to just seek out the high-risk individuals and treat them. Help them to quit smoking, to treat their elevated blood pressure and cholesterol, maybe even help them to change their diet. Combine this approach with an endorsement of the recommendations contained in the Framework Convention on Tobacco Control (WHO 2010c), such as price and tax measures to reduce the demand for tobacco, and non-price measures to reduce the demand for tobacco (namely, protection from exposure to tobacco smoke, packaging and labelling of tobacco products, and education, communication, training, and public awareness), and you may be doing the best that is possible in a near-impossible setting.

In the short term, as Rose (1985) acknowledged, an approach to 'sick individuals' may be the best tactic. There is no future, however, in restricting our strategies to the detection and treatment of sick individuals – we will be treating high-risk people for as long as the social and economic conditions that create their problems are not dealt with. Realistically, many chronic diseases will require that we take both approaches – that we use case-centred epidemiology to identify susceptible individuals (the 'high-risk strategy') and, at the same time, attempt to control the determinants of incidence (the 'population strategy'). The Finnish North Karelia project documents the benefits attainable in a 'sick population' approach that focused on community risk rather than individual risk (Vartiainen *et al.* 2000).