

## Changing Epidemics

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The world is now facing a global change in the patterns of disease. Non-communicable diseases such as diabetes or cardiovascular disease are fast replacing the traditional epidemics. These changes are affecting mainly developing countries, but its impact is fully observed in the developed world.

Cardiovascular diseases are a main cause of death among Portuguese adults, and changes in the prevalence of modifiable risk factors such as obesity or tobacco consumption, could lead to important changes in the morbidity and mortality of such diseases. However, national estimates indicate that obesity and tobacco consumption are the two most common modifiable risk factors in our population and unfortunately their prevalence estimates are not expected to decrease in the next years.

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The prevention of the leading causes of non-communicable diseases, such as cardiovascular diseases, cancer or diabetes, can be regarded as the final result of actions taken towards the control or the modification of lifestyles that are a common pathway to many of them (1).

To be effective, intervention needs to consider the individual, the family and the community level because risk factors are deeply entrenched in the social and cultural canvas of the human populations (2). It is essential to assess and quantify the distribution of those risk factors responsible for the greatest burden of disease (3).

We are now facing a global change in the patterns of disease (4). As described by the theory of epidemiologic transition, which basically focuses on the change in patterns of health and disease and on the interactions between these patterns and demographic, economic and sociologic determinants and consequences, non-communicable diseases such as depression or heart failure are fast replacing the traditional epidemics (5). These changes are affecting mainly developing countries, but its impact is fully observed in the developed world. Most non-communicable diseases are preventable and associated with ageing and economic development (urbanization and lifestyles). The World Health Organization (WHO) estimated that non-communicable diseases caused about 40% of the deaths in developing countries and 75% in developed ones (6).

Obesity is central to most common ill health conditions in Western societies. The WHO recognized obesity as a disease, affecting children and adults alike, and highly prevalent in both developing and developed countries (7). It is also commonly accepted that the main causes of the

obesity epidemic are sedentary lifestyles and high-fat, energy-dense diets. Moreover, the obesity epidemic may reflect pronounced changes in behavioural patterns of human communities, far beyond individual genetic or biological predisposition (8). Behavioural and environmental factors, the major contributors to overweight and obesity, provide the best opportunity for action and intervention at the different prevention levels. Dietary inadequacy, excessive energy consumption and physical inactivity are believed to be the most important factors underlying the rapid increase in the prevalence of overweight and obesity (9). To design effective strategies for dealing with the increasing prevalence of obesity, it is necessary to have a better knowledge of its magnitude and a deeper understanding of its causes. Unfortunately, adequate data on energy intake and expenditure are frequently unavailable, making it difficult to estimate their relative contribute in the development of obesity (10).

Epidemiological studies showed an increase in mortality associated with overweight and obesity (11). Increasing body mass index (BMI) is associated with increasing blood pressure, total cholesterol, low-density lipoprotein cholesterol (LDL) and triglyceride levels, and decreasing high-density lipoprotein cholesterol (HDL). The overall risk of coronary heart disease and stroke therefore increase substantially with weight gain and obesity (12,13). These diseases affect mainly elderly adults, but there is evidence that they are also a consequence of excessive weight gain through childhood and adolescence (7,9,14). Data on morbidity and mortality associated with overweight and obesity illustrate the importance of the prevention of weight gain as a major

public health concern. The Southern European region is a classic example of countries with increasing rates of obesity, accompanied by a growing prevalence of hypertension and diabetes (7). In Portugal, the prevalence of obesity is rising (15,16), and cardiovascular diseases are the main cause of death, increasing from 26.4% in 1960 to 38.7% in 2000 (17). However, good quality information on the main determinants and the specific characteristics of Portuguese high-risk groups remains sparse.

Obesity, as other health related conditions, has a clear association with poverty and in general with markers of social disadvantage, and smoking is even viewed as a surrogate marker of social class in different epidemiological studies (18,19).

A simplistic observation could lead to the erroneous notion that as smoking seems to decrease in our societies its "role" is taken up by obesity. There is a common belief that quitting smoking is associated with overweight and obesity development, and this type of concern is even expressed by smoking pregnant women (20). However, most surveys show that smoking and obesity go together and in fact this association is more often present in lower social class group in the western societies (21,22). Such misconception adds unneeded difficulties to public health programs designed to prevent and control these two major international avoidable risk factors.

The tobacco epidemic remains a major health concern in the Portuguese society. There is now enough evidence to categorise the various stages of the tobacco epidemic, and this is of utmost importance to implement in each community the more appropriate public health measures (23). Most Western countries are now facing the last stage of the epidemic, with the prevalence of smoking slowly declining in both sexes, and smoking being more common in lower social classes (22,23). Southern European countries, like Spain or Portugal, are still in an earlier stage of the epidemic. Some studies point out that they are at the beginning of stage 3, the prevalence in men rapidly decreasing, and in women reaching its peak (24-26).

Smoking is responsible for more coronary heart disease and stroke deaths than any other factor (27), it is a major acquired determinant of atherosclerotic disease and contributes for the development of a large number of other diseases. By 2020, the burden of disease attributable to tobacco is expected to outweigh that caused by any single disease. From 2.6 per cent of all worldwide disease burden in 1990, tobacco is expected to increase its contribute to 9 per cent in 2020, compared with just about 6 per cent for ischaemic heart disease, the leading projected disease (28).

To estimate the smoking population attributable risk we need information on its prevalence (29). This is not always possible because global data on prevalence of smoking are not available, are inaccurate, especially when age-specific data are needed, or obtained in such different ways that make comparisons or generalization impossible. Even if age and sex-specific smoking prevalence data are available, further information on factors

that influence tobacco consumption, such as age at which smoking began, duration of smoking, and number of cigarettes smoked per day are less often available. Such data are important to evaluate the relation with the occurrence of disease and to design and implement public health measures in tobacco control. Some countries like the United Kingdom or the United States have implemented strong public health measures to control and limit this addiction, mainly acting on the cigarette taxation and advertising (30-32). Strong price policies are now widely considered to be the highest priority among tobacco control strategies (33). The last decade of the twentieth-century will probably be remembered in the history of tobacco as the decade of the legal actions against tobacco industries, United States taking the lead (34). Currently the concern about tobacco has dismissed, and it is directed towards other products, mainly food products seen as responsible for the rising of the obesity epidemic. In the United States it is now believed that the obesity epidemic has left tobacco behind as the leading cause of preventable death.

Estimates from the health surveys conducted in Portugal point out that obesity and tobacco consumption are the two most common modifiable risk factors in our population (16,35-37). Specific prevalence of these risk factors according to sex, age and education levels among defined groups may indicate the differential adoption of behaviours and lifestyles. This is important information when trying to implement actions or interventions for reducing these risk factors.

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