2. BACKGROUND

In some communities even till today, weight gain and fat storage have been viewed as indications of good health and increasing wealth. As the standard of living continues to rise, weight gain and obesity has emerged as one of the most common and serious nutritional problems confronting many communities all over the world today. Obesity is a chronic disease, prevalent in both developed and developing countries, and affecting all age groups. Indeed, it is now so common that it is replacing the more traditional public health concerns, including undernutrition and infectious diseases, as one of the most significant contributors to ill health (WHO 1998). The problem may stem from the limited knowledge of the health impact of obesity compared with such fatal conditions as stroke and coronary heart disease.

Almost 30 years ago, we have been reminded by Professor Waterlow's statement in his report to the Department of Health and Social Security/Medical Research Council, United Kingdom in 1976, which still holds true up till today. He stated "We are unanimous in our belief that obesity is a hazard to health and a detriment to well-being. It is common enough to constitute one of the most important medical and public health problems of our time, whether we judge importance by a shorter expectation of life, increased morbidity, or cost to the community in terms of both money and anxiety" (Waterlow 1976).

Obesity is a condition of excess body fat and in most cases obese people are so because the energy intake in their diet has, over a period of time, exceeded their energy expenditure for metabolism, physical activity and growth. Obesity continues to be a prevalent public health problem in the developed countries, while there is strong epidemiological evidence indicating that the prevalence of obesity in developing countries often increases in communities emerging from lifestyles of subsistence into affluence.

One of the scientific curiosities of the human predicament is our limited ability to cope with excess supply of energy (calories). It has been known for many years that there is a range of acceptable body weight where present and future health is both optimal. This range is associated with a narrow range of energy supply. If the energy supply falls by 10%, 20% or perhaps 30%, then compensation through limiting physical activity can prevent disastrous weight loss. On the other hand, an increase in energy supply of even 10% above requirement for energy balance is enough to produce catastrophic weight gain. For most people there is no automatic compensatory increase in physical activity or other energy expenditure, which can match this rise (Lean 1996).

In developed countries, even with long experience in tackling the problem, they have failed to arrest the rise in the prevalence of obesity during the past few decades. The management of obesity is notoriously difficult for several reasons:

(i) the prolonged nature of the treatment,
(ii) the need to readjust dietary energy intakes and physical activity permanently to maintain a reduced weight and
(iii) the changes in metabolism and appetite which tend to minimize weight loss.

In most cases the result is a transient phase of weight loss followed by a rapid return to the obese condition. The hard fact therefore is that there is no immediate remedy, and a preventive policy seems to be the most appropriate solution.

Recent advances in human genetics and molecular biology have increased our understanding of the human genome. Scientists involved in the study of human obesity have become more optimistic about the possibility of identifying the genes associated with the predisposition to various types of obesity.

Obesity is a public health concern because of its association with a number of medical complications that lead to both increased morbidity and mortality. The most common complications are type 2 diabetes, hypertension, dyslipidaemia, cardiovascular disease (CVD), gallstones and cholecystitis, respiratory dysfunction and certain cancers (WHO 1998). These diseases represent far too great a burden for policy-makers, healthcare providers and researchers to ignore. The current trend in developed countries is the enormous cost of high technology and tertiary healthcare needed to diagnose and manage the high-incidence of obesity-related complications. Similar demands in Malaysia will impose a huge burden on the human and economic resources of the country and are liable to disturb priorities in the healthcare or other sectors. The question is "Can we afford it?" In this context, it is in Malaysia's best interest to intervene early before a typical dietary pattern associated with obesity becomes widespread and established within our population (Ismail 1998). Similarly, we need to curb the sedentary lifestyle pattern and physical inactivity that is evident among Malaysians in all age groups. Considerable advances have been made to treat obesity either through diet, exercise and behavioural modifications. However, despite this progress, prevalence of obesity has risen sharply over the last decade. Commercial weight loss products and programmes have gained popularity among Malaysians despite the fact that most of them have not been thoroughly evaluated for effectiveness and safety. The challenge to public health workers and scientists in this area has never been greater.

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