

OBESITY IN SAUDI ARABIA : AN OVERVIEW

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ABSTRACT

It is well documented that obesity is associated with several chronic illnesses. Therefore, the prevalence of obesity in a population can be considered as a rough indicator for health status. This paper reviews the current state of knowledge related to obesity in Saudi Arabia. The prevalence of obesity ranges from 14% to 66%. This wide variation can be attributed to the difference in criteria used to define obesity and also to differences in age and sex structure of samples studied. In a study on Saudis aged 18-74 years the prevalence of obesity was found to be 51% among men and 65% among women. Several studies showed that obesity is more prevalent in diabetic patients. Factors contributing to obesity have not been well studied. Some studies suggested that lack of physical exercise, excessive intake of high energy foods and attitudes of the community to the overweight are important factors for the occurrence of obesity in this country. A recent study using multiple regression analysis indicated that five variables were significant predictors for obesity among women : age, marital status, number of servants, having children and parity. The paper calls for urgent action to prevent and manage obesity. Studies on factors contributing to the high prevalence of obesity in Saudi Arabia are highly recommended.

Key Words : Obesity, social factors, S. Arabia.

INTRODUCTION

Obesity is defined as excessive storage of energy in the form of fat (Simopoulos and Van Itallie, 1984). For men, obesity is present when body weight consists of more than 20% fat, compared to the normal values of 15% to 18%. For women, obesity is present when body weight consists of more than 30% fat, compared to the normal values of 18% to 24% (Roche et al., 1981).

Sums of scapular and triceps skinfold have also been used to define obesity. The body mass index (BMI) is the best approximation for the degree of obesity in population-based studies (National Institute of Health Consensus, 1985; Roche et al., 1981). The BMI (weight in kilograms divided by the square of the height in metres) was first proposed by Quetelet (1869). Garrow (1978) proposed grading severity for both males and females by subdivisions of BMI into (a) Grade O

(normal) BMI from 20 to 24.9, (b) Grade I BMI from 25 to 29.9, (c) Grade II BMI from 30 to 39.9, (d) Grade III BMI > 40. The BMI correlates well with body fat, but does not distinguish between body fat and lean body mass. Increased body weight could be due to the increase in muscle mass, body fluid, or body fat.

Obesity is not an uncommon finding, particularly in affluent societies (Binhemd et al., 1991; Seidell et al., 1986). It is associated with an increased risk of several major diseases including hypertension (Gillum, 1987), non-insulin dependent diabetes mellitus (Bennet and Knowler, 1984), gall bladder disease (Bray, 1985), and some types of cancers (Van Itallie, 1985). Therefore, the prevalence of obesity in a given population is a rough indication of its general health status.

Obesity is becoming one of the most important public health problems in Saudi Arabia. The available data clearly indicate a high prevalence of adult obesity particularly in women in the Kingdom. This paper aims to briefly summarize our current state of knowledge about the prevalence, the management, and the factors related to obesity in Saudi Arabia.

PREVALENCE OF OBESITY

In Saudi Arabia the prevalence of obesity ranges from 14% to about 66% (WHO, 1989; Binhemd et al., 1991). This wide variation could be due to the difference in criteria used to define obesity and also to the differences in age and sex.

The risk of childhood obesity and its continuation to adulthood is now well established (Rimm and Rimm, 1976). A survey, utilizing the National Centre for Health Statistic Standards, carried out in the Kingdom (WHO, 1989), revealed 14% childhood obesity among those 0 to 6 years of age. It has been estimated that obesity persists into adulthood in over 80% of obese adolescents (Lloyd et al., 1961).

Binhemd et al (1991) studied the height and weight of 1072 Saudis (477 men and 595 women), ages 18-74 years, with a view to determine the prevalence of obesity in patients attending the primary health care centre of King Fahd University Hospital in Alkhobar. Of the total group, 51.5% of the men, and 65.5% of the women were considered overweight or obese, using a criterion of body mass index of greater than 25. More women were found to be obese than men. Similar findings were also reported by Al-Attas et al. (1990), where obesity was found more frequently in females than in males.

The prevalence of obesity in diabetic patients was higher than non-diabetic. In one study (Bacchus et al., 1982), 65% of the diabetic patients were overweight as compared with 26% of the non-diabetic population. Diabetes in Saudis appear to be related to obesity (Fatani et al., 1989). Similar findings were also reported by Fatani et al. (1987) in a study of the prevalence of diabetes mellitus in the Western Region of the Kingdom. They defined obesity as the BMI equal to, or higher than 27 for men, and equal to, or higher than 25 for women. Among 5,222 adult subjects, fifteen years of age and over, the rate of obesity among diabetic subjects (41.4%) was significantly higher than that among normal subjects (29.3%). They reported that in men, the obesity rate was significantly higher among diabetic subjects (39.1%) than in normal subjects (21.3%). Women did not have a significant difference in the rate of obesity in diabetic (42.4%) and normal subjects (39.3%).

In another study, using the same criteria of obesity as the previous one, Al-Attas et al. (1990) studied the metabolic indices in 217 Saudi diabetic patients and 57 controlled subjects in relation to BMI. Obesity was found more frequently in females (82.7%) than in males (40.9%).

Factors contributed to the prevalence of Obesity

There are several factors contributing to the high prevalence of obesity amongst women in Saudi Arabia. Watching television and eating snacks are the main activities during their leisure time, especially when the majority of the women are not employed outside the home. Excessive intake of food is also responsible for obesity in the region (Musaiger, 1987).

According to the Saudi Food Balance Sheets (1987-1989), the mean daily energy availability per person in Saudi Arabia has increased to 3,064 kcal, which is 13.2% above the WHO/FAO recommended energy intake. Daily availabilities are 82.4 grams of protein, 90.4 grams of fat, and 480.2 grams of carbohydrate for Saudi Arabia. These values are 16.5%, 33%, and 6.1%, respectively above the US Daily Recommended Allowances (Saudi Food Balance Sheets, 1987-1989).

The attitude towards obesity is another important factor. Musaiger (1987) reported that the attitude of most men in the Gulf region is to prefer obese women, mainly for sexual purposes. This encourages the wife to keep her fatness just to satisfy her husband's desire. The cultural acceptability of obesity, as in rural Egypt, describes the proper woman as an "envelope for conception," and therefore, a fat woman is a desirable because she is thought to have more room to bear the child, lactate abundantly and give warmth to her children

(Amnar, 1954). Also, the Tarahumara of Northern Mexico, reportedly consider large, fat thighs as the first requisite of beauty; a good-looking woman is called a "beautiful thigh" (Bennett and Zingg, 1935). Among the Amhara of the Horn of Africa, thin hips are called "dog hips" and is insulting (Messing, 1957).

There is the possibility that the traditional, long, comfortable, and wide clothes worn by women in the Gulf has not made them notice the gradual gain in weight (Musaiger, 1987).

In both urban and rural areas, the modernization and affluence in Saudi Arabia, as a result of the oil boom over the last three decades, has probably increased the problems of obesity for vulnerable persons. Changes in lifestyle, in eating habits, and the increased variety of foods due to the high influx of immigrants of various nationalities working in the area has probably contributed to the higher prevalence of obesity. Finally, higher levels of physical activity combined with higher rates of smoking among males compared to females may explain the lower rates of obesity in males (Klesges and Meyers, 1989).

In a recent study, Khashoggi et al. (1994) considered the factors affecting the rate of obesity among females whose ages ranged between 11 and 70 years in the Western Province of the Kingdom. The sample involved 950 females screened at the primary health care centres and the prevalence of obesity was 64.3% using BMI with a cut-off point of > 25 . Multiple regression analysis indicated that five variables were significant predictors for obesity. These variables include age, marital status, number of servants, having children, and parity. Other factors studied, including education and income, were of no predictive value.

In another study (Khwaja and Al-Sibai 1987) on a sample of 467 married non-pregnant Saudi female patients, using the cut point of >30 for the BMI, the overall prevalence of obesity was estimated to be as high as 27%. Age, rather than the parity, was a contributing factor to obesity. This appears more likely since the interval between pregnancies is usually short, and does not allow the female to lose the weight that was gained during pregnancy. This is particularly true in Saudi Arabia where grand multiparity (the births of five or more viable infants) is a common occurrence (Cochran and Faqeera, 1982; Madani et al., 1994).

Management of Obesity

Understanding the psychodynamics of obese patients and their families is a pre-requisite to successful treatment. Perhaps behaviour

modification with respect to food intake will be effective in the treatment of obesity, especially in Saudi Arabia.

It is often assumed that fasting during Ramadan (the ninth month of Islamic lunar calendar) will cause weight loss. However, some moslems that fast during Ramadan are gaining weight (Khashoggi et al., 1993). Fasting during the month of Ramadan is one of the five pillars of Islam. Moslems are obliged to abstain from eating and drinking between dawn and sunset. After sunset, and during the night, they are allowed to eat and drink until the first light of dawn appears. A survey was undertaken by Khashoggi et al. (1993) among Saudi females aged 20 to 50 years in the five main primary health care centres in Jeddah during the ten days before the month of Ramadan, and during the ten days after it ends. The result indicates that there was a significant increase in weight after the month of Ramadan ($p < 0.001$). The authors cited many reasons for the increase in the body weight, including the reduction in meal frequency, the increase in food energy intake, and the decrease in energy expenditure and activity during this month. Therefore, Moslems should change their food habits by attempting to keep to their normal food intake, reducing sweet consumption, increasing meal frequency, and increasing their activity in order to maintain the ideal body weight during the Holy Month.

A reasonable level of physical activity is recommended, not only to lose body fat (Hill et al., 1987), but also to improve circulation (Cresanta et al., 1987). This can be done either at the home or at physical fitness centre. Women in the Kingdom, are not allowed to participate in outdoor exercise programs, hence physical fitness centers have opened in order to fill women's needs for physical activity and exercise.

Surgical management of obesity has been introduced in Saudi Arabia for the treatment of patients with morbid obesity. In a surgical management study (Mofti and Al-Saleh, 1992), the mean weight loss during one year was 39% in males and 33% in females.

Conclusion

The previous studies highlight that obesity is becoming a public health problem in Saudi Arabia especially amongst adult females. To evaluate future programmes of applied nutrition interventions to help people maintain the ideal body weight, a well-designed national study is needed to determine the prevalence and the factors associated with obesity in Saudi Arabia. Studies are also needed to quantify, more precisely, the effects of energy intake and expenditure on obesity levels in various populations.

Other studies are needed to determine the cultural influences in developing obesity. Knowledge of the social factors associated with obesity will help to identify high risk groups. Certainly, public health measures should focus on all members of society (i.e. in school, via the printed media, T.V., radio, etc...) to discuss the health hazards of being overweight.

Studies are also needed relating to the distinction between gynoid and android obesity (Simopoulos, 1985). The latter type may correlate with medical morbidity, whereas the gynoid type may not (Larrison et al., 1984; Donahue et al., 1987).

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