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Prevention and Management of Obesity in the Kingdom of Saudi Arabia

Saad Salman Alqarni

Department of Basic Sciences, College of Science and Health Professions, King Saud bin Abdulaziz University for Health Sciences (KSAU-HS), Riyadh, Kingdom of Saudi Arabia

Tel: 966-11-4295668

ABSTRACT

Obesity and overweight are of worldwide concern due to the increasing prevalence globally. The number of obese people in the world posing a major health concern as obesity increases the risk of suffering from diabetes mellitus type 2, cardiovascular diseases like hypertension and myocardia infarction and depression. A previously health problem faced by developed countries, obesity is on the rise in the developing world. Several countries which previously had a lower prevalence of obesity are now faced with a major health issues. Saudi Arabia is one such nation, that is now faced with a high prevalence of overweight and obesity, and is considered among the nations with the highest prevalence of obesity. This is largely due to the interaction of several factors. This discussion will focus on the leading causes of obesity in Saudi Arabia, diseases associated with obesity, the treatment and management of obesity in the kingdom and the cost implications of the condition in healthcare.

Keywords: Obesity, Saudi Arabia, Physical Activity, Prevention

Introduction

Obesity and overweight pose a major public health problem making them a worldwide epidemic (James et al, 2001). Currently, more than one in five people qualify to be obese. Throughout the history of humanity, obesity has been observed as a health issue (WHO, 2000). Obesity was formally recognized as a worldwide epidemic by the World Health organization in 1997 following the high numbers of obese people globally (Al Qarni, 2016). Over the years, the number of people with obesity has tremendously increased with statistics indicating that the numbers have doubled (WHO, 2016). In 1980, 857 million adults were overweight while, 1.9 billion adults were estimated to be overweight with over 600 million having obesity (Al Qarni, 2016). These figures show a dramatic increase in the prevalence of obesity worldwide over a period of just 3 decades. Annually, over 2.8 million people die as a result of being obese or overweight (WHO, 2017).

The increase in the prevalence of obesity is not only taking place in developed countries, but also in developing countries (World Health Organization, 2016). In the developed countries, the prevalence of obesity is very high. Over the last 30 years, the rate has increased fourfold in the United Kingdom, making UK to have the highest rate of obesity in Europe. The figures are even more alarming in the United States where current statistics show that more than a third of the adults are considered to be obese (WHO, 2017). The figures are still high in children as 1/3 of

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the children are obese or overweight. Westernization of Saudi Arabia has led to the increase in the number of obese adults and children making it a health concern. The Kingdom of Saudi Arabia has an overall

35.5 % prevalence of obesity with variations observed at the regional and national level, in different ages and gender (Al Qarni, 2016). Saudi Arabia is among the top ten countries with the highest rate of obesity worldwide. Statistics show that 74 percent of the men in KSA are overweight with 36% of them being obese, while 77% of the women are overweight with 44% being obese(Al Qarni, 2016). Among preschool children, 6% are categorized as obese (Al Qarni, 2016).

The alarming numbers of adults and children who are obese in KSA and generally in the world could be attributed to several factors. Diet, genetics and physical activity are the main factors that lead to overweight and obesity. The major challenge of obesity is that it predisposes an individual to other diseases while at the same time ruining their self- esteem. Obesity and overweight are major causes of co- morbidities such as cardiovascular disease, diabetes, musculoskeletal disorders and cancers (World Health Organization, 2017). In KSA, higher rates of obesity and overweight have led to a corresponding increase in the prevalence of diseases like cardiovascular disease (CVD), diabetes type II and hyperlipidemia. The related health costs in the management of obesity and the diseases it causes are also substantial, making obesity a public concern that needs to be addressed (World Health Organization, 2017). The recent increase in the prevalence of obesity worldwide and more specifically in the Kingdom of Saudi Arabia has led to major health concerns raising the need for proper prevention and management measures to curb the obesity epidemic.

Overweight and Obesity

Obesity is the abnormal or excess fat accumulation in adipose tissue to an extent of impairing health. Body fat can either be stored around the waist or around the hips. Being obese or overweight means that an individual's body weight is greater than what is considered healthy for his or her weight (James et al, 2001). Factors that determine an individual's weight include genetics, diet and physical inactivity. Body mass index (BMI) is considered the most useful measure of obesity and helps in determining overweight, underweight and obese adults. It is calculated as [(weight in kg) /(height in m)^2]. BMI quantifies the amount of tissue mass that is muscle, fat and bone in an individual. The acceptable ranges for use are;

Underweight: under 18.5kg/m^2 Normal weight: 18.5- 25 kg/m^2

Overweight: 25- 30 kg/m^2 Obese: over 30 kg/m^2

Obesity is classified into categories: in class 1 obesity, the BMI range is 30- 35, 35-40 for class II obesity and greater than 40 for class III obesity which is also categorized as severe obesity. In the Kingdom of Saudi Arabia, 7 out of ten people have a BMI between 25- 30 kg/m^2 with 35.5

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% of the adults having a BMI greater than 30kg/m^2 (Memish et al, 2013).

Diseases Related to Obesity

Obesity and overweight are well known factors that increase the risk of certain non-communicable diseases. Obesity increases the likelihood of type 2 diabetes mellitus, obstructive sleep apnea, cardiovascular diseases, depression, osteoarthritis and certain cancers (Memisha et al, 2014). In obese people, cholesterol is usually deposited in the vascular system leading to atherosclerosis, which is a major precursor for cardiovascular diseases such as hypertension, stroke, myocardial infarction and aortic aneurysm (Baig et al, 2015). In KSA, higher rates of obesity have led to increased prevalence of diabetes and cardiovascular disease (Al Qarni, 2016). Saudi women are more susceptible to cardiovascular disease due to the high prevalence of hypercholesterolemia and the high rate of obesity among Saudi women and girls (Memish et al, 2014). This implies that there is a lot of fat accumulation among the women: the accumulated fat when deposited in the blood vessels in the vascular system leads to atherosclerosis which then leads to cardiovascular disease.

Causes of Obesity

According to the British Medical Journal, obesity is caused by a complex and multitude of inter-related causes, " fuelled by economic and psychosocial factors, as well as increased availability of energy dense food and lack of physical activity" (Global Issues, 2010). The main problem leading to obesity is the increase in availability of high energy foods due to food chains and supermarkets that encourage convenience and ready to eat foods, and the marketing of these foods through advertisements. Healthy eating has become expensive as there are alternatives of fast food and junk food which is cheap. Obesity occurs as a fresult of an inter- play between excessive food consumption and lack of physical activity. Physical inactivity in the world today is largely due to the sedentary way of living. At least 30% of the world population today gets insufficient exercise largerly due to mechanized transportation and the easing of labor by technology. Other factors also increase the risk for obesity. Obesity is as a result of the interaction between an individual's genetic make up and environmental factors (Albuqueque, 2017). Certain genes responsible for appetite predispose one to obesity and lead to obesity when the conditions such as food availability, lack of physical activity and environmental factors are favorable. Genetic conditions like Prader- Willi Syndrome and Cohen Syndrome (Walley, 2009), as well as other congemital and acquired conditions like hypothyroidism and eating disorders increase one's risk of acquiring obesity.

Saudi Arabia is currently undergoing rapid westernization which has led to remarkably high levels of cultural and lifestyle changes in the recent years (Alqarni, 2016). The kingdom among the fastest growing economies in the world. The growth and prosperity arising from the growing economies have largely contributed to changes in lifestyle especially dietary habits. There has been a shift from the previous culture to a more sedentary lifestyle. This change has led to a shift from healthy eating habits to less healthy eating habits (Ahmed et al, 2014).

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This has been aggravated by the induction of major global fast food chains in Saudi Arabia altering eating patterns even in the average households. Due to the growing economy, the people of Saudi Arabia have the purchasing power to buy and consume products of these food chains. Food chains in Saudi Arabia include Pizza Hut, Little Caesar's, Subway, Hardees, Dunkin Doughnuts, Mc- Donald's and Burger King. There also exists several national brands like Herfy, Al- Baik, and Shawerma besides the multinational brands mentioned.

Traditional diets in the kingdom have been replaced by fast foods from these food enterprises such as French fries, burgers, pizzas, ice- creams, hot dog and soft drinks. These foods have very high levels of calories, thus their daily or frequent consumption by people in this kingdom contributes to the increase in the figures of obese and overweight people.

Most individuals in the working class of Saudi Arabia find themselves too busy to indulge in healthy eating. The most convenient alternative to spending time preparing a healthy meal is fast food. Fast foods are quick and hunger satisfying, easy to make and consume, thus are most preferred by the working class. If this is done on a daily basis, the individual will gradually add weight as junk food contain high levels of refined sugars, white flour, polyunsaturated fats, numerous food additives and salts but lacking in protein, fibers and vitamin (Zahid, 2012). Higher levels of fats in these foods cause people to put on weight (Zahid, 2012). The increased consumption of junk or fast foods in Saudi Arabia especially among children is largely due to the promotion of these foods through advertisements. These food enterprises advertise their foods targeting children and adolescents as they are an easy and very potential target for junk food, thus the high rate of obesity and overweight among children in KSA. They aim at targeting children as this gives lifelong loyalty.

The shift from a healthy culture to an unhealthy one in Saudi Arabia, coupled with lack of physical activity has led to the high rates of obesity (Ahmed et al, 2014). The increase in food intake means an increase in energy levels in the body. When this energy is not utilized, the body stores this energy in the form of fat around the hips or the stomach. Physical activity helps burn the stored fat reducing their accumulation in the body. Among the people of Saudi Arabia, physical inactivity is rampant due to the enormous lifestyle changes (Ahmed et al, 2014).

Sedentary lifestyle is the new way of living in Saudi Arabia for most people (children). People are spending more time on video and computer games, they use vehicles for transport and are highly urbanized. When children participate more in sedentary recreation activities like video games, their bodies accumulate fats as these activities are more mentally than physically involving. The children in Saudi Arabia spend more of their time watching television and playing games using smart phones. This not only denies them a chance for physical activity to break down excess body fat, but also predisposes them to fast food advertisements. Physical inactivity among the adults could be attributed to a generally busy life at work leaving out little time to engage in physical exercise. Most people in Saudi Arabia have cars that they use for transport, thus rarely walk (Ahmed et al, 2014). The use of mechanized transport denies them participation in physical activity in the form of walking,

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Cost of obesity on Healthcare

Obesity is not only a health issue but also an economic one. Obesity contributes to increase in healthcare costs either directly or indirectly. The direct impact of obesity on healthcare costs is by monies spent on managing and treating those with obesity. Indirect impact is accrued from the management and treatment of diseases like cardiovascular disease, diabetes and cancer brought about by obesity. In 2011 the Gulf Cooperation Council member states (the UAE, Saudi Arabia, Qatar, Oman, Kuwait and Bahrain) experienced major hikes in their medical budgets. The spending further hiked between 2011 and 2014 from $28.9 billion to $44 billion due to the increased prevalence of diabetes, obesity, cardiovascular diseases, and cancer in these countries (Gulf News, 2017) .

High levels of obesity in Saudi Arabia have led to a corresponding rise in the prevalence of type 2 diabetes and cardiovascular disease, causing healthcare costs to spiral. The financial burden on the government is thus increased as the government caters for healthcare cost for all its nationals who make up two thirds of the population. The prevalence of obesity and its associated diseases such as diabetes and CVD prompted the kingdom to hire the services of an international organization to address the challenge. This move will cost the kingdom EUR 50 million raising, the amount spent on obesity (FinPro, 2015). The estimated healthcare expenditure due to diabetes amounts for 11% of the total worldwide expenditure in 2011 amounting to $465 billion (Alhowaish, 2013). The tendency to increased obesity in Saudi Arabia has led to an increased prevalence of diabetes, thus increasing the cost of treatment for diabetes. The number of people diagnosed with diabetes has increased by 1.6 million in the past 18 years, leading to a 500% increase in the health expenditure for obesity in Saudi Arabia (Alhowaish, 2013).

Treatment

The treatment of obesity encompasses several management measures such as diet, exercise, pharmacotherapy and/ or surgery. Measures that are used to manage obesity include dietary adjustments and exercise to aid in weight loss (Bupa, 2017). Dietary changes involve adjusting from consumption of unhealthy foods to the intake of a healthy balanced diet. A healthy, balanced diet should have carbohydrates, proteins and vitamins (Wing, 1999). One should swap the unhealthy and high- energy food choices with a healthy balanced meal. People trying to lose weight should reduce their daily energy intake by 600 calories (NHS, 2016).

To enhance the effect of the diet changes, one need to be physically active by exercise to aid in the weight loss process. When trying to lose weight, one can take part in moderately- intense activities such as walking, cycling and swimming. To maintain the weight loss process, individuals are advised to set realistic weight loss strategies and monitoring the progress (NHS, 2016). It is important that obese and overweight people refrain from fat diets and very low calories diets as these are unsafe ways of losing weight (NHS, 2016)

Pharmacotherapy in the treatment of obesity and overweight involves the use of drugs to help in reducing/ losing weight (Rucker et al, 2007). There have been many clinical trials on anti-

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obesity medicines. Currently only one is recommended as safe and effective in the treatment of obesity: Orlistat (NHS, 2016). It is a prescription- only drug and should thus be taken when instructed by a doctor. The drug should be used in combination with diet adjustments and exercise as it does not reduce the already accumulated fat, but only prevents absorbing of fat in the food eaten. Orlistat is currently used as the drug of choice in treatment of obesity in KSA and all over the world (Alfadda, 2016). Mertformin has also been in use as an effective drug in the management of obesity in the kingdom of Saudi Arabia (Alfadda, 2016).

In the Kingdom of Saudi Arabia, herbal medicine is also used alongside the aforementioned methods to treat obesity. The most commonly used method of herbal treatment is the use of green tea. Herbal medicines are preferred by people in Saudi Arabia who seek to lose weight as they are affordable, available and do not require a prescription for one to acquire them.

Weight loss surgery, bariatric surgery, is used as a treatment measure in people with severe obesity. Surgery is usually the last option in treatment for obesity class 2 and 3 people who have not achieved any success with the non- surgical methods (Alfadda, 2016). In KSA, bariatric surgery is increasingly becoming a common and preferred treatment of obesity with the Ministry of Heath accrediting more surgery facilities in the country.

Treatment of obesity also involves the treatment of disease that arise from it such as cardiovascular disease, type 2 diabetes and cancer. The treatment of these co- morbidities of obesity helps reduce mortality rates.

Prevention and Management of Obesity

In addressing the obesity epidemic worldwide and in Saudi Arabia, several measures and guidelines need to be followed to the latter. Measures critical in combating this epidemic include the implementation of policies, laws and regulations that will help drive the lifestyle and healthcare changes crucial in the prevention and reduction of obesity cases.

The Kingdom of Saudi Arabia has in the recent years taken several steps or measures to confront the obesity epidemic. The Ministry of Health in Saudi Arabia has established a branch responsible for the prevention of obesity in the kingdom. The Success of the functions of this branch has been crippled by the lack of national policies on obesity. Currently, the Ministry of Health in association with Al Shoura Council is trying to come up with policies on obesity in the kingdom (The Economist, 2017).

Saudi Arabia has also taken several steps in improving the provision of health services to individuals with obesity. The health ministry has developed an obesity treatment manual that has proved to be useful in outlined the process of diagnosis and treatment of overweight and obesity in primary health care centers (The Economist, 2017) .

Provision of bariatric surgery in the treatment of obesity by Saudi Arabia's hospital has tremendously increased the efforts in combating the epidemic (The Economist, 2017) . An estimated 12000 – 15000 bariatric surgeries were conducted in KSA in 2015 according to the

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Chief executive of King Saud Medical City (http://www.moh.gov.sa/OCP/Documents/001.pdf). Offering this surgical service in the kingdom has been termed a major step as most obese people in Saudi prefer this method. To cater for the growing demand of bariatric surgeries, the ministry of health has accredited about 10 surgical centers across the country (The Economist, 2017). These facilities are divided into two categories where one category provides standard surgical services while the other focuses on the more complicated cases (The Economist, 2017).

Provision of quality health is not the only approach that the country has used. Focus on lifestyle changes has also been emphasized. Individuals are advised to adopt a healthier lifestyle.. The school comes in handy in addressing obesity among children and adolescents. Children and adolescents spend a great time of their day in school during academic days. What they do in school and what they eat plays an important role in their growth and development. If the school offers

unhealthy meals (Al Dahi et al, 2017), it predisposes the students to health issues such as diabetes. Schools whose canteens sell junk and fast food increase the risk of obesity among its students. Policies should be put in place to control and monitor the nutritive value of the food offered to students in schools. This will help combat obesity among children by providing high-nutrient foods and limiting access to low- nutrient fatty foods. Nutrition lessons can be introduced into the curriculum, teaching skills that will equip the students with the knowledge of maintaining healthy eating habits. Activities that children take part in while in school are also crucial. A balance should be established between the mentally involving activities and the physical activities . Offering of co- curricular activities such as sports and/ or aerobic physical activities will help in the utilization of energy in the children (Al Dahi et al, 2017). The physical activities offered should aim at involving the students in high- quality and regular exercises. The government has imposed tax on sugar and high- calorie drinks as a measure in addressing the challenge of obesity in the country.

There has been plans to introduce physical education in girls' school (Musaiger et al, 2011). This plan has started taking effect as school girls were for the first time allowed to take part in sports.

Conclusion

Obesity is a major health concern in the world that is considered an epidemic by the World Health Organization. Over the last 3 decades, the number of obesity cases has doubled. The increase in the prevalence of obesity has been experienced in many countries of the world including Saudi Arabia. About 35.5 % of the population in Saudi Arabia are obese. These high figures are attributed to the changing lifestyle in the country due to growing economies. The change in lifestyle has led to unhealthy diet and lack of physical activity leading to obesity. The consequences of the rising cases of obesity have led to an increase in the prevalence of CVD, diabetes and cancers putting a heavy financial burden on the country's healthcare system. In confronting these challenges, the country has come up with several measures and steps that have helped curb the obesity menace in the country. However, more efforts should be channeled towards the prevention and management of obesity in the kingdom.

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