



IJIRR

International Journal of Information Research and Review  
Vol. 07, Issue, 06, pp.6957-6960, June, 2020



## RESEARCH ARTICLE

### OBESOGENIC FACTORS INFLUENCING OBESITY AMONG SAUDI CHILDREN

\***Evangelin Sally Jeya Singh**

Lecturer, Pediatric Nursing, College of Nursing, King Saud bin Abdulaziz University for Health Science, Riyadh, Saudi Arabia.

#### ARTICLE INFO

##### Article History:

Received 15<sup>th</sup> March, 2020  
Received in revised form  
19<sup>th</sup> April, 2020  
Accepted 27<sup>th</sup> May, 2020  
Published online 30<sup>th</sup> June, 2020

##### Keywords:

Obesity, Children, Risk factors

#### ABSTRACT

Childhood obesity is deliberated as a serious health problem worldwide. The aim of this review is to determine the factors influencing obesity among Saudi Children. Obesity prevalence has increased dramatically among children aged 6-17 years, which is extending into the developing world from the developed nations. In Saudi Arabia, it has been documented that, the occurrence of obesity among adolescents increased significantly (Country Cooperation Strategy for WHO and Saudi Arabia, 2015). Globally, 22 million children approximately, under age 5, are estimated to be overweight. The growing trend is predicted that by 2030, a majority of adult population of the world would be either obese or overweight. Saudi Arabia is facing a challenge though managing the levels of obesity among the young children aged between 5 to 19 years. According to Al-Shehri *et al.*, 2016 obesity has affected both the genders in Saudi Arabia and there is a serious need to design effective strategies to control this health issue. Evidence has shown that the researchers and the practitioners had been involved in investigating the social determinants of obesity across the globe inclusive of Saudi Arabia (Alqarni Saad Salman, 2018). The factors include: dietary habits, westernization, gender, and lifestyle. These four factors to be considered and an appropriate health strategies must be established to address this problem. This article aims to highlight the factors influencing obesity among children in Saudi Arabia.

**Copyright** © 2020, **Evangelin Sally Jeya Singh**. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## INTRODUCTION

Children are often represented as the future of our society. Obesity is now recognized as a chronic or non-communicable disease. Childhood obesity is a risk factor for adulthood obesity. Centers for Disease Control (CDC) defines, Obesity is defined as a BMI at or above the 95th percentile for children and teens of the same age and sex. According to the World Health Organization (2017), obesity is the abnormal accumulation of the fats that impairs the health and well-being of the human, Worldwide, the level of obesity has tripled since 1975. According to data from the National Child Measurement Programme (NCMP) 2016-2017, 9.6% of children (age 4-5) are obese, with a further 13.0% overweight. These proportions are higher among children (age 10-11), with 20.0% being obese and 14.3% overweight. In the rise of obesity and overweight, the interaction of a number of factors is contributing, which include metabolic, genetic, environmental, and behavioral influences. According to Mahmood TA & Arulkumaran S, (2012), the rapid growth in the rate of obesity is directly contributed by environmental and behavioral factors, rather than the biological factors.

\***Corresponding author: Evangelin Sally Jeya Singh**,  
Lecturer, Pediatric Nursing, College of Nursing, King Saud bin Abdulaziz University for Health Science, Riyadh, Saudi Arabia.

Moreover, racial or ethnic differences, consumption pattern, and lifestyle also influence the rate of obesity. For instance, as compared to rural areas, people in urban areas have higher obesity rate, possibly due to consumption of high-fat diets and more sedentary lifestyles. For daily living, the amount of energy spent has also reduced over the years, which also promotes obesity. Obesity is also often associated with high socio-economic status; as populations in the developed world are mostly affected by obesity (Dinsa, Y Goryakin, E Fumagalli, & Suhrcke, 2012). Over the past few decades, Saudi Arabia has become progressively westernized, and now it has one of the highest obesity and overweight occurrence rates (De Nicola E *et al.*, 2015). Obesity in the country is a main cause of concern, where 7 out of 10 people are experiencing the problem (Memish, 2014). Previous studies related to prevalence of obesity in the Kingdom of Saudi Arabia (KSA) showed the growing tendency in obesity and overweight, which are major bases of a number of other disorders, including hypertension, diabetes, obstructive sleep apnea, hyperlipidemia, and osteoarthritis (M Alqarni SS, 2016). This review article focus on the Obesogenic factors in Saudi Arabia. There have been definite increases in weight gain and obesity levels as a result of the altered lifestyle patterns, unhealthy dietary habits, socio economic factors, and societal or cultural influences, particularly among children.

This article enclosed from cross sectional study, longitudinal study, cohort study, content analysis, review articles and focus group discussion.

### Major Obesogenic factors in Saudi Arabia

**Altered Lifestyle patterns:** Today's children and adolescence, however, seem to have become obese and have adopted a less active lifestyle. Saudi children nowadays spend less energy in their daily activities compared with their counterparts three or four decades ago (Al-Hazzaa, 2012). The obese Saudi children were less active than non-obese Saudi children. The socioeconomic status of the Saudi residents is found to improve along which the individuals are more prone to buy cars for the purpose of transportation. The children instead of going out are using more of the indoor games, watch television, and play less in the open places. Due to such reasons, the level of physical activity is found to decline among the young children and a consequence they gain weight and get obese (Alqarni Saad Salman, 2018). Another sub-factor of the lifestyle variable is 'sleeping'. The research by Al Hazzaa, 2012 showed that the odds of normal weight were evidenced in the children who used to sleep more in comparison to those that had shorter duration of sleep.

**Unhealthy dietary habits:** Economic development has created apparent changes in food consumption patterns and eating habits in Saudi Arabia. The daily per capita fat consumption has risen to 143% and a similar trend in the reduction of energy expenditure has been recorded in Saudi Arabia (Al Dhaifallah A, Mwanri L & Aljoudi A, 2015). Moreover, there has been a remarkable shift from traditional foods to westernized fast foods, rich in fat, sugar, salt, and low in fiber. Unhealthy snacks and carbonated drinks are also highly popular among adolescents and young adults in Saudi Arabia. Al-Hazzaa, 2012, emphasized an obese Saudi children had lower intake of breakfast, fruits, and milk compared to non-obese Saudi children.

### Socioeconomic factors

**Working Mothers:** Employed mother's is an important factor in the prevalence of obesity. A mother who works probably improves the financial status of the families, which would lead to having a generosity of food available for the family members. Also working mothers can lead to less time available for preparing food at home, which leads to consumption of meals prepared at restaurants (Alazzeah AY *et al.*, 2018). Due to consuming more unhealthy food by the children and adolescents causes in positive association with obesity (Datar *et al.* 2014).

**Advertising and packaging:** Children and parents are influenced by marketing of obesogenic foods which intending to cause obesity. Advertising, food packaging, food placement in supermarkets, and high availability of unhealthy foods in public places will attract the children to make unhealthy food choices. Children are exposed to temptation all of the time, both in the shops, on television and in newspapers (Veena Mazarello Paes, 2015).

**Psychosocial Vulnerabilities:** There is evidence that psychosocial stress is related with obesity in children.

Depression and obesity are frequently comorbid in both children and adults. This comorbidity may be due to common genetic and environmental etiologies or common pathways via dysregulation of the hypothalamic–pituitary–adrenal system leads to increased food intake and reduced physical activity (M. Karen Campbell 2015).

**Westernization:** Saudi Arabia, which has become increasingly westernized over the past few decades now has one of the highest prevalence rates of overweight and obesity, even in children. (Shehri A, Fattani A & Alwan I, 2013) Central and Eastern regions of Saudi Arabia have the highest stated incidence of overweight and obesity, which has increased radically over a period of a few years. One of the effects of rapid modernization and urban residence in Middle East countries is the social disparities that lead to changed activities and food choices and it seems that the main underlying causes of overweight and obesity may be poor knowledge of food choices and lack of physical activity. Many cultural and social norms for diet and body image play an important role as risk factors; these risk factors vary according to different societies.

**Watching TV or computer:** Time spent on watching TV or computer screens and video games seems to be an important key of sluggishness which could rise the risk of obesity. Rebecca K *et al.*, 2007 Children with television sets in their rooms, spent less time in bed on weekdays and reported higher overall levels of being tired. Decreasing television seeing and computer use may have a vital role in preventing obesity children. Robinson TN, 2001 has hypothesized that watching television cause obesity through at least one of the following three mechanisms: (1) displacement of physical activity, (2) increased calorie consumption while watching as a result of advertising, and (3) reduced resting metabolism. A study from Saudi Arabia revealed that, the increase in the child's age, the presence of more than one TV at home, having own TV, and an increase in the number of hours of watching TV over the weekend were significantly associated with an increased risk of childhood obesity, Sameer H, 2013. The American Academy of Pediatrics recommends parents to limit the time their children occupy with the media and to emphasize other activities, such as athletics, and imaginative play.

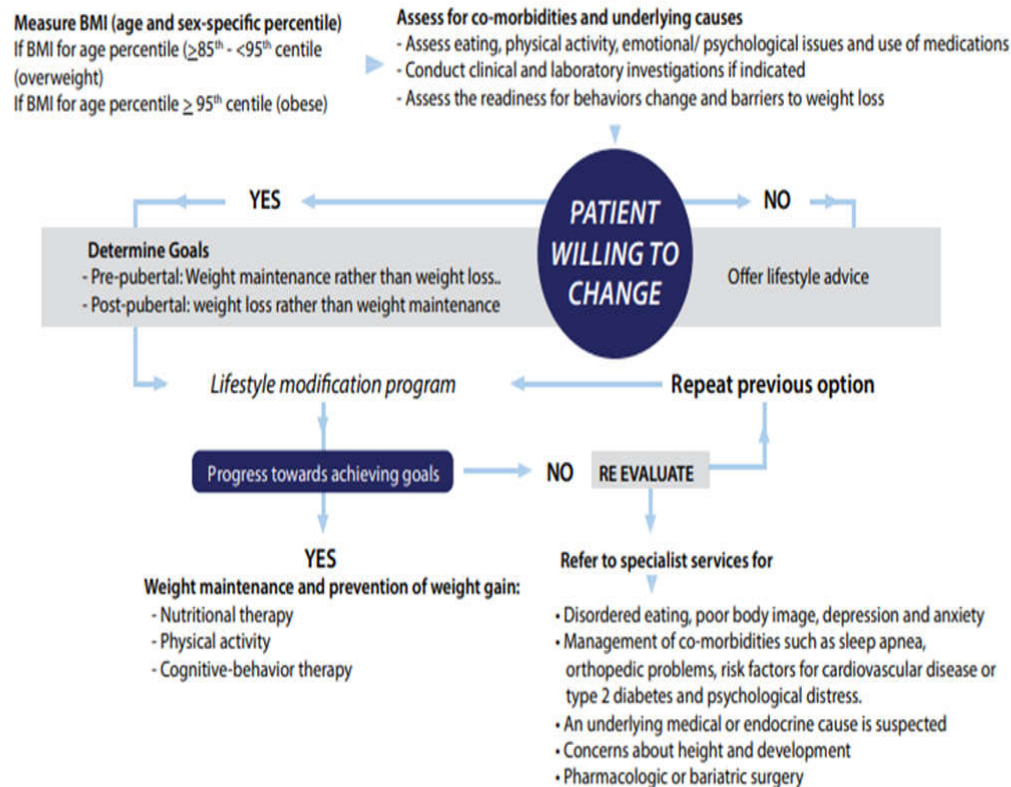
### Saudi guidelines on the prevention and management of obesity

#### Healthy Eating

##### Birth to five years

- Recommend exclusive breastfeeding from birth up to the age of six months.
- Gradually introduce solid food starting at the age of six months.
- Carefully introduce – one at a time- foods which may cause allergies such as milk, eggs, wheat, seeds, nuts, and shellfish.
- Provide three meals and two between-meal snacks for children one year old.
- Avoid high fiber foods and large volume of full fat dairy products in below two years children.
- Introduce gradually, low fat dairy products, for normally growing above two years old children.

### Algorithm for Managing Overweight and Obesity in Children



- Adjust salt intake to the age of the child; (less than 1 g/day up to age 12 months; from 1-3 years no more than 2 g/day and a maximum of 3 g/day for 4-6 year olds)

#### Children above five years

- Encourage the child to eat to appetite.
- Encourage children to eat regular meals including breakfast.
- Discourage availing easy access to foods not recommended for the child.
- Encourage intake of low salt foods and limit the intake of energy-dense foods and fast foods.
- Follow the 5-2-1-0 message every day
- 5= Encourage intake of daily 5 portions of fruits and vegetables (ICSI, strong recommendation, high quality evidence).
- 2= Encourage eating with the child in a sociable atmosphere without distractions, separate eating from other activities and keep recreational screen time to less than 2 hours, (ICSI, strong recommendation, high quality evidence).
- 1= Include at least 1 hour or more of active play every day (see physical activity section below).
- 0= Skip sugar sweetened beverages, drink more water every day.

#### Physical Activity

- Encourage children gradually to perform at least 60 minutes of moderate to vigorous exercise daily, continuous or accumulated in short bouts.

- Encourage children to lead active daily life such as walking, cycling, skipping and using the stairs and support them to practice regular physical activity appropriate to their age and ability such as football and swimming.
- Discourage sedentary behavior of more than two hours for children particularly of screen time, like watching TV, computer use and playing video games.
- Encourage family approach to physical exercise (e.g. walking and cycling to school and shops, going to the park or for swimming).

#### Conclusion

School-based intervention programs should be properly implemented, as these programs effectively reduce the obesity, especially in older children. In addition, parents should play a more positive role in reducing over weight and encourage them to engage in physical activities and healthier eating practices beginning at earlier age groups to prevent the expected obesity epidemic.

#### REFERENCES

- Al Dhaifallah A, Mwanri L, Aljoudi A. 2015. Childhood obesity in Saudi Arabia: opportunities and challenges. *Saudi J Obese.*, 3: 2.
- Al Shehri A, Al Fattani A, Al Alwan I. 2013. Obesity among Saudi children. *Saudi J Obesity.*, 1:3-9
- Alazzeah AY, AlShammari EM, Smadi MM. *et al.* 2018. Some Socioeconomic Factors and Lifestyle Habits Influencing the Prevalence of Obesity among Adolescent Male Students in the Hail Region of Saudi Arabia. *Children (Basel)*.5(3):39. Published 2018 Mar 9.

- Al-Dossary SS, Sarkis PE, Hassan A, Ezz El Regal M, Fouda AE. 2010. Obesity in Saudi children: A dangerous reality. *East Mediterr Health J.*, 16:1003-8.
- Al-Ghamdi Sameer H. 2013. The association between watching television and obesity in children of school-age in Saudi Arabia, Year: | Volume: 20 | Issue Number: 2 | Page: 83-89
- Al-Hazzaa HM, Abahussain N, Al-Sobayel H, Qahwaji D, Musaiger AO. 2012. Lifestyle factors associated with overweight and obesity among Saudi adolescents. *BMC Public Health* 12:354
- Al-Rethaiaa, A. S., Fahmy, A. E., & Al-Shwaiyat, N. M. 2010. Obesity and eating habits among college students in Saudi Arabia: a cross sectional study. *Nutrition journal*, 9, 39.
- Bornstein SR, Schuppenies A, Wong ML, Licinio J. Approaching the shared biology of obesity and depression: the stress axis as the locus of gene-environment interactions. *Mol Psychiatry* 2006;11:892–902.
- Datar A., Nicosia N., Shier V. Maternal work and children's diet, activity, and obesity. *Soc. Sci. Med.* 2014; 107:196–204.
- De Nicola E, Aburizaiza OS, Siddique A, Khwaja H, Carpenter DO. Obesity and public health in the Kingdom of Saudi Arabia. *Reviews on environmental health*, 2015;30: 191-205.
- Harell M, Ussery M, Cramer, B, Sharma, M, Arora, M. 2015. The influence of “westernization” on nutrition and physical activity behaviors of adolescents in New Delhi, India: Are we exporting an epidemic of obesity? *J Appl Res Child.*, 6:10.
- Jordan AB. 2008. Children, television viewing, and weight status: Summary and recommendations from an expert panel meeting. *Ann Am Acad Pol Soc Sci.*, 615:119-32.
- Karen Campbell. M. 2015. Biological, environmental, and social influences on childhood obesity. Advance online publication; 11 November 2015.
- Ma G, Li Y, Hu X. 2002. Effect of television viewing on paediatric obesity. *Biomed Environ sci.*, 15 (supply 4): 291-297.
- Mazarello Paes V, Ong KK, Lakshman R. Factors influencing obesogenic dietary intake in young children (0–6 years): systematic review of qualitative evidence *BMJ Open* 2015;5:e007396.
- Memish ZA, El Bcheraoui C, Tuffaha M, Robinson M, Daoud F, Jaber S, *et al.* Obesity and Associated Factors — Kingdom of Saudi Arabia, 2013. *Prev Chronic Dis* 2014; 11:140236.
- Musaiger AO. Overweight and obesity in Eastern Mediterranean region: Prevalence and possible causes. *J Obese* 2011.
- Rebecca K, Swarnarekha B, Tinku T. 2007. Television viewing and sleep are associated with overweight among urban and semi-urban south Indian children. *Nutritional Journal.*, ; 6:20-25.
- Robinson TN. 2001. Television viewing and childhood obesity. *Pediatric Clin North Am.*, 48:1017-25.
- Tarek Tawfik Amin, Ali Ibrahim Al-Sultan and Ayub Ali. Overweight and Obesity and their Association with Dietary Habits, and Sociodemographic Characteristics among Male Primary School Children in Al-Hassa, Kingdom of Saudi Arabia. *Indian J Community Med.* 2008 Jul; 33(3): 172–181.
- Togbo ID. 2018. Obesogenic factors influencing overweight among Asian children and youth. *J Health Res Rev.*, 5:111-6
- World Health Organization (2017) Media centre-Obesity and overweight.

\*\*\*\*\*