©IDOSR PUBLICATIONS
International Digital Organization for Scientific Research ISSN: 2579-0730
IDOSR JOURNAL OF BIOLOGY, CHEMISTRY AND PHARMACY 5(1)1-4, 2020.

Causes and Prevention of Obesity in Children: Review

Philippe Sarrazin and David Trouilloud

Department of Sociology/Psychology, Polytechnic Institute of Lisbon, Portugal.

ABSTRACT

Childhood obesity is a condition where excess body fat has a negative impact on a child's health or well-being. Due to the rising prevalence of childhood obesity and its many adverse health effects it is being recognized as a serious public health concern. Childhood obesity can lead to diabetes, high blood pressure and cholesterol, early heart problems and skin conditions such as heat rash, fungal infections, and acne. There is now a substantial body of evidence which suggests that obesity should be taken seriously by parents and by health and other professionals. So therefore general causes of obesity and the future remedy is being emphasized in this review articles.
Keywords: Childhood, Obesity, Diabetes and Cholesterol.

INTRODUCTION

One third of children in the U. S. are overweight or obese, and this number is continuing to rise [1]. Children have fewer weight-related health and medical problems than adults. However, overweight children are at high risk of becoming overweight adolescents and adults, placing them at risk of developing chronic diseases such as heart disease and diabetes later in life. They are also more prone to develop stress, sadness, and low self-esteem [2].

According to World Health Organisation, overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health. A crude population measure of obesity is the body mass index (BMI), a person's weight (in kilograms) divided by the square of his or her height (in metres) [3]. A person with a BMI of 30 or more is generally considered obese. A person with a BMI equal to or more than 25 is considered overweight. Overweight and obesity are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and cancer. Once considered a problem only in high income countries, overweight and obesity are now dramatically on the rise in low- and middle-income countries, particularly in urban settings [4]. Some recent WHO global estimates that in 2016, more than 1.9 billion adults aged 18 years and older were overweight. Of these over 650 million adults were obese. In 2016, 39% of adults aged 18 years and over (39% of men and 40% of women) were overweight. Overall, about 13% of the world's adult population (11% of men and 15% of women) was obese in 2016. The worldwide prevalence of obesity nearly tripled between 1975 and 2016. In 2019, an estimated 38.2 million children under the age of 5 years were overweight or obese. Once considered a high-income country problem, overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings. In Africa, the number of overweight children under 5 has increased by nearly 24% percent since 2000. Almost half of the children under 5 who were overweight or obese in 2019 lived in Asia [5]. Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016. The prevalence of overweight and obesity among children and adolescents aged 5-19 has risen dramatically from just 4% in 1975 to just over 18% in 2016 [6]. The rise has occurred similarly among both boys and girls: in 2016 18% of girls and 19% of boys were overweight. While just less

than 1% of children and adolescents aged 5-19 were obese in 1975, more 124 million children and adolescents (6% of girls and 8% of boys) were obese in 2016 [7].

General Causes of Obesity and Overweight

The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended [8]. Globally, there has been:

a. An increased intake of energy-dense foods that are high in fat and sugars; and
b. An increase in physical inactivity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization [6].

Changes in dietary and physical activity patterns are often the result of environmental and societal changes associated with development and lack of supportive policies in sectors such as health, agriculture, transport, urban planning, environment, food processing, distribution, marketing, and education.

Causes of Obesity in Children

Children become overweight and obese for a variety of reasons [8]. The most common causes are genetic factors, lack of physical activity, unhealthy eating patterns, or a combination of these factors. Only in rare cases is being overweight caused by a medical condition such as a hormonal problem. A physical exam and some blood tests can rule out the possibility of a medical condition as the cause for obesity [9]. Although weight problems run in families, not all children with a family history of obesity will be overweight. Children whose parents or brothers or sisters are overweight may be at an increased risk of becoming overweight themselves, but this can be linked to shared family behaviors such as eating and activity habits. Overweight and obesity are linked to more deaths worldwide than underweight [10]. Globally there are more people who are obese than underweight, this occurs in every region except parts of sub-Saharan Africa and Asia. A child's total diet and activity level play an important role in determining a child's weight. Today, many children spend a lot time being inactive. For example, the average child spends approximately four hours each day watching television. As computers and video games become increasingly popular, the number of hours of inactivity may increase.

Common health consequences of overweight and obesity

Raised BMI is a major risk factor for noncommunicable diseases such as:

- Cardiovascular diseases (mainly heart disease and stroke), which were the leading cause of death in 2012.
- Diabetes
- Musculoskeletal disorders (especially osteoarthritis – a highly disabling degenerative disease of the joints)
- Some cancers (including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon) [11].

The risk for these noncommunicable diseases increases, with increases in BMI.

Childhood obesity is associated with a higher chance of obesity, premature death and disability in adulthood [12]. But in addition to increased future risks, obese children experience breathing difficulties, increased risk of fractures, hypertension, and early markers of cardiovascular disease, insulin resistance and psychological effects.

Diseases Associated with Obese Children

Obese children are at risk for a number of conditions, including:

- High cholesterol
- High blood pressure
- Early heart disease
- Diabetes
- Bone problems
- Skin conditions such as heat rash, fungal infections, and acne [13].

Ways to reduce overweight and obesity

Overweight and obesity, as well as their related noncommunicable diseases, are largely preventable [14]. Supportive environments and communities are fundamental in shaping people's choices, by making the choice of healthier foods

and regular physical activity the easiest choice (the choice that is the most accessible, available and affordable), and therefore preventing overweight and obesity.

At the individual level, people can:

- Limit energy intake from total fats and sugars
- Increase consumption of fruit and vegetables, as well as legumes, whole grains and nuts; and
- Engage in regular physical activity (60 minutes a day for children and 150 minutes spread through the week for adults) [15].

Individual responsibility can only have its full effect where people have access to a healthy lifestyle. Therefore, at the societal level it is important to support individuals in following the recommendations above, through sustained implementation of evidence based and population based policies that make regular physical activity and healthier dietary choices available, affordable and easily accessible to everyone, particularly to the poorest individuals. An example of such a policy is a tax on sugar sweetened beverages [16].

The food industry can play a significant role in promoting healthy diets by:

- Reducing the fat, sugar and salt content of processed foods
- Ensuring that healthy and nutritious choices are available and affordable to all consumers
- Restricting marketing of foods high in sugars, salt and fats, especially those foods aimed at children and teenagers; and
- Ensuring the availability of healthy food choices and supporting regular physical activity practice in the workplace [13].

Prevalence of obesity in children

Across the developed and developing world, with the notable exception of parts of sub-Saharan Africa and the former Soviet Union, obesity in children and adolescents has been increasing rapidly [13]. The rate of increase in obesity is itself increasing in Europe [14]. In the UK the epidemic of obesity began in the mid- to late 1980s. Obesity is now very common in the UK and prevalence continues to rise. The most recent nationally representative survey from any part of the UK is from the Health Survey for England 2004. In 2004 in England, obesity prevalence (defined as BMI ≥ 95th centile) was 14 per cent in two- to 10-year-olds and a staggering 25 per cent in 11- to 15-year-olds [15].

As noted above, these are conservative estimates of obesity prevalence because obesity is underestimated when using the BMI [16]. Furthermore, there are groups in most populations at a higher risk of obesity than in the general population. In the UK children from families of lower socioeconomic status are at an even higher risk of obesity than the general population. Children from some ethnic minority groups are probably also at higher risk, though evidence from minorities in the UK is limited at present.

CONCLUSION

Adopted by the World Health Assembly in 2004 and recognized again in a 2011 political declaration on noncommunicable disease (NCDs), the "*WHO Global Strategy on Diet, Physical Activity and Health*" describes the actions needed to support healthy diets and regular physical activity. The Strategy calls upon all stakeholders to take action at global, regional and local levels to improve diets and physical activity patterns at the population level. There is now a substantial body of evidence which suggests that obesity should be taken seriously by parents and by health and other professionals. There is also a large body of evidence that parents and (health and education) professionals underestimate the importance of obesity in children and adolescents, and are often ignorant of the effects of obesity. Childhood obesity has been described as 'practically invisible'. There is also evidence that when parents seek medical help for childhood obesity they may often face a lack of support from health professionals

REFERENCES

1. Africa, J. A., Newton, K. P. and Schwimmer, J. B. (2016). Lifestyle interventions including nutrition, exercise, and supplements for nonalcoholic fatty liver disease in children. *Dig Dis Sci.,* 61(5):1375–1386.
2. Andreea, Cetateanu and Andy, Jones (2014). Understanding the relationship between food environments, deprivation and childhood overweight and obesity: Evidence from a cross sectional England-wide study, Health & Place, 27, 68-76.
3. Bacha, F. and Gidding, S. S. (2016). Cardiac abnormalities in youth with obesity and type 2 diabetes. *Curr Diab Rep.*,16(7):62.
4. Bass, R. and Eneli, I. (2015). Severe childhood obesity: an under-recognized and growing health problem. *Postgrad Med J.*, 91(1081):39-45.
5. Beck, A. R. (2016). Psychosocial aspects of obesity. *NASN Sch Nurse,* 31(1):23–27.
6. Cote, A. T., Harris, K. C. and Panagiotopoulos, C. (2013). Childhood obesity and cardiovascular dysfunction. *J Am Coll Cardiol.*, 62(15):1309–1319.
7. Gordon-Larsen, P. (2010). The NS, Adair LS. Longitudinal trends in obesity in the United States from adolescence to the third decade of life. *Obesity,* 18(9):1801--804.
8. Halfon, N., Kandyce, L. and Slusser, W. (2013). Associations between obesity and comorbid mental health, developmental, and physical health conditions in a nationally representative sample of US children aged 10 to 17. *Academic Pediatrics,* 13(1):6–13.
9. Jensen, M. D., Ryan, D. H. and Apovian, C. M. (2014). For the American College of Cardiology/American Heart Association Task Force on Practice Guidelines; Obesity Society. 2013 AHA/ACC/TOS guideline for the management of overweight and obesity in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society. *J Am Coll Cardiol.,* 63(25 Pt B):2985–3023.
10. Lloyd, L. J, Langley-Evans, S. C. and McMullen, S. (2012). Childhood obesity and risk of the adult metabolic syndrome: a systematic review. *Int J Obes (Lond),* 36(1):1–11
11. Marla, M. J., Michael, C. C., Thomas, A., Lance, G., Bryant, B. C. and Jimmy, L. S. (2018). Parents' Perceptions and Use of School-Based Body Mass Index Report Cards, Journal of School Health, 88(11):787-793.
12. Mohanan, S., Tapp, H., McWilliams, A. and Dulin, M. (2014). Obesity and asthma: pathophysiology and implications for diagnosis and management in primary care. *Exp Biol Med* (Maywood)., 239(11):31–40.
13. Morrison, K. M., Shin, S. and Tarnopolsky, M. (2015). Association of depression and health related quality of life with body composition in children and youth with obesity. *Journal of Affective Disorders*, 172:18–23.
14. Narang, I. and Mathew, J. L. (2012). Childhood obesity and obstructive sleep apnea. *J Nutr Metab.,* 10(2): 23-30
15. Pollock, N. K. (2015). Childhood obesity, bone development, and cardiometabolic risk factors. *Mol Cell Endocrinol.*, 410:52-63.
16. Verbeken, S., Braet, C. Bosmans, G. and Goossens, L. (2013). Comparing decision making in average and overweight children and adolescents, International Journal of Obesity, 38(4): 547-551