

# OBESITY

## (Causes, Consequences, and Prevention)

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### Abstract

The obesity epidemic has become one of the most important issues among societies of different countries. It is generated mainly due to the unstable energy intaking when the individual consumes more calories than the expenditures which cause an energy gap. Moreover, it leads to many serious effects on human health, economic earnings, employment opportunities, and social relationships. As such, many strategies have been suggested to prevent rapid weight gaining. Due to the consistent life changes, varied obesity causes, and strategies have occurred which require further investigations as this paper aims to achieve.

### 1. INTRODUCTION

Over the last years, obesity has considered as a health risk that can lead to several serious health problems. Its rates have been increasing rapidly since the 1980s until the current time which caused the rise of many diseases. Moreover, Finkelstein et al. (2005) explained that obesity does not affect only the human health, but it also has several economic effects due to the consumed food quantity and quality, and the physical activity choices. World Health Organization (2000, p.6) defined Obesity as “a condition of an abnormal or excessive fat accumulation in adipose tissue, to the extent that health may be impaired.” Burniat et al. (2006) also explained that obesity occurred due to the imbalance between energy spending and intaking which highlight the significant effect of diet and physical activity.

Obesity has been determined using the body mass index (BMI) that is a “simple index of weight-for-height” which usually used as an obesity estimation among a population; (World Health Organization, 2000, p.8). For instance, the National Health and Nutrition Examination Survey (NHANES) in 1999–2000 that confirmed the growing rates of obese people from 56% in 1994 to 65% of the USA adult population who had body mass index (BMI) more than 25% kg/m<sup>2</sup> (Hill et al., 2003).

Nevertheless, the World Health Organization (2000) discussed the difficult obesity classification when height and body composition are unstable, like the case of childhood and adolescence. Moreover, although many studies have confirmed the relationship between obesity and many diseases, Peeters et al. (2003) explained that an overall estimation of its effect on the public health is hard to be determined due to its complex interactions with body disabilities, age, different habits and other factors. The researchers also highlighted that obesity risks change over the years due to the different obese populations and treatment methods. Therefore, related studies are still required, as the present research.

### 2. OBESITY CAUSES

Finkelstein et al. (2005) discussed that obesity had been a rare phenomenon until the second half of the 20<sup>th</sup> century since gaining more weight was a sign of good health until the rapid increase of the overweight rates. Yach et al. (2006) also elaborated that in the last decades, people have been consuming different food sources which have been changed widely in their quality and quantity. The researchers added that due to the previous reason and the lack of physical activities, obesity had become a great problem among the populations. Moreover, Hill et al. (2003) also argued that although biology affects the individual height and weight, the rapid gain of weight is due to the environmental changes.

Furthermore, humans gain the extra weight when they expend fewer calories than the consumed ones (Finkelstein et al., 2005). Putnam and Allshouse (1999) emphasized that the caloric intake grew rapidly between 1985 and 2000 because of the high consumption of added fats, sugars, and grains. Moreover, the Centers for Disease Control and Prevention (CDC, 2004), added the increasing intake of carbohydrate had also raised the caloric intake.

Due to this rise in energy intake, the eating patterns have changed and relied greatly on snacking which Cutler et al. (2002) study confirmed the great effect of high snack calories in raising the energy intake, especially for females. In addition, although studies have different methods on the suitable consumed calories, they agreed that the snacking quantity per day also increases the calories consumption for children and adults.

The technological development has also increased the obesity epidemic due to its impact on reducing the expenditure energy (Lakdawalla and Philipson, 2002). Finkelstein et al. (2005) added that since technology had replaced many employees with machines especially in good-producing industry and building construction, the human labor had decreased considerably. Moreover, due to the industrial-technological improvements, the food price has decreased, which encouraged the rise of people food consumption (Mitra, 2001). Thus, Cutler et al.

(2002) declared the positive relationship between calories intake with food production changing technology which has reduced the calories-dense foods prices.

Finkelstein et al. (2005) explained that the prices of high calories foods which made of added fats and sugars had declined significantly compared with healthy foods, like fruits and vegetables since the 1980s. The researcher stated, "Between 1985 and 2000, the price of fresh fruits and vegetables, fish, and dairy products increased by 118%, 77%, and 56%, respectively, whereas sugar and sweets, fats and oils, and carbonated beverages increased at lower rates—46%, 35%, and 20%, respectively" (p.244).

Furthermore, Lakdawalla and Philipson (2002) had indicated a casual association between gaining extra weight and increasing the wages, particularly, among females' workforce. Finkelstein et al. (2005) justified the raising wages impact that required extra work hours, which may increase the consumption of restaurants and fast food and, as such, the increasing rates of obesity. Also, Chou et al. (2004) linked gaining extra weight with easing the accessibility to the calorie-dense foods restaurants which may reduce the time costs, but it increases the obesity rates. Maternal employment may be a reason for obesity among children since their children eat home-cooked foods less often (Ruhm, 2008).

Television had promoted the inactive lifestyle as the study of Cutler et al. (2003) elaborated when their findings linked the daily watching of television with overweight growing rates. Nonetheless, Finkelstein et al. (2005) that the previous effective relation also includes the daily use of computers, video games, cell phones, and other media devices that led to increasing the snacking habit and the consumption of calories-dense foods, particularly, among children. Accordingly, the World Health Organization (2000) declared that obesity epidemic considers a reflection of the varied problems of social, economic, and cultural aspects.

### 3. OBESITY CONSEQUENCES

#### - *On the Health Level*

Many studies highlighted the significant impact of obesity on human health since it leads to several health problems. These problems include "type 2 diabetes, cardiovascular disease, several types of cancers, musculoskeletal disorders, sleep apnea, hypoxia, hernia, arthritis, and gallbladder disease" (Finkelstein et al., 2005, p.239; Wellman and Friedberg, 2002, p. 706). Burniat et al. (2006) also discussed that the findings elaborated that 65% of overweight children between 5 to 10 years have recorded the cases of blood pressure and increasing fat levels. As such, obesity has been rated as the 7<sup>th</sup> cause of death in the United States (Wellman and Friedberg, 2002).

Furthermore, Quesenberry et al. (1998) highlighted that sever, and moderate levels of obesity have implied the need for more inpatient days than the people of normal weight. Also, the study of Thompson et al. (1998) noticed the rapid gain of extra weight among the inpatients.

#### - *On the Economic Level*

Besides the health effects, Finkelstein et al. (2005) discussed that the rapid growth of obesity rates has combined with increasing the individual expenditure and medical treatment. The cross-sectional study of Averett and Korenman (1996) also resulted that obesity decreases the individual earnings due to the limited job opportunities; Obese women earn 10% less than normal females. Whereas in 1999, the researchers reported indicated that overweight females earn almost 17% lesser than the normal weight women. Cawley (2000) also concluded the positive relationship between gaining weight and job earnings when their findings indicated that overweight is related to 7% fewer wages.

Wellman and Friedberg (2002) added that by the year of 2000, the total obesity costs were about 117\$ billion which included the direct and the indirect expenditures. As the researchers elaborated, the direct costs included the visits to hospitals and physicians while the indirect ones refer to the earning lost because of the combined illness and disabilities.

#### - *On the Social Level*

One of the most critical consequences of obesity is the emotional effects due to the modern life requirement of certain physical appearance in societies, particularly for women, which caused several feelings including shame, rejection, and other depression emotions (Wellman and Friedberg, 2002). Therefore, obese people prefer another disease; such as, "deaf, dyslexic, diabetic" instead of obesity epidemic (Rand and Macgregor, 1991, p.706)

### 4. PREVENTING METHODS

The World Health Organization (2000) discussed that for preventing the obesity epidemic, long-term approaches are required. Moreover, the authors suggested avoiding several factors; *Malnutrition* since nutrition is crucial to enhance the individual health; *Eating Disorders* that lead to obesity with other psychological issues; *Isolation*, especially among the children, need to be avoided. The World Health Organization also recommended improving the physical activity, diet quality, and consistent evaluation of the body BMI.

For obese children, Burniat et al. (2006) demonstrated the need for treatment in the sever cases where clinical care might be needed. Moreover, the authors highlighted the significant impact of environmental

adjustment that provides the suitable environment for preventing obesity epidemic. Also, Peeters et al. (2003) argued that obesity preventing is about avoiding risk factors; such as smoking.

Furthermore, Hill et al. (2003, p.854) stated that “Current social norms and values serve to reinforce behaviors that promote obesity and indeed are themselves powerful forces that help shape and perpetuate the obesigenic environment.” The researchers also suggested closing the energy gap to stabilize the inverse relationship between energy intake and physical activity which has been estimated with almost 100kcal/day for stopping the weight gain. Addressing the issue can also assist decreasing overweight, and obesity as the United States highlighted in recommending the CARE strategies; “communication, action, research, and evaluation” (Wellman and Friedberg, 2002, p.707).

## CONCLUSION

People’s lifestyle has been changed in the last decades where they become more physically inactive and calories-dense foods consumers. Moreover, several widespread habits including smoking and rabid snacking have also increased gaining extra weights. Growing obesity rates has been encouraged by fast foods low prices that full of fats and sugars, replacing human workforce with machines, high working hours, and daily watching for media devices. Therefore, many studies highlighted the considerable effects of obesity on human health, economic, and social aspects. Due to this varied impact, several initiatives suggested several preventing approaches; avoiding malnutrition, eating disorders, smoking, and isolation; medical treatment, environmental changes; stabilize the energy gap.

## REFERENCES

- Averett, S., & Korenman, S. (1996). jThe Economic Reality of the Beauty Myth, kJournal of Human Resources, 31 (2), 3041330.(1999): jBlack% White Differences in Social and Economic Consequences of Obesity. kInternational Journal of Obesity, 23, 1661173.
- Averett, S., & Korenman, S. (1999). Black-white differences in social and economic consequences of obesity. *International Journal of Obesity & Related Metabolic Disorders*, 23(2).
- Burniat, W., Cole, T. J., Lissau, I., & Poskitt, E. M. (Eds.). (2006). *Child and adolescent obesity: Causes and consequences, prevention and management*. Cambridge University Press.
- Cawley, J. (2000). *Body weight and women's labor market outcomes* (No. w7841). National bureau of economic research.
- Centers for Disease Control and Prevention (CDC. (2004). Trends in intake of energy and macronutrients--United States, 1971-2000. *MMWR. Morbidity and mortality weekly report*, 53(4), 80.
- Chou, S. Y., Grossman, M., & Saffer, H. (2004). An economic analysis of adult obesity: results from the Behavioral Risk Factor Surveillance System. *Journal of health economics*, 23(3), 565-587.
- Cutler, D. M., Glaeser, E. L., & Shapiro, J. M. (2003). Why have Americans become more obese?. *The Journal of Economic Perspectives*, 17(3), 93-118.
- Finkelstein, E. A., Ruhm, C. J., & Kosa, K. M. (2005). Economic causes and consequences of obesity. *Annu. Rev. Public Health*, 26, 239-257.
- Hill, J. O., Wyatt, H. R., Reed, G. W., & Peters, J. C. (2003). Obesity and the environment: where do we go from here?. *Science*, 299(5608), 853-855.
- Hill, J. O., Wyatt, H. R., Reed, G. W., & Peters, J. C. (2003). Obesity and the environment: where do we go from here?. *Science*, 299(5608), 853-855.
- Lakdawalla, D., & Philipson, T. (2002). *The growth of obesity and technological change: a theoretical and empirical examination* (No. w8946). National Bureau of Economic Research.
- Mitra, A. (2001). Effects of physical attributes on the wages of males and females. *Applied Economics Letters*, 8(11), 731-735.
- Peeters, A., Barendregt, J. J., Willekens, F., Mackenbach, J. P., Al Mamun, A., & Bonneux, L. (2003). Obesity in adulthood and its consequences for life expectancy: a life-table analysis. *Annals of internal medicine*, 138(1), 24-32.
- Peeters, A., Barendregt, J. J., Willekens, F., Mackenbach, J. P., Al Mamun, A., & Bonneux, L. (2003). Obesity in adulthood and its consequences for life expectancy: a life-table analysis. *Annals of internal medicine*, 138(1), 24-32.
- Putnam, J. J., & Allshouse, J. E. (1999). *Food consumption, prices, and expenditures, 1970-97*. US Department of Agriculture, ERS.
- Quesenberry, C. P., Caan, B., & Jacobson, A. (1998). Obesity, health services use, and health care costs among members of a health maintenance organization. *Archives of internal medicine*, 158(5), 466-472.
- Rand, C. S., & Macgregor, A. M. (1991). Successful weight loss following obesity surgery and the perceived liability of morbid obesity. *International Journal of Obesity*, 15(9), 577-579.

- Ruhm, C. J. (2008). Maternal employment and adolescent development. *Labour Economics*, 15(5), 958-983.
- Thompson, D., Edelsberg, J., Kinsey, K. L., & Oster, G. (1998). Estimated economic costs of obesity to US business. *American Journal of Health Promotion*, 13(2), 120-127.
- Wellman, N. S., & Friedberg, B. (2002). Causes and consequences of adult obesity: health, social and economic impacts in the United States. *Asia Pacific journal of clinical nutrition*, 11(s8).
- Wellman, N. S., & Friedberg, B. (2002). Causes and consequences of adult obesity: health, social and economic impacts in the United States. *Asia Pacific journal of clinical nutrition*, 11(s8).
- World Health Organization. (2000). *Obesity: preventing and managing the global epidemic* (No. 894). World Health Organization.
- Yach, D., Stuckler, D., & Brownell, K. D. (2006). Epidemiologic and economic consequences of the global epidemics of obesity and diabetes. *Nature medicine*, 12(1), 62-66.