



## IMPACT OF DIFFERENT SOCIO-ECONOMIC FACTORS ON OBESITY

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### **ABSTRACT**

According to World Health Organization (WHO), the worldwide prevalence of obesity more than doubled between 1980 and 2014. In occurrence of obesity, socioeconomic factors play an important role. Obesity also has its association with a high risk to health. In this study we considered various studies concerning with obesity and socio-economic factors. In the beneath, a discussion is also made.

**Discussion:** Obesity has become a global and challenging epidemic. On the basis of studies considered we came to know that persons belonging to lower socio-economic status are at more risk of being obese or overweight. Thus to detect obesity at early stage and for its prevention, there is a need for public health program.

**KEYWORDS :** Socio-economic Factors, Obesity, Overweight

### **Introduction**

Obesity has become a significant public health concern. The WHO claims that More than 1.9 adults were overweight, in the year 2014, including over 600 million obese individuals. 39% and 14% of the adults were reported overweight and obese respectively. Whereas, 41 million children (under age 5) around the world in 2014 were found either overweight or obese (WHO, 2016).

One of the study considered, conducted a series of nationally representative household-based health surveys between 1997 and 2007 in England and measured height and weight of 15,271 white children (7880 boys) aged 5 to 10 years. This study found the odds ratio (OR) for overweight was 0.99 (95% CI 0.88 to 1.11) and for obesity OR was 1.06. According to this study age and sex-adjusted OR for overweight was 1.88 in low socio-economic position (SEP), 1.25 in middle SEP, and 1.13 in high SEP children (Emmanuel S et al, 2009).

In another study associations between psychosocial and socio-economic factors with body mass index (BMI) and the waist-to-hip circumference ratio (WHR) in women were analyzed. Occupational, social and leisure time conditions, smoking and alcohol habits, height, weight and waist and hip circumferences of 1137 women from a population of 1464 women born in 1956 were measured. BMI was reported negatively associated with wine drinking whereas, WHR was found directly correlated with cigarette smoking and negatively with consumption of wine and beer. Both BMI and WHR showed independent associations with low education, unemployment and problems at work when employed, as well as with little physical activity and much TV-watching (Rosmond R et al, 1999).

Kuntz B et al considered 8318 subjects from the 2003 Telephone Health Survey in Germany to grab the information on different status indicators viz. income, education, and occupational position from the resident population of age 18 and older. 17% of men and 20% of women aged 18 and older were found obese in this study. Highest level of general education completed and the individual's occupational position were observed having a significant effect on the prevalence of obesity, for men. Whereas, significant social gradient was shown for all three status indicators, in women (Benjamin K et al, 2010).

A cross-sectional study was conducted to investigate the socio-economic factors lifestyle and nutritional characteristics from 1169 subjects (578 women and 552 men), aged 30-77 years in southern France. This study resulted that overweight and obesity were associated with age and education in both genders. A few dietary factors were also found identified (high energy intake and low intake of carbohydrates), but all these variables explained little of the variation of 18.5% in women and 14.6% in men (Scali J et al, 2004).

In one of the cross-sectional studies considered, 1139 adolescents, 447 from rural areas and 692 from urban districts of Riyadh region in Saudi Arabia were investigated to find the relationship between Socio-economic Status (SES) and obesity. According to this study male adolescents living in households having domestic driver were at a significantly higher risk of being obese in both the urban ( $p=0.02$ ) and rural areas ( $p<0.001$ ). Results of the study revealed that urban females

living in a medium-income household were at the risks of being overweight ( $p=0.02$ ) and obese ( $P<0.01$ ). The risk of obesity was found reported almost 11-times higher for females living in households having a driver ( $p=0.01$ ). An increased risk of being overweight was also found associated with owning a computer among urban adolescent females ( $p=0.01$ ) (Nasser A et al, 2014). We came across another cross-sectional study in which the weight status of 1164 Italian children aged 6-8 years (the Monitoring Air Pollution Effects on Children for Supporting Public Health Policy (MAPEC\_LIFE) cohort) was taken into account to identify the associations between selected socio-economic and environmental factors and overweight/obesity in Italy. In this study, overweight was found reported positively associated with male gender, parents of non-Italian origin, and parents who smoke, and a negative association with the parents' level of education and employment. In the same study, the frequency of overweight was found varied in relation to the geographical area of residence, with a greater prevalence of overweight children in the cities of central-southern Italy (Tiziana G et al, 2016).

A study considered data from the Austrian Health Interview Survey (ATHIS) 2006/07, of 1,077 individuals to investigate relation between weight of subjects belonging to different socioeconomic status (SES) and their health behavior, health, quality of life, and the use of medical care. Results of the study showed that subjects with a low SES differ significantly from those of high SES in terms of their health behavior, self-perceived health, levels of impairment, chronic conditions, quality of life, and health care. Obesity in adults was found associated with sub-optimal dietary practices and worse health, poorer quality of life and medical care than normal weight and overweight individuals. In this study, a significant interaction between the weight class and SES was also found in concern with physical exercise, impairment due to health problems and chronic diseases. Whereas, a strong negative impact of low SES on health, especially in obese individuals was revealed (Burkert NT et al, 2013).

Lindsay McLaren reviewed the relation between SES and obesity on the basis of diverse research databases (including CINAHL, ERIC, MEDLINE, and Social Science Abstracts) during the years 1988-2004. In this study a total of 333 published studies, representing 1,914 primarily cross-sectional associations, were included. The results of the study observed, an increase in proportion of positive associations and a decrease in proportion of negative associations as one moved from countries with high levels of socioeconomic development to countries with medium and low levels of development for both men and women. Negative associations (lower SES associated with larger body size) for women in highly developed countries were found reported most common with education and occupation, while positive associations for women in medium- and low-development countries were also observed most common with income and material possessions (Lindsay McLaren et al, 2007).

10,628 singleton children of mean age 4.8 years and born during the period 2000-2004 in Uppsala were taken into account in a study considered. This study found that the ethnicity of the children of North African, Iranian, South American, and Turkish had to be increased odds for being overweight/obese as compared with children of

Swedish ethnicity (adjusted odds ratio (OR): 2.60 (95% confidence interval (CI): 1.57–4.27), 1.67 (1.03–2.72), 3.00 (1.86–4.80), and 2.90 (1.73– 4.88), respectively) with an decreased odds for being overweight/obese (adjusted OR: 0.53 (0.32–0.90)) for Finnish children(Amal R K et al,2013).

In another study 36 674 out of 18 794 persons from the Sentinel Practices Data Sourcing project were included within the duration 2011 to 2013 in Illawarra-Shoalhaven region of New South Wales (NSW). Results of the study disclosed that, overweight was lowest in areas of highest socioeconomic disadvantage ( $aOR=0.910$ ; 95% CI 0.830 to 0.998;  $p<0.001$ )in men; but no statistically significant association with socioeconomic score was found reported for women and the overall obesity was found associated with high socioeconomic disadvantage ( $aOR=1.292$ ; 95% CI 1.210 to 1.379;  $p<0.001$ )( Ghosh A et al,2015).

Penny GL et al collected data from 13,113 U.S. adolescents enrolled in the National Longitudinal Study of Adolescent Health. In this study a limited effect on the disparities in overweight prevalence was observed when the adolescents were kept in their same environments and a change is made in family income and parental education. Ethnicity–SES–overweight differences were observed greater among females than males. According to this study overweight prevalence was decreased with increase in SES among white females and remained elevated and even increased among higher SES African-American females, African-American/white disparity in overweight prevalence was also reported increased at the highest SES(Penny GL et al,2003).

## References

- WHO: Obesity and overweight. 2016. <http://www.who.int/mediacentre/factsheets/fs311/en/>.
- Emmanuel Stamatakis, Jane Wardle, Tim J Cole .Childhood obesity and overweight prevalence trends in England: evidence for growing socio-economic disparities. *Int J Obes (Lond)* 2010; 34(1): 10.1038/ijo.2009.217.
- Rosmond R; Björntorp P. Psychosocial and socio-economic factors in women and their relationship to obesity and regional body fat distribution. *International Journal of Obesity & Related Metabolic Disorders* 1999; 23(2): p138. 8p.
- Benjamin Kuntz, Thomas Lampert. Socioeconomic Factors and Obesity. *Dtsch Arztebl Int* 2010; 107(30): 517–522.
- Scali J, Siani S, Grosclaude P, Gerber M. Dietary and socio-economic factors associated with overweight and obesity in a southern French population. *Public Health Nutr*. 2004;7(4):513-22
- Nasser Alqahtani, Jane Scott, Saad Alshahrani and Shahid Ullah. Socio-economic Determinants Factors of Overweight and Obesity among Saudi Children. *J Obes Weight Loss Ther* 2014;4:241. doi:10.4172/2165-7904.1000241
- Tiziana Grassi, Antonella De Donno , Francesco Bagordo , et al. Socio-Economic and Environmental Factors Associated with Overweight and Obesity in Children Aged 6–8 Years Living in Five Italian Cities (the MAPEC LIFE Cohort) *Int. J. Environ. Res. Public Health* 2016; 13: 1002. doi:10.3390/ijerph13101002, 1-11
- Burkert NT, Rásky É, Großschädl F, Muckenthaler J, Freidl W.The Influence of Socioeconomic Factors on Health Parameters in Overweight and Obese Adults. *PLoS ONE*2013; 8(6): e65407. <https://doi.org/10.1371/journal.pone.0065407>
- Lindsay McLaren. Socioeconomic Status and Obesity. *Epidemiologic Reviews*2007; 29 (1): 29–48. <https://doi.org/10.1093/epirev/mxm001>
- Amal R. Khanolkar, Ulla Sovio, Jonathan W. Bartlett, Thomas Wallby, and Ilona Koupil. Socioeconomic and early-life factors and risk of being overweight or obese in children of Swedish- and foreign-born parents. *Pediatric Research*2013;74:356–363
- Ghosh A, Charlton KE, Batterham MJ. Socioeconomic disadvantage and its implications for population health planning of obesity and overweight, using cross-sectional data from general practices from a regional catchment in Australia. *BMJ Open* 2016;6:e010405. doi: 10.1136/bmjopen-2015-010405
- Penny Gordon-Larsen, Linda S. Adair, and Barry M. Popkin. The relationship of ethnicity, socioeconomic factors, and overweight in U.S. Adolescents *Obes Res*. 2003;11:121–29.