



Mini Review

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Insights into Obesity and Socioeconomic Factors: A Comparative Analysis of BMI and BSSI in Pakistani Population

Waqas Ghulam Hussain*, and Muhammad Azeem Qureshi

Higher Education Department, South Punjab, Pakistan

***Corresponding author:** Waqas Ghulam Hussain, Higher Education Department, South Punjab, Pakistan**Received Date:** September 28, 2025**Published Date:** October 07, 2025

Abstract

Overweight and obesity have become some of the most critical concerns to humanity, whereby social factors are the main contributing factors. This mini-review builds upon the study conducted by Hussain et al. (2024) that reviewed various demographic variables with special emphasis on family income, BMI, and BSSI among the population of the federal territories of Pakistan in the ages of 2- 19 years. As the obesity epidemic continues to evolve and present new challenges associated with it, this review will try to focus on the recent developments in identifying obesity as well as the effects of such factors as socioeconomic when it comes to this disease, in addition to the significance of considering BSSI besides BMI to gain a deeper understanding of obesity and its effects. The review also offers a refined view of the gender-related approach to body composition and appraises the prospects regarding the concept of obesity in Pakistan.

Keywords: Obesity; body mass index, body shape and size index; socioeconomic status; healthcare policies; gender differences; Pakistan

Abbreviations: BSSI: Body Shape and Size Index; BMI: Body Mass Index; SES: Socioeconomic Status; WHO: World Health Organization

Introduction

This mini-review describes a condition in which people have an excessive amount of body fat that is closely linked with various health complications such as heart disease, and horror among other diseases. As stated by WHO, obesity is not just a question of an individual's health but a global social and economic problem that affects the global society. According to global statistics, more than 1.1 billion adults are underweight, while 320 million are obese; the problem is deemed significant, therefore there are increasing calls to develop appropriate prevention and treatment measures [1]. The epidemic is most worrying in LMICs such as Pakistan, there is

a steady increase in obesity, and at the same time, people face many other socioeconomic issues like poverty and poor health facilities. Among the various approaches for rating the obesity level, the Body Mass Index (BMI) is one of the most known and widely used standards, as this indicator is calculated based on the weight and height parameters of an individual.

BMI is useful as a screening tool but it has certain shortcomings: it does not take into consideration the location of fat stores in the body or the individual's body type. For example, two persons having the same BMI could be depicting the very different proportional

distribution of body fat and muscle and the health risk arising there from. Therefore, a new system of estimating obesity, which is called the Body Shape and Size Index (BSSI), has received rather a lot of attention as it takes into account not only weight, height, and body mass but also the surface area. Using both BMI and BSSI could provide a better insight into the nature of obesity and its consequences concerning ethnic diversity and body structures. There can be no denying the fact that socioeconomic factors are great determinants of obesity. Many papers have explored the relationship between obesity and Socio-Economic Status (SES) and found that individuals from the lower SES are at higher risk of being obese due to factors such as poor diets, lack of access to adequate healthcare facilities, and means of engaging in physical activities.

In Pakistan, where social and economic transformation is progressing inexorably more and more people focus on family income as one of the main factors, which affect the state of people's health. If the studies involving family income and obesity are examined, then one will see that a more stable economy is associated with better and healthier choices, better diet, and better health. Examining various aspects of the relationship between family income and obesity may help to reduce obesity better and more specifically for population groups. This mini review proposes that the gender aspect should not be overlooked when it comes to the issue of obesity. Previous studies show that women, especially in conservative cultures such as that of Pakistan, experience certain factors that influence their body image and their health behaviours. It is for this reason that obesity and obesity resultant diseases increase differently in men and women given that societal expectations and cultural norms that confine women to tight diets while permitting equivalent opportunities to men are very much real.

This translates to the fact that in formulating and implementing approaches to health disparities a much finer approach can be employed with the best features of gender-based approaches improving the health outcomes. In this mini-review an attempt will be made to discuss the intricacies of obesity from a socioeconomic standpoint, present recent findings on obesity with regard to the different SES aspects, and stress the importance of a holistic approach to address this rising health issue. It is significant to comprehend the further correlations of these factors as it can be essential for creation of health care policies and programs.

Literature Review

The Economic Burden of Obesity

This is especially so since obesity both directly and indirectly contributes to global economic costs in healthcare departments and society as a whole. The direct costs are the extra healthcare costs associated with obesity and related complications including type 2 diabetes, cardiovascular diseases, and specific forms of cancer [2]. Indirect costs, such as loss of productivity and increased absenteeism, compound the economic burden. In Pakistan, healthcare spending on obesity and its related complications is

rising, further straining a healthcare system already facing immense challenges.

Socioeconomic Status and Obesity

Socioeconomic status (SES) is a well-established determinant of health, influencing access to resources, education, and healthcare. Research has consistently shown that higher SES correlates with healthier weight status, whereas low SES often leads to nutritional deficiencies and higher obesity risk [3,4]. In Hussain et al.'s study, the relationship between family income and obesity underscores the importance of SES as a central factor contributing to the obesity epidemic in Pakistan. Recent literature emphasizes that economic stability often translates into better access to nutritious food, healthcare, and opportunities for engaging in physical activities. In contrast, those from lower socioeconomic backgrounds may experience food insecurity and limited access to recreational facilities, exacerbating the risk of obesity [5].

Gender Disparities in Obesity

Gender differences are pivotal in understanding the obesity epidemic. Research reveals that females often have higher rates of obesity compared to males across various populations. In Pakistan, sociocultural factors often dictate body image ideals that differentially affect males and females. For instance, while societal norms may pressure women toward thinness, the realities of access to resources and lifestyle choices create barriers to achieving and maintaining a healthy weight. Hussain et al.'s study noted a persistent trend of higher BMI and BSSI values among females than males, suggesting the influence of societal expectations, dietary habits, and levels of physical activity. Two other challenges that make obesity a complex issue in this context are: Gender in matters concerning the partitioning of labour and the cultural practice of taking exercise.

Body Shape and Size Index (BSSI)

The Body Shape and Size Index (BSSI) is, in fact, a recent measure that gives a better index of body shape and composition than BMI. Pre-existing estimations of weight and height in actuality do not incorporate a person's body fat or muscle mass [6]. The BSSI takes account of body surface area and is a more detailed approach to obesity than BMI which explains distribution and size of the body fat. This index is becoming very important because there is increasing evidence that central obesity (fat deposited in the abdominal area) poses more health risks than other distributions [7]. The determination of BSSI along with BMI may be of utility to clinicians because it offers a certain measure of individual health conditions to set appropriate interventions.

Discussion

Implications of Findings

[8] also isolated the variables that should be considered in the Pakistani context to explore important connections between SES, BMI, and BSSI. Obesity levels are higher among richer families

so there exists the likelihood of a positive relationship between economic status and poor health consequences. It is also important to notice the fact that BMI and BSSI are higher among females enhancing the fact that gender plays a crucial role in the obesity epidemic [9]. By reasons of the status that prevails in the culturally sensitive context of Pakistan, male and female gender roles and beliefs dictate dietary behaviours and exercise practices of the entire population thus requiring specific and tailored interventions. It is important to invest in the propaganda of nutrition awareness, eating habits, and the impact of physical activity on the public regardless the class differences [10].

Recommendations for Interventions

The following recommendations can be suggested in light of the literature review done as well as Hussain et al.'s study about potential ways of combating the rising instances of obesity in Pakistan:

- a) **Awareness Campaigns:** These are other key strategies that should be implemented in the different programs of the public health sector to help improve the different aspects of diet and lifestyles. These campaigns should involve all the population and should not differentiate any group of people in the society regarding their level of income, education, or any other aspect of their social demographic status.
- b) **Concepts of Policies:** Children and their families should be put in a position to easily get to shops selling healthy foods and facilities constructively engaging in physical activity. More availability of parks, sports facilities, and safe places should be availed to help increase the exercise among children and adults today.
- c) **Community Based Interventions:** It may be effective to use programs that are aimed at engaging the community since one can change the manner in which he or she exercises or eats. Community activities that encourage the use of physical activities, for example, walking groups, sports athletic clubs are beneficial as they encourage togetherness's and compel or maintain healthy behaviours of the people.
- d) **Gender-specific programs:** These are appropriate in Interventions by taking into consideration the way the genders perceive body image and their lifestyles. Initiatives that would help in improving literacy rates, employability employing women, and encouraging physical activity may go a long way in minimizing the obesity levels that are more pronounced in females.
- e) **Healthcare Accessibility Enhancement:** There are options to improve particular and detailed healthcare services to facilitate the early identification of obesity-associated diseases. These should be incorporated in the framework by subsidizing the health care services, especially for the families that are most affected by the problem.

- f) **Socioeconomic Development:** It implies that to prevent obesity in population, it is necessary to address the cause of the issue the presence of poverty and poor socioeconomic circumstances. This may entail equal job opportunity, education, and general advancement of community.

The Role of Research in Understanding Obesity Dynamics

Further research is crucial to comprehend the issue of obesity and its relation to the socio-economic and cultural aspects of Pakistan. Future researches must involve various factors that relate to obesity, the eating habits, physical activity, psychological factors and genetic aches. Quantitative cross-sectional surveys combined with qualitative research designs can provide better information on the socioeconomic factors that contribute to obesity in various demos. Further research should be conducted to confirm BSSI standard deviation in different population groups with the aim of obtaining a more refined method in the detection and treatment of obesity.

Conclusion

In the end, it is concluded that the fact of a steady increase in the levels of obesity in Pakistan is indicative of a rather important problem in the field of public health that requires a better understanding of the relationship between SES, anthropometric indicators, and gender. The study emphasizes the importance of family income concerning BMI and BSSI present in different age and gender groups of the Pakistani population. The economic examination of the conditions that help or hinder the improvement of nutritional status and health-enhancing activities establishes social status disparities as the remaining significant challenge in the fight against obesity. It also underlines the necessity to use the second kind of metric, such as BSSI in obesity, as it offers more comprehensive and detailed information about the potential threat that failed to be revealed by using BMI [11]. Complex and situational strategies are necessary to prevent obesity because it is considered to be caused by a combination of factors. It involves supporting a health education campaign to educate people on the appropriate diets to undertake and the significance of exercising among other activities of supporting policies for pro-health to be adopted in addressing health issues. Gender-sensitive programs should also be prioritized to address the unique challenges faced by women in achieving and maintaining healthy weights within cultural contexts. By fostering multifaceted approaches that consider socioeconomic disparities and gender norms, policymakers can develop effective strategies to mitigate obesity's growth, improve public health outcomes, and enhance the overall quality of life for individuals in Pakistan.

Future Research

- a) Conduct longitudinal studies to track obesity trends over time and identify causal factors.
- b) Explore the psychological and cultural dimensions of obesity to inform interventions.

- c) Investigate the efficacy of community-based interventions in reducing obesity rates.
- d) Establish comprehensive datasets that incorporate SES, dietary patterns, physical activity, and obesity metrics to facilitate robust analysis.
- e) In conducting this analysis, it is vital to recognize the complexities surrounding obesity and related health outcomes while maintaining a focus on equitable health improvements across diverse populations.

Ethical Approval

This study was approved by Higher Education Department, South Punjab, Pakistan.

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None.

Conflict of Interest

Authors have no conflict of interest.

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