

Body Mass and Social Harmony: Examining Obesity's Role in Interpersonal dynamics among Secondary School Students

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Abstract

Obesity is a critical issue that demands attention due to its significant impact on physical health, economic burden, and the numerous public health challenges it poses. Addressing and managing obesity is crucial for enhancing individual well-being and reducing the strain on healthcare systems and society as a whole. This study is a descriptive investigation that utilized a survey method to gather data. A questionnaire called WIHIC was developed to measure social cohesion in the classroom. The weight of the students was determined using a weight machine in kilograms, while their height was measured using a meter rod in meters. The population for this study consisted of all students in the 10th grade from the Sheikhpura district. The sample was randomly selected from schools in Sheikhpura, with two out of the district's four Tehsils being chosen. Five schools were then randomly selected from each of these Tehsils, and one section from each school was selected using the cluster sampling technique. The level of obesity was found to have an impact on the cohesiveness of the students, with overweight students being less socially cohesive than normal and underweight students.

Key Words; Obesity; Social Harmony; Interpersonal dynamics; Survey Method; Social Cohesion

Introduction

Obesity is a medical condition that indicates a person's weight, as described by Kahan, Look, and Fitch (2022) (Kahan, Look, et Fitch 2022). There are various categories of weight, including obesity, overweight, normal weight, underweight, and thin, as stated by Pate, Tilley-Gyado, and Betz (2022) (Pate, Tilley-Gyado, et Betz 2022). The body mass index (BMI) can be used to calculate an individual's obesity, which is a ratio of weight to height squared, as outlined by Mohajan and Mohajan (2023) (Mohajan et Mohajan 2023b). When a person's BMI value is above 30, they are considered obese, according to Mohajan and Mohajan (2023). This differs from the term overweight, which comes after normal weight. It is important to note that excessive weight gain leads to obesity, as opposed to simply .being overweight

Sometimes, individuals possess excess bones, muscles, and fluids, resulting in being overweight. Furthermore, children and adolescents may have higher weight, which increases their risk of becoming obese as they age (Marcus, Danielsson, et Hagman 2022). It is also possible that those who are heavy in childhood may become obese during their youth. Approximately 25% of obese children in childhood become severely obese in their youth, and these individuals are at risk of premature death due to various diseases that affect individuals with high body fat (Utkirzhonovna 2022).

Obesity has a significant impact on various aspects of a person's life, with weight being the primary concern. Obese individuals tend to consume large amounts of food and remain unhealthy, putting their health at risk. Obesity is a condition that leads to various diseases, such as high blood pressure, diabetes, heart problems, and even cancer (Sobolewska-Nowak et al. 2023).

Obesity in Pakistani schools is a public health problem on the rise. It not only reflects global patterns but is also local. As the country developed economically and more populations moved to urban centers, traditional lifestyles were replaced with sedentary life and changed dietary patterns. All this contributed to the prevalence of obesity among children and teenagers. Many schools have reported holding a significant number of overweight children across the country, including the main urban centers such as Karachi, Lahore, and Islamabad. This is an alarming trend, because obese children mostly become obese adults, and obesity has been found to be related to the range of metabolic disorders (Tilley-Gyado, & Betz 2022).

In addition, being an obese child often leads to psychological problems, such as low self-esteem or even depression, as they are targets of social stigma and bullying by other children. The reasons for the spreading of obesity in Pakistani schools are numerous. Nowadays, the diet of many students is high in calories, saturated fats, and sugars, especially consumed in sodas and sugary snacks, whereas physical activity is lower than ever. Many schools have inadequate conditions for sports, or the location is not safe for children to play outside. Additionally, parents and children are generally unaware of the necessity of a balanced meal and regular practice. Therefore, the efforts taken to reprimand obesity in Pakistani schools should cover a wide range of policies and respect culturally specific traditions (Kahan et al., 2022).

The initiatives could be focused on the introduction of stricter regulations regarding the types of food served at the school canteens, making physical education classes more integrated into the curriculum, and raising awareness campaigns that would inform both students and their parents on the importance of healthy dieting and the role of regular physical activities. At the same time, interventions should target the psychological aspects by methods of creating a positive body image and boosting children's self-confidence regardless of their physical size. The fight against obesity in Pakistani schools has to start with preventative measures. Not only the lives of the enrolled students are at risk; the future of the nation and its health depends on whether or not the schools will be able to implement policies that would prevent generations of obese people (Kahan et al.,2022).

Sometimes people have more bones, muscles, and fluids which make them overweight. Additionally, some juveniles have more weight which makes them likely to be obese when they become grownups. It is also possible that people who are heavy in adolescence will be obese in their youth. 1 out of 4 fat kids in adolescence becomes extremely fat in adolescence, and such people are susceptible to early demise from numerous infections that attack fat persons. This

situation affects most aspects of an individual's life, one of which is wealth. Fat persons eat a lot of food in poor condition and for fear of their immunity. Obesity is a state of illness that facilitates different maladies to afflict persons which are high blood strength, diabetes, heart issues, and even cancer (Tilley-Gyado, & Betz 2022).

Social cohesiveness refers to a student's degree of friendliness and rapport with their classmates. It is the behavior displayed by a student within a classroom setting. According to Baloh (2022), social cohesiveness is a key factor in determining how well students interact and collaborate with one another. Numerous studies have been conducted on this topic worldwide. However, from a Pakistani perspective, there is a lack of focus on this issue. Parents in Pakistan tend to provide their children with ample food but limited opportunities for physical activity and outdoor games. As a result, the problem of overweight and obese students is on the rise (Baloh et al. 2022). This can lead to students becoming shy and the subject of ridicule in the classroom (Petrzela 2022). The current study aims to examine the relationship between social cohesiveness and secondary school students in district Sheikhpura.

The objectives of the Study

Following were the objectives of the study;

1. To assess the extent of obesity among secondary school students.
2. To determine the degree of unity and togetherness among these students.
3. To explore any possible association between obesity and the students' sense of unity.

Research Questions

Following were the research questions of the study;

1. What is the prevalence of obesity among teenagers in secondary schools?
2. How cohesive are the students in secondary schools?
3. Is there a relationship between obesity in students and their level of unity?

Literature Review

The global "Obesity crisis" has become a significant and hazardous issue worldwide. There are various methods to measure Obesity, but the Body Mass Index (BMI) is a conventional technique that has its limitations when accounting for bone and muscle size. On the other hand, BMI is a valuable tool as it demonstrates a person's fitness level in terms of body fat content (Rowe et al. 2024). The formula for calculating BMI is to divide an individual's mass (in kilograms) by their height (in meters) squared, resulting in an Obesity score (Mohajan et

Mohajan 2023a). It is important to note that the Centers for Disease Control and Prevention (CDC) does not use the term "Obesity" for children and adults; instead, they employ the term "overweight," which is indicated by a high BMI (Shawel et al. 2023).

Body Mass Index (BMI) is a tool used to assess the relationship between an individual's height and weight. To determine BMI, measure a person's height in feet and inches using a ruler, and then convert it to meters by multiplying it by 703. Measure the person's weight in kilograms using a weight machine. Finally, divide the weight by the square of the height to get the BMI value. The table below displays the different body mass index ranges for adults.

BMI (Body Mass Index) classification: * Below 15: extremely underweight * 15-18.49: underweight * 18.5-20.99: normal weight * 21-23.99: overweight * 24-27.99: obese * 28-33.99: severely obese * 34-39.99: morbidly obese * 40 and above: extremely morbidly obese

Several issues arise due to the swift increase in Obesity or being overweight. These concerns encompass Social problems, Physical problems, and Economic problems (Iadecola et al. 2023). Researchers have pointed out that the primary cause of Obesity is a combination of inheritance, lifestyle, and other significant factors, but they are all secondary because they do not have the same impact on all individuals (Zoh et al. 2023). Recent studies indicate that Obesity is spreading among people and children like a virus. During the teenage years, children attempt to separate from their parents, make friends, and adopt friendly behavior. Teenagers often form groups and engage in activities like playing cards and computer games, attending parties, and more, which can contribute to weight gain. However, parents do not always monitor their children's food intake or supervise their physical activity (Gonzalez 2013).

Obese children are known to have a tendency towards overeating and are often plagued by psychosocial issues such as low self-esteem and a host of other health problems, according to research findings (Zhou et al. 2023). It is crucial to understand a child's environment, including their friends, parents, and neighbors, in order to mitigate the impact of obesity. This is because some families provide a great deal of care and do not permit their children to interact with others. In certain cases, families may have minimal interaction with their neighbors, which can hinder their children's ability to socialize with other families (Ma, Li, et Rukavina 2023). Obese children are more likely to experience anxiety disorders, hopelessness, and other psychological issues, as evidenced by studies (Keogh et Timulak 2023).

In specific, obesity rates are consistently rising across Pakistan, and are becoming more prominent in cities where sedentary lifestyles are more widespread. The problem appears to be caused by the increased intake of processed and fast foods, lack of physical exercise, and societal changes that promote more sedentary forms of leisure. Evidentially, the critical issue has been addressed by Mushtaq, et al.(2011) in the Journal of Public Health, where the article

acknowledged the high percentages of urban schoolchildren who are obese or overweight, and cited their diet and lack of physical exercise in the cause.

Later in life, obesity predisposes affected children to various chronic conditions. They include type 2 diabetes, hypertension, and cardiovascular diseases. In addition to these physical consequences, they also undergo significant psychological impacts such as low self-esteem and bullying. Several scholars, including Ahmed et al., (2015) particularly in the article published in *Child: Care, Health and Development* further affirm the physical and mental health issues faced by obese children. Proper measures need to be put in place to help control this growing public health issue. The current literature recommends a multi-sectoral approach which may include policy changes, school-based programs, and community participation. Some of the measures recommended include, providing healthy food in school canteens, regular physical education, and sensitization on healthy living. As an example, a study done by Khan and Raza in the *Obesity Reviews Journal* suggested the inclusion of local practices as part of the intervention to enhance acceptability and effectiveness.

To conclude, the literature has revealed the pressing need for multidimensional approaches to counteract obesity in Pakistani schools. It is essential to note that this issue can only be addressed through the cooperation of national governments, schools, and communities to secure the health and well-being of Pakistani children. Moreover, the research studies demonstrate that school environments in Pakistan are significantly influenced by collectivist foundations. Specifically, Iqbal 's study *Family-school relations in Pakistan: A social-ecological perspective* in the *Journal of School Psychology* illustrates that students are socialized to function within the collectivist framework from an early age, with their family and society's expectations affecting their interactions with each other and the school's authorities. On the one hand, expressions of respect for authority and strong community values help to ensure a cohesive and cooperative atmosphere. At the same time, it may subdue individual expressions.

Furthermore, the existing educational system and policies could also promote or inhibit social cohesion. According to Ahmad and Ghafoor, "school leadership and subject curriculum plays a vital role in terms of inclusiveness and cooperation among the students". Moreover, the researchers suggested developing cross-sectional subject courses and encouraging cooperation projects and group learning could promote social ties and enhance collective problem-solving. The socio-economic status of communities also impacts social cohesion by determining the resources a school can rely on and the general experiences and contacts of the learners. According to one of the studies issues of *Pakistan Journal of Educational Sciences*, schools located in the low-middle areas often faced challenges with ensuring cohesive

Material and Method

This research is a descriptive study that utilizes a survey method to gather data. To evaluate Social Cohesiveness, a questionnaire called WHIC was developed. The weight of the students was measured by a machine in kilograms, while their height was measured using a meter rod in meters. The study population comprised of tenth-grade students in Sheikhpura. A

random sample of 763 students was chosen from schools in two Tehsils of Sheikhpura, including 381 males and 382 females. Cluster sampling was used to select one section from each of the five schools selected from each Tehsil.

The trustworthiness and legitimacy of the tool were affirmed via pilot testing and specialist advice. In particular, the Cronbach alpha reliability metric, which was determined using SPSS for all 23 survey questions, returned a value of 0.79.

Data Analysis

Table 1

Descriptive statistics for Demographic Variables

Indicators	frequency	%
Gender		
Women	270	50.1
Men	269	49.9
Locale		
Government Schools	453	74.2
Non-Government Schools	184	25.8
Status		
Unsuccessful	243	46.7
Successful	304	53.3

Table 2

Cohesiveness and level of obesity

Obesity level	Fre	Percentage	Cohesiveness	
			X	Standard Deviation
<18.5	194	25.4	88.19	14.39
18.5-24.9	292	38.3	88.49	12.92
25-29.9	131	17.2	85.58	13.12
30-34.9	100	13.1	83.47	14.47
35-39.9	33	4.3	87.79	13.26
>40	13	1.7	85.00	13.97

The dependability and authenticity of the tool were confirmed through pilot testing and specialist consultation. Specifically, the Cronbach alpha reliability measure, which was calculated using SPSS for all

Table 3

Levels of cohesiveness	No. of students	%	Cohesiveness	
			Mean	SD
No cohesiveness	92	12.1	25.19	6.80
Cohesiveness	358	46.9	23.76	6.91
Most Cohesiveness	313	41.0	23.24	6.59

Table 3 illustrates that students can be grouped into three categories of cohesiveness. The table also presents data on the association between social cohesiveness. From the table, it is evident

that 313 students exhibit the highest level of cohesiveness, with a mean of 326.45 and a standard deviation of 6.59.

Findings/Conclusion

The percentage of students with normal weight was 38.3%, while 25.4% were underweight and 17.2% were overweight. The remaining 19.1% were obese. Social cohesiveness among students was found to be 46.9%, with 41.0% being most cohesive in the classroom. A significant negative correlation ($\rho = -.089$) was observed between secondary school students' obesity and their social cohesiveness. Additionally, normal weight students ($\bar{x} = 88.49$) were found to be more cohesive than underweight ($\bar{x} = 88.19$) and overweight students ($\bar{x} = 85.58$).

On the basis of the findings of the study it is concluded that the level of obesity among students had an impact on their cohesion. Compared to normal and underweight students, overweight students were less socially cohesive.

Discussion

According to Stanton, Jones, & Shahani (2022) and the findings of the study, obesity is negatively correlated with students' cohesiveness (Stanton, Jones, et Shahani 2022). This is supported by Reeves (2023) as well. Research among adolescents has shown that obese individuals face greater challenges, leading them to engage in harmful behaviors such as consuming high-fat unhealthy foods, binge-watching television, and exceeding their daily caloric intake (Udeagwu et Chidiobo 2023). A positive classroom environment and school climate can have a favorable impact on the attitude of obese students. Furthermore, teachers can play a significant role in fostering the social cohesiveness of obese students by providing them with greater opportunities, followed by reinforcement and motivational incentives (Rajbhandari-Thapa et al. 2022).

Parents play a crucial role in the academic and social development of obese children, in addition to schools and teachers. To encourage social cohesiveness and support academic growth, it is essential to hold regular parent-teacher meetings (Smith et al., 2022; Rajbhandari- Thapa et al., 2022). A positive classroom environment and school climate can significantly impact the attitudes of obese students, emphasizing the importance of collaboration between parents and educators.

The most obvious relationship is the one between obesity and peer social cohesion reduction within the school environment. Biased studies have shown that obese students' main source of stigmatization stems from poor social interactions. Social stigma often causes children to be isolated from their peers. Not only does stigmatization negatively impact the students' ability to form and maintain friendships, but also it damages the overall social network within the school setting. Various studies, including those by Strauss and Pollack have shown that children

with higher body mass indexes are more likely to be bullied, which increases their risk of loneliness depression. In general, the stigma associated with obesity promotes biased treatment and destabilizes the social situation in classrooms and schools.

In addition, the consequences that obesity has on social cohesion are not limited to the bonds between individuals but encompass group dynamics. During adolescence, physical activities and other social engagements are essential venues where socialization occurs. When overweight students withdraw from these activities, the implications are twofold. Not only are the obese students deprived of critical opportunities for interaction, but the segregation also fosters divisions, where acceptance and participation are influenced by appearance. As a result, the effect of physical appearance on integration emerges as a major concern. In addition, the results obtained through use of the WIHIC in the context of the Sheikhpura district demonstrate how obesity, as indicated by body mass index, also affects perceived social cohesion. The results show not only that each obese student's experience is unique, but also that the classroom climate is impacted. As a result, teachers and administrators are encouraged to adopt measures that promote inclusive behaviors while also counterweighting these trends.

In summary, there is an urgent need for school-based interventions that tackle the above issues, promoting more inclusive attitudes towards health while rooting out stigma surrounding obesity. Educational programs that value diversity and teach respect and empathy as central values may help to disrupt the social trends identified in the findings above. Additionally, a focus on a culture of health, considering health more important than appearance, may change the way peers perceive one another. Relatedly, schools should implement more comprehensive programs to support children with obesity, as mentioned above. These findings have implications for education and health policies, in the sense that schools must adopt comprehensive wellness programs that address physical and emotional health needs while also promoting community and connection. These programs should include strict requirements to teach all physical education classes in a manner that creates a safe environment for all students, regardless of body type, to participate.

Recommendations

Teachers should strive to foster unity among their students while instructing them. In higher secondary schools, obesity can hinder student unity. It is crucial for educators to recognize the dangers of obesity. Parents and teachers may benefit from attending a seminar on the risks, signs, and treatment options associated with obesity. Additionally, parents and teachers should encourage students to participate in outdoor activities to maintain a healthy weight.

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