

Awareness of risks and complications of obesity in school going children

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ABSTRACT

Introduction: Childhood obesity is increasing in Pakistan, and it mostly occurs when there is more energy-rich food intake and not enough physical activity. Not realizing the dangers, parents often encourage the children to eat as much as possible and whatever is preferred by the child.

Objective: To assess the level of awareness of school-going children of Peshawar about the risks and complications of childhood obesity.

Materials & Methods: It was a descriptive cross-sectional study conducted in two private schools of Peshawar, Khyber Pakhtunkhwa, from April - July 2017, where data were collected through consecutive sampling of all available children of classes 7 to 10. Questionnaires contained open and closed-ended questions. Data were entered in SPSS 22 and Microsoft Excel, and analyzed for descriptive statistics.

Results: Majority of children (83%) were aware of the meaning of obesity and 72% knew that obesity is an illness, and it can cause problems in their bodies. Most children (65%) thought obesity caused high cholesterol levels in the body, and 56% children thought that obesity could be controlled by exercise.

Conclusion: Majority of the school children were aware of obesity and its risks and complications.

Keywords: Awareness; Risks; Complications; Obesity; Childhood Obesity.

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INTRODUCTION

The word Obesity means the excessive collection of fat in the body, which leads to medical conditions that negatively affect the obese person's life and health.¹ Obesity is not a single disease, but a syndrome with multifactorial etiologies that includes metabolic, genetic, environmental, social, and cultural interactions.² All obese persons are overweight, but all overweight persons are not necessarily obese as excess body weight may arise from bone, muscle, or body water content.³ Current research suggests that physical inactivity is inversely correlated with the risk of obesity.⁴ Obesity and overweight are risk factors for many non-communicable diet-related diseases, which are the 5th leading global causes and risks of death.⁵

Obesity and Overweight are a global pandemic. According to a World Health Organization (WHO) report, 300 million people out of 1 billion overweight people are obese⁶ and the WHO Member States in the 66th World Health Assembly have agreed on a voluntary global non-communicable disease (NCD) target to halt the rise in diabetes and obesity.⁷ Insulin resistance and Type-II diabetes are majorly caused by Obesity.⁸

Obesity in children or childhood obesity is a condition where excess body fat in children negatively affects their well-being.⁹ Obesity in children is emerging as one of the global health concerns with over 200 million school-aged children worldwide being categorized as obese or overweight; an estimated mean of 124 million children were obese in 2016.¹⁰ Childhood obesity in developed countries has reached epidemic levels; developed countries have the highest prevalence rates of childhood obesity. However, the prevalence rate of childhood obesity is increasing in developing countries as well.¹¹ Children of younger age who were overweight or obese were associated with higher chances of bullying victimization.¹² The global estimated prevalence of childhood obesity and overweight has increased over the years from 4.2% in 1990 to 6.7% in 2010; this rate was expected to increase more in the coming years, and might reach up to 9.1% in 2020.¹ Furthermore, the prevalence rate of obesity and overweight in children and adolescents has elevated from 8.4% to 13.4% in girls and from 8.1% to 12.9% in boys over the span of 30 years in developing countries, showing the course of time of this epidemic-in-developing.¹³

Over the past few decades, obesity in children or childhood obesity is increasingly being observed in families with changing lifestyles.¹⁴ Childhood obesity and overweight can harm a child's psychosocial status.¹⁵ Obesity in children can immensely affect their emotional well-being, physical health, social abilities, and self-esteem and can also be linked to bad performance at school and a lower standard of life experienced by the child.¹⁶ Obesity in children seems to significantly increase the risk of future morbidity whether or not obesity continues into adulthood.¹⁷ Complications due to childhood obesity can occur both in the short and long term but some complications that were thought to only appear in adulthood (long term issue) now seem to manifest in adolescents and children.¹⁸

Although the problem related to obesity in adults has already received some attention in or through research in Pakistan,¹⁹ on the other hand, childhood obesity is becoming an equally challenging, yet under-recognized, problem in Pakistan.²⁰ The subject related to childhood obesity has only recently gained attention in Pakistan, with an estimated frequency of childhood obesity in Pakistan between 15% - 20%.¹⁹ Estimation of early childhood obesity and overweight during a child's school years helps in preventing diseases that can progress from childhood into adulthood.¹⁴

The aim of the study was to raise awareness regarding obesity in children as it is becoming more common day by day and becoming a major concern. The objective was to assess the level of awareness of school-going children about the risks and complications of obesity.

MATERIALS & METHODS

A descriptive cross-sectional study was conducted in two private schools in Peshawar, KP, Pakistan, from April to June 2017 where nonprobability consecutive sampling technique was employed. The Principals of both schools were consulted beforehand, and they were kind enough to give permission for the research. Both Principals and the school staff co-operated in every way possible.

Questionnaires were distributed among all 237 students in the age group of 12-16 years [from classes 7 to 10]. The Questionnaires were created specifically for this topic and were not re-used from another source. A mixed-type questionnaire was developed with both open and close-ended questions; the 10 questions were regarding knowledge of obesity and its risks and complications. Data collected were analyzed using SPSS version 22 and Microsoft Excel.

RESULTS

The response rate was 100% from both boys and girls. The boy-to-girl ratio was 12:3 (after rounding out). Table 1 gives the responses to the first set of questions related to knowledge of obesity.

Questions started with whether the children knew the meaning of obesity; 83% children understood the meaning of the term obesity and 17% did not know the meaning of obesity. The second question was whether children consider obesity as an illness; 72% children thought obesity an illness, and 28% children did not

consider it an illness. The next question asked was about how someone can control obesity; 56% children thought obesity could be controlled through exercise, 13% of children thought obesity could be controlled through eating less, and 37% children thought obesity could be controlled through diet control. Lastly, the children were asked for an opinion on various causes of obesity; 38% children thought obesity was caused by various causes (eating junk food, no exercise and drinking cold drinks, etc.), and 38% thought due to eating junk food and drinking cold drinks.

Table 1: Questions to school children regarding obesity (n=237).

Questions	Responses (%)
Do you know what obesity means?	
To be underweight	07
To be healthy	09
To be overweight	83
None of the above	01
Do children consider obesity as an illness?	
Yes	72
No	28
How do you think someone can control their obesity?	
Through diet control	37
Through eating less	07
Through exercise	56
What do you think causes people to become obese (Fat)?	
Eating junk food/ cold drinks	38
Doing no exercise	15
Overeating	09
All the above	38

Table 2 lists the responses to the next questions regarding awareness of diseases caused by childhood obesity.

When asked whether obesity caused problems in the body, 72% children said yes, 21% thought it might, 4% did not know, and 3% did not think obesity caused any problems.

Table 2: Children's responses to questions about diseases caused by childhood obesity (n=237).

Questions	Yes	No	May be	Don't know
Do you think being obese can cause a problem in your body?	72%	3%	21%	4%
Do you think obesity can cause heart disease?	58%	15%	21%	6%
Do you think obesity can cause diabetes in children?	36%	29%	34%	1%
Do you think obesity causes high blood pressure?	58%	14%	20%	8%
Do you think obesity causes high cholesterol levels in the blood?	65%	11%	19%	5%
Do you know obesity can cause joint problems?	43%	26%	24%	7%

The next series of questions consisted of complications and risks of obesity and their awareness in children; majority of the students knew the risks and complications of obesity. Regarding heart diseases, 58% children thought that it is caused by obesity; 36% thought obesity could cause diabetes in children; 58% thought that high blood pressure was caused by obesity; 65% thought that high cholesterol levels were caused by obesity; and 43% thought that joint problems could be caused by obesity.

DISCUSSION

A previous systematic review,²¹ based on interventional studies for childhood obesity focused on school children aged 6 to 12 years, found convincing evidence for the beneficial effects of obesity preventing programs in relation to BMI in this age group. The current study focused on slightly older school children aged 12 to 16 years about the awareness of obesity and its causes or risk factors as well as complications. In this study, suggestions were asked regarding the control of obesity and the school children think that obesity can be controlled by diet and exercise. Another study recommends that children should be encouraged to regularly exercise and eat healthy food.²²

This study also shows that the children knew about most of the comorbidities (heart diseases, high cholesterol levels, etc.) caused by obesity; another study discusses the diseases / comorbidities caused due to obesity which can also manifest in obese and overweight children.²³ A study on childhood obesity²⁴ recognized such obesity as a public and medical health problem with a series of medical complications (diabetes, hypertension, etc.); the present study also shows that the children knew obesity as an illness that could cause medical complications (diabetes as well as hypertension).

A research paper²⁵ discusses many different causes of obesity in children (e.g. genetics, decreased physical activities, psychological factors, endocrine disorders, unhealthy diet, environmental factors, etc.); keeping in mind the causes of childhood obesity, the current article shows that the children showed their awareness of the causes of obesity and listed

unhealthy diet, overeating, no physical exercise, etc., as the causes.

The current study shows the awareness of sampled school children about the different types of complications caused due to obesity (such as heart diseases, hypertension, diabetes, and joint problems); similarly, these complications were highlighted in a previous study²⁶ that discusses the different complications due to childhood obesity (hypertension, orthopedic problems, gallstones, obstructive sleep apnea, diabetes, and psychological complications) and importantly, emphasizes that such problems can either arise in childhood or later in adulthood.

CONCLUSION

The majority of school-going children were aware of the meaning of obesity and also the risks and complications of obesity.

RECOMMENDATIONS

1. Various programs at the school and community level, like seminars to further increase awareness about childhood obesity.
2. Government should address this issue via media, which would also help in making non-school going children and their parents aware of obesity.
3. Schools should organize monthly health / physical checkups to check the height, weight, and health status of the children.
4. Schools should make physical education part of the school curriculum.

LIMITATIONS

The limitations of the study are as follows:

1. The study was conducted in only two private schools, and the findings may not represent those of public schools.
2. A small sample of school-going children of Peshawar was studied, hence the findings would not be generalized to all of Khyber Pakhtunkhwa province or the country.

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