

Frequency of Stunting with Obesity among 2 to 5 Years Old Children in Pakistan

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ABSTRACT

Objective: Our study's goal is to find out how common stunting and obesity are among Pakistani children aged 2 to 5 years old.

Study Design: Descriptive study

Place and Duration: Shalamar Medical & Dental College Lahore and Quetta Institute of Medical Sciences. Jan, 2021 to June, 2021.

Methods: There were 130 children with age 2-5 years were presented in this study. Detailed demographics of enrolled cases included age, sex; weight and height were recorded after taking informed written consent from the parents of children. Maternal demographics status was also recorded. Frequency of stunting was recorded with respect to weight of included patients. SPSS 24.0 was used to analyze complete data.

Results: Among 130 children, there were 80 (61.5%) males and 50 (38.5%) females in this study. The mean age of the included children was 5.9±12.42 years and had mean weight 17.16±12.52 kg. Children had mean height 109.5±11.22 cm. Majority of the patients were underweight 75 (57.7%), 45 (34.6%) children were obese and frequency of severe underweight were 10 (7.7%). As per maternal status, majority were had poor socio economic status. Frequency of stunted children was 19 (14.6%), in which 8 (4.6%) cases were obese while remaining 13 (10%) were underweight. Among 19 cases of stunted children, 11 (57.9%) were females and 8 (42.1%) were males.

Conclusion: We concluded in this study that prevalence of stunting among obese children was 4.6% and majority were females in these cases. Poor-socioeconomic status of mothers was the most common factor of stunting among children. Treatments that can address these issues, such as community-based education and focused nutritional interventions, are thus needed to lessen the impact of malnutrition.

Keywords: Children, Obese, Stunt, Underweight, Gender

INTRODUCTION

Pakistan, like many poor nations, continues to struggle with malnutrition among its young population, which is a major public health issue worldwide. More than one factor can contribute to malnutrition, which can have short-term as well as long-term impacts on health. It has a negative impact on children's cognitive and physical development, increases their infection risk, and has a major impact on their mortality and morbidity [1,2]. Stunting, wasting, and underweight are three common indications of a child's nutritional health. When it comes to underweight, both acute and chronic malnutrition are present. As a matter of fact, children might suffer from many kinds of malnutrition simultaneously [3].

There is a strong link between malnutrition and a wide range of health problems across the world. Most children under five die from malnutrition [4], with at least half the fatalities occurring because of it. At least 155 million children under the age of five were stunted, wasted, and underweight in 2016, according to the World Health Organization (WHO) [5]. Approximately 6 million youngsters were also found to be very underweight and severely stunted at the same time. Africa and South Asia have the highest rates of malnutrition [5-7]. Three nations in the area, India, Pakistan, and Bangladesh, have a particularly high frequency of the disease [8].

Stunting in newborns and young children is exacerbated by water, sanitation, and hygiene issues, according to Cumming and Cairncross [9]. Undernourishment is particularly prevalent in Ugandan children from lower socioeconomic backgrounds, according to research [10].

Many variables have been reported which might contribute to child's malnutrition; mother's nutritional status is one such factor [11]. For children born to poor moms, the risk of being underweight increases. Low birth weight, susceptibility to infections, and infants with growth and developmental delays are all linked to a mother's poor nutritional condition during pregnancy, according to a number of recent studies. The mother's nutrition is affected by a number of variables, including high fertility, poor food,

low socio-economic position, cultural influences, fertility desires, and narrow birth interval. It is impossible for a woman to maintain her nutritional reserves when she is pregnant and nursing because of the high fertility rate and the absence of birth spacing. Parity and spacing of births are important factors in a woman's chances of having a healthy baby [12]. When a woman is malnourished, a short inter-pregnancy interval leaves her with little time to recover after childbirth and replenish her nutritional reserves depleted during pregnancy [13].

Different approaches to improving nutrition services for women and children are used in Pakistan, which is distinct from other countries. When it comes to improving the nutrition of women and children, the country provides a lot of information [14]. Malnutrition is becoming an increasing concern in Pakistan, with overweight women outnumbering underweight women. [14] But for now, Pakistani women and children are still grappling with inadequate nourishment. A lot more has to be done to ensure that women avoid the dangers of under nutrition, as well as the increased risk of obesity [15] in the population. Researchers in this study set out to discover the prevalence of stunting in preschoolers (2-5 years old) and the factors that influence it.

MATERIAL AND METHODS

This descriptive study was conducted Shalamar Medical & Dental College Lahore and Quetta Institute of Medical Sciences From Jan, 2021 to June, 2021 and comprised of 130 children. Detailed demographics of enrolled cases included age, sex, weight and height were recorded after taking informed written consent from the parents of children. Children <2years of age, children with severe other medical illness and those did not provide any written consent were excluded from this study.

Children with ages 2-5 years were presented. Both the height and weight of youngsters were recorded using Shorr productions' measuring boards and SECA scales' digital readings, respectively. BMI is used to evaluate women's nutritional status (BMI). An underweight person is classified as "normal," whereas a

normal person is "overweight," and an obese person is "obese." Children's nutrition is assessed using Z-scores based on three different parameters: stunting, wasting, and under- and overweight relative to their age. Weight at a given age is classed into three categories: severe, moderate, and over-weight. Stunting is categorised into two categories (Severe and Moderate) (Severe underweight, Moderate underweight, and Overweight).

Frequency of stunting were recorded with respect to weight of included patients. SPSS 24.0 was used to analyze complete data.

BMI (Weight for Height) cut-off for women: a healthy weight for height

- If your BMI falls below 18.5 kg/m², you are considered underweight; if your BMI falls between 18.5 and 24.9 kg/m², you are considered normal-weight. If your BMI falls between 30.0 and 29.9 kg/m², you are considered overweight.

Limits on stunting (height relative to age) for children:

- Severely Stunted: Z-score < - 3.0 SD below mean
- Moderately Stunted: Z-score < - 2.0SD below mean

RESULTS

Among 130 children, there were 80 (61.5%) males and 50 (38.5%) females in this study. The mean age of the included children was 5.9±12.42 years and had mean weight 17.16±12.52 kg. Children had mean height 109.5±11.22 cm. As per maternal status, majority were had poor socio economic status.

Table-1: Characteristics of included children

Variables	Frequency	Percentage
Mean age (years)	5.9±12.42	
Mean weight (kg)	17.16±12.52	
Mean height (cm)	109.5±11.22	
Gender		
Male	80	61.5
Female	50	38.5
Mother's Socio-economic Status		
Low income	100	76.9
High income	30	23.1

Majority of the patients were underweight 75 (57.7%), 45 (34.6%) children were obese and frequency of severe underweight were 10 (7.7%).

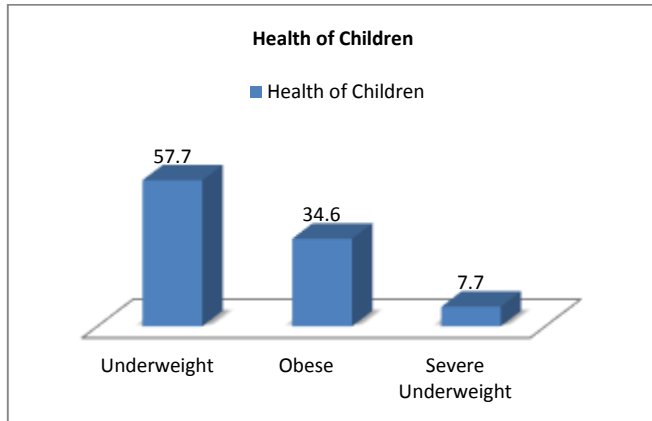


Figure-1: Frequency of obese, underweight and sever underweight

Table-2: Frequency of Stunting among children

Variables	Frequency	Percentage
Stunting		
With Stunting	19	14.6
Without Stunting	111	85.4
Types		
Stunting with Obese	6	4.6
Stunting with Underweight	13	10

Frequency of stunted children was 19 (14.6%), in which 6 (4.6%) cases were obese while remaining 13 (10%) were underweight.

Among 19 cases of stunted children, 11 (57.9%) were females and 8 (42.1%) were males.

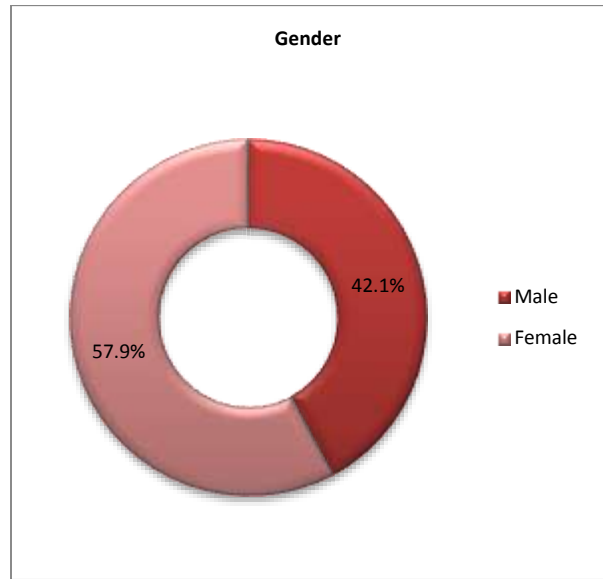


Figure-2: Gender distribution among stunted cases

DISCUSSION

Having malnutrition is a dangerous and even life-threatening illness. An undernourished child's impaired immune system renders them more susceptible to the usual infectious illnesses. Children under the age of eighteen are particularly susceptible. In the absence of timely intervention, malnutrition can have long-term consequences for a child's physical and mental development. Pakistan and other resource-limited countries should be concerned about its widespread use.

In current study 130 children with ages 2-5 years were included. Among 130 children, there were 80 (61.5%) males and 50 (38.5%) females in this study. The mean age of the included children was 5.9±12.42 years and had mean weight 17.16±12.52 kg. Children had mean height 109.5±11.22 cm. As per maternal status, majority were had poor socio economic status. Results of our study was comparable to the studies conducted in past.[16,17] The incidence of stunting in children under the age of five in Pakistan is 44 percent, compared to 36 percent and 35.8 percent in neighbouring countries like Bangladesh and Nepal [18,19]. Stunting was barely reduced by 5% in comparison to the country's previous demographic health census in 1990-91 [20]. Over the past two decades, Pakistan has seen a steady rise in the frequency of stunting. Both maternal and child variables, which are linked to stunting in Pakistan, need to be extensively explored in order to implement suitable treatments.

In current study, majority of the patients were underweight 75 (57.7%), 45 (34.6%) children were obese and frequency of severe underweight were 10 (7.7%). These were comparable to prior studies.[21,22] In children, stifling their growth can have a negative impact on their cognitive, motor, and emotional development. As a result, these deficits have a negative impact on academic performance. Stunting has been linked to a variety of adverse outcomes, including low academic performance and cognitive impairment in several studies. An important indicator of nutritional health is the weight-for-age ratio. According to several studies, being overweight or obese is not linked to a child's growth or academic success. A few studies have revealed that children who are underweight for their age are more likely to suffer

behavioural and developmental issues. Weigh for age was shown to be a significant predictor of walking age in Kuklina EV and colleagues. [23,24] According to Lasky RE's research, the first two years of a child's existence are the most critical for cognitive and behavioural development. [25]

As children become older, their nutritional needs rise, which necessitates the use of supplemental feeding to keep up with them. For children older than 23 months, wasting was less common than it was for those under 12 months, according to a study. According to earlier research, a reduction in the amount of food that a baby eats as he or she becomes older may be linked to the introduction of new foods into a baby's diet. [26]

Children whose mothers visited prenatal clinics more frequently were less likely to suffer from chronic malnutrition in the study group (stunting). A woman's willingness to seek out prenatal care and her ability to pay for it are thought to be reflected in how often she visits the doctor during her pregnancy. As a result, this may have an impact on the health of children both now and in the future [27]. According to previous research, children's nutritional status has a good correlation with the availability of health care [28]. The findings of this study have substantial policy implications related to the availability of either free or at least cheap health care to reduce the incidence of childhood malnutrition. Improve the health of children in Pakistan through increasing the provision of good, basic healthcare services [29].

CONCLUSION

We concluded in this study that prevalence of stunting among obese children was 4.6% and majority were females in these cases. Poor-socioeconomic status of mothers was the most common factor of stunting among children. Treatments that can address these issues, such as community-based education and focused nutritional interventions, are thus needed to minimize the impact of malnutrition.

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