

“INCEDENCE OF OBESITY IN CHILDREN ATTENDING THE OUTPATIENT DEPARTMENT OF HOSPITAL”

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Abstract

Introduction: Overweight and obesity levels in childhood and adolescence are a global public health concern. Worldwide prevalence rates of overweight/obesity have risen considerably in children and adolescents in both developed and developing countries. There is overwhelming evidence that overweight/ obese children and adolescents face social, psychological and physical problems as a consequence of their weight. Obese/overweight children are more likely to suffer from anxiety and depression, be bullied, face discrimination, and report low self-esteem compared to healthy weight counterparts. Furthermore, overweight and obesity has been linked to poor health outcomes and negatively impacts quality of life.

Objective: To determine the frequency of Obesity in Children attending the Outpatient Department of Hospital.

Material and METHODS: This Descriptive Cross Sectional study was performed NSC ward pediatric unit-1, Sheikh Zayed children hospital, Larkana from 14th February 2023 to 14th August 2023. The study included children between 2 years and 14 years attending the Outpatient Department with complains as mentioned under operational definition. Data was collected regarding the age, height, weight, BMI, gender, monthly income, educational status of father/mother, residential status, diagnosis and reason for attending the clinic was noted. The outcome variable i.e. Obesity was labelled as positive as per operational definition and will be noted in predesigned Performa by the researcher himself. Post stratification, Chi-square/Fisher exact test was also applied to see the effect of effect modifiers on outcome variables. P-value < 0.05 was taken as statistically significant.

RESULTS: A total of 300 children were included, the mean age was 8.5 ± 2.0 years, mean height was 100.3 ± 10.5 inches, mean weight was 15.6 ± 1.1 kg and mean BMI was 16.6 ± 1.1 kg/m². 96 (31.9%) were male and 204 (68.1%) were female. Most of the children had diarrhea 153 (51%), 81 (27%) had

asthma, 57 (19%) had pneumonia, 2 (0.6%) had UTI and 7 (2.3%) had headache. Out of 300 children, 57 (19%) were obese.

CONCLUSION: Current study concludes that there is a high proportion of the children attending pediatric OPD were obese.

INTRODUCTION

Overweight and obesity levels in childhood and adolescence are a global public health concern. Worldwide prevalence rates of overweight/obesity have risen considerably in children and adolescents in both developed and developing countries [1]. A cross-sectional questionnaire study was conducted during 2012 in private and public-sector schools of Karachi to determine the prevalence and factors influencing overweight and obesity among school children (aged 11-15 years). Of a total of 887 children, being overweight and obese was found in 169 (19.1%) and 96 (10.8%), respectively [2]. There is overwhelming evidence that overweight/obese children and adolescents face social, psychological and physical problems as a consequence of their weight. Obese/overweight children are more likely to suffer from anxiety and depression, be bullied, face discrimination, and report low self-esteem compared to healthy weight counterparts [3]. Furthermore, overweight and obesity has been linked to poor health outcomes and negatively impacts quality of life. It also contributes to populations' burden of disease by impacting all cause morbidity, mortality, and health related quality of life [4]. Obese children and adolescents are more likely to be obese adults and have more severe disease risk factors than individuals of healthy weight in their youth [5].

There are several levels to obesity prevention among children and adolescents. Promoting healthy eating, physical activity and limiting sedentary activity are examples of primary prevention strategies [6]. Secondary prevention includes early detection of obesity through BMI monitoring in children and youth. These secondary prevention measures are carried out at primary care practices and community public health clinics by health care providers [7]. In fact, physicians are recommended to screen children for obesity and to refer or to provide behavioral interventions to help them reduce their weight, for those found to have BMIs in overweight/obese categories [8], but in clinical practice the

documentation rate of overweight/obesity among physicians' remains very low [9]. A study conducted in Malta to determine the prevalence of obesity in a pediatrics outpatient clinic in which 26.4% of the children were found to be obese [6].

The present study was designed to determine the frequency of Obesity in Children attending the Outpatient Department of Hospital. There is paucity of literature at national and international level. Moreover, most of the previously published studies have analyzed the retrospective series of the patients. This study would give frequency of obesity in our population which is different in demographics and would be helpful in general pediatric outpatient setting provides a suitable opportunity for pediatricians to assess children's BMI, to educate parents and children about the consequences of obesity, and to give practical advice on the prevention and control of obesity through a lifestyle approach based on healthy nutrition, physical activity and limitation of TV and computer screen time.

OBJECTIVE:

To determine the frequency of Obesity in Children attending the Outpatient Department of Hospital.

MATERIAL AND METHODS

This descriptive cross-sectional study was conducted in the NSC Ward, Pediatric Unit-I, Sheikh Zayed Children Hospital, Larkana, over a duration of six months from 14th February 2023 to 14th August 2023. A total of 300 children were enrolled in the study. The sample size was determined using a previously reported prevalence of childhood obesity (26.4%), with a 5% margin of error and a 95% confidence interval. A non-probability consecutive sampling technique was employed to recruit participants.

Children between the ages of 2 and 14 years presenting to the Outpatient Department with complaints consistent with the operational definition

of obesity were included. Both male and female children were eligible, and written informed consent was obtained from their parents or legal guardians. Children with chronic debilitating conditions such as cerebral palsy, other neuro-disabilities, Down syndrome, and inflammatory bowel disease were excluded. Additionally, children with severe acute malnutrition were also excluded from the study.

DATA COLLECTION:

Study was started after taking the approval of synopsis from the ethical review committee of hospital and CPSP. All those patients attending the OPD of the hospital fulfilling the eligibility criteria were included in the study. An informed consent from the parents/guardian was taken after explaining the purpose and procedure of the study. Data was collected regarding the age, height, weight, BMI, gender, monthly income, educational status of father/mother, residential status, diagnosis and reason for attending the clinic was noted. The children's height was measured using a standardized stadiometer and they weighed in light clothing using the same electronic scales (without shoes). The outcome variable i.e. Obesity was labelled as positive

as per operational definition and will be noted in predesigned Performa by the researcher himself.

DATA ANALYSIS PROCEDURE:

The data was entered and analyzed with the help of SPSS version 21.0. Kolmogorov-Smirnov test was used for normality assessment of quantitative variables like age, height (m) weight (kg) and BMI. Mean + Standard deviation was calculated. Frequency and percentages was calculated for gender, diagnosis, monthly income, educational status of father/mother, residential status, and outcome variable i.e. obesity. Stratification with respect to age, gender, BMI, monthly income, educational status of father/mother, residential status and diagnosis will be done. Post stratification, Chi-square/Fisher exact test was also applied to see the effect of effect modifiers on outcome variables. P-value < 0.05 was taken as statistically significant.

RESULTS

A total of 300 children were included, the mean age was 8.5 +2.0 years, mean height was 100.3+10.5 inches, mean weight was 15.6+1.1kg and mean BMI was 16.6+1.1 kg/m², as shown in table#1-4.

Table 1: Mean Age (years) of the Patients

Age	Mean \pm SD
	8.5 \pm 2.0

Table 2: Mean Weight (kg) of the Patients

Weight	Mean \pm SD
	15.6 \pm 1.1

Table 3: Mean Height (inches) of the Patients

Height	Mean \pm SD
	100.3 \pm 10.5

Table 4: Mean BMI (kg/m²) of the Patients

BMI	Mean \pm SD
	16.6 \pm 1.1

96 (31.9%) were male and 204 (68.1%) were female, as shown in table #5.

Table 5: Gender Distribution
(n=300)

Gender	Frequency	Percentage
Male	96	31.9%
Female	204	68.1%

96 (31.9%) of the mothers were illiterate, 138 (46%) were primary pass, 56 (18.8%) had education till secondary, 08 (2.6%) were intermediate pass and only 2 (0.6%) were graduated, as shown in table#6.

Table 6: Educational Status of the Mother (n=300)

Educational Status	Frequency	Percentage
Illiterate	96	31.9%
Primary	138	46%
Secondary	56	18.8%
Intermediate	08	2.6%
Graduate & Above	02	0.6%

77 (25.8%) of the fathers were illiterate, 126 (41.9%) were primary pass, 82 (27.3%) had secondary education, 12 (4.1%) were intermediate pass and 3 (1%) were graduated, as table#7.

Table 7: Educational Status of the Father (n=300)

Educational Status	Frequency	Percentage
Illiterate	77	25.8%
Primary	126	41.9%
Secondary	82	27.3%
Intermediate	12	4.1%
Graduate & Above	03	1%

113 (37.8%) had monthly income less than and equal to Rs. 20,000, 184 (61.4%) had Between Rs. 21, 000 to 50,000 and 3 (1.04%) had > Rs. 50,000, as shown in table#8.

Table 08: Monthly Income (n=300)

Monthly Income	Frequency	Percentage
Less than and equal to Rs. 20,000	113	37.8%
Between Rs. 21, 000 to 50,000	184	61.4%
➤ Rs. 50,000	03	1.04%

53 (17.6%) were urban resided and 247 (82.4%) were rural resided, as shown in table# 9.

Table 09: Residential Status (n=300)

Residential Status	Frequency	Percentage
Urban	53	17.6%
Rural	247	82.4%

Most of the children had diarrhea 153 (51%), 81 (27%) had asthma, 57 (19%) had pneumonia, 2 (0.6%) had UTI and 7 (2.3%) had headache, as shown in table#10.

Table 10: Distribution of the Children according to the diagnosis
(n=300)

Diagnosis	Frequency	Percentage
Asthma	81	27%
Diarrhea	153	51%
Pneumonia	57	19%
Urinary tract infection	02	0.66%
Headaches	07	2.3%

Out of 300 children, 57 (19%) were obese, as shown in table#11.

Table 11: Frequency of Obesity among School going Children. (n=300)

Obesity	Frequency	Percentage
Yes	57	19%
No	243	81%

The outcome variable was further stratified with respect to age, gender, residential status, parents education, monthly household income, as shown in table#12-19.

Table 12: Stratification of Frequency of Obesity in Children with respect to Age (n=300)

Obesity	Age (months)		P-Value
	2-7 (n=159)	>7-14 (n=141)	
Yes	31	26	0.815
No	128	115	

Table 13: Stratification of Frequency of Obesity in Children with respect to Gender (n=300)

Obesity	Gender		P-Value
	Male (n=96)	Female (n=204)	
Yes	05	52	0.000
No	91	152	

Table 14: Stratification of Frequency of Obesity in Children with respect to Residential Status (n=300)

Obesity	Residential Status		P-Value
	Urban (n=53)	Rural (n=247)	
Yes	08	49	0.424
No	45	198	

Table 15: Stratification of Frequency of Obesity in Children with respect to Educational Status of Mother (n=300)

Obesity	Educational Status of Mother					P-Value
	Illiterate (n=96)	Primary (n=138)	Secondary (n=56)	Intermediate (n=08)	Graduate (n=02)	
Yes	19	21	12	04	01	0.099
No	77	117	44	04	01	

Table 16: Stratification of Frequency of Obesity in Children with respect to Educational Status of Father (n=300)

Obesity	Educational Status of Father					P-Value
	Illiterate (n=77)	Primary (n=126)	Secondary (n=82)	Intermediate (n=12)	Graduate (n=03)	
Yes	14	27	11	04	01	0.382
No	63	99	71	08	02	

Table 17: Stratification of Frequency of Obesity in Children with respect to Monthly Income (n=300)

Obesity	Residential Status			P-Value
	Less than and equal to Rs. 20,000 (n=113)	Between Rs. 21, 000 to 50,000 (n=184)	>Rs. 50,000 (n=03)	
Yes	27	31	01	0.278
No	86	153	02	

Table 18: Stratification of Frequency of Obesity in Children with respect to Diagnosis (n=300)

Obesity	Diagnosis					P-Value
	Asthma (n=81)	Diarrhea (n=153)	Pneumonia (n=57)	UTI (n=02)	Headaches (n=07)	
Yes	12	27	13	01	04	0.049
No	69	126	44	01	03	

DISCUSSION

Childhood obesity is a growing public health problem of international concern. India is currently facing the triple burden of malnutrition, continuing prevalence of stunting, wasting, micronutrient deficiency, and an upsurge in childhood obesity [10].

The proportion of obese participants in the present study was 22%. A household-based study from Babylon, Iraq, by Shalal et al [11]; revealed that the proportion of overweight and obese children was 48.29% and 28.29%, respectively. According to Cyril et al [12] in their study in a tertiary care center in South Kerala, the highest proportion of obesity was found in children aged 7–8.5 years (38.6%) followed by age group 9–10.5 years (21.6%). The findings of a study in Kerala were similar to Chandra et al [13]; study in Telangana, where the highest prevalence of childhood obesity was seen in the 8–10 years age group (31.6% obese and 37.3% overweight).

The proportion of male and female participants in the current study was nearly equal. Overweight-to-obese nutritional status was observed more among female children (51%). However, this was not statistically significant. This corroborated with the Chandra et al. Study [13], where the prevalence of Obesity was more in girls (32.8%) than boys (17.3%). A higher prevalence of obesity among girls was also reported by Mahajan et al [14]. from the Puducherry study down South. Gender-wise distribution of Obesity was not mentioned by Cyril et al [12], in Kerala. This may be because the female-to-male participants ratio was 1.45:1 in their study. In contrast to these studies, Gautam and Jeong study [15] in Udupi reported that both overweight and obese nutritional status was found more among men (11.0% and 7.1%, respectively) than women (10.6% and 5.4%, respectively) [16]. It is also known that women are

more likely to be obese than men, owing to inherent differences.

No sociodemographic factors characteristics were found to have a statistically significant association with overweight-to-obese nutritional status in the multivariable regression model in the present study. Attending private schools and having a father with a business occupation was significantly associated with the overweight/obese group in the Karnataka study [17]. In Puducherry, obesity was observed more among urban children than rural children [14].

Weight and height measurement should be part of the routine examination of children, and the parents should be alerted if their child is overweight. Many parents have misconceptions about their children's weight. While many consult the paediatrician for what they perceive as a 'poor appetite', very few seem to be aware or concerned about their children's obesity. This was highlighted by one child in this study who was referred as a result of a perceived 'poor appetite', but in fact had a BMI in the overweight range. Weight control is notoriously difficult to achieve and maintain, even in dedicated obesity clinics.

Parental commitment is a crucial factor for success. Parents of overweight children often complain that their child 'does not eat anything'. In one instance during this study period, after a thorough discussion with a mother about healthy food choices, she gave her son a packet of sweets on their way out of the clinic. On a more positive note, in another instance, the parents of another child managed to control his weight from the obesity to normal range within a span of two years. The child himself was unaware of the subtle changes implemented by the family, which included healthy food choices, control of portion size, limit on screen time, and increased physical exercise through play and outdoor activities.

The obesity epidemic in Pakistan, especially among children, is a major public health concern and it should be tackled on many fronts. Paediatricians and family doctors have an important role to play. Hospital and community paediatricians, as well as other primary care providers, are well positioned to raise and discuss the issues with parents and children, and to give them specific information on weight control. Good quality information leaflets and a dedicated website in Maltese would be useful tools. A family-focused community-based intervention programme should also be made available to refer the more severe cases.

CONCLUSION

A high proportion of the children attending pediatric OPD were obese. Children must be motivated by parents and teachers for adequate physical activity and avoid consuming too much fast food. Further studies to assess the risk factors of obesity may be done so that strategies may be made to deal with such a chronic issue.

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