PREVALENCE OF UNDERNUTRITION AMONG SCHOOL GOING CHILDREN OF URBAN POOR AREA

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ABSTRACT

Malnutrition – in the form of under nutrition in the first 1,000 days of any child embodies a vital squandering on future health outcomes. To a large extent urban areas are characterized by large inequalities in health-related conditions. The heterogeneity of such urban conditions is fueled by the migration process that is the primary factor of urban growth. Information on nutritional status among children is limited, particularly in Gujarat. A community based- cross sectional study was conducted to assess the prevalence of malnutrition among school going children aged 10-14 years. Poor areas in the Deesa city were used as source of sample collection. A total of 60 children (30 girls and 30 boys) were collected randomly to be the final sample size. Z score was used to calculate nutritional status. Thinness is defined as the BMI for age (BAZ) <-2SD. The prevalence of Thinness was 53.3% (95%CI) and 46.7% school children were found normal. Thinness was noted among boys at 56.7%, compared with girls who had 50%. The current study revealed that undernutrition as indicated by thinness was highly prevalent in both the gender of school going children. The prevalence of thinness among preschool children can be used to determine the need for nutritional surveillance, nutritional care, or appropriate nutritional intervention programs in a community.

Keywords : *malnutrition, thinness, baz, children*

INTRODUCTION

Malnutrition is one of the most common causes of morbidity and mortality among children throughout the world, more so in developing nations. Globally, malnutrition among school age children is a major public health concern. More than 200 million school age children are stunted and underweight and if no action is taken and at this rate, about one billion school children will be growing up by 2020 with impaired physical and mental development[(1-5).] Malnutrition among urban poor children is worse than in rural areas. Children living in the urban slums are exposed to risks of infectious diseases, malnutrition and possibly impaired cognitive development. According to National Family Health Survey (NFHS) III With a prevalence of underweight, stunting and wasting is 43.5%, 48% and 20% respectively. There is also a wide disparity in the prevalence of under-nutrition among the states of India, ranging from high (55%) to relatively lower (27%). In Gujarat prevalence of underweight is 47.4%, of stunting is 42.4% and of wasting is 17.0%. In urban area of Gujarat prevalence of underweight is 42.7%.[(6)] Therefore the present study was conducted in this urban poor areas to find out the prevalence of malnutrition among school going children.

OBJECTIVE

To estimate the prevalence of under nutrition (Thinness) among children aged 10 to 14 years in a urban poor area of Deesa city

METHODOLOGY

Totally 60 children of 10 to 14 years (School age children) were living in urban poor locale of Deesa city were selected. Data was collected using a semi-structured questionnaire. Age of the child, sex of the child, caste, type of family, mother's age at birth, birth order, educational status of the mother, occupation of father, family income and media ownership were the socio- demographic factors were considered as independent variables. Thinness was considered as dependent variables.

Standing height was measured (to 0.5 cms) using stadiometer, without shoes, the child standing erect and looking straight so that the inferior orbital margin and the tragus of the ear fall in a horizontal plane parallel to the

ground. An electronic weighing scale was used to measure the weight in kilograms. The scale was calibrated. Zero error was checked, children were without shoes, in shirt and trousers or skirt. The weighing machine was placed on a firm and flat ground. Weight was recorded to the nearest 100 grams. The same balance was used throughout the study. Body Mass Index expressed in standard deviation units (Z scores) from reference median as recommended by 2007 WHO growth reference for (5-19 years). Thinness is defined as the BMI for age (BAZ) <-2SD.

The various Interpretation of cut-offs of (BAZ)[7] are:

- **Overweight:** >+1SD (equivalent to BMI 25 kg/m^2),
- **Obesity:** >+2SD (equivalent to BMI 30kg/m^2),
- **Thinness:** <-2SD, Severe thinness: <-3SD

All the data collected was entered with MS Excel and imported to WHO Anthro software. Z score was arrived by Anthro+ package using WHO standards for nutritional status classification. The output of Anthro was analyzed with SPSS version 19. Prevalence was expressed in percentage with 95% confidence intervals (CI). Distribution of Socio-demographic factors of the study participants were expressed in frequency and percentage.

RESULTS AND DISCUSSION

A total of 60 children residing in urban poor area of Deesa city were studied. Equal number of male (50%) and female (50%) participants was studied.

Table 1 : Socio-demographic factor of children and their families **(**n=60)

Sr. No.	Factors	Category	Frequency	Percent
1	**Age**	10-12	29	48.33
		13-14	31	51.66
2	**Sex**	Male	30	50.00
		Female	30	50.00
3	**Type of family**	Nuclear	39	65.00
		Joint	21	35.00
4	**Mothers age at birth**	<20 years	06	10.00
		20-30 years	50	83.33
		35+ years	04	06.66
5	**Birth order**	1	42	70.00
		2	10	16.66
		3+	08	13.33
6	**Mother's education**	Illiterate	24	40.00
		Primary	19	31.66
		Secondary+	17	28.33
7	**Father's occupation**	Service	07	11.66
		Daily wagers	13	21.66
		Business (food sellers)	14	23.33
		Labor work	24	40.00
		Other	02	03.33
8	**Yearly Family income (₹)**	<50,000	38	63.33
		50,000-1,00,000	21	35.00
		>1,00,000	01	01.66
9	**Media ownership**	Mobile	18	30.00
		Television	25	41.66
		Both	17	28.33

Age of the child was divided in to two groups i.e. 10-12 year,13-14 year and it was noted 48.33%, 51.66% respectively. Majority of participants (65%) were belonged to nuclear family where 35% children were belonged to joint

family. Majority of the children were born when the mothers were 20-30 year old in age (83.33%) and rest of the children were born when mothers age was < 20 year (10%) and more than 35 year (6.66%). 70% children were first baby of the parents. Mother's educational status was studied and it was found that 40% were illiterate, 31.66% have studied till primary and 28.33% have studied till secondary. Regarding Father's occupation status, 11.66% were doing service, 21.66% were daily wagers, 23.33% were involved in small business like fruit and vegetable sellers and almost half of the fathers were doing labor work (40%). More than half of the participants (63.33%) were belonged to poor households with yearly income ₹ <50,000 and only 1.66% participants had family income more than ₹ 1 lakh. Participants were having both the media i.e. mobile and television (28.33%).

Table-2 : Distribution of children according to WHO growth reference for (5-19 years) 2007

Sr. No.	Nutritional Grade	Girls		Boys		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
1	Normal	15	50	13	43.3	28	46.7
2	Thinness BAZ<-2SD	15	50	17	56.7	32	53.3

The prevalence of Thinness was 53.3% (95%CI). The nutritional status based on BAZ Score shows that moderate thinness was noted among 13.3% of the children and 40% were severely thin. Thinness was noted among boys at 56.7% was higher as compared with girls who had 50%.

The overall prevalence of thinness in the current study was 53.3%. This finding is similar to that found in a cross sectional study conducted by Chakraborty et al during 2003 in Nandigram among school children of 5-10 year old which showed the prevalence of thinness was 62.9%. [8] Sameena et al conducted a cross sectional study in Aligarh in 2010 among 6-12 year old children and found a very high prevalence of thinness of 79.4%.[9] However, a lower prevalence was reported in few other studies. A cross sectional study conducted by Vinoth et al during 2013 in Southern part of India among school children of age (9- 17 years), based on WHO-BAZ scores in which the prevalence of thinness was reported to be 13%.(10) Bose et al did a cross sectional study in 2007 among Bengalee Hindu children aged 6-14 years and showed the prevalence of thinness as 23.1%. (11) Anjum et al conducted a cross sectional study in Kashmir in 2008 among 5-14 year old children and reported 29% prevalence for thinness (Poshiya *et al.* 2018).

CONCLUSION

The current study revealed that undernutrition as indicated by thinness was highly prevalent in both the gender of school going children. Poor nutritional status is a major concern in urban poor areas, particularly as this group is expected to grow rapidly in the next few years. The situation calls for specially designed and well targeted interventions that take into account that many of the mothers are poor and less educated, which affects their ability to provide care to their children. The prevalence of thinness among preschool children can be used to determine the need for nutritional surveillance, nutritional care, or appropriate nutritional intervention programs in a community.

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