

Prevalence of Wasting in Children under the Age of Five Years in Fazilka in Punjab

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Today, malnutrition in children is the key issue of the world. Children below the age of five years constitute about 13% of the population in India. This health problem has high occurrence in the children in developing countries. The study was executed in city Fazilka, in Punjab, encompassed total 440 children, selected through random, multistage sampling technique. Study displayed overall prevalence of (13%) 'wasting' in children under age of five years, along with differential prevalence of 11% (27/240), 15% (20/127), 15% (11/73) 'wasting' in children in Schools, Anganwadi and Slum areas correspondingly.

Keywords: Malnutrition, Wasting.

1. INTRODUCTION

Malnutrition is a clinical condition that stems from either inadequate or surplus nutrients in the diet. The WHO has declared Malnutrition as the major threat to world's public health. The frequency of under nutrition children below the five year age group is increasing, especially in developing countries. It is the most prevalent predisposing factor for mortality and morbidity in children under five years of age [1].

Wasting is acute malnutrition unlike stunting and under weight. It denotes either low calorie intake or the loss of nutrients from the body. Wasting is due to shortage of food supply, chronic diseases as tuberculosis, diarrhea or AIDS [2].

According to World Bank Report, India is one of the highest ranking countries in world, having maximum number of malnourished children. Under-nutrition is the highest risk factor for mortality and morbidity among children under five years of age. Global hunger index 2011, ranked India as the 15th hunger affected country in the world. In India, Global Hunger Index increased from 22.9% to 23.7% during the period 1996-2011.

Malnourished children have low immunity and high susceptibility to diseases like tuberculosis, childhood diarrhoea, respiratory infections and bacterial/viral infections. Hence, the rate of mortality rises in children. Further, the malnourished children that survive would suffer from frequent illness. This vicious cycle of inadequate food intake and/or diseases, impairs the normal growth and development of children [3].

2. RATIONALE

Prevalence of malnutrition deprives the society of smiling, healthy, intelligent and active children. It costs heavily on the physical capabilities, mental and intellectual functioning of the children during the periods of growth and development.

The study was designed to assess regional prevalence of wasting in Fazilka in Punjab, although data is already available on prevalence of wasting at national and international levels.

3. AIM AND OBJECTIVES

The study aimed to assess the prevalence of wasting in children under the age of five years in Fazilka in Punjab.

The study has objectives

1. To determine the prevalence of wasting in children under five years of age in different strata.
2. To assess the variation in prevalence of wasting in children under five years of age in different strata.

4. MATERIALS & METHODS

4.1. Research Design

Observational, Descriptive and Cross-sectional research study was committed. Study involved under listed elements.

4.2. Sampling Design

4.2.1. Study Area

Study was carried in the city of Fazilka, Punjab. It is a city on Indo-Pak border in Punjab. As per census report of 2001, Fazilka has a population of 67,424, comprising 52% males and 48% females. In Fazilka, 13% of the population is under 6 years of age.

4.2.2. Sample Source and Sampling Units

Children below the age of five years, residing in and around Fazilka, Punjab, according to the inclusion and exclusion criteria, constituted the sample source and sampling units.

4.3. Participant Selection Criteria

4.3.1. Inclusion Criteria

1. Children between 2 years to below the age of five years.

2. All the children who were physically and mentally healthy.

4.3.2. Exclusion Criteria

1. Children who were critically ill.
2. The children who were crying and agitated, did not participate in anthropometric measurements procedure.

4.4. Sampling Methods

Random, Multistage sampling technique was adopted. In the first stage, the city was divided into three strata as: Elementary schools, Anganwadi (child care centres), Slum areas.

In the second stage, Schools, Anganwadi and Slum areas were selected randomly from the sample frame.

In the third stage, all the children between two years to below five years of age were selected as per the selection criteria.

4.5. Data Collection Instruments

1. Observation and interview schedules were availed for demographic and anthropometric data points.
2. Pre-structured proforma used for data collection pertaining to clinical signs and symptoms.

4.6. Data Collection Methods

1. Observation: This method was used to assess general behavior of children.
2. Inspection and Palpation: This method was used to examine clinical signs and symptoms of the children.
3. Interview: This method was adopted to collect data about dietary indices and additional information on physical symptoms of children from parents, teachers and care takers.
4. Anthropometric parameters of weight and height were recorded by measuring with digital weight measuring scale and two meters tape for weight and height respectively.

4.7. Data Collection Scales

Data expressed in numerical values and percentage scales.

4.8. Statistical Design

1. The weight and height of the participants were expressed in Z- score classification, as recommended by WHO child growth standard, 2007.

2. The cut point of (-2SD), was used to compare the weight and height of participants with that of median of reference population, as follows:

- A. (WHZ), weight/height of participant below -2SD (moderate low wasting)
- B. (WHZ), weight/height of participant below -3SD (severe low wasting)

Wasting as defined by WHO child growth standard, 2007 [4].

5. RESULTS

1. Tables 1, 2 showed the overall distribution of study participants in different strata, namely Schools, Anganwadi and Slum areas along with gender wise coverage of children as males in Schools, Anganwadi and Slum areas were, 59% (143/240), 61% (78/127) and 53% (39/73) respectively. The female participants were 41% (97/240), 39% (49/127), 47% (34/73).

Table 1. Distribution of participants in strata.

Strata	Participants (n/N)
Schools	240/440
Anganwadi (child care centre)	127/440
Slum residents	73/440

Table 2. Gender-wise distribution of participants.

Strata	Male		Female	
	Frequency	(n%)	Frequency	(n%)
Schools	143/240	59%	97/240	41%
Anganwadi (child care centre)	78/127	61%	49/127	39%
Slum residents	39/73	53%	34/73	47%

Table 3. Age-wise distribution of participants.

Age Group	Schools		Anganwadi (child care centre)		Slum residents	
	Frequency	(n%)	Frequency	(n%)	Frequency	(n%)
2Y to 3Y	88/240	37%	42/127	33%	39/73	53%
>3Y to 4Y	80/240	33%	42/127	33%	24/73	33%
>4Y to <5Y	72/240	30%	43/127	34%	10/73	14%

2. Table 3 showed the age- wise distribution of children as 37%, 33%, 53% in age group of (2y-3y) and 33% in age group of (>3y-4y) and 30%, 34%, 14% in age group of (>4y-<5y) in the Schools, Anganwadi and Slum areas respectively.

3. Table 4 showed overall prevalence of (13%) 'wasting' in the study area, Fazilka. Further, Table 4 exhibited individual prevalence of 11% (27/240), 15% (20/127), 15% (11/73) 'wasting' in children under age of five in Schools, Anganwadi and Slum areas correspondingly.

Table 4. Prevalence of Wasting in different strata.

Strata	Wasting (<-2SD)	Normal (≥-2SD)	Over all Prevalence
Schools	11% (27/240)	89% (213/240)	13% (58/440)
Anganwadi (child care centre)	15% (20/127)	85% (107/127)	
Slum residents	15% (11/73)	85% (62/73)	

6. DISCUSSION

1. Wasting is the acute under-nutrition. This health disorder in under five children manifests as low weight to height (thinness). The present study shows 13% prevalence of 'wasting' in Fazilka, in Punjab. But the prevalence of 'wasting' in India, as per the WHO, Global data base, 2006 is 19.3%. The diminished prevalence of 'wasting' in regional area of Punjab is attributed to regional variations in the availability of food items, literacy rate, poverty, access to medical facilities and time period of data collection.

The above stated assumption and explanation of regional variations in malnutrition is further, supplemented by the work of J.K. Gulati on child malnutrition [5].

Almost comparable prevalence of 'wasting' (13.7%) was found in Kerala by Vipin chanderan K.P. in 2009, in his work on nutritional status of preschool children in Kerala [6]. The present study depicting prevalence of 'wasting' (13%) in Punjab is supplemented by same data on prevalence of wasting (13.1%) in Delhi in 2013 by researcher, Bhadoria *et al.* [7].

2. Further, prevalence of wasting (11%) in children in Schools was found to be less in comparison to prevalence of wasting (15%) in children in Anganwadis and Slum areas. It is due to better educational and economical status of the parents, combined with comparatively good dietary habits. This finding showing different rates of prevalence in 'wasting' is also augmented by study conducted by Dutta, *et al.* in 2009 in Garhwal, Himalya [8].

Present study has a prevalence of 'wasting' in Anganwadi (15%), is not better than Slum areas (15%). It is probably attributed to similar socio-economic status, literacy rate, nutritional status, non-availability or ignorance to medical aids.

3. The present study depicted (15%) prevalence of 'wasting' in Slum children. It is stated that the prevalence of 'wasting' in Slum areas as per WHO Global data base

- is ($\geq 15\%$). So the present study in Punjab, in Fazilka slum areas also depicts the similar prevalence of wasting.
4. There is a wide variation in 'wasting' prevalence for children under five years of age all over the world as mentioned by the work of Bisai *et al.* in 2008 in Midnapore town in West Bengal [9].

7. CONCLUSION

High prevalence of 'wasting' exists in children. Its occurrence is more in children inhabiting slum areas and studying in child care centers (Anganwadi), owing to variable socio-economic status, literacy, poverty and medical facilities. It is the utmost need of the day to exercise coordinated and cumulative efforts by Govt. agencies and NGO to eradicate malnutrition.

8. REFERENCES

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