

**A STUDY ON NUTRITIONAL AND ANTHROPOMETRY STATUS OF CHILDREN BETWEEN 0-6 YEARS IN URBAN AREA OF SKMCH MUZAFFARPUR DISTRICT OF BIHAR – A CROSS SECTIONAL STUDY**

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ABSTRACT

Background: Nutritional deficiency may result in adverse health consequences. One of the greatest problems for India is under nutrition among children. Malnutrition, the condition resulting from faulty nutrition, weakens the immune system. **Aims & Objective:** To study the nutritional and anthropometry status of 0-6 years of child in urban areas of SKMCH Muzaffarpur. **Methods And Materials:** A cross-sectional study, in which we explored nutritional status in urban children and analyze factors associated with malnutrition with the help of a pre-designed and pre-tested questionnaire, anthropometric measurements and clinical examination from August 2023 to January 2024 in urban area of SKMCH, Muzaffarpur, Bihar India after approval from the ethical committee. **Result:** The stunted children (low height for age), Wasted children (low BMI for age) were 44.58% and 47.23%, respectively. The percentage of children with underweight (low weight for age), overweight (high BMI for age) were 67.32% and 3.78%, respectively. 52.64% underweight children belonged to lower socioeconomic status. No difference was observed among boys and girls for stunting and underweight ($p>0.05$). The mean heights of normal and stunted children were significantly different ($p<0.01$). **Conclusion:** Most of the urban area children in our study had a poor nutritional status. There were almost equal prevalence of malnutrition among boys and girls. The prevalence of underweight and wasting were more relevant than that of stunting.

KEYWORDS : Nutritional Status, Anthropometry, Stunting And Urban Area**INTRODUCTION:**

The dynamic period for physical growth and mental development of the child starts from the beginning of life. Nutritional deficiency may result in adverse health consequences [1]. Malnutrition has been an important health problem in developing countries but the impact is more in country like India with large population and variety of socio-cultural practices [2,3]. Despite satisfactory achievement in economic progress, India has failed to secure a better nutritional status of majority of children in the country. The prevalence of underweight children is on rise among the poor households with wide regional differentiation [4]. There is a strong evidence that poor growth is associated with impaired physical development, slower cognitive development and may lead to serious health impairments in later part of life, reducing quality of life of individual [5,6]. Childhood obesity is a chronic nutritional disease condition adversely affecting health and wellbeing of children [7-9]. The poor sanitation in the slums and low socio-economic status of parents perpetuate a vicious cycle of malnutrition [10]. Children living under such conditions are at high risk for health and nutritional problems [5]. Inadequate food and infections are two preventable factors for growth deficits in developing countries. Anthropometry is most useful and accepted tool for assessing the nutritional status of children [11]. Heights for age, weight for age, BMI and mid arm circumference are the standard tools of anthropometric measurement for nutritional status. Nutritional status plays an important role and determines the further growth and quality of life of the children [1]. The national family health survey (NFHS 3&4) has shown that the prevalence of underweight is about 53% of children from rural areas and varies across states [6]. Prevalence of stunting varies from 37.9 % to 70.7% whereas prevalence of wasting varies from 3.8% to 8.1% in different states of India [11].

Undernutrition in childhood was one of the reasons behind the high child mortality rates observed in developing countries. Chronic undernutrition in childhood is linked to slower cognitive development and serious health impairments later in life that reduce the quality of life of individuals. Nutritional status is an important index of this quality. In this respect, understanding the nutritional status of children has far-reaching implications for the better development of future

generations. Growth monitoring is universally used to assess nutritional status, health and development of individual children, and also to estimate overall nutritional status and health of populations. Compared to other health assessment tools, measuring child growth is a relatively inexpensive, easy to perform and non-invasive process. Geographical relocation from rural areas to urban localities will expose migrants to new environmental challenges. Urban dwellers are exposed to poor environmental conditions (overcrowding, poor quality drinking water and sanitation, no removal of waste). Ignorance and difficult conditions of life in the slums are likely to result in improper food habits, low health care use and hygiene awareness and lack of knowledge of the origin of sickness and proper measures for the cure. The situation is further worsened due to lack of necessary health centers, medicines, and health care personnel. Children living under such conditions are at especially high risk for health and nutritional problems.

Anthropometric examination is an almost mandatory tool in any research to assess health and nutritional condition in childhood. Physical measurements like body weight, height, circumference of arm and calf, triceps skin fold of children have been extensively used to define Stunting is defined as a low height-for-age for children, and it measures the past (chronic) child undernutrition. Children with z-scores <-2.00 are said to be stunted and those <-3.00 severely stunted.

AIMS AND OBJECTIVE:

1. To study the nutritional status and anthropometry of 0-6 years of child in urban areas of SKMCH Muzaffarpur. 2. To estimate prevalence of stunted, wasted, underweight and the influence of socio-economic status and education of parents on nutrition.

MATERIAL AND METHODS:

This was a community based cross-sectional study among children (age 0-6 years) in urban areas SKMCH, Muzaffarpur with an approximate population of more than 2.5 lacs, were selected as these areas prone for rains and frequent sewage contaminations. Ethical Committee had cleared this study. Parents and guardians were

informed about the study objectives and consent was obtained prior to the study.

Stunting is defined as a low height-for-age for children, and it measures the past (chronic) child undernutrition. Children with z-scores < -2.00 are said to be stunted and those < -3.00 severely stunted.

Wasting is defined as low weight-for-height for children, and it is a measure of current or acute undernutrition. Children with z-scores < -2.00 are said to be wasted.

Underweight is defined as low weight-for-age and it reflects past (chronic) and present (acute) undernutrition. Children with z-scores < -2.00 are said to be underweight.

Study Design:

Cross sectional study in urban area field practice area of SKMCH Muzaffarpur, Bihar.

Samples Of The Study-

The study was carried out among 150 children's (72 males and 78 females) having age 0-6 years were interviewed and examined of the rural health training centre, kanti, Muzaffarpur.

Study Duration: August 2023 to January 2024

A semi-structured questionnaire was drafted in Hindi. Questionnaire was used to collect information on family characteristics like type of family, education and occupation of parents and information on individual characteristics like; sex and eating habits. Age of the child was obtained from birth certificate. Anthropometric measurements like weight in Kg and height in cm were recorded. Anthropometric measurements were taken and noted by trained field workers.

Each child's height and weight were measured in the metric system, using standardized technique recommended by Jelliffe. A stadiometer (measuring rod) capable of measuring to an accuracy of 0.1 cm was used to assess height of the subjects. The subject was made to stand without footwear with the feet parallel and with heels, buttocks, shoulders, and occiput touching the measuring rod, hands hanging by the sides. The head was held comfortably upright with the top of the head making firm contact with the horizontal head piece. A portable balance with an accuracy of 100 g was used to record the weight of the subjects. Children were instructed to stand on the balance with light clothing and without footwear and with feet apart and looking straight. Weight was recorded to the nearest value.

Height for age (stunted), weight for height (wasted), and weight for age (underweight) for each child were calculated and compared with the CDC 2000. Cut-off point values between ± 2 SD were considered normal.

Inclusion criteria:

All Children's having age of 0-06 yeas was included in the study.

Exclusion criteria:

1. Age more than 7 years onwards and those whose parents not co-operating to share information & does not wants to participate in the study.

Statistical Analysis:

Master chart was prepared and data were analyzed in Microsoft excel. For nutritional assessment, BMI for age, height for age, weight for age were used. Stunting, underweight and wasting were assessed by values 2SD (standard deviation) below the WHO reference values and were taken as markers of under nutrition

RESULT:

The stunted children (low height for age), Wasted children (low BMI for age) were 44.58% and 47.23%, respectively. The percentage of children with underweight (low weight for age), overweight (high BMI for age) were 67.32% and 3.78%, respectively. 52.64% underweight children belonged to lower socioeconomic status. No difference was observed among boys and girls for stunting and underweight ($p>0.05$). The mean heights of normal and stunted children were significantly different ($p<0.01$).

DISCUSSION:

The present study showed a growth lag in the basic parameters of height and weight as compared to the reference standards laid down by

CDC 2000. Our findings are similar to that reported by other workers from India [12,13]. Best C. et al. also reported that underweight and thinness were most prominent in populations from South-East Asia and Africa, whereas in Latin America, the prevalence of underweight or thinness was generally below 10% [14]. Further improvement in nutritional status with maternal education has been reported by other authors [15,16,17,18]. The pattern for wasting concurs with arguments found in several other studies [19, 20] that wasting is influenced less by maternal characteristics than is stunting. One explanation is that mother's education has a limited effect on preventing illness such as diarrhea when there are widespread sources of infection. Various studies have concluded that parental education, especially mothers' education, is a key element in improving children's nutritional status [21, 22].

In the present study family type was significantly associated with all three indices of malnutrition. Similar results have been reported by Gopaldas et al. [23]. NFHS I survey also showed that children living in joint family setup were more likely to suffer chronic malnutrition than children from nuclear families. The results are different from a study by Singh [24]. on childrens of urban areas as in their study > 70% of the families were nuclear. One of the strongest predictors of malnutrition in this analysis was mother's working status. Children of nonworking mothers have better nutritional status than children of working mothers, possibly due to more time for caring of children [25]. Hence the busy time schedule of working mothers adversely affects the nutritional status of children. The NFHS II also observed a higher prevalence of these three indices of malnutrition in children of working mothers.

CONCLUSION:

Most of the urban area children in our study had a poor nutritional status. There were almost equal prevalence of malnutrition among boys and girls. The prevalence of underweight and wasting were more relevant than that of stunting. From the present study, it may be concluded that the children in the urban areas had more malnutrition. The prevalence of underweight and wasting were more relevant than that of stunting.

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