Original Research

Evaluation of nutrition status of children age <6 years- A community-based cross-sectional study

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ABSTRACT
Background: Among individuals of all ages in any community, children are at the highest risk for issues such as delayed physical growth, mental health disorders, and social development challenges. The present study was conducted to assess nutrition status of children age less than 6 years.
Materials & Methods:280children below 6 years of age of both genders were selected. Interviews were conducted with the mothers of the children to gather information about sociodemographic characteristics, feeding practices, and immunization status. The evaluation of socio-economic status was carried out with the help of a modified version of BG Prasad's classification.
Results: Out of 280 children, 130 were boys and 150 were girls. Nutrition grade was >80% (normal) in 170, 71-80% (mild undernutrition) in 80, 61-70% (moderate under nutrition) in 18, 51-60% (severe undernutrition) in 7 and <50% (very severe under nutrition) in 5. The difference was significant (P< 0.05). Age group 36-48 months comprised of 48 normal and 32 under nourished, 49-60 months had 52 normal and 48 under nourished and 61-72 months had 70 normal and 30 under nourished children. The difference was significant (P< 0.05). Mother's occupation was semi- skilled in 35 normal and 25 under nourished, unskilled in 83 normal and 20 under nourished and Home maker in 52 normal and 6580 under nourished children. The difference was significant (P< 0.05).
Conclusion: Home maker mothers had a greater number of under nourished children.
Keywords: Children, nutrition, semi- skilled

Introduction

Among individuals of all ages in any community, children are at the highest risk for issues such as delayed physical growth, mental health disorders, and social development challenges. Appropriate psychomotor and behavioral development is fundamental to their healthy lifestyles, which ultimately contributes to the socioeconomic success of any nation.[1]A balanced diet is a crucial predictor of a child's overall growth and development. A child's growth and nutritional development are shaped by a country's economic, cultural, demographic, and climatic factors.[2]

The two key contributors to children's growth impairment are infection and malnutrition. For the majority of instances involving childhood infections, the underlying reason can be linked to inadequate food consumption or absorption. This deficiency leaves the human system susceptible to infections.[3]The extent of the issue of malnutrition among children under five years of age is significant across India. Children suffering from malnutrition, especially those with severe acute malnutrition, face an increased risk of dying from common childhood diseases like diarrhea, pneumonia, and malaria. Nutrition-related factors account for approximately 45% of deaths among children under 5 years old.[4]

Several anthropometric indices have been effectively utilized for years to assess the prevalence of under-nutrition in pre-school children. These consist of height-for-age, weight-for-age, and weight-for-height. The height-for-age measure reflects the cumulative impact of under-nutrition throughout the child's life.[5] Weight-for-age takes into account the effects of nutrition over both the short and long term, while weight-for-height indicates the child's recent nutritional experiences.[6] These indices serve as reasonably sensitive indicators of the immediate and underlying general causes of nutrition. It is crucial for children's health and development to receive adequate

nutrition during childhood. A number of initiatives have been undertaken to alleviate the burden of malnutrition, particularly in developing nations.[7]The present study was conducted to assess nutrition status of children age less than 6 years.

Materials & Methods
Study place: PMCH, Patna
Study duration: January 2021 to December 2021
Study design:community-based, descriptive, and cross-sectional study.

Sampling technique and procedure:
A multistage random sampling technique was used to select study participants in participating public schools.

The present study comprised of 280children below 6 years of ageof both genders. The consent was obtained from all parents.

Data such as name, age, gender etc. was recorded. Interviews were conducted with the mothers of the children to gather information about sociodemographic characteristics, feeding practices, and immunization status. The evaluation of socio-economic status was carried out with the help of a modified version of BG Prasad's classification. The children's weight was measured with a portable weighing device. The nutritional status of the children was evaluated by calculating their weight-for-age using the National Centre For Health Statistics (NCHS) standards, and their nutritional status was classified according to the Indian Academy of Paediatrics (IAP) classification. Nutritional grade from Grade I to Grade IV is classified as undernourished. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table: I Distribution of patients

Total- 280		
Gender	Boys	Girls
Number	130	150

Table I shows thatout of 280 children, 130 were boys and 150 were girls.

Table: II IAP classification of nutritional status

Percentage of standard weight for age	Nutrition grade	Number	P value
>80%	Normal	170	0.04
71-80%	Mild undernutrition	80	
61-70%	Moderate undernutrition	18	
51-60%	Severe undernutrition	7	
<50%	Very severe undernutrition	5	

Table IIshows that nutrition grade was >80% (normal) in 170, 71-80% (mild undernutrition) in 80, 61-70% (moderate under nutrition) in 18, 51-60% (severe undernutrition) in 7 and <50% (very severe under nutrition) in 5. The difference was significant (P< 0.05).

Table: III Age and nutritional status

Age (months)	Normal	Under nourished	P value
36-48	48	32	0.05
49-60	52	48	0.74
61-72	70	30	0.01

Table III shows that age group 36-48 months comprised of 48 normal and 32 under nourished, 49-60 months had 52 normal and 48 under nourished and 61-72months had 70 normal and 30 under nourished children. The difference was significant (P< 0.05).

Table: IV Assessment of Mother's occupation and nutritional status

Mother'soccupation	Normal	Under nourished	P value
Semi- skilled	35	25	0.05
Unskilled	83	20	0.01
Home maker	52	65	0.04

Table IV, graph I shows that mother's occupation was semi- skilled in 35 normal and 25 under nourished, unskilled in 83 normal and 20 under nourished and Home maker in 52 normal and 6580 under nourished children. The difference was significant (P< 0.05).

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Graph I: Assessment of Mother's occupation and nutritional status
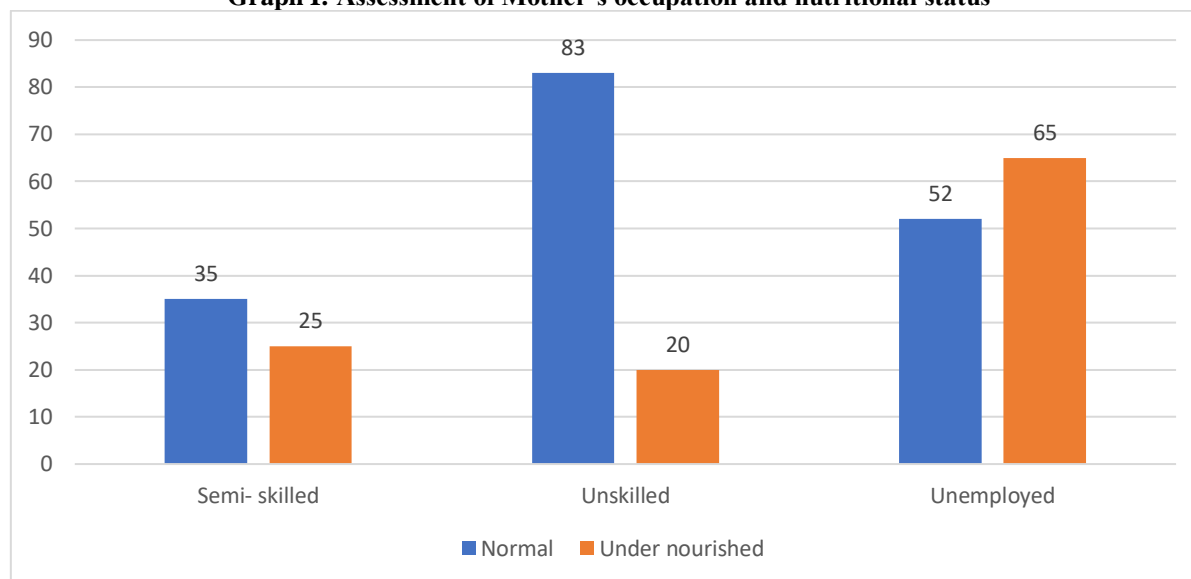
Discussion

One of the global health issues is malnutrition, which hampers children's natural growth and diminishes an individual's quality of life. It encompasses disorders of both under- and over-nutrition.[8]Undernutrition results from a diet lacking in nutrients and leads to wasting (low weight-for-height), underweight (low weight-for-age), vitamin and mineral deficiencies, and stunted growth (low height-for-age).[9,10] In contrast, overnutrition stems from a nutrient-rich diet and results in obesity, overweight conditions, and diet-related noncommunicable diseases (NCDs) like diabetes mellitus and heart disease. Bodily measures like weight, height, arm circumference, and waist circumference are utilized by anthropometry.[11]The present study was conducted to assess nutrition status of children age less than 6 years.

We found that out of 280 children, 130 were boys and 150 were girls.We found that nutrition grade was >80% (normal) in 170, 71-80% (mild undernutrition) in 80, 61-70% (moderate under nutrition) in 18, 51-60% (severe undernutrition) in 7 and <50% (very severe under nutrition) in 5. Kumar et al[12]analyzed the risk-factors associated with malnutrition. Total 224 children aged 1-5 years were randomly chosen, and study was initiated after taking a written consent from their parents. The anthropometric measurements were taken as per WHO standard. The extent of malnutrition among children in terms of underweight, stunting, wasting and overweight was found to be 24.10%, 16.07%, 3.57% and 5.35% respectively. The study showed that underweight boys were higher than girls while stunting and wasting was maximum in girls as compared to boys.

We found that age group 36-48 months comprised of 48 normal and 32 under nourished, 49-60 months had 52 normal and 48 under nourished and 61-72 months had 70 normal and 30 under nourished children. The nutritional status and morbidity pattern of children attending Anganwadi centers were assessed by Carolina et al.[13] This cross-sectional study, which was community-based, involved children aged 3 to 6 years. According to the WHO-recommended classification, the overall prevalence rates were 172 (45.2%) for underweight, 243 (63.8%) for stunting, and 79 (20.7%) for wasting. Anemia was noted to have a high prevalence of morbidity at 125 (32.08%), followed by upper respiratory tract infections at 78 (20.48%).

We found that mother's occupation was semi- skilled in 35 normal and 25 under nourished, unskilled in 83 normal and 20 under nourished and Home maker in 52 normal and 6580 under nourished children. The nutritional status of children aged 3–6 years was assessed by Anuradhaet al.[14] The study included all children aged 3 to 6 years. Mothers of the children were interviewed with a structured interview schedule to gather information on sociodemographic profiles, feeding practices, and immunization status. The evaluation of socio-economic status was carried out with the help of a modified version of BG Prasad's classification. The under-nutrition rate (defined as less than 80% of the standard weight for age) was 66.5%. Grade 1 malnourishment was prevalent at a rate of 46.2%. As age increased, so did the prevalence of undernourishment, with the difference being statistically significant (p < 0.05). The prevalence of undernourishment among male children (76.9%) was greater than that among female children (56.3%) and this difference was statistically significant. As the socioeconomic status increased the prevalence of undernourishment decreased and the difference was found to be statistically significant.

The shortcoming of the study is small sample size.

Conclusion

Authors found that Home maker mothers had a greater number of under nourished children.

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