

ORIGINAL RESEARCH

Prospective Evaluation Of Prevalence Of Undernutrition Among 3–6 Year-Old Children

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ABSTRACT

Background: Malnutrition is one of the major public health problems all over the world. The present study was conducted to assess prevalence of undernutrition in a known population.

Materials & Methods: The present cross-sectional study was conducted over a period of 1 year among 3–6-year-old children. The sample size of 300 was included. Anthropometric measurements (weight and height) were done. Underweight, wasting, and stunting were computed using weight and height measurement. The data collected were coded and transferred into Microsoft Excel worksheet 2016 and were later imported and analyzed using SPSS version 22 (IBM, Armonk, NY). Differences and associations were interpreted as statistically significant at $P < 0.05$.

Results: In the present study maximum children of age group 3-4 years in which 140 were males and 86 were females. The overall prevalence of undernutrition among children was 47.66%, of which 23.33%, 11% and 13.33% were stunted, wasted, and underweight, respectively.

Conclusion: The present study concluded that the overall prevalence of undernutrition among children was 47.66%, of which 23.33%, 11% and 13.33% were stunted, wasted, and underweight, respectively.

Keywords: Prevalence, Undernutrition, Underweight.

INTRODUCTION

Adequate nutrition is very crucial for balanced and healthy growth and early childhood development. Children between 1 and 6 years constitute 15% of total population. Nutritional status of preschool children is considered to be the most sensitive indicator of community health, owing to their rapid growth.¹ Undernutrition also includes “hidden hunger,” which is due to the deficiency of micronutrients such as iron, iodine, and other trace elements.² Globally, an estimated 101 million children below five years of age were underweight. These accounted for 16% of children below five years of age. The prevalence was the highest, which was 33%, followed by Sub-Saharan Africa, which was 21%. These were 59 million in South Asia, while 30 million were in sub-Saharan Africa.³ UNICEF in the year 2006 reported the causes of childhood malnutrition as insufficient diet, frequent infections, poor breastfeeding practices, delayed introduction of complementary foods and inadequate protein in the diet. Other factors that influence food intake include health status,

food taboos, growth and personal choice related to diet. Malnutrition can also develop due to neglect, abnormal mealtimes, insufficient quantities of food and insufficient parental knowledge.⁴ World Health Organization (WHO) in 2001 reported that 54% of all childhood mortality was attributable, directly or indirectly, to malnutrition.⁵ It is not only an important cause of mortality and morbidity but also leads to physical and mental impairment in children. Health and physical consequences of prolonged states of malnourishment among children were delay in their physical growth, lower intellectual quotient, poor cognitive ability, decreased economic productivity, decreased reproductive performance, poor school achievement and poor school performance, greater behavioral problems and deficient social skills, and susceptibility to contracting diseases.⁶ The present study was conducted to assess prevalence of undernutrition in a known population.

MATERIALS & METHODS

The present cross-sectional study was conducted over a period of 1 year among 3–6-year-old children. Specially abled children were excluded and all children aged 3–6 years and whose parents consented were included in the study. The sample size of 300 was included. Informed consent were taken from the parents/guardians after explaining them the study. A pretested semi-structured questionnaire was used to collect sociodemographic parameters. Anthropometric measurements (weight and height) were done. A portable stadiometer was used to measure older children (above two years) and calibrated length board was used for younger children (less than two years). Older children were measured at standing position, while younger children less than two years were measured at lie down position. The child was measured without shoes, hats, and hair ornaments. During measurement their head, shoulders, buttocks, and heels were attached with the vertical surface of the stadiometer. The height measurement was recorded to the nearest 0.1 cm. Weight was measured using infant and toddler weighting scales. The scale was zeroed for each measurement. Each child was measured with bare foot and light clothing. Infants were measured in supine position and older children were measured in sitting position. Weight was recorded immediately after measurement to the nearest 0.1 kg. Underweight, wasting, and stunting were computed using weight and height measurement. Underweight is weight for age, stunting is height for age, and wasting is weight for height, which are $< -2SD$ of the WHO Growth Standard chart.⁷ The data collected were coded and transferred into Microsoft Excel worksheet 2016 and were later imported and analyzed using SPSS version 22 (IBM, Armonk, NY). Differences and associations were interpreted as statistically significant at $P < 0.05$.

RESULTS

In the present study maximum children of age group 3-4 years in which 140 were males and 86 were females.

The overall prevalence of undernutrition among children was 47.66%, of which 23.33%, 11% and 13.33% were stunted, wasted, and underweight, respectively.

Table 1: Distribution of children in accordance with age and gender

Age groups(yrs)	Male 175 (%)	Females 125 (%)
3-4	140(80%)	86(68.8%)
4-5	25(14.28%)	26(20.8%)
5-6	10(5.71%)	13(10.4%)

Table 2: Prevalence of Undernutrition

Variable	N (%)
Stunting	70(23.33%)
Wasting	33(11%)

Under weight	40(13.33%)
Overall undernutrition	47.66(%)

DISCUSSION

Undernutrition can be classified as stunting, wasting, and being underweight. Stunting is characterized by low height-for-age (HAZ) and is the result of long-term nutritional deficiency. Wasting is low weight-for-height (WHZ), which indicates short-term poor nutritional status. On the other hand, underweight is a low weight-for-age (WAZ) that shows reduced public situations in both the long and short term.⁸

In the present study maximum children of age group 3-4 years in which 140 were males and 86 were females. The overall prevalence of undernutrition among children was 47.66%, of which 23.33%, 11% and 13.33% were stunted, wasted, and underweight, respectively.

Research by Navya and Udayakiran in the coastal districts of Karnataka, where the prevalence of underweight, stunting, and wasting was 25.5%, 18%, and 15%, respectively.⁹

Stunting reflects chronic undernutrition and hence UNICEF is also focusing on stunting among under five children.¹⁰ High prevalence of stunting (89.6%) and underweight (73.2%) were reported in a study among under-five children in Uttar Pradesh, India.¹¹ Whereas another study had revealed a low prevalence of both underweight (19.9%) and stunting (17.1%) and reversed the ranking.¹²

Kavosi *et al.* reported an increased prevalence of stunting in male children, with an odds ratio of 1.41 times relative to girls.¹³ One of the previous studies showed a similar proportion (21.2%) of boys and girls (20%) being wasted.¹⁴ This difference in the prevalence can be due to different geographical area, different food habits, and different sociocultural factors. No significant association was found between the gender of the children and prevalence of under-nutrition.¹⁵

Philip RR et al found that among the total 365 children aged 3–6 years, 54.7% were males and 45.3% were females. Majority (60.8%) of the children hailed from nuclear family and 50% belonged to upper lower socioeconomic class. The prevalence of undernutrition which constitutes underweight, stunting, and wasting was 25.4%, 23.5%, and 10.2%, respectively. Prevalence of severe acute malnutrition was 0.3%.¹⁶

CONCLUSION

The present study concluded that the overall prevalence of undernutrition among children was 47.66%, of which 23.33%, 11% and 13.33% were stunted, wasted, and underweight, respectively.

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