Original Article

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Nutritional Status of Urban Child Aged 1 to 5 Year

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Abstract

Background: Nutrition of pre-school children (0-5 years age group) is of paramount importance because the foundation for lifetime health, strength and intellectual vitality is laid during this period. Malnutrition among under-five children is an important concern for the health authorities in India. *Aim and Objectives*: To assess the burden of under-nutrition and over-nutrition, its determinants and strategies required to tackle malnutrition among under-five children in India. The information retrieved was reviewed and analyzed for discrepancies. *Study Design*: Cross-sectional study. *Material and Methods*: Distribution of various types of risk factors and its influence on nutrition status of children in a given set up should be analyzed for planning the control measures. Strengthening public health interventions for mild malnutrition cases and vulnerable groups, effective implementation and evaluation of the strategies at regional level, research on overweight, obesity and its etiological factors and steps for improving socioeconomic development are the prerequisites for tackling malnutrition among under-five children in India. *Result*: Existing evidence shows that the prevalence of under-nutrition among under-five children was high and varied widely (under-weight: 39-75%, stunting: 15.4-74%, wasting: 10.6-42.3%) depending on the assessment methodology adopted. Studies on assessment of over-nutrition status among under-five children were limited. *Conclusion*: Malnutrition among under-five children appears to be a sustained crisis instead of an acute, self-limited problem linked to the post-election violence.

Keywords: Malnutrition; Strategies; Under-Five Children.

Introduction

Nutrition is the cornerstone of socioeconomic development of a country. It is an essential component of millennium development goals (MDGs) and Primary Health Care (PHC). Better nutrition means stronger immune systems, less illness, better health and a productive community.

Malnutrition among under-five children is a major public health problem in India. This is reflected by the fact that the prevalence of under-weight children in India is among the highest in the world, and is nearly double that of Sub-Saharan Africa [1]. It is also observed that the malnutrition problem in India is a concentrated phenomenon that is, a relatively small number of states, districts, and villages account for a large share of the malnutrition burden — only 5 states and 50% of villages account for about 80% of the malnutrition burden [1]. Each year approximately 2.3 million deaths among 6-60 months aged children in developing countries are associated with malnutrition, which is about 41% of the total deaths in this age group [2]. A recent study, among children aged between 3 months and 3 years of age conducted in 130 districts through Demographic and Health Surveys in 53 countries over a period from 1986 to 2006 found that — variance in mild under-weight has a larger and more robust correlation with child mortality than the variance in severe under-weight [3]. The study concluded that the prevalence of mild under-weight deserves greater attention as a useful signal of changing public health conditions among preschool children in developing countries. Therefore, it is important for the health system to detect malnutrition at an early stage for planning and implementing timely interventions at the community level.

Millennium Development Goal 1 (Target 2) aims to halve, between 1990 and 2015, the proportion of people who suffer from hunger as measured by the

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prevalence of under-weight among under-5 years children.[4] The burden of under-nutrition among under-five children has not changed much even though various intervention programs are in operation in India. Current changing dietary patterns are also affecting the nutrition status of under-five children resulting in increased prevalence of adult noncommunicable diseases such as obesity, diabetes, hypertension and coronary heart disease. The need of the hour is to examine the burden of under-nutrition and obesity, study it's determining factors and assess the effectiveness of the various approaches to combat malnutrition among under-five children. The present review article discusses the issues and strategies for strengthening service delivery to under-five malnourished children.

Materials and Methods

This cross-sectional study was carried out .One hundred children of 1–5 years of age were included in the study selected through simple random sampling.

The heads of households were taken into confidence and after obtaining informed, written consent data was collected. They were assured of confidentiality of the data.List of children from 1 to 5 years was obtained from the lady health workers (LHWs) of the region.

The variables which were studied were age, sex, conjunctiva, nails, hairs lustre, skin, oedema, history of ARI, history of diarrhoea, weight for age, height for age, weight for height, mid upper arm circumference (MUAC). The investigator himself collected all the data to take care of inter-rater bias. The instruments used in the process of data collection like measuring tapes, weighing machines and Shakir's tapes were the same for all data collection. Weighing scale was calibrated on daily basis.

Composite indices like Weight for Age, Height for Age, and Weight for Height were compared with the WHO reference data and categorised accordingly. Children with two Z-scores below the median of the reference population were considered as malnourished and 3 Z-scores below the median of the reference population were considered as suffering from severe malnutrition. Variable of interval scale were described as Mean±SD. Frequencies and percentages were calculated for ordinal and nominal variables. Based on this sample data, 95% confidence limits were calculated using t-test.

Results

Total number of children included in study was 100. Of these, 54 were male and 46 were female. Their ages ranged from 13 months to 59 months. Mean age was 38.10±13.68 months. Out of 100, 79 gave positive cases histories of cough and fever, 42(77.7%) were male and 37(80.4%) were female. Among 93 positive cases, 51(94.4%) were male and 42(91.13%) were female.

Ninety-nine children had normal hair and normal skin only one male child had lustreless hair and scaly skin. Out of 63 children having normal conjunctivae, 32% were male and 31% were female. Among 37 children who were having pale conjunctiva 22(40.7%) were male and 15 (32.6%) were female.All children (n=100) had normal nails. There was no oedema in any children.

According to height for age Z-score, out of 100 children, 80 were normal while 17 were stunted and 3 were severely stunted. Gender-wise, 41(75.9%) male and 39(84.7%) female were normal. Ten (18.5%) male children and 7(15.2%) female children were stunted. Among severely stunted, all 3(5.5%) were male children. According to weight for age Z-score, 79 children were normal, 11 were underweight and 10 were severely underweight. Gender-wise, 42(77.7%) male and 37(80.4%) female were having normal weight. Five (9.2%) male and 6 (13%) female were underweight. Among severely underweight 7 (12.9%) were male and 3 (6.5%) were female. According to weight for height Z-score, 83 children were normal while 13 were wasted and 4 were severely wasted. Gender-wise, 44 (81.4%) male and 39(84.7%) female were normal. Eight male (14.8%) and 5 female (10.8%) were wasted. Among severely wasted 2(3.7%) were male and 2 (4.3%) were females.

Under-Nutrition

There are various risk factors that showed an association with under-nutrition among under-five children.Furthermore, food consumption was found to be lower among girls compared to boys [2]. Poor feeding practices was common during infancy with 46.4% of under-six month's aged children receiving exclusive breastfeeding and 56.7% of those aged 6-9 months receiving complementary food items. The rates of exclusive breast feeding and complementary feeding were higher for mothers who had more antenatal visits and watched television [3]. A study reported that 60% of the caregivers did not know regarding growth monitoring of child. Hence, the

factors related to nutrition and growth monitoring affects the malnutrition status of children [4].

It is known that place of residence, household wealth, birth weight, age of child, awareness regarding diarrheal disease and acute respiratory tract infection control, maternal education, number of under 5 years children < and source of drinking water were strong predictors of child nutritional status in developing countries. In Indian preschool children, the risk of infection was more consistently associated with body mass index (BMI) for age and wasting which indicate current energy deficit as compared to weight for age and height for age [4,5]. Maternal factors like age, weight and anemia also significantly affect child's nutritional status.

Over-Nutrition

There is a paucity of data related to the prevalence and determinants of overweight and obesity among under-five children in India [6]. A study among 4-12 years aged children showed that the mean total calorie intake of the children was not significantly high, but the calories derived from fats was more than the desired 25%, which was especially high in the 4-7 years age group. Lack of physical activity, watching television or video for more than one 1 h daily and a positive family history of obesity contributed significantly to child obesity[7].

Conclusion

Prevalence of under-nutrition among under-five children is relatively high and varied widely depending on the assessment methodology adopted, and there are limited studies on assessment of over-nutrition. The distribution of risk factors and its influence on malnutrition among children in a given set up should be analyzed in planning diverse control measures. Strengthening public health interventions for mild malnutrition cases among the vulnerable groups with a focus on socioeconomic development and research on overweight, obesity and its etiological factors in the country are the prerequisites required to tackle malnutrition among under-five children in India.

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