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Original Research Article

Nutritional status of 0-5 years children and its determinant in Maharashtra India

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ABSTRACT

Background: Malnutrition is silent emergency and it is one of the most common causes of morbidity and mortality among children in India. India is home for underweight children. Hence the present study attempt to assess the underweight status of 0-5 years children and to find out socio-demographic determinant with it in rural community of Maharashtra.
Methods: A cross sectional study was conducted among 281 children aged 0-5 years. The study was conducted rural health training centre, Barshi Takali district Akola which is field practicing area of Community Medicine Department of Government Medical College, Akola. The data was analyzed using Epi-info-6.
Results: 24.9% children were in the age group of 24-35 months. 33.8% fathers were educated up to high secondary 21%. Under five children were underweight. The proportion of under-five children with under-weight showed significant association with education of father, breast feeding and diarrhoea.
Conclusions: Father education, breast feeding practices and diarrhoea were the important determinant for underweight that were found in the study. The information education and communication (IEC) is needed to for preventing the occurrence of under-nutrition among 0-5 years children.

Keywords: Under-nutrition, Socio-demographic determinants, Under-five aged children

INTRODUCTION

Malnutrition among children in India is a well-known public health problem due to inadequate nutrition. According to WHO, malnutrition is defined as a "pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients".[1] United Nations Children's fund (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.[2] Nutritional status of under 5 year children is one of the important indicator of overall development of community and thus country. Children living in rural and tribal areas of India are at high risk of under-nutrition because of improper nutrition, sanitation coupled with low hygienic practices and other condition.[3]

The nutritional status of an individual is usually a result of multiple factors that interact with each other at different levels. Recognizing the role of diet at the onset of many diseases and assessing the nutritional status of an individual, family and community are important for public health. The nutritional assessment is done to obtain information about the prevalence and geographic distribution of nutritional disorders within a community or a specified population group. It can also be used to identify high-risk groups and to assess the role of different epidemiological factors in nutritional

deficiency.[4] The nutritional status of an individual is usually a result of multiple factors that interact with each other at different levels. The consumption of adequate amount of food both in terms of quantity and quality is one of the key determinants, which has a significant impact on the nutritional status.[5]

Despite rapid economic development along with increase in food production in recent decades and several nutritional intervention programmes in operation since the last three decades, childhood undernutrition remains an important public health problem in India. It is one of the important reasons for ill health and child mortality.[6] Malnutrition denotes impairment of health arising either from deficiency or excess or imbalance of nutrients in the body.[7] The nutritional status of a community particularly of its vulnerable groups comprising of children, expectant mother and lactating mothers has been recognized as an important indicator, of national development in turn depends on social development indices. The 'nutrition' emerges as an important prerequisite for national development.[8] Malnutrition in India has been called 'The Silent Emergency'.[9] 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. 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.[10] A child is not a miniature form of adult. Growth is an indispensable feature of life of a child that distinguishes him from an adult. Environment experiences of the child during postnatal life determine the pace and pattern of his growth and development.[11] Malnutrition is widely recognized as a major public health problem in the developing countries of the world including India. Based on the UNICEF report, malnutrition in early childhood has serious, long term consequences because it delays motor, sensory, cognitive, social and emotional development.[12]

Objective

The objective of the present study was to assess the underweight status of 0-5 years children and to find out socio-demographic determinants for underweight.

METHODS

The present study was conducted in children below five years of age from rural health training centre (RHTC) Barshi Takali district Akola which is field practicing area of Community Medicine Department Government Medical College Akola. The total population of the area was 16042. Study was conducted from April 2019 to August 2019. Study subjects consisted of children below five children. Total 282 mother having children's aged less than five year of age, who attend the immunization clinic for child vaccination on Monday and Thursday were interviewed. Purposive sampling method was used to select the study population. Weight of child along with vaccination status was collected from vaccination card. The information about participants demography and practices towards breast feeding were collected from the mothers on pre designed and pretested Performa. A verbal and written consent was taken from the respondent before collecting the information.

Statistical analysis

The data were entered and analyze in Epi-6 software version 2.3. The frequency and percentages of various responses were obtained and results are given in percentages. Chi-square test was applied for statistical analysis.

RESULTS

The child considered as malnourished when he or she is underweight. The overall prevalence of malnutrition in the study was 59 (20.99%).

Table 1: Socio-demographic characteristic of study population.

Factor	No. of participants	%
Gender		
Boys	147	52.3
Girl	134	47.7
Age in months		
1-12	49	17.4
13-23	59	21.0
24-35	70	24.9
36-47	60	21.4
48-60	43	15.3
Religion		
Hindu	186	66.2
Muslim	81	28.8
Christian	01	0.4
Buddhist	03	1.1
Sikh	10	3.6

Continued.

Factor	No. of participants	%
Other	00	0.0
Occupation of father		
Non worker	05	1.8
Service	105	37.4
Laborers	171	60.9
Education of father		
Primary	38	13.5
Secondary	95	33.8
Higher secondary	69	24.6
Graduate	63	22.4
Post graduate	16	5.7
Occupation of mother		
Non worker	254	90.4
Service	6	2.1
Laborer	21	7.5
Education of mother		
Primary	79	28.1
Secondary	105	37.4
Higher secondary	57	20.3
Graduate	36	12.8
Post graduate	4	1.4

It was observed that among 281 children, 147 (52.3%) were male and 134 (47.7%) were female. Maximum of 70 (24.9%) being in the age group of 24-35 months. 186 (66.2%) were Hindu with maximum number followed by 81 (28.8) Muslim community. Majority 171 (60.9%) of fathers occupation were laborer in the study however mothers occupation 254 (90.4%) were non-worker. Maximum 95 (33.8%) fathers education high secondary while most 105 (37.4%) mothers were educated up to secondary.

Table 2: Association of diarrhoea and malnutrition.

Diarrhoea	Malnutrition		Total
	Present	Absent	
	N (%)	N (%)	
Present	43 (25.1)	128 (74.9)	171
Absent	16 (14.5)	94 (85.5)	110
Total	59 (21)	222 (79)	281

Chi-square: 4.53; OR: 1.97 (1.04-3.71); p: 0.036.

Table 3: Association of breastfeeding and malnutrition.

Bf	Malnutrition		Total
	Present	Absent	
	N (%)	N (%)	
Absent	26 (29.5)	62 (70.55)	88
Present	33 (17.1%)	160 (82.9)	193
Total	59 (21)	222 (79)	281

Chi-square: 5.64; OR: 2.03 (1.12-3.67); p: 0.026.

The odds of child being malnourished are 4.5, when diarrhea is present and it is found to be statistically significant (p=0.036).

Malnutrition is significantly associated with breastfeeding and the odds are found to be 2 times (p=0.026).

Table 4: Association of education of father and malnutrition.

Education of father	Malnutrition		Total
	Present	Absent	
	N (%)	N (%)	
Primary	11 (28.9)	27 (71.1)	38
Secondary	20 (21.1)	75 (78.9)	95
Higher secondary	20 (28.9)	49 (71.1)	69
Graduate	06 (9.5)	57 (90.5)	63
Post graduate	02 (12.5)	14 (87.5)	16
Total	59 (21)	222 (79)	281

Chi-square: 4.37, p: 0.036.

Malnutrition is associated with father's education and it is found statistically significant (p=0.036).

DISCUSSION

India has a unique opportunity to improve the health and nutritional status of its citizens as a result of its tremendous economic development in the past two to three decades. There have been impressive improvements in some health indicators in the past two decades, including a drop in the fertility rate and reduction in

infant mortality rate, but improvements in nutritional status have been less impressive.[12] Nutrition is one of the important social determinants of health. In the last few years, state of Maharashtra has made significant progress in reducing infant mortality rate and maternal mortality rate. The state also has significant economic growth. However, despite this context, the state has not been able to make much significant progress in improving the nutritional status of the child population.[13] In present study, we tried to explain malnutrition in term of underweight and its association with socio-demographic indicator. The study finding revealed that the prevalence of underweight among under five children were 59 (21%).

The study conducted by Purohit et al at UHTC reported 38%.[14] However Senthilkumar et al observed 41.3% underweight.[1] The study carried out by Meshram et al observed prevalence of underweight 44%.[3] Prevalence of underweight in rural urban Haryana 43% reported by Yadav et al.[16] A study carried out by Singh et al reported observed 53.86% prevalence of underweight in RHTC Dhaura.[15] Overall prevalence of underweight 49% were reported by Meshram et al.[6]

We observed very less prevalence of malnutrition and this may be due to early initiation of breast feeding practices and exclusive breast feeding up to six months good vaccination status. The other reason may be due to control of infectious diseases in community by ongoing immunization programmes and other nutritional interventional programme, integrated child development services which aims to improve nutritional status. Among all the children underweight was significantly associated with diarrhoea (p=0.036), breast feeding (p=0.026) and fathers education (p=0.036). Meshram et al reported that the undernutrition was associated with age, gender, community literacy of mother and wealth index.[3]

The study carried out by Yadav et al observed that underweight was influence by mothers education in urban Haryana.[16] Nath et al reported that age and gender of the child was significantly associated with malnutrition. We do not found such variable in other studies so we unable to compare present study with other studies.

Limitation

The present study has certain limitation. Different anthropometric measurement was not uses in the study which will used to find out the malnutrition status however as for as we were aware, this is provincial study to define the relationship between socio-demographic factor under-nutrition.

CONCLUSION

The study revealed that 21% under-nutrition it showed significant relationship with diarrhea, breast feeding and fathers education these were important risk factor for under nutrition in the present study.

Recommendations

Further reduction in the underweight in 0-5 years group can be ensured by availability of supplementary feed. Health education of father and mother may explore the quantum of reduction in under- nutrition in community. Periodic assessment of nutritional status and do corrective measures simultaneously. Improved sanitation and provision of safe drinking water for prevention and control of diarrheal diseases and other infection.

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