Research Article

A study of factors influencing nutritional status of under five children in a tertiary teaching hospital

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ABSTRACT

Background: Nutrition is a core pillar of human development, influences growth and development before as well as after birth, around 90% of the world undernourished children live in Asia and Africa. In India among under-five children 43% are underweight and 20% have wasting due to acute under-nutrition. The study was conducted to assess socio demographic characteristics of the family and to assess nutritional status of children attending under five clinics.
Methods: Retrospective record based data was obtained from the register of under-five clinic, MIMS, Mandya from the mothers who attended under five clinics from September 2012 - August 2013 (1 year).
Results: A total of 8506 children attended under-five clinic in the study period. 68.0% of mothers were in the 20-25 years age group. 82% of mothers had education above secondary school level, while 6.2% of mothers are illiterate. Majority of the families (88.4%) belongs to lower socio economic class and 67.9% were living in joint family. Malnutrition in the form of overweight and underweight has been observed in 2517 (74.0%) children, who were class IV SES, followed by 640 (18.8%) in class V.
Conclusions: Majority of the children attending under five clinics belongs to joint family and low socio economic status. A significant of them were malnourished have been observed in lower socio economic people.

Keywords: Nutritional status, Under-five children, Overweight, Underweight

INTRODUCTION

Good nutrition early in a life is a key input for human capital formation, a fundamental factor for sustainable and equitable economic growth. Any major deviation in the nutrient intake either in quality or in quantity from its requirement can affect growth in many ways.[1] Nutrition is a core pillar of human development, and the level of child under-nutrition remains unacceptable throughout the world, with 90% of the developing world's chronically undernourished children living in Asia and Africa. In India 43% of children under five years are underweight, 20% of children under five years of age suffer from wasting due to acute under-nutrition. More than one third of the world's children who are wasted live in India.[2] Normal growth and development take place only if there is optimal nutrition. Nutrition influences

growth and development before as well as after birth. Retardation of growth rate is an indication of malnutrition. Measurement of weight and rate of gain in weight are the best single parameters for assessing physical growth. This is best done on growth chart.[3] Various maternal factors which influence nutritional status of under five children which includes, age at marriage, child bearing, child spacing, family size patterns, level of education, economic status, customs and beliefs.[4] Freedom from hunger and malnutrition is a basic human right and their alleviation is a fundamental prerequisite for human and national development.[5] An estimated 54% of all childhood deaths occurs globally because of malnutriton.[6]

There are only few studies available regarding the factors influencing the nutritional status of under five children,

hence the proposed study seeks information regarding the nutritional status of under five children attending under five clinic and also to assess nutritional status of children attending under five clinic.

METHODS

It is a retrospective record based study. The data for the purpose of the study was obtained from the registers of under-five clinic, Mandya Institute of Medical Sciences, Mandya with permission. After obtaining the permission and clearance from the Institutional Scientific committee and ethical committee, the data on nutritional status of children which has been recorded during the visit has been obtained and also the socio economic characteristic of the mother such as, age of mother, education of mother, SES and type of family are obtained from the register of the under-five clinic during the study period from September 2012 to August 2013. Children whose data were incomplete and out of study period were excluded. The data was entered and analysed using Microsoft excel software. Descriptive statistics were used to analyse the data.

RESULTS

Table 1: Socio-demographic characteristics of the family.

Indicators	Number(n=8506)	Percentage (%)
Age		
<20	460	5.4
20-25	5784	68.0
26-30	1796	21.1
31-35	408	4.8
>36	58	0.7
Mothers education		
Illiterate	527	6.2
Primary	1003	11.8
Secondary	3572	42.0
PUC	1983	23.3
Graduation & above	1421	16.7
Socio economic status		
Class I	153	1.8
Class II	834	9.8
Class III	2892	34.0
Class IV	3572	42.0
Class V	1055	12.4
Type of family		
Nuclear	2730	32.1
Joint	5776	67.9
Total	8506	100

In the present study, 8506 mothers attended under five clinics. 68.0% of mothers were in the 20-25 years age group. 82% of mothers had education above secondary school level, while 6.2% of mothers are illiterate.

Majority of the families (88.4%) belongs to lower socio economic class and 67.9% were living in joint family (Table 1).

Table 2: Distribution of study subjects based on nutritional status.

Malnutrition status	Number	Percentage
Normal	5103	60.0%
Underweight	2951	34.7%
Overweight	452	5.3%
Total	8506	100

Out of the total 8506 children, we found out that 2951 (34.7%) were found to be suffering from underweight and 451 (5.3%) from overweight. Children in the normal nutritional status were found to be 5103 (60%) (Table 2).

Table 3: Gender wise distribution of children according to degree of malnutrition.

Malnutrition status	Male	Female	Total
Normal	2965	2138	5103 (60.0%)
Underweight	1207	1744	2951 (34.7%)
Overweight	268	183	452 (5.3%)
Total	4823	3683	8506 (100%)

1475 (30.6%) male children and 1927 (52.3%) female children were suffering from malnutrition in the form of underweight and overweight (Table 3).

Table 4: Distribution of children according to social class and malnutrition.

Social class	Normal children	Malnutrition (Overweight and underweight)	Total
I	145 (2.8%)	08 (0.2%)	153(1.8%)
II	831 (16.2%)	03 (0.01%)	834(9.8%)
III	2657(52.0%)	235 (6.9%)	2892(34.0%)
IV	1055(20.8%)	2517 (74.0%)	3572(42.0%)
V	415 (8.2%)	640 (18.8%)	1055(12.4%)
Total	5103 (100%)	3403 (100%)	8506 (100%)

Malnutrition in the form of overweight and underweight has been observed in 2517 (74.0%) children, who were class IV SES, followed by 640 (18.8%) in class V. Only 11(0.3%) of children who were found to be malnourished were in class I & II (Table 4).

DISCUSSION

In our study, 40.0% children were suffering from malnutrition (underweight and overweight). 52.3% female children were suffering from malnutrition compared to 30.6% male, which implicate that still there is a lot of negligence in the community regarding

upbringing of female child. Malnutrition has also been observed in the low socio economic people.

Contrast to our findings, study conducted by Stalin P, et al have shown prevalence of underweight was 52.9%. Around 7% of children were severely malnourished. In their study higher rate of malnutrition is observed in females (62.6%). Children belonging to higher socio-economic status (40.0%) were less malnourished than lower socioeconomic status (47.2%).[7] Study by Shreyaswi SM et al have observed 63.16% malnourished children.[8] Dhakal MM et al study, mentioned that the burden of malnourishment still haunts the poor with 82.75% children from low income group i.e. IV & V by Prasad Scale[9].

Study conducted by Saxena N et al found that grade II and III PEM were higher among children of social class V., whereas Patwari AK, study showed that delayed weaning after one year of age, was associated with malnutrition in 53.4% of children in his study.[10,11] A study conducted in urban slum of Delhi, it was found that there was significant difference among male and female with respect to malnutrition with more females (9.6%) suffering from severe malnutrition as compared to male (6.5%).[12]

CONCLUSION

The causes of under nutrition in under-five children are complex and involve multiple factors. Emphasis should be given on maternal nutrition and their education, and improvement of socio-economic status to reduce the burden of childhood under nutrition. Area-specific programmes are to be planned to create an enabling environment for comprehensive nutrition and health education to mothers or care-givers. The present study may also help the policy planners to develop strategies to combat different forms of malnutrition by targeting the high-risk groups.

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