NUTRITIONAL STATUS OF SCHOOL GOING CHILDREN BETWEEN THE AGE GROUP OF 6-12 YRS IN RURAL AREA OF BIJPAUR DISTRICT

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ABSTRACT

Background: Primary school age is a dynamic period of physical growth and mental development of the child. The nutritional problem has a wide spectrum , On one end it is represented by Severe acute malnutrition {Marasmus and kwashiorkor},While the other end is represented by obese children.

Objective of the study was to assess the nutritional status of school children between the age group of 6-12 yrs.

Materials and methods: A cross sectional study was done in the rural area of Bijapur district in the month of December 2013. A total 284 children were examined and data was collected.

Results: Out of 284 children in our study 97 (34.15%) were underweight and 25% were stunted . The socio demographic variables like gender and parents education were checked for association with the underweight of the children and all the variables were found to be statistically insignificant on applying chi square test.

Conclusion: A comprehensive school health programme and Notional programme has to be implemented uniformly and also based on extra needs of micronutritents in certain geographical regions of the country. Educating the parents and community about the local available energy dense food which is readily , cheaply and easily available.

Keywords: School, Malnutrition, Underweight, Stunting, Rural

INTRODUCTION

In the words of the 35th President of the United States, John F. Kennedy, "Children are the world's most valuable resource and its best hope for the future".[1] It is indeed true that the future is in the hands of the children. Hence the health and well-being of children go a long way in nurturing them into better adults.

Malnutrition is one of the greatest international health problem and the biggest challenge, WHO is facing today. Malnutrition continues to be the biggest health problem of our country today, despite efforts by the Government of India and voluntary health agencies towards eradication of the same. There is growing realization that adequate nutrition is a necessary first step in the improvement of quality of life. Causes of malnutrition are complex multidimensional and interrelated. Infection, family size, parental education, nutritional taboos and economic status of the family are few of the main causes of malnutrition in children.

Primary school age is a dynamic period of physical growth and mental development of the child. The nutritional problem has a wide spectrum, On one end it is represented by Severe acute malnutrition {Marasmus and kwashiorkor}, While the other end is represented by obese children. Severe acute malnutrition represents only the tip of the Iceberg, while a larger population of mild and moderate malnourished cases are hidden. Since the preva-

lence of malnutrition (mild and moderate) is very high compared to obese children, the word malnourishment is synonymously used for representing various forms of under nutrition. Most effective and simplest way of detecting hidden malnutrition is by anthropometric assessment.

Poverty, faulty feeding habits, sex discrimination, large family, illiteracy, ignorance of the family are contributing factors for malnutrition. Indian Government is providing many welfare programs for the children through anganwadi centers , Vitamin - A Prophylaxis Program, Mid- day-meal Program etc. In spite of implementation of all these programs the prevalence of malnutrition among school children is high.

The World Bank estimates (2009) reported that India is ranked 2nd in the world of the children suffering from malnutrition & the most growth retardation occurs by the age of two, and the damage is irreversible. The prevalence of underweight in rural area is 50% versus 38% in urban area and higher among girls (48.9%) than boys (45.5%).[2]

The objective of the present study was to assess the nutritional status of children between age of 6-12yrs in Bijapur District and will provide a base line data for future research.

MATERIALS AND METHODS

The present study was conducted at Ukkali, Rural Field Practise area of Shri B M Patil Medical College, Bijapur, Karnataka.

A cross sectional community based study was carried from December 1st 2013 – December 30 th 2013.Anthropometric measurements were taken for the school going children between the 6-12 years of the age.

According to the National family health survey 3, the prevalence of underweight among children is 37.6%[7] at 95 % confidence interval, expecting 15 % clinically variations the worked out sample size is **284** using the statistical formula n = (1.96)^{2}xpx q/l^2.

After obtaining the institutional ethical clearance and the authorized consent from the Principal the school which was randomly selected by lottery method , the school was visited and the data was collected using Semi structured pretested proforma. All children between 6-12 years of age as determined using school records were included in the study. The data was collected by interviewing the children in the presence of children.. Weight was measured using bathroom scale and reading were measured nearest to 100 gms and height was recorded nearest to 10 cms and recorded as per the standard procedure.[3]

The data was then compared and correlated with the NCHS (National Center for Health Statistics) Standards and the standards given by ICMR (Indian Council of Medical Research).[4]

Data was entered in SPSS v 20 and analysed using percentage and chi square test..

Two Indices were taken for measurement of nutritional status i.e. height for age (Stunted) and weight for age (underweight), with reference to NCHS standards of growth and development .50th percentile was taken as median percentile function. Children below the -2SD were considered as underweight and stunted and measuring equal to higher were graded as normal.

RESULTS

Out of the total 284 children examined , 178(62.6%) boys and 106(37.3%) were present.. Age wqise distribution of children in the school was almost equal in the range of 12-19 %.

The prevalence of the underweight among boys was 56(31.4%) which was lesser than the girls 41 (38.6%). The overall prevalence of the underweight among the school children was 34.2%. The total number of children who were stunted in our study was 71(25%). 43 (24.2%) of the boys and 28 (26.4%) of girls in our study were stunted.

Table 1: Distribution of children based on underweight and stunting according to age and gender

Age group	Boys			Girls			Total		
	Examined	Underweight	Stunted	Examined	Underweight	Stunted	Examined	Underweight	Stunted
6-7	21 (11.79)	9 (16.07)	6 (13.95)	14 (13.2)	7 (17.07)	3 (10.71)	35 (12.32)	16 (16.49)	9 (12.6)
7-8	28 (15.73)	12 (21.4)	5 (11.62)	18 (16.9)	8 (19.51)	4 (14.28)	46 (16.19)	20 (20.61)	9 (12.6)
8-9	34 (19.10)	8 (14.81)	6 (13.95)	21 (19.8)	5 (12.19)	4 (14.28)	55 (19.36)	13 (13.40)	10 (14.08)
9-10	27 (15.16)	10 (18.5)	8 (18.60)	18 (16.98)	8 (19.51)	6 (21.4)	45 (15.8)	18 (18.55)	14 (19.71)
10-11	32 (17.97)	8 (14.81)	8 (18.60)	20 (18.86)	6 (14.6)	5 (17.85)	52 (18.30)	14 (14.43)	13 (18.30)
11-12	26 (14.6)	9 (16.07)	10 (23.25)	15 (14.15)	7 (17.07)	6 (21.4)	51 (17.95)	16 (16.49)	16 (22.53)
Total	178 (100)	56 (100)	43 (100)	106 (100)	41 (100)	28 (100)	284 (100)	97 (100)	71 (100)

Figure in parenthesis indicate percentage; Age is in years

Table 2: Socio demographic Association with Underweight

Variable	Normal	Underweight	P value*
Gender			
Boys	122 (62.2)	56 (57.7)	0.214
Girls	65 (34.8)	41 (42.3)	
Fathers education			
Illiterate	79 (42.2)	39 (40.2)	0.74
Literate	108 (57.8)	58 (59.8)	
Mothers education			
Illiterate	95 (50.8)	59 (60.8)	0.107
Literate	92 (49.2)	38 (39.2)	

Figure in parenthesis indicate percentage; *Chisquare test

Table 3: Socio demographic association with stunting

Variables	Normal	Stunted	P value
Gender			
Boys	135 (72.1)	43 (44.3)	0.67
Girls	78 (27.9)	28 (35.7)	
Fathers education			
Illiterate	89 (47.5)	29 (29.8)	0.88
Literate	124 (52.5)	42 (71.2)	
Mothers education			
Illiterate	109 (58.2)	45 (46.3)	0.07
Literate	104 (41.8)	26 (53.7)	

The socio demographic variables like gender and parents education were checked for association with the underweight of the children and all the variables were found to be statistically insignificant on applying chi square test.

The association between socio demographic variables with stunting among the children was also found to be statistically insignificant,

DISCUSSION

The present study was carried out in the rural areas from Bijapur district. Out of 284 children in our study 97 (34.15%) were underweight and 25% were stunted.

The finding in our study was found to be similar to the finding of the study done by Shivaprakash in the Mandya District [5] (30.3% underweight and 27.8% stunted) , Ruchika et al in Allahabad [4] (25% underweight and 17.3% stunting) .

Other studies done by Neelu S et al in the city of meerut[5] (48.3% underweight and 44.6% stunted), Hassan et al in Bangalore[6] (58.2% underweight and 40.4% stunted) , G K Mendhi et al in Assam [7](51.7% underweight and 47.4% stunted), Anwer I from Pakistan[8] (64.7% underweight and 40.9% stunted)showed much higher prevalence of the underweight and stunting than our study. In another study done in Chhattisgarh by Mitra et al [9] showed the prevalence of underweight at 90% and stunting at 47.5%.

Few studies reported the prevalence of malnutrition among school going children lesser than our study. Bandopadyay et al from Navinagar[10] (42.3% underweight but 16.8% stunting) and Anjum et al in Kashmir (11.1% underweight and 9.25% stunted) and chowdhary et al[11] in Bengal (33.7% underweight and 17% stunted)

There are wide variations in the prevalence of malnutrition across the nation. With few studies reported very less prevalence and few reported very high percentage of malnutrition on comparison with the national data. These variation in nutritional status can vary due to change in the socio demographic factors, cultural factors and also the availability of various and different types of food habits and taboos .[14,15] Lack of Knowledge about the locally available energy dense foods which can be effectively used to provide nutrition to children among the parents and community might have contributed to the more prevalence of malnutrition.

CONCLUSION AND RECOMMENDATION

In our study the percentage of the children suffering from malnutrition was less than thirty five percentage of the total number of students examined. The percentage of male and female children who were classified as malnourished were almost equal. The Association of Father and mother education with the nutritional status was found to be not significant. Even the role of gender in the nutritional status was found to be not significant.

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