

Study of social factors affecting the nutritional status of Zero to two year old children in a peri-urban area of Gulbarga

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Abstract

Introduction: India is a country with more than 50% of its children malnourished. Any damage due to malnourishment during the period of zero to two years could be irreversible and not amenable for correction throughout the later life.

Objectives: 1). To assess the nutritional status of children between zero to two years

2). To correlate various social factors with the nutritional status of the child.

Material and Methods: A cross sectional study was conducted in Rajapur, a periurban area of Gulbarga and also a urban field practice area of department of community medicine, M R Medical College, Gulbarga. All the 172 children between the age group of zero to two years were included in the study. Information was collected by using pre-tested proforma. Weighing of mother and child was done on the platform type of weighing machine. The procedure followed was, the combined weight of the mother and child was taken and was subtracted from the mother's weight recorded nearest to 0.5kg. Where the child was able to stand on its own, the weight of child was taken directly by using platform type of (spring balance) weighing machine. Grading of malnutrition was done using Gomez Classification, by plotting on a standard WHO growth chart to find the grade of malnutrition according to weight for age. Data was analysed using S.P.S.S Software.

Results: Out of 172 children 81 (47.09%) children were malnourished, with majority- being from socioeconomic class IV and V 30(37.04%), being from upper caste 39(48.15%), having illiterate mothers 50(61.73%) , illiterate fathers 32(39.51%) and whose mothers were housewife 58(71.60%),

Key words: children up to two years, social factors, nutritional status peri-urban area.

Introduction

The future of any country depends on its children. It is the health status of children of any country that represents the health status of people of that country. Since this growing generation is going to be the future productive citizens, they should be healthy enough to make use of the full potential of their productive age. Scientific evidence has shown that beyond the age of 2-3 years, the effects of chronic malnutrition are irreversible [1]. Malnutrition remains an important predictor of child morbidity and mortality, accounting for more than half of all child deaths worldwide [2]. The effects of malnutrition on human performance, health and survival have been the subject of extensive research for several decades and studies show that malnutrition affects physical growth, morbidity, mortality, cognitive development, and physical work

capacity. Malnutrition is an underlying factor in many diseases in both children and adults, and it contributes greatly to the disability-adjusted life years worldwide [3]. Malnutrition is an outcome of various factors resulting from unfavourable socioeconomic circumstances such as difficulties in obtaining food, unemployment which determines an irregular income for the family's breadwinner, limited access to education and health services, or illness caused by unsanitary conditions [4]. Malnutrition has for a long time been recognized as a consequence of poverty since most of the world's malnourished children live in the developing nations of Asia, Africa and Latin America where those mostly affected are from low income families [5] Therefore, the assessment of growth not only serves as one of the best global indicators of children's nutritional status but also

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provides an indirect measurement of the quality of life of an entire population [6].

Material and Methods

A cross sectional study was conducted in Rajapur, a periurban area of Gulbarga, also a field practice area of department of community medicine, M R Medical College, Gulbarga. All the 172 children between the age group of zero to two years were included in the study.

Information was collected by using pre-tested proforma. Modified Kuppuswami's Socio economic

classification was used in this study [7]. Weighing of mother and child was done on the platform type of weighing machine. The procedure followed was, the combined weight of the mother and child was taken and was subtracted from the mother's weight recorded nearest to 0.5kg. Where the child was able to stand on its own; the weight of child was taken directly by using platform type of (spring balance) weighing machine. Grading of malnutrition was done using Gomez Classification, by plotting on a standard WHO growth chart to find the grade of malnutrition according to weight for age [8]. Data was analysed using S P S S Software.

Table 1. Age and sex wise distribution of children

Age groups (months)	Male		Female		Total	
	No.	%	No.	%	No.	%
<4	20	19.23	13	19.12	33	19.19
4-6	12	11.54	08	11.76	20	11.63
7-9	16	15.38	18	26.47	34	19.77
10-12	17	16.35	11	16.18	28	16.28
13-18	27	25.96	12	17.65	39	22.67
19-24	12	11.54	06	8.82	18	10.47
TOTAL	104	100.00	68	100.00	172	100.00

Table 2. Distribution of children according to degree of malnutrition

Degree of malnutrition	No.	%
Normal	91	52.91
First degree	35	20.35
Second degree	35	20.35
Third degree	9	5.23
Fourth degree	2	1.16
Total	172	100.00

Table 3. Relationship between social factors and nutritional status of children between 0-2 years

Social factors	Nutritional status of child				Total		-value	p value
	Normal		Below Normal		No.	%		
	No.	%	No.	%				
SOCIO-ECONOMIC CLASS								
I	2	2.20	1	1.23	3	1.74	$\chi^2 = 12.74$	P<0.01
II	40	43.96	22	27.16	62	36.05		
III	36	39.56	28	34.57	64	37.21		
IV & V	13	14.29	30	37.04	43	25.00		
CASTE								
SC/ST	22	24.18	22	27.16	44	25.58	$\chi^2 = 7.59$	P<0.05
OBC	40	43.96	20	24.69	60	34.88		
UPPER CASTE	29	31.87	39	48.15	68	39.53		
LITERACY STATUS OF MOTHER								
Illiterate	62	68.13	50	61.73	112	65.12	$\chi^2 = 1.03$	P>0.05
Primary & higher primary	15	16.48	14	17.28	29	16.86		
High school	9	9.89	11	13.58	20	11.63		
Pre-University & college	5	5.49	6	7.41	11	6.40		
LITERACY STATUS OF FATHER								
Illiterate	28	30.77	32	39.51	60	34.88	$\chi^2 = 4.54$	P>0.05
Primary	7	7.69	8	9.88	15	8.72		
Higher primary	12	13.19	7	8.64	19	11.05		
High school	24	26.37	21	25.93	45	26.16		
Pre university	9	9.89	9	11.11	18	10.47		
College	11	12.09	4	4.94	15	8.72		
MOTHER S OCCUPATION								
Housewife	81	89.01	58	71.60	139	80.81	$\chi^2 = 8.374$	P<0.01
Working	10	10.99	23	28.40	33	19.19		
TYPE OF FAMILY								
Joint	41	45.05	28	34.57	69	40.12	$\chi^2 = 1.96$	P>0.05
Nuclear	50	54.95	53	65.43	103	59.88		
TOTAL	91	52.91	81	47.09	172	100		

Results

There were total 172 children in the age group of 0–2 years and out of them 104(60.47%) were males and 68(39.53%) were females. Maximum i.e. (22.67%) & minimum i.e. 10.46% were in the age group of 13-18 months and 19-24 months respectively as shown in Table 1.

Table 2 shows distribution of children according to degree of malnutrition. Out of 172 children, 91 (52.91%) were having normal nutritional status followed by 35 (20.35%), 35 (20.35%), 9 (5.23%) and 2 (1.16%) were having grade I, II, III, and IV type of malnutrition respectively.

As seen in Table 3, maximum i.e., 30 (37.04%) malnourished children belonged to socioeconomic class IV and V and minimum 1 (1.23%) belonged to socioeconomic class I. It was found that increase in socio economic status significantly decreased the prevalence of malnutrition ($p < 0.01$).

Out of 81 malnourished children, maximum i.e., 39 (48.15%) were found in upper caste. The relation between nutritional status of children and caste was statistically significant ($p < 0.05$). (Table 3)

Out of 81 malnourished, maximum children belonged to Illiterate mothers i.e. 50(61.73%). The relation between nutritional status of children and mother's literacy status is statistically insignificant ($p > 0.05$). (Table 3)

Out of 81 malnourished children, maximum i.e., 32 (39.51%) children were found in illiterate father's group and minimum i.e. 4 (4.94%) children were belonging to father's having college level of education. The relation between nutritional status of children and father's literacy status was statistically insignificant ($p > 0.05$). (Table 3)

Maximum prevalence i.e., 58 (71.60%) of malnourishment was seen in children of housewife mothers, The relation between mother's occupation and nutritional status of child was statistically significant. (Table 3)

Out of 81 malnourished children 53 (65.43%) belonged to nuclear family and 28 (34.57%) belonged to joint family. The relation between type of family and nutritional status of child was statistically insignificant. (Table 3)

Discussion

Out of 172 children 91 (52.91%) were showing normal nutritional status and 81 children were below normal nutritional status showing one or the other grade of malnutrition (Table 2). Similar observation made by Sandip Kumar Ray et.al in their study out of 316 children, 117 (37.03%) children were having normal nutritional status and 101(31.96%), 77(24.37%), 17(5.38%) and 4(1.27%) children were having grade I, grade II and grade III and grade IV malnutrition respectively [9].

In our study maximum i.e., 30 (37.04%) malnourished children belonged to socioeconomic class IV and V and minimum 1 (1.23%) belonged to socioeconomic class I which was similar to study done by Saiprasad Bhavsar et al showing out of 116 malnourished children maximum i.e. 93 (80.2%) belonged to class IV and V and only 23 (19.8%) belonged to class I, II and III [1].

Out of 142 literate mothers, 45.07% of their children were normal 28.17% had grade I, 21.13% had grade II, 4.23% had grade III and 1.41% had grade IV malnutrition, (Table 3).

Similar study was done by Sandip Kumar Ray et.al and observed that out of 174 illiterate mothers 30.45% of children were normal, 35.06% had grade I, 27.01 had grade II, 6.32% had grade III and 1.15% had grade IV malnutrition.⁹ In other study done by Shaili Vyas et al, out of 500 children and mothers majority of illiterate mothers (41.20%) had undernourished children(73.30) as compared to graduate mothers in whom the prevalence of undernourished children was (35%). The association was found to be statistically significant [10].

Out of 81 malnourished children, maximum i.e., 32 (39.51%) children were found in illiterate father's group and minimum i.e. 4 (4.94%) children were belonging to father's having college level of education. The relation between nutritional status of children and father's literacy status was statistically insignificant ($p > 0.05$) (Table 3). Similar study was done by Sandip Kumar Ray et al and observed that out of 103 illiterate fathers, 25.24% of their children were normal and 74.76% were malnourished and out of 213 literate fathers 42.72% of their children were normal and 57.28% were malnourished which was statistically significant [9].

Out of 172 children, majority 58 (71.60%) children suffering from malnourishment children of housewife mothers, The relation between mother's occupation and nutritional status of child was statistically significant. This is similar to study done by Shaili Vyas et.al, which showed that mothers who were working had maximum number of undernourished children (64.10%) compared to mothers who were housewives(59.22%). Statistically the association was found to be significant [10].

Out of 81 malnourished children maximum i.e., 53 (65.43%) belonged to nuclear family and 28 (34.57) belonged to joint family which similar to study done by Megha Luthera et.al, which showed that out of 84 undernourished children maximum 59 (61.9%) belonged to nuclear family and 32 (38.1%) belonged to joint family [11].

Conclusion

Malnutrition is the most widespread condition affecting the health of children. In our study maximum children- belonged to socio-economic class IV and V (37.04%), belonged to upper caste (48.15%), belonged to where in whose father's were illiterate (39.51) and also in housewife mothers (71.60). Improvement in the nutritional status of child may be attributed to better health care facilities, supplementary feeding and health education to mothers provided by I C D S centres. The reason for this may be attributed to cultural factors present in that place, evaluation of which is beyond the scope of this study.

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