IJFANS

International Journal of Food And Nutritional Sciences

INTERNATIONAL JOURNAL OF FOOD AND NUTRITIONAL SCIENCES

IMPACT FACTOR ~ 1.021

Official Journal of IIFANS

Research Paper   *Open Access*

ASSESSMENT OF NUTRITIONAL STATUS OF CHILDREN BELOW 5 YEARS AGE GROUP WITH ESPECIAL REFERENCE OF THEIR MORBIDITY PATTERN IN A RURAL AREA OF BIHAR

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The present attempt was made aimed at to identified the etiological factors of child malnutrition, which prevalent in India even after the intensive government and nongovernment preventive and curative approaches. The malnutrition leads different types of infectious and degenerative diseases among the affected children as its implications, which was also determined in the present research. The selective methods of assessment of nutritional status was used to determine the degree and type of malnutrition and case history, clinical and patho-physiological examination was made to identified the morbidity pattern among 200 selected children aged 0-5 years from different localities of rural area Ramnagar village in Purnia district Bihar. It was found that most of the children belonged from poor economic family. 50% children had moderate malnutrition and 16% children of <2 years were found to be on severe malnutrition. 55.5% children did not applied the exclusive breast feeding from their mothers and suffered from frequent illness, in which nutritional deficiency diseases such as PEM, rickets and cheilosis were more common ranked I, diarrhoeal diseases II and ARI got III rank among the children. The major prominent cause behind this scenario was found to be ignorance of families which then preceded the unhygienic practices, poor nutritional care, etc. There is much more intensive efforts are needed which is suggested and package formulated in the study.

INTRODUCTION

India is a developing country with its huge population and has a challenging task to maintain the health and living status of every citizen. At the present health scenario, child malnutrition is serious nutritional problem accelerates the child morbidity and mortality rate in the country, especially in backward states such Bihar, Utter Pradesh, Jharkhand, Chhattisgarh and Madhya Pradesh. The World Bank estimates that India is ranked second in the world of the number of children suffering from malnutrition, where 47% of the children exhibit a degree of malnutrition. The primary cause of malnutrition is a faulty and inadequate diet. Besides diet and socio economic factors and various environmental factors are aggravate the dietary deficiencies. It leads different types of malnutrition among children included Protein energy malnutrition, micronutrient deficiencies such as vitamin A deficiency and iron deficiency anemia are common among preschool children. The high prevalence of these nutrient deficiency diseases stresses the need for a balanced, nutritious diet during preschool years.

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MATERIAL AND METHODS

Survey was conducted in the rural area of Ramnagar village in Purnia district Bihar. The selection of households (HHs) and 200 children below 5 years were done by purposive and random sampling from different localities of Ramnagar village. Different methods of assessment of nutritional status were used for data collection. The demographic data was obtained by general survey method. Anthropometric information collected through the measurement schedule and the observation schedule was made to collect the clinical information. Dietary survey was carried out to investigate the feeding and dietary pattern of children in terms of breast feeding, weaning and supplementary food intake. A case study and clinical examination were carried out to assess the morbidity status of respondent children.

RESULTS AND DISCUSSION

The data interpretation and analysis has been revealed the results of the study which are presented and discussed here:

General Profile of the Subjects

Age Profile of Respondents

A total of 200 subjects, the age of 0-5 years were included in the study. The Table 1a revealed that most of the children (29%) belonged to 24-36 month whereas 17% found to be 0-

Table 1a: Age (Months) wise Distribution of the Children

Age (Months)	N=200	%
0 – 12	34	17
12 – 24	46	23
24 – 36	58	29
36 – 48	39	19.5
48 – 60	23	11.5
Total	200	100

Table 1b: Age (Years) of the Children as Study Group

Age (Years)	N = 200	%
< 2	60	30
< 5	140	70
Total	200	100

12 month age as infant stage. The Table 1b revealed that maximum children, i.e.,70% was found <5 and above than 2 year age.

According to Singh *et al.* (2013), malnutrition among children below five years continues to be one of India's major human development challenges. In spite of tremendous economic progress made in the last two to three decades, malnutrition among children in both urban and rural India still claims many lives.

Socio-Economic Status (SES) Classification (According to Per Capita Income)

Per capita incomes of respondent's families were calculated separately and assess their SES class according to Prasad's standards. Table 2 showed that among the total children respondents, maximum (63%) were belonging V class, 21% from IV class, 13.5% had III class and 2.5% included in II class as their per capita family income. None of the percentage had belonging the SES class I, because of most of them have coming from low family income group and also had large family size.

Per capita income was negatively correlated with family size at with the increase in the family size, per capita income decreases.

Table 2: Socio-Economic Status (SES) Class of the Respondents

Socio-Economic Status (SES) Class	N = 200	%
I (Rs. >5571)	--	--
II (Rs. 2786-5570)	5	2.5
III (Rs. 1671-2785)	27	13.5
IV (Rs. 836-1670)	42	21
V (Rs. <836)	126	63

Anthropometric Measurement

Anthropometric measurement is the widely used method for assessment of nutritional status of the communities. All the children subjects were measured for weight (kg), height (cm) of body and mid upper arm circumference (MUAC).

Mean Body Weight for Age

The body weight of children was measured and compared with standard value given for age of children which is presented in Table 3. The table revealed that the mean weight

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Table 3: Mean Body Weight of Children for Age				
Age (Years)	**Mean Weight (kg)**		**Mean *Standard Weight (kg)**	
	Boys	**Girls**	**Boys**	**Girls**
<1 (N = 10)	6.8	6.3	7.3	6.78
1 – 2 (N = 50)	9.7	8.6	11.33	10.7
2 – 3 (N = 48)	11.2	10.8	13.83	11.8
3 – 4 (N = 69)	13.3	12	16	15
4 – 5 (N = 23)	14.8	13.3	17.7	16.8
Total = 200				

Note: * Standard weight of children given by National Centre for Health Statics (NCHS).

for age in both male and female children was less than their standard weight.

Mid Upper Arm Circumference (MUAC) of Children

The Table 4 revealed that total 63% children affected from malnutrition, in which 30% had mild, 25% moderate and 8% had severe malnutrition.

Table 4: Status of Malnutrition on the Basis of Mid Upper Arm Circumference (MUAC) of Children						
Category of Malnutrition (on the Basis of MUAC)*	**<2 Years Age Group N = 60**		**<5 Years Age Group N = 140**		**Total, N = 200**	
	N	**%**	**N**	**%**	**N**	**%**
Normal (16 cm)	16	26.6	58	41.4	74	37
Mild Malnutrition (13.5 cm)	17	28.3	43	30.7	60	30
Moderate Malnutrition (12.5 cm)	11	18.3	39	27.8	50	25
Severe Malnutrition (<12.5 cm)	16	26.6	__	__	16	8

Note: * Category of Malnutrition (on the basis of MUAC)* of children given by National Centre for Health Statics (NCHS).

Health and Morbidity Status of Children

The clinical assessment and case study of children had

revealed their morbidity patternas given in Table 5 thatmost of the children were affected from deficiency diseases got Ist rank such as PEM, rickets, beri-beri and cheilosis whereas diarrheal diseases and ARI scored 2nd and 3rd ranks respectively.

Table 5: Health and Morbidity Status of Children			
Type of Morbidity (Past Illness)	**N = 200**	**%**	**Rank**
Acute Respiratory Infection (ARI)	65	35	III
Diarrheal diseases	86	43	II
Deficiency diseases	118	59	I
Congenital neurological disorders	12	6	V
Other infection and disorders	28	14	IV

Several authors have examined the association between anthropometry and morbidity. The leading childhood diseases are diarrhea, respiratory infections, measles, tuberculosis, etc. It is known that a child may get affected severaltimes in a year; the incidence increases with the aggravation of a state of malnutrition.

CONCLUSION

It can be concluded from the study that most of the children (63%) below 5 years age found to be malnourished in which 8% had severe malnutrition required rehabilitation approach. The demographic study revealed its causes as the majority of low economic status of families and ignorance etc, found in the Ramnagar village of Purnia district of Bihar state of India. The infections and diarrheal disease were more prevalent among the children as implications of malnutrition apart from nutritional deficiency diseases. Malnutrition in 0-5 age group can be ensured by improving the living status of people in terms of good nutritional care and practices on low purchasing power with maintenance of hygiene and sanitation at home as well as the surrounding of villages. It is suggested to healthcare providers to focus on health education among parents, especially the mothers on the exact nutritional requirements in terms of quality and quantity of the child at specific age groups.

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