Influence of environmental factors, parental attributes and feeding practices on prevalence of severely acute malnutrition among children

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Environment plays an important role in the growth and development of children. The objectives of the present research was to study the environmental factors, parental attributes and feeding practices of the children suffering from Severely Acute Malnutrition (SAM). One hundred children suffering from Severely Acute Malnutrition attending NRHM centre of Malkanagiri District, Odisha were selected by random purposive sampling method for the present study. Pretested questionnaires and required tools were used to collect information. The results of the study revealed that majority of the respondents were belonged to the age group of 7 months to 2 years. Most of the parents were labourers having annual income less than Rs.30,000 and were illiterate. Maximum families (63%) had more than four children. Age at marriage was found to be less than 15 years in case of 74 per cent mothers and had their first child at the age of 16 years in 60 per cent respondents. Joint family system heaving more than 3 children was found to be prevalent in that area. Birth spacing was found to be 10 month or less than 1 year in 33 per cent cases. Exclusive breast feeding was practised among 61 per cent respondents and rest of the respondents took only Mandia Peja along with Breast Milk upto one year of age. 56 per cent children continues to take breast milk upto three years of age. One year onwards most of the children were fed with home prepared diet along with Anganwadi supplied food. "Salafa" one type of beverage was also taken by the children. Thus it can be concluded that poor environmental factors and faulty feeding practices were the main contributory causes for prevalence of Severely Acute Malnutrition among the respondents.

Key Words : Food habits, Severely acute malnutrition, Breast feeding

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INTRODUCTION

Influence of environmental conditions on occurrence of malnutrition has been well established since long. Macro environmental conditions include social, economic and cultural variables whereas micro-environmental condition include poor housing and sanitation. Various types of parental attributes and faulty

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feeding practices also plays a crucial role in prevalence of malnutrition. Severe Acute malnutrition is a life threatening condition, a silent killer. It is a major public health issue in India, afflicts about 8.1 million under five children and causing nearly 0.6 million deaths. Malnutrition in early childhood has serious, long term consequences as it affects motor, sensory, cognitive, social and emotional development. Malnourished children are less likely to perform well in school and more likely to grow into malnourished adults with greater risk of disease and early death. Keeping these facts in

mind, the present research is the designed to study influence of environmental factors, parental attributes and feeding practices on prevalence of severe Acute Malnutrition.

The objectives of study were

- To study the environmental factors responsible for occurrence of Severely Acute Malnutrition.

- To provide some in insight in to parental attributes.

- To know the prevailing breast feeding practices and weaning practices in that locality.

METHODOLOGY

The present research was carried out at NRHM (National Rural Health Mission) Centre of Malkanagiri District of Odisha. One hundred children (0-5 yrs) Suffering from Severely Acute Malnutrition attending NRHM Centre of Malkanagiri, District, Odisha were selected by random purposive sampling method for collection of data. The information on environmental factors, parental attributes and prevailing feeding practices was collected by interviewing the mothers with the help of pretested and predesigned questionnaire.

Severe Acute Malnourished Children were selected on the basis of weight for height measurement of 70 per cent or more below the median or three SD or more below the mean. NCHS reference values (that will likely be replaced by new WHO growth curves) which is called wasted, "the bilateral pitting odema of nutritional origin which is called odematous "malnutrition" or a mid upper arm circumference of less than 110 mm in children age 1-5 years.

OBSERVATIONS AND ASSESSMENT

The results of the present investigation were tabulated, analysed and discussed below :

It was observed from the above Table 1 that 78 per cent respondents belonged to the age group of 7 month to 24 month. It was also interesting to note that occurrence of severely acute malnutrition was more in this age group in comparison to other age groups which may be due to prolonged breast feeding, diluted milk, late introduction of supplementary food etc. Occurrence of malnutrition according to different sex was not observed. Only 8 respondents were there in the age group of 4-6 years. However more girls (22%) were suffering from malnutrition in comparison to boys (16%) in the age group of 7-12 months.

Caste:

It was observed that 12 per cent respondents were belonged to schedule caste whereas 88 per cent of the respondents belonged to schedule tribe. Out of then 32 per cent of them were from Adiwasi caste followed by Dura (16%), Halva (14%), Koya (14%) and Bonda (12%)

Occupation of parents :

The results of study revealed that majority of the fathers were working in their own Agricultural land *i.e.* 60 per cent. or working as labourers 26 per cent whereas 44 per cent of the mothers were working as labourers and 33 per cent of mothers were working in their Agricultural land to support their family income (Table 2)..

Annual income of families :

Datas on annual income of the family showed that 49 per cent of the respondents belonged to the families having less than Rs. 30000/- income per annum and 37 per cent families had less than Rs. 20000/- income per annum. Only 14 per cent families had more than Rs. 30000/- income per annum. The mean per capita income

Table 1 : Age and sex distribution of severely malnourished children according to 'Z' Score (WHO)

Sr. No.	Age in month	< 1SD		< 2SD		< 3SD		< 4SD		Total	
		M	F	M	F	M	F	M	F	M	F
1.	0-6	-	-	-	-	2	2	-	-	2	2
2.	7-12	-	-	-	-	7	14	9	8	16	22
3.	13-24	-	-	-	-	17	14	6	3	23	17
4.	25-36	-	-	-	-	5	2	1	2	6	4
5.	37-48	-	-	-	-	-	3	1	-	1	3
6.	49-60	-	-	-	-	1	1	1	1	2	2
	Total					32	36	18	14	50	50

Table 2 : Parental attributes according severity of malnutrition

Sr. No.	Attributes		Grade - III		Grade - IV	
1.	**Caste**					
	SC		9		3	
	ST		59		29	
		Total	68		32	
2.	**Occupation**		Grade - III		Grade - IV	
	Father					
	Working in own land		51		08	
	Working as Labourers		04		22	
	Business		13		2	
		Total	68		32	
	Mother					
	Working in own land		30		03	
	Working as Labourers		20		24	
	House wife		18		5	
		Total	68		32	
3.	**Annual Income of parents**		Grade - III		Grade - IV	
	< 20,000		13		24	
	20,000 -30,000		41		08	
	> 30,000		14		-	
		Total	68		32	
4.	**Education**		Father	Mother	Father	Mother
	Illiterate		56	62	20	30
	5th Class		8	6	4	2
	< 10th Class		4	-	-	-
		Total	68	68	32	32
5.	**Types of family**		Grade - III		Grade - IV	
	Joint		53		23	
	Nuclear		15		24	
		Total	68		32	
6.	**Age at marriage**		Grade - III		Grade - IV	
			Father	Mother	Father	Mother
	Below 15 or 15 years		-	48	-	26
	16 - 18		37	21	6	06
	19 - 20		14	10	18	-
	Above 20		17	-	8	-
		Total	68	68	32	32
7.	**Age at first child**		Grade - III		Grade - IV	
			Father	Mother	Father	Mother
	Below 16 or 16 years		-	37	-	23
	16 – 18		20	21	02	07
	19 – 20		21	10	19	2
	Above 20		27	-	11	-
		Total	68	68	32	32
8.	**Birth spacing**		Grade - III		Grade - IV	
	10 Month or < 1 Year		15		18	
	1 Years		49		12	
	2 Years		04		02	
	3 Years or more		-		-	
		Total	68		32	

Table 3 : Age at introduction of supplementary food

Sr. No.	Age in month	No	%
1.	Less than 3 months	1	1
2.	Less than 6 months	-	-
3.	7 - 12 months	38	38
4.	More than 12 months	61	61

of the families was found to be Rs. 32, 450/- per annum (Table 2).

Education of parents :

Information on education of the parents showed that 84 per cent fathers and 92 per cent mothers were illiterate. Only 12 per cent and 4 per cent fathers were educated upto 5th class and above 10th class, respectively where as only 8 per cent mothers were educated upto 5th class. Thus severe malnutrition was prevalent among children due to illiteracy of the parents (Table 2).

Joint family system (61%) was found to be prevalent in that area. 81 per cent family had 3 or more than 3 children (Table 2).

Age at marriage and age at first child :

Datas on age at marriage of the parents showed that 74 per cent mothers were married at below 15 or 15 years of age where as 43 per cent fathers were married at 16-18 years of age. It was also interesting to note that 60 per cent and 28 per cent of mothers had their first baby at the age of < 16 or 16-18 years and 17-18 years of age, respectively where as 62 per cent fathers had their first baby at the age of 17-20 years (Table 2).

Birth spacing between the children was found to be 10 month or less in 33 per cent cases. Similar observations were also found by Jena *et al.* (2013).

Breast-feeding practice :

Breast feeding is best for the baby. Even though 100 per cent mothers were ignorant about the nutritive value of the colostrum still than most (89%) of them breast fed their babies after 1 hours of delivery. Rest of the mothers breast fed their baby after 2 or more than 2 hours of delivery.

Interval of breast-feeding :

Cent-per cent mothers breast fed their babies whenever they showed any sign for wanting.

Frequency of breast feeding :

It was observed that children between 0-6 months were fed 12-14 time per day whereas children between 7-12 months were fed 10-12 times per day in 18 per cent cases, 9-10 times per day in 15 per cent cases. It was also interesting to note that 20 per cent respondents breast fed 9-10 times, 8 per cent respondents took breast milk 12-14 times and 13 per cent took 3-4 times per day in the age group of 1-2 years of age.

Duration of breast feeding :

It was observed that 91 per cent of the respondents breast fed upto 5 years of age. 56 per cent of them breast fed upto 3 years of age and 29 per cent of them were breast fed until next pregnancy starts and 6 per cent of them continues to take breast milk till milk dries up.

Marlyn *et al.* (2014) found in their studies frequency of exclusive breast feeding was 60.08 per cent upto 1 year of age (Table 3).

Supplementary food :

It was interesting to note that only one child was fed with other milk upto 6 months of age because of death of his mother, exclusive breast feeding was practised among 61 per cent respondents upto one year of age.

Even if supplementary food is given by the Anganwadi still then 40 per cent parents did not give it to their children saying that Anganwadi supplied food will creates stomach problem. 38 per cent of the respondents took only mandia peja along with breast milk of mother upto 1 year of age (Table 4). They observe "Varsha Purani - Parab" when the child is of 1 year age

Table 4 : Types of supplementary food given to the children according to age

Age	Milk (Cows/Buffalos)	Salafa	Mandia Peja	Rice	Anganwadi supplied food	Home
0-3 Month	1	-	-	-	-	-
3-6 Month	1	-	-	-	-	-
6-12 Month	1	-	38	-	-	-
13-24 Month	-	20	50	18	60	89
> 24 Month	-	78	90	98	86	100

and fed them "rice" with "Salafa". 'Salafa' is one type of beverage prepared from Salafa tree. One year onwards the children were fed with normal home prepared diet along with the diet supplied by Anganwadi. Similar findings were also observed by Semual *et al.* (2008) and Jena *et al.* (2013).

Breast feeding practice and supplementary feeding practices by the mothers :

The mothers were quite ignorant about breast feeding practices as well as supplementary feeding practices. None of them wash their nipples before breast feeding nor do burping after feeding their babies. Holding the babies during breast feeding properly was also not observed in majority (90%) of the cases. Cleanliness of utensils as well as feeding place was also not healthy in most of the cases (72%). Those were the major causes for prevalence of malnutrition in that area.

General surroundings :

Clean Environment has a direct bearing on health status of the children. Housing condition, source of water supply, lighting and ventilation of the house, sanitation facilities and cleanliness of surroundings plays vital role in preventing infectious diseases. It was observed that 78 per cent children were staying in Kutcha houses 63 per cent families had improper lighting and ventilation condition. It was interesting to note that even though Govt. has provided latrine to the families still then 90 per cent of them going to open field for defecation as it is a source of entertainment for them. All families were found to use Ph.D. supplied water or tube well water for the purpose of drinking and cooking.

Conclusion :

Prevalence of Severely Acute Malnutrition is one of major health problem globally. From the results of the present study it can be concluded that education, occupation, income, age at marriage of the parents, as at first child, birth spacing, faulty breast feeding techniques, late introduction of supplementary foods and poor environmental conditions are the main contributory causes for prevalence of severely acute malnutrition among the respondents.

Suggestion and Recommendations :

Providing nutrition education to the parents and creating awareness about child care, breast feeding practices and importance of weaning and supplementary food among mothers is highly recommended for combating malnutrition in that area.

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