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Does pattern of feeding during sickness play a role in child Undernutrition

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Abstract

Infant and child feeding practices and feeding during sickness have been proposed as crucial social factors that influence child undernutrition in India. Delayed initiation of breast feeding, deprivation of colostrum, improper complementary feeding and various myths and malpractices about feeding during sickness contribute to undernutrition. The aim of this study was to assess the role of feeding practices for infant and young child and the feeding pattern during sickness in current status of undernutrition. This cross-sectional study was conducted in Gwalior District among 300 mothers who were selected across the district on the basis of nutritional status of their child. It was found that 31.00% mothers stated that they initiated complementary feeding after 9 months. 44.00% mothers stated that they do not modify family food/food not specially prepared for the child. 57.50% mothers withhold milk during diarrheal episodes. 69.00% mothers avoided liquid items during ARI/Pneumonia episodes. It may be concluded that continued and active communication with mothers is required for behavior change towards appropriate feeding during sickness. Authorities should promote the production of low cost, nutritious and safe ready-to-eat food items at local level.

Key words: Feeding, Sickness, Undernutrition, Market Foods

Introduction

India presents a unique combination of social factors that may be partly responsible for its abnormally high rate of child undernutrition. Infant feeding practices, misunderstanding the etiology of severe under nutrition, the educational level of the parents, women's empowerment, domestic violence, the healthcare seeking attitudes of the mother, birth order preference, and gender bias have all been proposed as social factors that influence child under nutrition in India. Investigators have searched unsuccessfully for a single cause or a specific set of causes of undernutrition and the appropriate intervention strategies to correct that cause or set of causes. Attention has shifted from inadequate protein to inadequate energy to inadequate micronutrients, with accompanying shifts of focus concerning appropriate intervention and treatment strategies.

Among these, infant and young child feeding practices and feeding pattern during sickness have long been debated to be important causes of child undernutrition. Delayed initiation of breast feeding, deprivation of colostrum, and improper complementary feeding contribute to undernutrition among children under five years of age. One study found that only 30.65% of mothers initiated breast feeding within six hours of birth. This delay places the newborn on the path of undernutrition from the very beginning. In addition, 54.8% of mothers discarded colostrum, the thick milk produced by the mother's mammary glands for the newborn's first meal⁽¹⁾.

Colostrum contains highly concentrated carbohydrates, protein, and antibodies that give the newborn much needed nutrients and bolster the newborn's immune system. It also has a mild laxative effect, which encourages the passing of the baby's first stool to clear excess bilirubin and prevent jaundice. Depriving the baby of colostrum immediately makes them susceptible to undernutrition and infection. Finally, only 38.7% of mothers gave their child appropriate complementary feeding and this also predisposes to undernutrition⁽¹⁾.

Many mothers do not understand that their child is undernourished because of lack of food. Others may attribute their child's condition to pollution, spiritual influences, or punishment for adulterous behavior⁽²⁾. Some mothers

believe that if a type of toad called a therai or its shadow touches a pregnant mother then it will cause severe undernutrition in her child. Rather than feeding the child extra food, mothers treat their undernourished child by tying a live toad around their neck⁽³⁾. Others believe that feeding a neonate sweet water or honey for his first meal, rather than colostrum, will give the infant a pleasant personality⁽⁴⁾. These misunderstandings about the etiology of child undernutrition are likely contributing to India's child undernutrition problem. Even after so many studies and so many years of continued efforts, child undernutrition still remains a major public health problem. The present study was undertaken to assess the feeding practices for infant and young child and the feeding pattern during sickness which are currently prevalent in the community.

Methodology

The present study was a population based cross-sectional study carried out in Gwalior district for a period of one year from October 2012 to October 2013. Study was conducted in Government health centres in Gwalior District. 300 Mothers were included in the study. Mothers were selected based on nutritional status of the child. Using the growth chart 'Normal', 'Moderately undernourished' and 'Severely Undernourished' children were selected, 100 in each group. Mothers of these children were included in the study. As per NFHS-3, prevalence rate of underweight for age of below 60 months children in Madhya Pradesh is 60.4%⁽⁵⁾; thus the sample size calculated was 96 which was rounded off to 100; so 100 mothers were selected in each category. Mothers were selected across the district giving appropriate representation to the urban and rural areas. Pre-designed, pre-tested, semi-structured questionnaire was used for data collection. Data analysis was carried out by percentage, proportion, chi-square test and Odds ratio was calculated utilizing Odds Ratio calculator. The study received ethical approval from the Ethics Committee, Gajra Raja Medical College, Gwalior.

Results

Out of 200 mothers of undernourished children, only 33.50% (36+31) mothers followed exclusive breast feeding till 6 months. Compared to this, 64% (64) mothers of normal nourished children followed exclusive breast feeding till 6 months. The results are statistically significant ($p < 0.05$) (Table No.1). Many mothers admitted giving water, honey etc. to below 6 month child.

Out of 200 mothers of undernourished children, 62.50% (61+64) mothers stated that they initiated complementary feeding at 7- < 9 months while 83.00% (83) mothers of normal nourished children initiated complementary feeding at 7- < 9 months. Out of 200 mothers of undernourished children, 31.00% (32+30) mothers stated that they initiated complementary feeding after 9 months. Compared to this, only 14% (14) mothers of normal nourished children initiated complementary feeding after 9 months. ($p < 0.05$). Out of 200 mothers of undernourished children, 44.00% (46+42) mothers stated that they do not modify family food for the child. Compared to this, only 18% (18) mothers of normal nourished children stated that they do not modify family food for child. ($p < 0.05$). (Table No.1)

Home food and energy dense food was considered "Good Quality Food" by large number of mothers in all the groups. Out of 200 mothers of undernourished children, 56.00% (52+60) mothers considered market foods/Ready to eat food also as "Good Quality Food" and 54% (54) mothers of normal nourished children believed the same. (Table No.1)

Table No.1 Infant and Young Child Feeding: Mother's Perspective

S. No	Mother's Perspective	Normal Child (n=100)	Moderate Under nutrition (n=100)	Severe Under nutrition (n=100)	P value
A.	BREAST FEEDING				
1.	Breastfeed their children	94% (94)	91% (91)	91% (91)	p> 0.05
2.	Exclusive breast feeding till 6 months	64% (64)	36% (36)	31% (31)	p < 0.05
3.	Given water	30% (30)	52% (52)	66% (66)	p < 0.05
4.	Given Honey & Ghutti	12% (12)	11% (11)	09% (09)	p> 0.05
B.	COMPLEMENTARY FEEDING				
1.	Initiated before 6 month	03% (03)	07% (07)	06% (06)	p> 0.05
2.	Initiated at 7- < 9 month	83% (83)	61% (61)	64% (64)	p < 0.05
3.	Initiated after 9 month	14% (14)	32% (32)	30% (30)	p < 0.05
4.	Family food not modified/food not specially prepared	18% (18)	46% (46)	42% (42)	p < 0.05
5.	No food avoided	56% (56)	48% (48)	52% (52)	p> 0.05
6.	Market/Modern fast foods given	49% (49)	45% (45)	36% (36)	p> 0.05
C.	PERCEPTION OF GOOD QUALITY FOOD				
1.	Home food	78% (78)	69% (69)	72% (72)	p> 0.05
2.	Energy dense food	86% (86)	76% (76)	75% (75)	p> 0.05
3.	Market foods	54% (54)	52% (52)	60% (60)	p> 0.05

*Multiple Responses

The pattern of feeding under five child during common sickness i.e. Diarrhea, ARI/Pneumonia and fever has been depicted in **Table No.2**.

Diarrhoea: As shown in **Table No 2**, out of 200 mothers of undernourished children, only 39.50% (41+38) mothers modified food during diarrheal episodes while 63% (63) mothers of normal nourished children modified food during diarrheal episodes. Out of 200 mothers of undernourished children, 57.50% (58+57) mothers withhold milk during diarrheal episodes while 36% (36) mothers of normal nourished children withhold milk during diarrheal episodes. The results are statistically significant (**p < 0.05**)

Table No. 2 Pattern of Feeding under five child during Sickness

S. No.	Pattern of Feeding	Normal Child (n=100)	Moderate Under nutrition (n=100)	Severe Under nutrition (n=100)	P value
A.	DIARRHOEA				
1.	Modify Dietary intake	63% (63)	41% (41)	38% (38)	p < 0.05
2.	Avoided solid food/Soft/ Light/ Easily digestible	41% (41)	61% (61)	69% (69)	p < 0.05
3.	Withholding of milk	36% (36)	58% (58)	57% (57)	p < 0.05
B.	ARI/PNEUMONIA				
1.	Modify Dietary intake	54% (54)	29% (29)	33% (33)	p < 0.05
2.	Nutritious & energy dense food	48% (48)	26% (26)	30% (30)	p < 0.05
3.	Avoided Liquid items	33% (33)	66% (66)	72% (72)	p < 0.05
C.	FEVER				
1.	Modify Dietary intake	41% (41)	34% (34)	21% (21)	p < 0.05
2.	Withholding of milk	21% (21)	46% (46)	54% (54)	p < 0.05
3.	Avoided certain foods	48% (48)	62% (62)	69% (69)	p < 0.05

*Multiple Responses

ARI/Pneumonia: Out of 200 mothers of undernourished children, only 31.00% (29+33) mothers modified food during ARI/Pneumonia episodes while 54% (54) mothers of normal nourished children modified food during ARI/Pneumonia episodes. Out of 200 mothers of undernourished children, 69.00% (66+72) mothers avoided

liquid items during ARI/Pneumonia episodes while 33% (33) mothers of normal nourished children avoided liquid items during ARI/Pneumonia. Out of 200 mothers of undernourished children, only 28.00% (26+30) mothers gave nutritious & energy dense food during ARI/Pneumonia episodes while 48% (48) mothers of normal nourished children gave nutritious & energy dense food during ARI/Pneumonia. The results are statistically significant ($p < 0.05$). (Table No.2)

Fever: Out of 200 mothers of undernourished children, only 27.50% (34+21) mothers modified food during fever episodes while 41% (41) mothers of normal nourished children modified food during fever episodes. Out of 200 mothers of undernourished children, 50.00% (46+54) mothers withhold milk during fever episodes while 21% (21) mothers of normal nourished children withhold milk during fever episodes. The results are statistically significant ($p < 0.05$). (Table No.2)

Discussion

Kumar et al reported that the initiation of breastfeeding after six hours of birth (30.6%), deprivation from colostrum (54.8%) and improper complementary feeding (38.7%) were significant risk factors for children under the age of two for being underweight⁽⁶⁾. Ghosh et al in their study argued that high rates of malnutrition in India are not primarily caused by poverty, rather due to the behaviour of delayed initiation of breastfeeding, early introduction of water and liquids, inadequate duration of exclusive breastfeeding and delay in complementary feeding⁽⁷⁾. Aashama et al found that lack of awareness and lack of motivation are prime factors responsible for faulty feeding and delayed weaning⁽⁸⁾. The problem is further compounded because the child is dependent on someone else to feed him/her (usually elder siblings/elders) and they may not have the requisite motivation, or the correct knowledge and awareness regarding the quantity and frequency of feeding^(10,11). A study by Garg et al. showed that 29% had not initiated the feeding of any semisolid/solid food to their infants till they were in their second year. Of those who had initiated complementary feeding, 40% did so only after eight months of age.⁽⁸⁾ The paper by Sivakami showed that women spent very little time on preparing special food for their young children⁽⁹⁾. Most working women spent less than half an hour preparing an evening meal and one fifth even less than 15 minutes⁽¹²⁾. Thus the quality of food and consequently the nutrition of child is compromised.

According to the National Sample Survey food expenditure has declined by 56 percent in the rural areas and by 44 percent in urban areas. According to the study, the increase in disposable income was at a rate less than the increase in the prices of market products. Changes in the children's food consumption behaviour in the context of busy mothers could also allow for the potential deficiency of nutrients caused by the increased intake of fast foods and snacks^(13,14).

Conclusion

Continued and active communication with mothers is required for behavior change towards appropriate feeding and nutrition of infants and young children particularly about nutrition during sickness and also about good quality care and food. This can be achieved by Anganwadi Workers, ASHAs, NGOs and Self Help Groups. Along with this, authorities should promote the production of low cost, nutritious and safe ready-to-eat food items at local level which are time saving for mothers and fulfill the nutritional requirements of children.

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