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A STUDY OF PROTEIN ENERGY MALNUTRITION WITH RESPECT TO BREAST FEEDING PRACTICES IN LESS THAN SIX YEAR CHILDREN

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ABSTRACT

Introduction: Breastfeeding is one of the most effective ways to ensure child health and survival globally, less than 40% of infants under six months of age are exclusively breastfed.

Method: Community based, cross sectional study in rural field practice area in 476 under six children

Results: The Proportion of undernutrition was more in, who has not exclusively breast fed (72.92% and 44.07%, p<0.001); who did not received colostrum (91.74% and 27.64%, p<0.0001); who received prelacteal feed (94.35% and 25.20%, p<0.05); Breast fed after 1hr of birth. (71.66% and 45.34%, p<0.0001); who has un-hygienic feeding practices (63.33% and 50.57% p<0.05); and who weaned after 6 months of age (67.11% 43.60%. p<0.001).

Conclusion: Adequate breastfeeding counseling and support are essential for mothers and families to initiate and maintain optimal breastfeeding practices.

Key word: Malnutrition, Breast feeding, hygiene, feeding practices, weaning practices

INTRODUCTION

PEM is identified as major health and nutrition problem in India. It occurs particularly in weakling and children in the first year of life. It is not only an important cause of childhood morbidity and mortality but also leads to permanent impairment of physical and possibly of mental growth of those who survive[1]. Exhibiting a sluggish trend over past decade and half the recent estimate from the National Family Health survey -3(NFHS-3)-the unique source for tracking the child malnutrition in India – indicates about 43 percent of children under 5 years of age are underweight (thin for age), 48 percent are stunted (short for age), and approximately 20 percent are moderately to severely wasted (thin for height)[2]. The decline in prevalence however becomes unimpressive with the average levels marked by wide inequality in childhood malnutrition across the states and various socio-economic groups[3,4]. The UN ranks India in the bottom quartile of countries by Infant mortality (the 53rd highest), and under-5 child mortality (78 deaths per 1000 live births) [5]. According to the 2008 CIA fact book, 32 babies out of every 1,000 born alive, die before their first birthday[6].

Malnutrition impedes motor, sensory, cognitive and social development, so malnourished children will be less likely to benefit from schooling, and will consequently have lower income as adults[5]. The most damaging effects of under-nutrition occur during pregnancy and the first two years of a child's life. These damages are irreversible, making

dealing with malnutrition in the first two year crucially important[7]. Breastfeeding is one of the most effective ways to ensure child health and survival, if breast feeding initiated within an hour of birth, given exclusive breast milk for first six months, and continued breastfeeding up two years of age, about 800,000 child lives would be saved every year globally, less than 40% of infants under six months of age are exclusively breastfed so adequate breastfeeding counseling and support are essential for mothers and families to initiate and maintain optimal breastfeeding practices[8].

METHOD

It was a community based cross sectional study conducted during 1st Oct 2010- 30th Sep 2011 in rural field practice area of the department of preventive and social medicine of government medical college. According to ICDS August 2010 survey the rural block has total population of 12329 children in age group of 0-6. The ICDS block had two ICDS sub blocks, one was selected randomly which consisted population catered by 4 primary health centers. List of all villages under these 4 primary health centers was prepared and the villages were selected randomly by lottery system to examine all under six children and interview their parents.

Sample size calculation[9]: Sample size was estimated by the formula $n=4pq/l^2$, Where n= Sample size ,p=prevalence of underweight children=47% [5]q= 100-p= 100-47=53% ,l= allowable error=10% of p = 4.7, n = 450 was the minimum sample size, 476 under-six children were included in the study.476 under six children were studied starting from randomly selected first village sequentially as selected by lottery system till adequate sample size is reached. Children under six years of age and are living in the same area for past 1 year or more were included in the study. Children living in the study area, for less than 1 year were excluded from the study. A pilot study was undertaken for assessing feasibility & finalization of proforma, on 90 respondent's .Necessary modifications were made after analyzing responses. The questionnaire was then finalized. Data was collected using semi structured; predesigned & pretested questionnaire by interviewing parents and thorough clinical examination of all 476 under six children from randomly selected villages during 1st Oct 2010 to 30th Sep 2011. Predesigned proforma consisting of standard questions related to socio –demographic factors, environmental conditions, birth history and feeding practices. In addition questionnaire also included questions on past & present medical history, followed by general and systemic examination. Weight measurement was recorded to nearest 100 gm using Salter's baby weighing apparatus for infants and standard weighing machine for children above 1 yr. Height of the children was recorded to nearest 1 cm, with the help of markings on wall. For children below 24 month of age, length was measured using infantometer. WHO's criteria was used to classify under six children into underweight (<-2SD of median weight for age) and Normal (≥-2SD of median weight for age). Underweight children further classified into mild underweight (≥ -3 SD to < -2 SD of median weight for age) &severe underweight (< -3SD of median weight for age)[10]

Table 1: Distribution of Study Characters and Nutritional Status of Less than six Year Children (n=476)

Study Character	Nutritional Status		χ^2	P value
	Undernutrition	Normal		
Exclusive breastfeeding				
Yes	104 (44.07)	132 (55.93)	41.96	p<0.001
No	175 (2.92)	65 (27.08)		
Colostrum feeding				
Given	68 (27.64)	178 (72.36)	202.6	p<0.0001
Not given	211 (91.74)	19 (8.26)		
Prelacteal feed				
Given	217 (94.35)	13 (5.65)	6.518	p<0.05
Not given	62 (25.20)	184(74.80)		
Initiation of breastfeeding				
Immediately (within 1hr of birth)	107 (45.34)	129 (54.66)	47.96	p<0.0001
After 1hr of birth	172 (71.66)	68 (28.34)		
Feeding practices				
Hygienic	89 (50.57)	87 (49.43)	7.45	p<0.05
Un-hygienic	190 (63.33)	110 (36.67)		
Age of initiation of weaning (months)				
4- 6	75(43.60)	97(56.40)	11.29	p<0.001
> 6	204(67.11)	100(32.89)		

(Figures in parenthesis indicate percentages).

DISCUSSION

In our study proportion of undernutrition was more in, who has not exclusively breast fed which could be due to the fact that exclusive breastfeeding is essential and sufficient for babies up to six months and no other feed is required. If other feeds are given, that increases the chances of undernutrition because of increased risk of contamination of food and infection during feeding. The observed difference in exclusive breastfeeding status and undernutrition of children was highly significant. ($p<0.001$) These findings are in confirmation with Rao S et al (1992)[11], Anita Khokhar et al (2003)[12], Masood-us-Syed SS et al (2011)[13].

Also seen that The Problem of undernutrition was more in who did not received colostrum. This could be attributed to the fact that colostrum contain protective factors like immunoglobulins that helps to reduce diarrheal diseases and rich in fats and proteins which prevents undernutrition. These findings are in confirmation with, Dubowitz et al (2007)[14], Megha Luthra et al (2009)[15].

Further seen The Problem of undernutrition was more in who received prelacteal feed this could be due to the reason that prelacteal feeds increases chances of infections like diarrheal diseases and contributes to undernutrition. The observed difference in prelacteal feeding and nutritional status of children was statistically significant.($p<0.05$).These findings are in confirmation with Jayanti Semwal et al (2008)[16], Megha Luthra et al (2009)[15].

The Problem of undernutrition was more in who Breast fed after 1hr of birth this could be due to the fact that delay in breast feeding favors prelacteal and other unhygienic feeding practices contributing to undernutrition. the observed difference in initiation of breastfeeding and nutritional status of children was highly significant ($p<0.0001$) These findings are in confirmation with, Megha Luthra et al (2009)[15], Ramji S et al (2009)[17].

More undernutrition was seen in who had unhygienic feeding practices ($p<0.05$). Reason could be unhygienic feeding practices predispose the children to infections causing diarrheal diseases, which increases the risk of malnutrition.

The Proportion of undernutrition was significantly more in who has weaned after 6 months of agethis could be due to reason that after six months of age only breast milk is not sufficient to satisfy the energy and protein needs of children which contributes to undernutrition ($p<0.001$). These findings are in confirmation with Kirsten B Simondon et al (2000)[18], Sabu S Padmadas, et al (2002)[19], Masood-us-Syed SS et al (2011)[13]

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