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IMPACT OF BREAST FEEDING AND WEANING PRACTICES ASSOCIATED WITH MORBIDITY IN RURAL AREA OF GHAZIABAD, UTTAR PRADESH, INDIA: A COMMUNITY BASED LONGITUDINAL STUDY

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ABSTRACT

Introduction: Every day, on an average more than 26000 children under the age of five die around the world. Malnutrition contributes to more than half of these deaths. Malnourished children often suffer the loss of precious mental capacities. They fall ill more often. If they survive, they may grow up with lasting mental or physical disabilities.

Methods: The study was divided in to two phases, one month for socio-demographic survey and 6month for follow up for morbidity. Before data collection, eligible mothers were given explanations concerning the study and, upon verbal consent to participate.

Results: Among infants whose growth was monitored for the previous three months, majority (73.1%) had good weight gain while a low proportion (0.6%) had lost weight. About one quarter (26.3%) of the infants had no change in weight. The study findings showed that almost two-thirds (63.8%) of infants who were exclusively breastfed had good weight gain and only 1 (0.6%) was found to have lost weight.

Conclusion: There is no relation found between, exclusive breastfeeding practices and wasting, underweight but related with growth and stunting among the study infants.

Keywords: Breast feeding /weaning practices, Morbidity, Rural area, Ghaziabad

INTRODUCTION

To survive, a child faces many challenges in the form of disease which varies from nutritional disorders like deficiency disorders and overt malnutrition to infectious diseases like diarrhea and respiratory infections. [1] Every day, on an average more than 26000 children under the age of five die around the world. Malnutrition contributes to more than half of these deaths1. Malnourished children often suffer the loss of precious mental capacities. They fall ill more often. If they survive, they may grow up with lasting mental or physical disabilities.[2] The beneficial effects of breastfeeding depend on breastfeeding initiation, its duration, and the age at which the breast-fed child is weaned. Breast feeding practices vary among different regions and communities.[3] The Third National Family Health Survey (NFHS-3) of India reported that overall 21.5% of children aged under three years were breastfed within one hour of birth, 48.3% of the children aged zero to five months were exclusively breastfed, and 53.8% of the children aged six to nine months received solid or semi-solid food and

breast milk.[4] Beliefs like the first milk is not good or there is no secretion of milk in first three days result in practices like discarding colostrum and promoting prelacteal feeds, such practices increase the risk of infections and deprive the valuable benefit of colostrum feeding to the vulnerable neonates. This issue becomes an area of concern since large number of babies born in India are low birth weight.[5] Worldwide, suboptimal breastfeeding still accounts for deaths of 1.4 million children aged less than five years (under-five mortality). The timely introduction of complementary feeding can prevent almost 6% of under-five mortality.[6] Hence an attempt had been made to ascertain the pattern of breastfeeding practices and the impact of breastfeeding.

METHODS

This was a community based, longitudinal study of morbidity among children bellow nine months of age, conducted at Anganwadi centre in vicinity of rural health training centre of Rama Medical College and Research Hospital of Uttar Pradesh. HIV-positive and congenital diseases Infants were excluded from the study.

In this study the total population of rural area it was 10245. Most of people were working as daily wedge earner like laborers, factory workers, vendors, Masson etc. There are total 11 Anganwadi centre in rural area. Out of the total Anganwadi in both area, 10 Anganwadi was selected from rural area by random sampling and all of the children bellow 9 months of age in the selected Anganwadi constituted the study group. The 186 children were enrolled in all rural selected Anganwadi centre. The houses of all children in the selected groups were visited and best effort was made to include every child. The study started in July 2014 and continued till March 2015.The study divided in to two phases, one month for socio-demographic survey and 6month for follow up for morbidity. Before data collection, eligible mothers were given explanations concerning the study and, allowed to participate in this study after verbal consent. A predesigned pretested proforma was used to collect the information about the children. Survey was carried out for estimating incidence of only the two leading cause of morbidity (Upper respiratory tract infection and Diarrhea). The independent variable was the type of breastfeeding from birth to the time of survey. This was categorized as exclusive breastfeeding (mother's milk only, with the exclusion of all other food or drink) and non-exclusive breastfeeding. Information was also collected on housing conditions, socio economic status literacy status and occupational status of parents, type and size of family, living order. The informant was always mother.

The age of children was determined on the basis of date of birth or according to the local calendar in case of date of birth was not known. For incidence of morbidity, diagnosis was made on the basis of history of present illness and clinical examination of every child. Anthropometric examination was done to assess nutritional status by recumbent length. The nutritional status of infants was assessed using the indicators of weight-for-height/length, height-for-age and weight-for-age. The weight-for-height/length index measures body mass in relation to body height or length and describes current nutritional status. Infants whose z-scores were less than -2 SD were considered wasted and those with less than -3 SD severely wasted. The height-for-age index is an indicator of linear growth retardation and cumulative growth deficits. Infants who had height-for-age z-score below -2 SD were considered stunted and those with -3 SD severely stunted. Weight-for-age is a composite index of height-for-age and weight-for-height. It takes into account both acute and chronic malnutrition. Infants with weight-for-age z-score below -2 SD were classified as underweight while those with less than -3 SD were considered severely underweight. Every fortnightly information about morbidity of all the children included in the study was obtained by home visit. Interviews and data collection were carried out by 40 under graduate medical students (4 per center) who had a university-level education and had been trained by the study staff about the study. Data gathering activities were supervised by the social workers and principal investigator. Result were tabulated and analyzed by SPSS software version 16.

RESULTS

Over a half (52.7%) of infants were girls while (47.3%) were boys. The mean age (± SD) of selected infants was 3±1.7 months. Nearly a third (32.5%) of the infants were aged 3-4 months, 30.7% were aged 1-2 months, 26.8% were aged 5-6 months and 9.3% less than one month old. Most of the infants (74.1%) were either first or second born (Table).

The study findings showed that overall, almost a half of infants (45.5%) were exclusively breastfed at the time of the study.

Table 1: Number of subjects per Anganwadi center: (n=186).

Village	No. of house hold	No. of subjects (%)
Khera	1423	85(45.7)
Dhaulana	1058	101(54.3)
Total	2481	186(100)

Table 2: Characteristics of study infants (n=186).

Characteristic	Frequency (%)
Gender of child	
Male	88 (47.3)
Female	98 (52.7)
Birth order (n=186).	
1st born	68 (36.6)
2nd born	70 (37.5)
3rd born and above	48 (26)
Age of child (n=186).	
< 1 month	19 (9.9)
1-2 months	57 (30.7)
3-4 months	60 (32.5)
5-6 months	50 (26.8)
Child feeding based on 24-hour recall (multiple ans)	
Food/liquid consumed	
Plain water	45 (24.2)
Sugar/glucose water	9 (5.2)
Fresh animal milk	4 (2.4)
Tinned/powdered milk	3 (1.5)
Cow's milk	3 (1.8)
Porridge	36 (19.4)
Breast milk	184 (99.1)
Other	28 (15.2)

Table 3: Reported morbidity status (n=186)

Reported morbidity	Yes (%)	No (%)
Diarrhea	41 (22.1)	145 (77.9)
URTI*	67 (36)	119(64)

URTI* -Upper Respiratory tract Infection

Table 4: Nutritional status of infants (n=186).

Nutritional status indicator	Normal (%)	<-2SD (%)	<-3SD (%)
Weight-for-length	174 (93.6)	6 (3.1)	6 (3.4)
Length-for-age	164 (88.0)	16 (8.7)	6 (3.3)
Weight-for-age	174 (93.9)	9 (4.8)	2 (1.2)

Table 5: Nutritional status and exclusive breast feeding

Variable	EBF* (n=186)	Not EBF (n=186)	Chi square	P value
Weight-for-length				
<-3 SD	4 (2)	8 (4.4)	1.520	0.468
<-2 SD	6 (3.4)	5 (2.8)		
≥-2 SD	176 (94.6)	173 (92.8)		
Length-for-age				
<-3 SD	11 (6)	2 (1.1)	6.131	0.047
<-2 SD	16 (8.6)	18 (9.9)		
≥-2 SD	159 (85.4)	165 (89)		
Weight-for-age				
<-3 SD	2 (1.3)	2 (1.1)	0.220	0.896
<-2 SD	8 (4)	9 (5)		
≥-2 SD	176 (94.7)	175 (93.9)		

EBF*- Exclusive breastfeeding

Almost all (99.1%) of infants were breastfed. In addition, close to a half (44.2%) of infants were given plain water, over a third (35.2%) porridge, 9.2% sugar water, 4.4% fresh animal milk and 2.7% tinned/powdered milk. The remaining proportion (15.2%) was given salt plus sugar water and gripes water. Of those infants whose growth was monitored for the previous three months, majority (73.1%) had good weight gain while a low proportion (0.6%) had lost weight. About one quarter (26.3%) of the infants had no change in weight. The study findings showed that almost two-thirds (63.8%) of infants who were exclusively breastfed had good weight gain and only 0.6% was found to have lost weight. Among those not exclusively breastfed, more than two-thirds (80.9%) had good weight gain and only1 (0.6%) had lost weight.

Table 4 presents the nutritional status of infants as measured by weight-for-length (wasting), Length-for-age (stunting) and weight-for-age (underweight). The study findings indicated that 3.1% of infants were wasted while 3.4% were severely wasted. Findings showed that 8.7% of infants were stunted and 3.3% severely stunted. Further, it was found that 4.8% of infants were underweight while 1.2% severely underweight. Assessment of morbidity status focused on diarrhoea and acute respiratory infection 2 weeks prior to the study (Table). Findings showed that 22.1% of infants studied had diarrhoea. Of these, majority (25%) had diarrhoea for 2 days, 22% for 3 days and 15% for a week (7 days) within the two weeks prior to the study. Further, 1.2% of infants had blood in their stool. Slightly over a third (36%) of the infants had experienced difficulty in breathing. The difficulty in breathing had been experienced by 17%, 21% and 20% for 2 days, 3 days and one week respectively. Among those who experienced difficulty in breathing, mothers attributed the difficulty to blocked nose (55.3%), coughing (23%) and noisy breathing (14.5%).For infants reported to have had difficulty breathing, nearly a half (45.6%) received medication. Of these, slightly over a half (50.6%) were taken to clinic/hospital, less than a half (42.9%) received drugs bought from the chemist and 1.3% got the medicine from traditional healers.

DISCUSSION

Infant and young child feeding practices play an important role in reducing early childhood morbidity, mortality as well as improving early childhood growth and development. Findings showed that the pattern of growth as assessed by growth monitoring was significantly (p=0.002) associated with exclusive breastfeeding. This implies that the pattern of growth can be influenced by breastfeeding practices. Similarly, Muchina (2007) [12] found that

88% of children had good growth (positive slope) and this was significantly ($p<0.05$) associated with breastfeeding practices. Further, Onayade, Muchina and Waithaka [13, 14] argue that inappropriate breastfeeding practices are associated with severe malnutrition and growth faltering in the under five children (Onayade, 2004; Muchina and Waithaka, 2010) [14]. The study findings indicated no association between exclusive breastfeeding with wasting and underweight. On the contrary, Mugo (2008) [15] found an association between underweight and poor infant feeding practices in a study done in Narok District, Kenya, among infants aged 0-6 months. In another study conducted in Ethiopia, Shibeshi (2004) 16 found that underweight (57.1%) and wasting (11.4%) were associated with early introduction of foods below 3 months.

Exclusive breastfeeding protects very young infants from diarrheal diseases in two ways: first, breast milk contains both specific and nonspecific antimicrobial immune factors; second, exclusive breastfeeding eliminates the intake of potentially contaminated food and water. When exclusive breastfeeding is continued during diarrhea illness, it also diminishes the adverse impact on nutritional status (WHO, 2011) [17]. However, study findings showed no relationship between exclusive breastfeeding and diarrhea for those infants who had experienced diarrhea in the previous two weeks prior to the study. Some factors may be responsible for no relationship between diarrhea and exclusive breast feeding like unconfirmed diagnosis, no documentation of adherence, short term breast feeding and differential environmental control measures. This is in contrast with findings by Fantoumata Binta Diallo et al., a decreased risk of diarrhoea and respiratory infections in infants who were exclusively breastfed as already reported by others [7,8,9,10,11].

CONCLUSION

Optimal infant feeding practices are the unparalleled ways of enhancing the health and survival of infants and young children, with exclusive breastfeeding meeting the nutritional needs of infants in the first six months of life. From the study findings, exclusive breastfeeding practice was not related with wasting, underweight and morbidity pattern in the study area. A relationship was found between exclusive breastfeeding with growth and stunting among the study infants.

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