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KNOWLEDGE AND PRACTICE OF MOTHERS REGARDING BREASTFEEDING-A HOSPITAL-BASED STUDY

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Introduction: The first six months of an infant's life are critical in terms of mental and physical health development; therefore, the World Health Organization (WHO) encourages mothers to initiate breastfeeding early and keep exclusively alone in this period. Breastfeeding significantly reduces infant morbidity and mortality.
Objective: To assess the knowledge and practice of mothers regarding breastfeeding-A Hospital Based Study.
Material and Methods: A cross-sectional study was conducted in OPD and Pediatric Ward at Uttara Adhunik Medical College Hospital (UAMCH), Uttara, Dhaka, Bangladesh from January to December 20212021. A total of 101 mothers of infants were enrolled in the study and non-probability consecutive sampling technique was used. Inclusion criteria included mothers of infants and premature babies born on 34 weeks of gestation and above requiring admission at the time of study, age up to 24 months of both genders, without any major birth defects such as congenital heart disease and cleft lip/cleft palate. Those not meeting up the inclusion criteria were excluded from the study.
Results: Out of 101 mothers, 75% (n=76) belonged to the age group 20-30 years, 13.8% (n=14) were of 30-40 years, 9.9% (n=10) were less than twenty years of age and 1% (n=1.9) were above forty years. Table-1 describes the demographic characteristics of the infants. Half (49.5%) of the infants were from 2-12 months of age at the time of study. About fifty-seven percent infants were delivered through normal vaginal delivery. About 44% (n=67) mothers had only one child under five, 38% (n=58) had two children under five years of age, 15% (n=23) of

mothers had three children under five while 3% (n=5) had four children under five years of age including the infant under study. There was a discrepancy between knowledge and practice. There was a low prevalence of exclusively breastfed infants up to six months. About 10% (n=11) of infants of age 6-12 months were wrongly exclusively breastfed although 81.1% knew age of weaning was six months, remaining were using other types of feeding alone or in combination with breastfeeding. About 54.4% (n=55) mothers were using formula milk but 58.1% (n=32) were aware of correct method of making formula feed i.e. 1 scoop in 1-ounce water. Similarly, there were 27.2% (n=15) of mothers gave buffalo/cow milk alone or in combination with breast milk but then again 8.6%(n=4) were over diluting it i.e. 1 part of buffalo/cow milk to 2 parts of water. Moreover, majority of the mothers showed encouraging attitude as 81.1% mothers considered breastfeeding to be more convenient than other types of feeding. There was an association of early initiation of breastfeeding with mode of delivery ($p=0.034$ i.e. $p<0.05$).

Conclusion: Majority of the mothers had the knowledge of breastfeeding. But there was a noticeable deficit in the implementation of knowledge in their breastfeeding practice. The percentage of exclusive breastfeeding practice was remarkably low. Mixed feeding was the predominant approach after exclusive breastfeeding in infants up to six months while third being the formula feeding.

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INTRODUCTION

The first six months of an infant's life are critical in terms of mental and physical health development; therefore, the World Health Organization (WHO) encourages mothers to initiate breastfeeding early and keep exclusively alone in this period. Breastfeeding significantly reduces infant morbidity and mortality [1]. It has a role in the physical and immunological development of an infant by providing protection against infections and non-communicable disease [2,3]. Exclusive breastfeeding is defined as "giving mother's milk to infant without inclusion of water, juice, non-human milk or any food (with exception of vitamins, minerals or medicines if needed) up till six months of age" [3]. Colostrum is a rich source of antibodies, proteins and essential fatty acids [4]. Breastfeeding has significant implications on maternal physical and mental health as well, including gaining prepregnancy weight, prevention of postpartum depression and protection against breast and ovarian cancers [2,3]. WHO recommends initiation of breastfeeding within one hour of birth, exclusive breastfeeding up to six months of age and introduction of complementary feeds at 6 months of age [1]. Surprisingly previous data shows that only 40% ofinfants below six months of age are exclusively breastfed [5]. Globally, one third of under five year mortality is due to malnutrition, of which two-third die during their first year of life [5,6]. The 2030 agenda for Sustainable Development Goals adopted by UN aims at boosting exclusive breastfeeding practices to 50% [7]. Various socioeconomic and demographic factors are the cause of low breastfeeding practices.8 However, mothers should be educated during antenatal visits [8]. UNICEF reported that exclusive breastfeeding practices

were 37% in 2006-2007 which became 38% in 2016 in Pakistan [9,10]. Various studies conducted in different cities of Pakistan exhibited low breastfeeding knowledge [11]. A cross sectional survey in Faisalabad revealed that mothers having prior knowledge about exclusive breastfeeding had five times higher rate of breast feeding their infants [12]. WHO reports (2003) confirmed that the lack of knowledge about the proper way to feed infants and young children was the prominent cause of widespread malnutrition in many of the developing countries [13]. On the other hand, maternal knowledge of the importance of exclusive breastfeeding in the first six months and the date of introduction of supplementary feeding had a positive impact on the infant's health[14]. Moreover, urban and more educated women knew more about the concept of breastfeeding compared to rural and less educated women, but often they discontinued breastfeeding and early introduced complementary feeding. Breastfeeding helps strengthening the mother–child bond. It not only helps in making the mother-child relation more intimate, but also helps infant to fight diseases [15].. Breast milk carries antibodies from the mother that help combat the disease[16] . It protects infant against infectious and chronic diseases. Exclusive breastfeeding reduces infant mortality rate due to common childhood illness such diarrhea or pneumonia, and helps for a quicker recovery during illness [13]. It also stimulates an infant's immune system and response to vaccination [14]. Breastfeeding is one of the most effective ways to ensure child health and survival. If breastfeeding were scaled up to nearly universal levels, about 820,000 children would be saved every year. Globally, only 40% of infants fewer than six months of age are exclusively breastfed [17]. It has been estimated that optimal breastfeeding of children under two years of age has the potential to prevent 1.4 million deaths in children under five in the developing world annually [18].

MATERIAL AND METHODS

A cross-sectional study was conducted in OPD and Pediatric Ward at Uttara Adhunik Medical College Hospital (UAMCH), Uttara, Dhaka, Bangladesh from January to December-2021. A total of 101 mothers of infants were enrolled in the study and non-probability consecutive sampling technique was used. Inclusion criteria included mothers of infants and premature babies born on 34 weeks of gestation and above requiring admission at the time of study, age up to 24 months of both genders, without any major birth defects such as congenital heart disease and cleft lip/cleft palate. Those not meeting up the inclusion criteria were excluded from the study. Data was collected using pretested self-structured questionnaire completed during face-to-face interviews with the mothers fulfilling the inclusion criteria. It comprised information about age distribution of participants and their infant as well as gestational age of the infants, mode of delivery, source of information about breastfeeding, knowledge, attitude and practice towards breastfeeding. The variables of interest involved mother's knowledge concerning breastfeeding, behaviors in its implementation, attitudes, and constitution of other types of feeding. All the variables were represented as frequency and percentages. At the end of interview each mother was apprised about the significance of breastfeeding continuation up to two years. Verbal informed consent was taken from the participants and their confidentiality was respected.

Statistical analysis: Analyses was done using PSPP version 2020 and results were presented in tables. The relationship between different variables was studied using the Chi-square test and the significance level for all statistical analysis was set at 0.05.

RESULTS

The sample consisted of total 101 mothers, 75% (n=76) belonged to the age group 20-30 years, 13.8% (n=14) were of 30-40 years, 9.9% (n=10) were less than twenty years of age and 1% (n=1.9) were above forty years. Table-1 describes the demographic characteristics of the infants. Half (49.5%) of the infants were from 2-12 months of age at the time of study. Fifty-seven percent infants were delivered through normal vaginal delivery. About 44% (n=67) mothers had only one child under five, 38% (n=58) had two children under five years of age, 15% (n=23) of mothers had three children under five while 3% (n=5) had four children under five years of age including the infant under study. It was found that there were 61.3% (n=62) of the mothers who were advised by health care providers about breastfeeding their infants and 16% (n=16) were advised by elders in the family. Twenty three percent study participants (n=23) were breastfeeding the infants by their own decision.

Table-1: Infants Demographic Characteristics (N=101)

Variables	Frequency N=101	Percentage(%)
Age of the Infant:		
≤ 1 month	10	9.9
2-12 months	50	49.5
12-24 months	41	40.5
Gestational age of Infant:		
34 weeks	2	1.9
35-38 weeks	90	89.1
≥38weeks	9	8.9
Mode of Delivery:		
Spontaneous vaginal delivery	55	54.4
Caesarean section	46	45.5
After birth Admittance of baby in hospital:		
No	75	74.2
Yes, for <3 days	17	16.8
Yes, for 3-7 days	6	5.9
Yes, for >10 days	3	2.9

Table-2: Knowledge of Mothers (N=101)

Variables	Frequency N=101	Percentage(%)
What do you know about colostrum?		
Beneficial	90	89.1
Harmful	10	9.9
No idea	1	0.9
What should be the duration of breast feeding?		
12 months	3	2.9
24 months	93	92.0
No idea	5	4.9
When should weaning be started to infant?		
3 months	9	8.9
6 months	82	81.1

12 months	7	6.9
24 months	3	2.9

Regarding breastfeeding knowledge as shown in Table-2, majority (89.1%) of the participants knew that colostrum was beneficial source of nutrient for the newborns. The proportion of the mothers having knowledge of duration of breastfeeding up to 24 months of age was 92.0%.

Table-3: Attitude of mothers towards breastfeeding (N=101)

Variables	FrequencyN=101	Percentage(%)
Do you think exclusive breast- feeding fulfils the nutritional requirements of your baby?		
Yes	96	95.0
No	4	3.9
Maybe	1	0.9
Do you think breastfeeding makes baby strong against infections?		
Yes	96	95.0
No	1	0.9
Maybe	4	3.9
Do you think breastfeeding is easier than formula or buffalo milk feeding?		
Yes	89	88.1
No	7	6.9
Maybe	5	4.9
Do you think your baby is gaining weight adequately?		
Yes	76	75.2
No	10	9.9
Maybe	15	14.8

Majority of the mothers exhibited optimistic attitude towards breastfeeding beneficial effects as per percentages obtained as depicted in Table-3. Ninety percent stated that breastfeeding was more convenient than other types of feeding.

Table-4: Practices of breastfeeding by mothers (N=101)

Variables	**Frequency**	**Percentage(%)**
When was this baby first givenbreast milk?		
within 1st hour of birth	43	33.6
within first 6 hours of birth	21	20.7
within first 24 hours of birth	13	12.8
within first 7 days	22	21.7
After 7 days	2	1.9
Was pre- lacteal given to thisbaby before breastfeeding?		
Yes	55	54.4
No idea	46	45.5

What type of feeding are you using for your baby ≤6 monthsof age? N=60		
Breast milk	25	41.6
Formula Milk	5	8.3
Cow's Milk/Buffalo Milk	2	3.3
Breast Milk+Formula Milk	15	25.0
Breast Milk+Buffalo/CowMilk	13	21.6
What type of feeding are you using for your baby up to 7-12months of age? N=41		
Breast milk	10	24.3
Formula Milk	4	9.7
Cow's Milk/Buffalo Milk	7	17.0
Breast Milk + Formula Milk	9	21.9
Breast Milk + Buffalo/CowMilk	11	26.8
How often do you think babyneeds to be breastfed?		
When baby cries	63	62.3
Every 2-4 hours	7	7.0
Both	31	30.6

There was a discrepancy between knowledge and practice. There was low prevalence of exclusively breastfed infants up to six months as shown in Table-4. About 10% (n=11) infants of age 6-12 months were wrongly exclusively breastfed although 81.1% knew age of weaning was six months, remaining were using other types of feeding alone or in combination with breastfeeding as shown in Table-4. There were less than half (45.5%) of the mothers reporting to have breastfed their infants within one hour.

Table-5: Constitution of different types of feeding milk (N=101)

Variables	Frequency N=101	Percentage(%)
Mothers giving formula milk alone or in combination with breast milk, method ofpreparation is:	**55**	**54.4**
1 scoop in 1-ounce water	32	58.1
1 scoop in 2-ounce water	15	27.2
2 scoops in 1-ounce water	8	14.5
If giving buffalo milk/cow milk/goat milk, dilution fraction(milk: water) is:	**46**	**45.5**
No dilution	27	58.6
2:1	15	32.6
1:2	4	8.6

Table-5 showed that apart from infants who were exclusively breastfed, about 54.4% (n=55) mothers were using formula milk but 58.1% (n=32) were aware of correct method of making formula feed i.e. 1 scoop in 1-ounce water. Similarly, there were 27.2% (n=15) mothers giving buffalo/cow milk alone or in combination with breast milk but then again 8.6%(n=4) were over diluting it i.e. 1 part of buffalo/cow milk to 2 parts of water.

Table-6: Chi Square Tests.

Pearson Chi-Square	Value	Asymp.Sig.
Mode of delivery *Early initiation of breastfeeding	10.43	0.034
Prelacteal feed given to baby *Knowledge regarding colostrum	3.82	0.148
Number of children under five *Total duration of breastfeeding	2.68	0.848
Number of children under five *exclusive breastfeeding fulfils nutritional requirement	4.93	0.552

Table-6 showed that after applying chi square test, a significant association (p=0.034 i.e. p0.05) was present between prelacteal feed given to baby and knowledge of the mother about colostrum. There was no significant association (p=0.552 i.e. p>0.05) between number of children under five with exclusive breastfeeding fulfilling nutritional requirement of the studied child and number of children under five with total duration of breastfeeding (p=0.848 i.e. p>0.05).

DISCUSSION

Breastfeeding plays a major role in an infant's development. Its foremost implication is to help reducing infants' mortality. In our study, ninety-four percent (94%) mothers agreed that the total duration of breastfeeding was two years. In a study among married women, 43% participants thought that the duration for breast feeding was less than twelve months [19, 20]. Appropriate knowledge regarding breastfeeding is a prerequisite for the proper practicing habits. Advice on breastfeeding should be initiated for all mothers during antenatal visits as mother is more receptive during pregnancy [21]. Probably it is because of the different study setting and educational status differences among mothers. The source of information for breastfeeding was mainly health care providers even in foreign countries although the frequency varies among different studies [21,22,23]. In a study carried out in Faisalabad, it was observed that occurrence of exclusive breast feeding was only 42%. A few other studies also reported lower rate of exclusive breastfeeding worldwide [11,18,20,22,23,24]. Certain cultures discard the first milk based on the appearance and texture of colostrum. Colostrum has twice the fatty acids, proteins, immunoglobulins and it protects against many gastrointestinal infections, developmental and neurological disorders [25]. There were more than a quarter mothers in rural area of Sindh, Pakistan that were not aware about the health benefits of colostrum and offered pre-lacteal feeding to babies [26]. In our study 90% mothers considered it beneficial. Most important contributing factor could be the availability of health care professionals though the percentage was still low. Similarly in Saudi Arabia 84% mothers initiated breastfeeding in the first day of birth [27]. Pneumonia and diarrhea are among the top five leading causes of infant mortality in Pakistan which are preventable though proper vaccination and feeding practices implementation [28]. Majority of the mothers in our study were aware of the immunological role of breastfeeding and stated that infants were gaining weight adequately. If maternal diet is balanced, breast milk is considered sufficient for infant's nutrition till first six months of age. American Academy of Pediatrics recommends that all infants up to 12 months of age be given 400 IU of vitamin D daily via oral route, and 600 IU daily beyond this age

[29]. Without Vitamin-D supplementation there is risk of vitamin D deficiency rickets in exclusively breast fed infants [30]. Similarly, with dilution of buffalo/cow milk or with hypo-osmolar constitution of formula milk, the caloric, vitamin and mineral requirements of infant are not fulfilled. Buffalo/cow milk also increases the risk of iron deficiency anaemia. With hyperosmolar constitution of formula milk (adding more scoops wrongly) there is a risk of diarrhea, electrolyte imbalance, hypernatremic dehydration, seizures and intracranial haemorrhage [31]. In recent years, the trend of using formula and buffalo/cow milk has increased, it was due to lack of knowledge about exclusive breast feeding, urbanization, increasing proportion of working mothers, availability and affordability of formula feeding as to avoid breastfeeding. In our study, only 31% mothers were practicing exclusive breastfeeding up to six months of age and 10% were practicing it beyond i.e. 6-12 months of age, while others were using supplementary modes of feeding. On the contrary, 90% considered breastfeeding more convenient than other types of feeding practices. Another study showed 63% mothers used buffalo/cow milk for bottle feeding and of these 35% used diluted milk to feed the child. It was seen that mothers delivering per vaginally breastfed the infants earlier as compared to caesarian section group. In our study, there was a significant association ($p=0.034$i.e. $p<0.05$) of early initiation of feeding with mode of delivery as 68% of babies that were given breast-milk within 1 hour were delivered normally. Our study emphasis the need to counsel mother regarding appropriate breastfeeding knowledge and practices. Implementation of knowledge should be in such a way that attitude also changes for good. We found that many mothers received information from health care providers despite it, there was low frequency of exclusive breastfeeding and proper weaning was also deficient. Thus, infrastructural plans should be worked out to fulfill WHO recommendations of infant feeding practices

CONCLUSION

Majority of the mothers had the knowledge of breastfeeding. But there was a noticeable deficit in the implementation of knowledge in their breastfeeding practice. The percentage of exclusive breastfeeding practice was remarkably low. Mixed feeding was the predominant approach after exclusive breastfeeding in infants up to six months while third being the formula feeding. There is a need to take measures in helping mothers to fully carry out the responsibility of nurturing and nourishing the babies. It is essential for the mothers of all backgrounds and educational status to exclusive breastfeed their babies. Government should also make polices and take initiatives for enhancing lactation management services from home to home.

Conflict of Interest: None.

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