



Knowledge, Attitude and Breastfeeding practices of Mothers of Infants: An Experience from a Tertiary Care Hospital in Lahore

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ABSTRACT

Introduction: Breastfeeding has a key role in an infant's nutrition and development. Breastfeeding is the most effective intervention for reducing infant mortality worldwide. Despite its importance, there is a low prevalence of exclusive breastfeeding in Pakistan. **Aims & Objectives:** The purpose of this study was to assess the recent knowledge, attitude and breastfeeding practices of mothers of infants presenting to a tertiary care hospital in Lahore. **Place and duration of study:** A cross sectional survey was conducted in the Pediatric Medicine department, Mayo Hospital Lahore during the month of January 2018. **Material & Methods:** One hundred and fifty-three mothers of infants presenting to the department were included in the study. A self-structured questionnaire was completed during face-to-face interviews with the mothers. **Results:** Out of 153 participants, 76% (n=116) mothers belonged to the age group 20-30 years and 51% (n=78) of the infants were from 2-6 months of age. Only sixty percent mothers were advised by health care providers about breastfeeding. Majority (90%) of the participants were mindful of benefits of feeding colostrum to the newborns. About 94%(n=144) of the mothers had knowledge of total duration of breastfeeding was up to 24 months and 85%(n=130) stated age of weaning was six months. There was noticeable incongruity in their practice as only 52%(n=48) infants were exclusively breastfed accurately and 10% (n=15) infants of age 7-12 months were wrongly exclusively breastfed. Mixed feeding was used by 37% and 49% mothers up to six months and 7-12 months of age respectively. Only 40% (n=62) of the mothers reported to have breastfed their infants within one hour of birth and 59%(n=90) mothers gave pre-lacteal feed. Moreover, majority of the mothers showed encouraging attitude as 90% 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:** We concluded that there was a lack of accurate breastfeeding practices despite encouraging attitude. Mixed feeding was the predominant mode of feeding after exclusive breastfeeding in infants of six months. Health care providers should be encouraged to counsel the mothers regarding appropriate breastfeeding knowledge and practices.

Key words: Knowledge, Attitude, Practice, Breast Feeding, Mothers, Infants.

INTRODUCTION

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 pre-pregnancy 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% of

infants 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.^{11,12} 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.¹³

There was a marked disparity between knowledge and practices. In a study carried out in Lahore in year 2017 revealed that only 42% were given colostrum as first feed whereas in another study carried out in Sir Ganga Ram hospital Lahore showed low prevalence of exclusive breastfeeding.^{14,15} In a study conducted in Jinnah hospital Lahore, it was noted that about 80% mothers exclusively breastfed their babies and 84% continued breastfeeding along with complementary feeding.¹⁶ In a study conducted in India, 72% of the mothers acknowledged that exclusive breastfeeding should be practiced for 6 months.⁸ In Nigeria, 90% participants were of the opinion that exclusive breast feeding was not ideal for the tropics while in Iran maternal knowledge about breastfeeding was also low.^{4,17}

Previously there is paucity of robust data from Lahore regarding maternal knowledge, attitude and practice about breastfeeding. Our study highlighted the issues prevailing regarding breast feeding, as well as the aspects that need to be targeted to improve breast feeding practices. Keeping in view the significance of optimal breastfeeding and weaning practices in child's overall survival rate, a cross sectional study was carried out in a tertiary care hospital in Lahore, with the aim to assess knowledge, attitude and infant breastfeeding practices of mothers of infants presenting to a tertiary care hospital of Lahore.

MATERIAL AND METHODS

A cross-sectional study was conducted in January 2018 in Pediatric Medicine department of Mayo Hospital Lahore. The sample size was calculated using Raosoft calculator, with confidence interval of 90% and 6% margin of error, which came out to be 153. A total of 153 mothers of infants attending Pediatric Medicine Department in January 2018 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, presenting with acute illnesses but not requiring admission at the time of study, age up to 12 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 2017/0909) 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 153 mothers, 76% (n=116) belonged to the age group 20-30 years, 16% (n=24) were of 30-40 years, 7% (n=11) were less than twenty years of age and 1% (n=2) were

Knowledge, Attitude and Breastfeeding practices of Mothers of Infants

above forty years. Table-1 describes the demographic characteristics of the infants. Half (51%) of the infants were from 2-6 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.

It was found that there were 60% (n=92) of the mothers who were advised by health care providers about breastfeeding their infants and 16% (n=25) were advised by elders in the family. Twenty four percent study participants (n=36) were breastfeeding the infants by their own decision.

Variables	Frequency N=153	Percentage (%)
Age of the Infant:		
• ≤ 1 month	14	9
• 2-6 months	78	51
• 7-12 months	61	40
Gestational age of Infant:		
• 34 weeks	2	1
• 35-38 weeks	138	90
• ≥38weeks	13	9
Mode of Delivery:		
• Spontaneous vaginal delivery	87	57
• Caesarean section	66	43
After birth Admittance of baby in hospital:		
• No	120	78
• Yes, for <3 days	22	15
• Yes, for 3-7 days	8	5
• Yes, for >10 days	3	2

Table-1: Infants Demographic Characteristics N=153

Regarding breastfeeding knowledge as shown in Table-2, majority (90%) 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 94%. 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.

Variables	Frequency N=153	Percentage (%)
What do you know about colostrum?		
• Beneficial	138	90
• Harmful	14	9
• No idea	1	1
What should be the duration of breast feeding?		
• 12 months	3	2
• 24 months	144	94
• No idea	6	4
When should weaning be started to infant?		
• 3 months	11	7
• 6 months	130	85
• 9 months	9	6
• 1 year	3	2

Table-2: Knowledge of Mothers N=153

Variables	Frequency N=153	Percentage (%)
Do you think exclusive breast-feeding fulfils the nutritional requirements of your baby?		
• Yes	148	97
• No	4	3
• Maybe	1	1
Do you think breastfeeding makes baby strong against infections?		
• Yes	148	97
• No	1	1
• Maybe	4	3
Do you think breastfeeding is easier than formula or buffalo milk feeding?		
• Yes	138	90
• No	9	6
• Maybe	6	4
Do you think your baby is gaining weight adequately?		
• Yes	122	80
• No	12	8
• Maybe	19	12

Table-3: Attitude of mothers towards breastfeeding N=153

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=15) infants of age 6-12 months were wrongly exclusively breastfed although 85% 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 (41%) of the mothers reporting to have breastfed their infants within one hour.

Variables	Frequency	Percentage (%)
When was this baby first given breast milk?		
• within 1st hour of birth	62	40
• within first 6 hours of birth	33	22
• within first 24 hours of birth	21	14
• within first 7 days	35	23
• After 7 days	2	1
Was pre-lacteal given to this baby before breastfeeding?		
• Yes	90	59
• No idea	63	41
What type of feeding are you using for your baby ≤6 months of age? N=92		
• Breast milk	48	52
• Formula Milk	8	9
• Cow's Milk/ Buffalo Milk	2	2
• Breast Milk+Formula Milk	23	25
• Breast Milk+Buffalo/Cow Milk	11	12
What type of feeding are you using for your baby up to 7-12 months of age? N=61		
• Breast milk	15	25
• Formula Milk	5	8
• Cow's Milk/ Buffalo Milk	11	18
• Breast Milk + Formula Milk	13	21
• Breast Milk + Buffalo/Cow Milk	17	28
How often do you think baby needs to be breastfed?		
• When baby cries	97	63
• Every 2-4 hours	10	7
• Both	46	30

Table-4: Practices of breastfeeding by mothers N=153

Table-5 showed that apart from infants who were exclusively breastfed, about 32% (n=49) mothers were using formula milk but 61% (n=30) were aware of correct method of making formula feed i.e. 1 scoop in 1-ounce water. Similarly, there were 27% (n=41) mothers giving buffalo/cow milk alone or in combination with breast milk but then again 10%(n=4) were over diluting it i.e. 1 part of buffalo/cow milk to 2 parts of water.

Variables	Frequency N=153	Percentage (%)
Mothers giving formula milk alone or in combination with breast milk, method of preparation is:	49	32
• 1 scoop in 1-ounce water	30	61
• 1 scoop in 2-ounce water	13	27
• 2 scoops in 1-ounce water	6	12
If giving buffalo milk/cow milk/goat milk, dilution fraction (milk: water) is:	41	27
• No dilution	24	58
• 2:1	13	32
• 1:2	4	10

Table-5: Constitution of different types of feeding milk N=153

Table-6 showed that after applying chi square test, a significant association ($p=0.034$ i.e. $p<0.05$) of early initiation of breastfeeding with mode of delivery was noted; 68% of the babies that were given breast milk within one hour were delivered normally. It was found that no association ($p=0.148$ i.e. $p>0.05$) 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. $p>0.05$).

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

Table-6: Chi Square Tests

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 in Universities of Lahore, 43% participants thought that the duration for breast feeding was less than twelve months.¹⁸ Half of the participants (50%) of a study conducted in Sana'a city Yemen, stated that they continued breastfeeding for two years.¹⁹

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.⁸ In our study, 60% of the participants stated that they were counseled by doctors/lady health workers relatively a higher percentage was found in another study conducted in Lahore.¹⁸ Probably it is because of the different study setting and educational status differences among mothers. In Sialkot, only 29% mothers received antenatal counselling for breastfeeding from doctors and lady health workers.¹¹ The source of information for breastfeeding was mainly health care providers even in foreign countries although the frequency varies among different studies.^{17,20,21}

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} However, a study from Nepal noted higher practice of exclusive breastfeeding when mothers lived in extended families, probably due to better family support.²⁵ The Millennium Development Goals report 2013 pointed that < 50% of new-borns were breastfed within 1st hour of birth and in our study it was also less than 50% (41%).²⁶

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.³ 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.²⁷ In our study 90% mothers considered it beneficial. There were thirty-five percent of the mothers who gave pre-lacteal feed to the infants and 14% discarded colostrum in a study carried out in Karachi.²²

The WHO recommended initiation of breastfeeding within one hour of birth but our study showed low percentage of (41%) early initiation of breastfeeding while in a study conducted in Rawalpindi, 86% of women started feeding after 6-24 hours.¹² 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.²⁰

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 hemorrhage.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.7-12 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 emphasizes the need to counsel mothers 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. Steps should be taken to improve access to practical information and demonstrations of methods and various issues related to breast feeding, during antenatal and postnatal clinics and routine follow ups for assessment of the progress. It is essential for the mothers of all backgrounds and educational status to exclusively breastfeed their babies. Government should also make policies and take initiatives for enhancing lactation management services from home to home.

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