

Knowledge, attitudes, and breast feeding practices of postnatal mothers: A cross sectional survey

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Abstract

Background: Breast feeding has several benefits for both the infants and mothers. However, despite strong evidences in support of breast feeding its prevalence has remained low worldwide. The objective of the present study was to examine the knowledge and attitude towards breast feeding and infant feeding practices among Indian postnatal mothers.

Methodology: A cross sectional descriptive study was carried out among randomly selected postnatal mothers at Pediatric outpatient department at a tertiary care center. Data was collected through face-to-face interview using a structured questionnaire.

Results: Our findings revealed that a majority (88.5%) of the mothers were breast feeders. However, merely 27% of the mothers were exclusive breast feeders and only 36.9% initiated breast feeding within an hour. While mothers have good knowledge on breast feeding (12.05 ± 1.74 , $M \pm SD$), the average score of the Iowa Infant Feeding Scale (IIFAS) (58.77 ± 4.74 , $M \pm SD$) indicate neutral attitudes toward breast feeding. Mothers those who were currently breast feeding (58.83 ± 4.74) had more positive attitudes than non- breastfeed mothers (45.21 ± 5.22).

Conclusion: Our findings also show that the level of exclusive breast-feeding was low. Thus, it is important to provide prenatal education to mothers and fathers on breast-feeding. We also recommend strengthening the public health education campaigns to promote breast-feeding.

Keywords: Attitudes, Breast feeding, India, Infant feeding practices, Knowledge, Mothers

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Introduction

Breastfeeding is a basic human activity, vital to infant and maternal health and of immense economic value to households and societies. ⁽¹⁾ The WHO recommends that for the first six months of life, infants should be exclusively breastfed to achieve optimal growth, development, and health. Thereafter, infants should receive nutritionally adequate and safe complementary foods, while continuing to breastfeed for up to two years or more. ⁽²⁾ Exclusive Breast Feeding (EBF) is defined as infant feeding with human milk without the addition of any other liquids or solids. ⁽³⁾ The benefits of breast-feeding, to both mother and baby, have long been recognized. ⁽⁴⁾ Despite strong evidences in support of EBF for the first six months of life, its prevalence has remained low worldwide ⁽⁵⁻⁷⁾ and it is estimated that only about one-third of infants were exclusively breastfed for the first six months of life. ⁽³⁾

In India, breastfeeding appears to be influenced by social, cultural, and economic factors. In 1991, Breastfeeding Promotion Network of India (BPNI) was born to protect, promote and support breastfeeding. ⁽⁸⁾ Further, the Government of India has undertaken National Rural Health Mission, which intends to implement Integrated Management of Neonatal and Childhood Illnesses (IMNCI) through the existing healthcare delivery system. ⁽⁹⁾ Poor practices and attitudes toward exclusive breastfeeding have been reported to be among the major reasons for poor health outcomes among children, particularly in developing countries. Nonetheless, the promotion and acceptance of practices, such as exclusive breastfeeding, are especially important in developing countries with high levels of poverty, and that are characterized by a high burden of disease and low access to clean water and adequate sanitation. ⁽¹⁰⁾

Breastfeeding has declined worldwide in recent years, as a result of urbanization and maternal employment outside the home. Studies in India have also shown a decline in breastfeeding trends, especially in urban areas. ⁽¹¹⁾ Early initiation of breastfeeding is not seen in over 75% of the nation's children and over 50% of children are not exclusively breastfed. ⁽¹²⁾ Hence, the low figures for early initiation of breastfeeding in India are a matter

of urgent concern. Although, the practice of breast feeding is influenced by various social, cultural and religious beliefs, maternal infant feeding attitude has been shown to be a stronger independent predictor of breastfeeding initiation. ⁽¹³⁾ In addition, maternal positive attitudes toward breastfeeding are associated with continuing to be breastfeeding longer and have a greater chance of success. ⁽¹⁴⁾ On contrary, negative attitudes of women toward breastfeeding is considered to be a major barrier to initiate and continue to breastfeeding. ⁽¹⁵⁾ While, a number of studies have assessed knowledge, attitude and practice of breastfeeding in different parts of the world; such studies are limited among Indian mothers. ⁽¹⁶⁻¹⁸⁾ However, there were no reported studies of breastfeeding knowledge and attitudes of mothers using the IIFAS (Iowa Infant Feeding Attitudes Scale) from India, which may be different from other cultures. Further, maternal attitude is also a concept of interest to health professionals who support breastfeeding. Thus the present study was developed to examine the infant feeding practices, knowledge and attitude towards breast feeding among Indian postnatal mothers' using the IIFAS.

Materials and methods

This was a cross sectional study carried out among post natal mothers who attended immunization clinics and the Pediatric Out Patient Department with their children for vaccination and for the treatment of other minor illnesses at a tertiary care hospital in the month of January 2014.

Study participants were selected through a random sampling method of the database of children attending the Pediatric outpatient department. Those who met the inclusion criteria were interviewed. The study criteria were; a) mothers of healthy infants aged 6 months, b) born between 37 and 42 gestation weeks, c) and without major birth defects such as congenital heart disease, cleft lip/cleft palate and Down syndrome and d) who volunteered to participate. Mothers of preterm babies, and multiple gestations were excluded. One hundred and thirty eight mothers were enrolled in to the present study. However, the final sample comprised of 122 mothers because of few of the participants (n=12) refused to participate due to lack of interest

and lack of time and we could not complete the interviews since mothers could not manage the infants (n=4).

Data collection Instruments

Demographic data survey instrument

The demographic form elicited information on participants' background: age, marital status, religion, place of residence, employment, education, family's monthly income, type of delivery, number of deliveries, current breast feeding practices, exclusive breast feeding and initiation of breast feeding within an hour.

Questionnaires Data Collection

A structured questionnaire has been used to assess knowledge and attitudes towards breastfeeding among postnatal mothers.

This questionnaire has two sections;

Section A: This part of questionnaire was developed by the researchers based on the review of literature and past experiences. There were 15 items (3 negatively worded items) to measure knowledge of the participants towards breastfeeding. Each item in the knowledge section of the questionnaire had 3 possible responses, namely True, False, and not sure. One mark was awarded for every correct response, zero otherwise. Hence, the total number of marks in the knowledge section ranged from 0 to 15. This part of questionnaire was validated by twelve nursing and obstetrics experts.

Section B: The Iowa Infant Feeding Attitudes Scale (IIFAS) was used to assess mothers' attitudes toward breastfeeding. ⁽¹⁹⁾ The scale included 17 attitude items to determine level of agreement to each question. A 5-point Likert scale from strongly disagree to strongly agree was applied to all questions. Approximately half of the questions were negatively worded (i.e. 1, 2, 4, 6, 8, 10, 11, 14, and 17). Total IIFAS score ranged from 17 to 85 with higher scores reflecting more positive attitudes on breastfeeding. Total scores were grouped into three groups (1) positive to breastfeeding (70-85), (2) neutral (49-69), and positive to formula feeding (17-48). The Iowa Infant Feeding Attitudes Scale (IIFAS) is a valid and reliable

measure (Cronbach's alpha scores ranges from (.85-.86) that evaluates breastfeeding knowledge and attitudes in cross-cultural settings. ⁽²⁰⁻²²⁾

Data collection procedure

After obtaining the permission from hospital authorities, all mothers were given an explanation of purpose of the study. Written informed consent was obtained from the mothers who were willing to participate in the study. Data were collected by the researchers through face-to-face interview, in a private room at the treatment facilities where the participants were recruited. It took approximately 25 minutes to complete the structured questionnaire. Though, it was not part of the study, researchers educated the mothers about the importance of continuing breast feeding up to 2 years.

Ethical consideration

Written consent was obtained from the participants and they were given freedom to quit the study. Participants' confidentiality was respected.

Statistical analysis

Responses of the negatively worded items were reversed before data analysis. The data were analyzed using statistical software and results were presented in narratives and tables. The relationship between IIFAS scores and socio-demographic variables was tested by using correlation, t-tests, or a one-way analysis of variance. The significance level for all statistical analysis was set at 0.05.

Results

Sample description

The sample of the present study comprised of postpartum mothers (N=122) of whom 71.3% (n=87) belonged to 20-25ys age group. The mean age of the participants was 23.07±3.50 (M±SD) and average income was Rs/- 2.655±1.48 (M±SD). The majorities (66.4%) of them were Hindus and were from rural background (64.8%). More than three fourth of the participants were homemakers (77.8%) and had normal delivery. Nearly half of the participants were illiterate and primary educated (49.2%). Although most of the mothers (88.5%) were breastfeeding their infants, merely 27% of the mothers were

exclusive breast feeders and 36.9% initiated breastfeeding within an hour of delivery (Table 1).

Table 2 shows the mothers knowledge towards breastfeeding. The majority of the mothers agreed that colostrums is first breast milk (96.7%) and is important to maintain the immunity of the baby (99.2%). While, 85.2% felt that exclusive breast milk to be given during first 6 months, only 68% stated that breastfeeding should be continued up to 2 years. Similarly most of the mothers were aware of the importance of burping after each feed (91.8%), importance of taking healthy food (98.4%) and breast feeding helps in mother and child bonding (97.5%). All the mothers stated that mothers should sit comfortably during breastfeeding. However, 40.2% of the mothers opined that breast feed can affect the beauty of the feeding mothers and 56.6% stated that breastfeeding should be stopped when they start weaning the baby. Nonetheless, the average scores (12.05 ± 1.74 , $M \pm SD$) indicate that mothers have good knowledge about breastfeeding.

Concerning attitudes of the mothers towards breast-feeding, the majority of the participants agreed that breastfeeding is more convenient than formula feeding (83.6%) and increases mother infant bonding (73.8%). While 26.2% of the mothers disagreed, half (50%) of them were neutral to the statement "breast milk is lacking in iron". However 36.9% of the participants opined that "formula feeding is the better choice if the mother plans to go

back to work". Of the mothers, 57.4% agreed that formula feed miss one of the great joys of motherhood and fathers doesn't feel left out if a mother breastfeeds (81.2%). Nearly three fourths of the participants agreed that the women can breastfeed in public places such as restaurants (75.4%). The majority stated that breast milk is ideal for the babies (89.3%), easily digested (83.6%) and healthy for an infant than formula (82.8%). More than half (50.8%) of the mothers felt that the mother who occasionally drinks alcohol should not breast-feed the baby. However, the average score of the IIFAS (58.77 ± 4.74 , $M \pm SD$) lay in the range of 'neutral breastfeeding attitudes'. Most of the individual items had a mean score over 3 and only three items had a mean score less than 3, indicating that most of the mothers had neutral to positive attitude towards breastfeeding (Table 3).

Mothers from urban background (60.23 ± 4.11 , $p < .012$) and monthly income above Rs 2500/- had higher IIFAS scores, indicating more favorable attitudes towards breastfeeding. There was also significant difference with regard to current breast feeding practices ($p < .000$). Mothers those who were currently breastfeeding (58.83 ± 4.74) had more positive attitudes than non-breastfeeding mothers (45.21 ± 5.22) did. Although there were no significant differences found, older aged mothers (60.00 ± 5.40) and homemakers (59.13 ± 4.72) had more positive attitudes towards breastfeeding than the other participants (Table 4).

Table 1. Socio demographic characteristics of the participants

Demographic variables	Group	Frequency	Percentage
Age in years	<19	13	10.6
	20-25	87	71.3
	26-30	18	14.8
	>31	4	3.3
Income	<2500	78	64
	2501-5000	36	29.5
	5001-10000	8	6.5
Marital status	Married	122	100
Religion	Hindu	81	66.
	Muslim	41	33.6
Background	Rural	79	64.8
	Urban	43	35.2
Employment	Employed	18	14.8

	Labour	9	7.4
	Homemaker	95	77.8
Education	Illiterate	21	17.2
	Primary	39	32
	Secondary	51	41.8
	Puc	9	7.4
	Degree and above	2	1.6
Type of delivery	Normal	91	74.6
	Caesarian	31	25.4
Gravida	Primi	69	56.6
	Multigravida	53	43.4
Current Breast feeding practices	Yes	108	88.5
	No	14	11.5
Exclusive breast feeding	Yes	33	27
	No	89	73
Breast feeding initiation within an hour	Yes	45	36.9
	No	77	63.1

Table 2. Mothers' knowledge regarding breastfeeding

Variables	True		False		Mean \pm SD
	f	%	F	%	
Colostrum is first breast milk	118	96.7	4	3.3	0.96 \pm 0.17
Colostrum is important for the baby to maintain immunity	121	99.2	1	0.8	0.99 \pm 0.09
Burping should be done after each feed	112	91.8	10	8.2	0.93 \pm 0.30
Breast feeding should be continued Up to 2 years	83	68	39	32	0.68 \pm 0.46
Exclusive breast milk can be given during first 6 months	104	85.2	18	14.8	0.85 \pm 0.35
Lactating mother should take healthy food to improve secretion of milk	120	98.4	2	1.6	0.98 \pm 0.12
During breastfeeding the mother should sit comfortably	122	100	0	0	1.00 \pm 0.00
During breastfeeding the mother should maintain eye to eye contact and talk with the baby	113	92.6	9	7.4	0.92 \pm 0.26
Wash each breast with warm water before breast feeding	105	86.1	17	13.9	0.86 \pm 0.34
Awakening the baby while breastfeeding	74	60.7	48	39.3	0.60 \pm 0.49
Breast feeding helps in mother and child bonding	119	97.5	3	2.5	0.97 \pm 0.15
Breast feeding can prevent diseases affecting breast	116	95.1	6	4.9	0.95 \pm 0.21
Breastfeed affect the beauty of feeding mothers	49	40.2	73	59.8	0.40 \pm 0.49
Mother should not feed the child when she has diarrhea	44	36.1	78	63.9	0.36 \pm 0.48
Stop breastfeeding when you start weaning	69	56.6	53	43.4	0.56 \pm 0.49
Mean Knowledge score					12.05 \pm 1.74

f- frequency, SD- Standard Deviation

Table 3. Mothers' attitudes towards breastfeeding on IIFA Scale

Variables	Disagree		Neutral		Agree		Mean (SD)
	f	%	f	%	F	%	
The benefits of breast milk last only as long as the baby is breast fed*	73	59.8	13	10.7	36	29.5	3.43 ± 1.05
Formula feeding is more convenient than breastfeeding	102	83.6	8	6.6	12	9.8	3.90 ± 0.78
Breastfeeding increases mother infant bonding	16	13.1	16	13.1	90	73.8	3.58 ± 0.89
Breast milk is lacking in iron*	32	26.2	61	50	29	23.8	3.12 ± 1.04
Formula fed babies are more likely to be overfed than breastfed babies	81	66.3	14	11.5	27	22.2	2.49 ± 0.98
Formula feeding is the better choice if the mother plans to go back to work*	69	56.5	8	6.6	45	36.9	3.40 ± 1.19
Mothers who formula feed miss one of the great joys of motherhood	35	28.7	17	13.9	70	57.4	3.25 ± 1.07
Women should not breastfeed in public places such as restaurants	92	75.4	6	4.9	24	19.7	3.77 ± 1.05
Breastfed babies are healthier than formula fed babies	27	22.1	3	2.5	92	75.4	3.60 ± 1.08
Breastfed babies are more likely to be overfed than formula fed babies	28	23	19	15.6	75	61.4	2.59 ± 0.99
Fathers feel left out if a mother breast feeds*	99	81.2	13	10.7	10	8.2	3.84 ± 0.72
Breast milk is the ideal food for babies	11	9.1	2	1.6	109	89.3	3.93 ± 0.89
Breast milk is more easily digested than formula	18	14.8	2	1.6	102	83.6	3.77 ± 0.91
Formula is as healthy for an infant as breast milk*	101	82.8	4	3.3	17	13.9	3.99 ± 0.94
Breastfeeding is more convenient than formula	25	20.5	0	0	97	79.5	3.60 ± 1.08
Breast milk is cheaper than formula	12	9.8	3	2.5	107	87.7	3.82±0.85
A mother who occasionally drinks alcohol should not breastfeed her baby*	28	23	32	26.2	62	50.8	2.62±1.11
Mean attitude score							58.77 ± 4.74

* Reverse scored items

Table 4. Differences in demographic factors and total attitude scores

Demographic variables	Group (N=122)	Mean (SD)	P-value
Age in years	<25 (n=100)	58.51(4.57)	0.184
	>25 (n=22)	60.00(5.40)	
Religion	Hindu (n=81)	58.83(4.90)	0.839
	Muslim (n=41)	58.65(4.48)	
Background	Rural (n=79)	57.98(4.90)	0.012*
	Urban (n=43)	60.23(4.11)	
Income	<2500 (n=78)	57.91(4.45)	0.007*
	>2500(n=44)	60.31(4.90)	
Employment	Employed (n=28)	57.57(4.70)	0.126
	Home makers (n=94)	59.13(4.72)	

Education	Illiterate (n=60)	59.50(4.94)	0.099
	Literate (n=62)	58.08(4.47)	
Type of delivery	Normal (n=91)	58.40(4.54)	0.139
	Caesarian (n=31)	59.87(5.22)	
Gravid	Primi (n=69)	58.91(4.76)	0.723
	Multipara(n=53)	58.60(4.76)	
Current Breast feeding practice	Yes (n=108)	58.83(4.74)	0.000*
	No (n=14)	45.21(5.22)	
Exclusive breast feeding	Yes (n=33)	59.16(4.96)	0.137
	No (n=89)	57.72(3.97)	
Breast feeding initiation within an hour	Yes (n=45)	58.80(4.92)	0.936
	No (n=77)	58.73(4.48)	

* Significance at $p < 0.05$

Discussion

To our best knowledge, this was the first study that examined knowledge and attitudes towards breastfeeding among postnatal mothers using an internationally standardized tool (IIFAS) in India. Although, the present study demonstrated good knowledge among Indian mothers, they hold neutral attitudes toward breastfeed indicating room for improvement.

In the present study, majority (88.5%) of the mothers were breast feeding their infants. While, 85.2% of the mothers were aware of EBF, merely 27% were exclusive breast feeders. These findings are supported by previous studies from different parts of the world. ^(23,24) However, the low prevalence of EBF at six months of age in our study (27%) was substantially lower than previous studies ⁽²⁵⁾ but higher than a recent studies from India (7.8% and 16.5%) ^(26, 27) New Guinea (17%), ⁽²⁸⁾ and Nigeria. ⁽²⁹⁾ Further, studies indicate the prevalence of exclusive breastfeeding at six months is generally low in low resource countries and varies from 9% ⁽³⁰⁾ to 40%. ⁽¹⁶⁾

The majority of the mothers started supplementary feed at 4-6 months of age and the reasons given by them were; insufficient milk, to calm down the baby and believed that breast milk alone is insufficient for a growing baby. Published reports indicate that insufficient milk supply was the most common reason cited by the women for weaning. This finding was similar to those found in other studies. ^(14,31) In a recent evaluation of the Millennium Development Goals (MDGs),

exclusive breastfeeding (EBF) for six months was considered as one of the most effective interventions to achieve Millennium Development Goals (MDG-4). ⁽³⁰⁾ However, breastfeeding promotion interventions in developing countries have been shown to result in a six fold increase in exclusive breastfeeding rates at six months. ⁽³²⁾

According to Infant and Young Child Feeding (IYCF, 2006) guidelines, Government of India recommends that initiation of breastfeeding should begin immediately after birth, preferably within one hour. ⁽³³⁾ Though, majority of the mothers delivered normally and in the hospital, only 36.9% of the mothers stated that they had initiated breastfeeding within an hour. Most common reasons for delay in initiation of breastfeeding as cited by the mothers were; delay in shifting the mothers from labor room, babies were in neonatal ICU, Caesarean section and family restriction. This is higher than the studies conducted from different parts of the world ranging from 6.3% to 31%. ^(17, 25, 34, 35) On the contrary, few studies demonstrated higher rate of breastfeeding initiation 38% ⁽³⁶⁾ 53% ⁽³⁷⁾ and 72.2%. ⁽²⁵⁾ However, the data in various studies in India shows that initiation rates vary from 16 to 54.5%. ⁽³⁸⁾ These findings indicate health professionals to be made aware about the importance of initiating early breastfeeding is an urgent concern.

In the present study, 85.2% of the mothers were aware of EBF. This finding is consistent with previous results that lactating mothers from developing countries have good

knowledge of EBF. ^(25, 39) Similarly, 68% mothers in the current study felt that they should continue breastfeeding till the age of 2 years. This finding is consistent with a recent study that found 75% mothers were aware that they should continue breastfeeding till the age of 2 years. ⁽³⁵⁾ Mothers who breastfed at 6 months had a higher average score (58.83 ± 4.74) on the IIFAS than their non-breastfeeding counterparts (45.21 ± 5.22) and significant difference was observed ($p < .000$). Previous studies also have shown that mothers who do not breastfeed have negative attitudes towards breastfeeding. ⁽⁴⁰⁾ Most mothers had low attitude scores towards "Breast milk is lacking in iron", "Formula fed babies are more likely to be overfed than breastfed babies" and "A mother who occasionally drinks alcohol should not breastfeed her baby" and indicated future promotion program should improve these knowledge and attitudes. On the other hand, consonance with previous reports about breastfeeding, most of the mothers in this study agrees that breastfeeding promotes mother-baby bonding. ⁽⁴¹⁾

A number of studies also enlightened that there are psychological benefits for both mother and infant as the act of breastfeeding is a time of physical contact and closeness which nurtures the bond between the two. ^(42, 43) In line with previous research, mothers from urban background had higher score on IIFAS and indicate more positive attitudes toward breastfeeding. ⁽²³⁾ Maternal education has been described as one of the strongest determinants of the practice of EBF. ⁽⁴⁴⁾ Though, no difference was found between education and attitudes score, surprisingly, in our study illiterate mothers (59.50 ± 4.94) than literate mothers (58.08 ± 4.47) hold better positive attitudes toward breast feeding. This finding is similar to results from Jordan where less educated women were more likely to breastfeed than women of higher education level. ⁽⁴⁵⁾ Studies indicate that mothers with higher family income had better attitudes towards breastfeeding and similar finding was observed in the study sample. ^(46, 47) Mothers with income higher than 2500 Rs/- (57.91 ± 4.45) had better attitudes than mothers with low income (60.31 ± 4.90) and significant difference was found ($p < .007$).

Though, statistically significant difference was not found between attitude scores and

age, employment. Mothers older than 25 years and homemakers had more positive attitudes toward breast feeding. This finding is consistent with previous reports that showed high rates of awareness of EBF among older groups ⁽⁴⁷⁾ and homemakers. ⁽⁴¹⁾ These findings can be attributed to homemakers who can focus on motherhood than working women. Studies have found a direct correlation between positive attitude to breastfeeding and optimal EBF practice. ^(15, 48, 49) The mothers in the present study had adequate knowledge and neutral attitudes toward breast feeding. These findings were supported by a recent study that found most mothers had neutral knowledge and attitude on breastfeeding. ⁽⁴⁷⁾

Limitations

The present study has certain limitations such as cross sectional in nature, all the participants were at 6 months postpartum and small sample size that made difficult to generalize the findings. Future research should be focused on larger sample and qualitative studies such as focus group interviews to identify barriers to promote breast feeding among Indian mothers. Further, perceptions of health care providers towards breast feeding may provide greater understanding of the social and cultural beliefs in maternal and child health care practices postpartum. However, despite of these limitations, the present study findings may be helpful to the clinicians and nursing professionals in designing the interventions to promote breast feeding practices.

Conclusions

The present study concludes that the mothers have a very good knowledge and neutral attitudes toward breast feeding. Our findings also show that the level of exclusive breast feeding was low among Indian mothers. Thus, it is important to provide prenatal education to mothers and fathers on breast feeding. We also recommend strengthening the public health education campaigns to promote breast feeding.

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