

A Cross-Sectional Study of Knowledge, Attitude, and Practice toward Breastfeeding among Postnatal Mothers Delivering at a Tertiary Care Center in Garhwal, India

Abstract

Background: Despite several initiatives taken, exclusive breastfeeding rates remain low. The objective of this study was to evaluate the knowledge, attitude, and practices of breastfeeding and to assess factors associated with breastfeeding practices among postnatal mothers delivering in Garhwal region of Uttarakhand, India. **Methods:** A cross-sectional study was conducted from March 2018 to August 2018 among postpartum mothers who were selected through convenient nonrandom sampling. A semi-structured questionnaire including the participants' data, knowledge, attitude, and practices was used. **Results:** A total of 361 postnatal mothers participated in the study. 88.92% knew that breastfeeding should be continued for 6 months after birth and almost 64.81% initiated breastfeeding within 1 h of birth. 26.59% of the women discarded colostrum. 16.35% of the mothers gave prelacteal feeds, with formula milk being the most common prelacteal feed. 82.82% of the mothers did not receive breastfeeding counseling during antenatal visits. Multiparous women, those undergoing vaginal delivery (VD), and those living in joint family were more likely to initiate breastfeeding within 1 h of birth as compared to primiparous women, those undergoing cesarean section, and those living with nuclear families ($P < 0.05$). A significant difference was also noted in terms of giving prelacteal feeds in those undergoing cesarean section as compared to VD (23.71% vs. 13.63%, $P = 0.0217$). **Conclusion:** This study revealed that the rate of early initiation of breastfeeding is still low.

Keywords: Attitude, breastfeeding practices, colostrum, knowledge, prelacteal feeds

Introduction

Breastfeeding is the cornerstone of child survival, nutrition, and development and maternal health. The World Health Organization (WHO) recommends exclusive breastfeeding (EBF) for the first 6 months of life, followed by continued breastfeeding with appropriate complementary foods for up to 2 years or beyond.^[1]

Breastfeeding as an intervention was identified by the Lancet neonatal survival series that can reduce 55%–87% of all-cause neonatal mortality and morbidity.^[2] Studies have reported that breastfeeding reduces neonatal deaths, particularly due to infections^[3] such as diarrhea,^[4] neonatal sepsis,^[5] and pneumonia.^[6] Breastfeeding also has long-term benefits in the form of improved intelligent quotient, obesity, diabetes, and hypertension.^[7] All mothers should be supported to initiate breastfeeding

as soon as possible after birth, within the 1st h after delivery.^[8]

Compared to infants who initiated breastfeeding within 1 h after birth, infants who initiated breastfeeding 2–23 h after birth had a 33% greater risk of neonatal mortality and infants who initiated breastfeeding after 24 h after birth had a 2.19-fold greater risk of neonatal mortality.^[9] Despite various initiatives being taken world over,^[10,11] to improve breastfeeding, it was noted that only 45% of world's newborns and 42% of newborns in South Asia initiated breastfeeding within 1 h of birth.^[12] In India,^[13] only 41.6% of newborns were put to breast within 1 h of birth, whereas in Uttarakhand,^[14] only 27.8% of children received breastfeeding within 1 h.

Breastfeeding rates vary among regions in India.^[15] Multiple factors such as sociodemographic and obstetric characteristics, availability of health

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Submitted: 15-Sep-2020

Revised: 02-Nov-2020

Accepted: 08-Jan-2021

Published: 08-Apr-2021

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Access this article online

Website:
www.ijabmr.org

DOI:
10.4103/ijabmr.IJABMR_605_20

Quick Response Code:



How to cite this article: Kumar R, Mundhra R. A cross-sectional study of knowledge, attitude, and practice toward breastfeeding among postnatal mothers delivering at a tertiary care center in Garhwal, India. *Int J App Basic Med Res* 2021;11:64-9.

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services, and cultural beliefs may have an impact on breastfeeding rates.^[16]

The present study was undertaken to assess the knowledge, attitude, and practices of breastfeeding and to assess factors associated with breastfeeding practices among postpartum women delivering at a tertiary center.

Methods

Study design

This was a cross-sectional observational study conducted from March 2018 to August 2018.

Study setting and participants

This study was carried out in a tertiary center in Garhwal region of Uttarakhand, India. This center serves as the only tertiary level health-care referral facility in the hilly region. The participants were selected by convenient nonrandom sampling. All the women who delivered in the institute's maternity center during the specified time period consenting for interview were included in the study sample. Mothers who lost their baby, babies admitted in neonatal intensive care unit prior to starting breastfeeding, and mothers having babies with conditions/malformations where breastfeeding was difficult or contraindicated were excluded from the study. The study was approved by Institutional Ethics Committee vide number IEC/VCSGGMSI and R/031.

Data collection tool

A researcher-made semi-structured questionnaire was used for interview. It included data on maternal sociodemographic characteristics, breastfeeding knowledge, attitude, and practices along with source of information regarding breastfeeding. Information on breastfeeding practices included timing of initiation of breastfeeding, feeding on colostrum, prelacteal feeds, and EBF of previous child in multiparous mothers.

Data collection

The participants were verbally informed regarding the purpose and method of conducting the study in a language which they fully understood. Verbal informed consent was obtained from each participant prior to the initiating data collection. Each interview was conducted by one of the two researchers or enumerator in a separate room accompanied by a female nursing staff or a female attendant. Each interview lasted for around 20–25 min, keeping in mind about the trust conferred by the participant on the interviewer.

As an institutional protocol, mothers who delivered vaginally were kept for at least 48 h in hospital, whereas those delivering by cesarean section were discharged after 3–4 days only. The interview was conducted after a minimum of 24 h postdelivery.

Statistical analysis

The data were checked, cleaned, coded, and entered into Microsoft Excel spreadsheet and analyzed statistical software, Graph Pad Prism version 8, (GraphPad Software, LLC, USA). Descriptive statistics (frequencies, percentages, means, and standard deviation) were used to describe maternal demographic and socioeconomic characteristics, prevalence of EBF, knowledge, attitudes, and practice of EBF. Chi-square test was used to test for association between the practice of EBF and categorical variables. $P < 0.05$ was used as the criterion for statistical significance.

Results

Three hundred and sixty-one postnatal mothers were included in the study sample as per convenient sampling. Only mothers who consented to participate in the study were included.

Table 1 shows the baseline characteristics of the study participants. The mean age of mothers in this study was 24.84 ± 3.32 years, with a range of 19–37 years.

Table 2 shows the knowledge of breastfeeding among study participants. The main source of information (52.63%) regarding breastfeeding was from family and friends, while only a small fraction (13.85%) received information from mass media. 15.5% received some information from

Table 1: Baseline characteristics of study participants (n=361)

Characteristics	Frequency (%)
Age of mother (years), mean±SD	24.84±3.32
Education	
Illiterate	8 (2.21)
Up to high school	206 (57.07)
Graduate and postgraduate	147 (40.72)
Occupation	
Homemaker	324 (89.75)
Employed	37 (10.25)
Family type	
Nuclear	26 (7.20)
Joint	335 (92.79)
Received ANC care	
No	2 (0.54)
Yes	359 (99.45)
Parity status	
Primipara	191 (52.91)
Multiparous	170 (47.09)
Mode of delivery	
VD	264 (73.13)
Cesarean section	97 (26.86)
Have you received counseling regarding breastfeeding during ANC	
Yes	62 (17.17)
No	299 (82.82)

SD: Standard deviation; ANC: Antenatal care; VD: Vaginal delivery

health-care workers. 88.92% were aware of the fact that breastfeeding should be continued for at least 6 months after birth, while 7.2% felt that it should be less than

Table 2: Knowledge of study participants toward exclusive breastfeeding (n=361)

Variable	Frequency (%)
Source of knowledge of breastfeeding	
None	36 (9.97)
Friends and family	190 (52.63)
Nurses and HCW	35 (9.70)
Doctor	21 (5.82)
Mass media	50 (13.85)
Multiple	29 (8.03)
Duration of EBF (months)	
<6	26 (7.20)
6	321 (88.92)
>6	14 (3.88)
Frequent sucking improves milk production	
Yes	258 (71.47)
No	50 (13.85)
No idea	53 (14.68)
How will you know baby is satisfied?	
Leaves breast	205 (56.79)
Sleeps during breastfeeding	92 (25.48)
Stops crying	59 (16.34)
Multiple	5 (1.39)
EBF protects from diarrhea	
Yes	289 (80.06)
No	14 (3.88)
No idea	58 (16.07)
EBF prevents pregnancy	
Yes	66 (18.28)
No	40 (11.08)
No idea	255 (70.64)
Formula-fed babies gain more weight than breastfed babies	
Yes	80 (22.16)
No	277 (76.73)
No idea	4 (1.11)
Breastfeeding is ideal choice for infant feeding	
Yes	356 (98.61)
No	4 (1.11)
No idea	1 (0.28)
Breastfeeding is cheaper	
Yes	338 (93.63)
No	21 (5.82)
No idea	2 (0.55)
Formula is better for working mothers	
Yes	125 (34.63)
No	182 (50.42)
No idea	54 (14.95)
Increases bonding	
Yes	352 (97.50)
No	9 (2.49)

EBF: Exclusive breastfeeding; HCW: Health-care workers

6 months and 3.88% reported that it should be continued for a period more than 6 months. 71.47% of the mothers agreed to the fact that regular breastfeeding increases breast milk production. 56.79% of the mothers told that the adequacy of breast milk was accessed by satisfaction and stopping of feed by child. 80.06% believed that EBF protects child from diarrheal diseases. Only 18.28% of the study participants were aware of the fact that EBF also gives some protection from pregnancy during lactational amenorrhea. Around 76.73% agreed that breastfed babies gained weight better than formula-fed babies.

98.61% of the mothers considered breastfeed to be ideal food for baby and 96.68% felt that breastfeed makes babies healthier. 93.62% of the mothers thought that breastfeeding is cheaper than formula feeding. 34.63% considered formula feeding a better option while going back to work. 97.50% of the mothers felt that breastfeeding increases mother-child bonding.

Table 3 describes the attitude toward breastfeeding in postnatal women. Approximately, 26.59% of the women discarded colostrum, whereas 71.75% considered it important for baby. 85.87% of the mothers wanted only breast milk to be given for the first 6 months, whereas 14.13% wanted to supplement it with other food. 54.29% of the mothers felt that comfortable position of mother is necessary for breastfeeding. 95.29% considered eye contact to be made with baby during feeds. 44.04% considered it important to wake the baby if it slept during feeding.

Table 4 shows the practices regarding breastfeeding among postnatal women. 35.19% of the mothers did not start

Table 3: Attitude of study participants toward breastfeeding (n = 361)

	Frequency (%)
Colostrum should be discarded	
Yes	96 (26.59)
No	259 (71.75)
No idea	6 (1.66)
What do you want to feed in the first 6 months	
Only breastfeed	310 (85.87)
Breastfeeding and others	51 (14.13)
Comfortable position of mother is necessary for breastfeeding	
Yes	196 (54.29)
No	148 (40.99)
No idea	17 (4.71)
Eye contact is necessary during breastfeeding	
Yes	344 (95.29)
No	16 (4.43)
No idea	1 (0.28)
Should wake baby if sleeps during breastfeeding	
Yes	159 (44.04)
No	196 (54.29)
No idea	6 (1.66)

Table 4: Breastfeeding practices among study participants (n = 361)

	Frequency, n (%)
Timing of starting of breastfeeding (h)	
Within 1	234 (64.81)
1-6	98 (27.15)
6-24	18 (4.99)
>24-48	11 (3.05)
Delay reason	
No delay	234 (64.81)
There was no milk	25 (6.92)
Mother was having pain	23 (6.37)
Baby slept	7 (1.94)
Mother was inside labor room for procedure	51 (14.13)
Baby did not accept	11 (3.04)
Mother was exhausted	10 (2.77)
Prelacteal feeds	
Nothing	302 (83.65)
Sugar water	7 (1.94)
Honey	1 (0.28)
Cows/buffalo milk	3 (0.83)
Formula	47 (13.02)
Tea	1 (0.27)
Breastfeeding should be continued if mother is having diarrhea	
Yes	284 (78.67)
No	69 (19.11)
No idea	8 (2.22)
Breastfeeding can be done in public place	
Yes	316 (87.53)
No	45 (12.46)

breastfeeding within 1 h of birth. The reasons cited for delay were mainly no milk on expression (6.92%), mother having pain (6.37%), baby sleeping when mother arrived (1.93%), mother was not out of labor room (14.13%), tried but baby did not accept (3%), and mother was exhausted (2.77%). Almost 16.35% of the babies received prelacteal feeds, with formula milk being the most common prelacteal feed. 78.67% of the women were of the opinion that breastfeeding should be continued even if mother has diarrhea. Almost 87.53% felt that feeding can be done in public places if baby needs feeding.

As shown in Table 5, multiparous women were likely to initiate breastfeeding within 1 h as compared to primiparous women (74% vs. 56%, $P = 0.0005$). No significant association was observed in terms of colostrum and prelacteal feeding with parity status. It was seen that significantly higher percentage of women delivering vaginally were initiating breastfeeding within 1 h as compared to those undergoing cesarean section (68.94% vs. 53.60%, $P = 0.0069$). A significant difference was also noted in terms of giving prelacteal feeds in those undergoing cesarean section as compared to vaginal delivery (VD) (23.71% vs. 13.63%, $P = 0.0217$). Those

living in joint family were more likely to breastfeed within one of birth as compared to those living in nuclear family (66.57% vs. 42.31%, $P = 0.0126$). Furthermore, they were less likely to give prelacteal feeds as compared to those living in nuclear family (14.93% vs. 34.62%, $P = 0.0089$).

Discussion

The present study shows that despite all mothers receiving some sort of antenatal care (99.46%), only 17.17% of the women received counseling regarding breastfeeding during antenatal visits. This finding is supported by study of Romola *et al.*^[17] who reported that only 16.5% of mothers received counselling regarding breastfeeding during antenatal visits. This study thereby highlights the importance of discussing breastfeeding during antenatal checkups. The main source of information regarding breastfeeding was from family and friends (52.6%). It was seen from this study that though more than 80% of the women knew about duration of EBF, still they were ignorant about the concept of lactational amenorrhea and long-term benefits of EBF. Despite good knowledge about EBF, only 29.5% of the postnatal mothers were actually aware of the benefits of breastfeeding being carried up to adult life. The importance of giving the first milk that is colostrum is still not known to many mothers as nearly 26.59% of the women discarded it, whereas 71.74% considered it important for baby. Unlike ours, Romola *et al.*^[17] reported that 88.4% of the mothers gave colostrum.

Keeping the baby skin to skin on mother's abdomen just after birth is a practice widely promoted by the WHO and UNICEF as part of newborn care package to create an optimal environment for breastfeeding the child.^[18] However, this requires a skilled birth attendant in the labor room who can assist the mother to initiate early feeding. In our hospital also, it was a policy to keep the baby on mother's abdomen immediately after birth, but at times, multiple deliveries take place simultaneously, and with less nursing staff, adoption of this practice becomes difficult to be followed resulting in handing the baby to family members. In a recent systematic review and meta-analysis, it was seen that breastfeeding initiation after the 1st h of birth doubles the risk of neonatal mortality.^[19] In the present study, 64.81% initiated feeding within an hour of birth and 27.14% could feed between 1 and 6 h. These data are quite high as compared to the corresponding national (41.6%), Uttarakhand (27.8%), and more specifically Garhwal region (26.3%). Rathaur *et al.*^[20] conducted a study on infant feeding practices among infants attending outpatient pediatric clinics in the same institute. They reported that 46.4% received breast milk within 1 h of birth, but their method of eliciting these data was based on recall method as compared to ours, wherein we obtained information just 24 h of birth while mother was still in hospital. The high percentage of early initiation of breastfeeding as compared to lower rates at national and

Table 5: Association of breastfeeding practices with parity, mode of delivery, and type of family

Breastfeeding practices	n (%)	Started within 1 h		Colostrum given		Prelacteal feed given	
		Yes	No	Yes	No	Yes	No
Parity							
Primipara	191 (52.91)	108 (56.54)	83 (43.45)	134 (70.16)	57 (29.84)	34 (17.80)	157 (82.20)
Multipara	170 (47.09)	126 (74.12)	44 (25.88)	125 (73.53)	45 (26.47)	25 (14.71)	145 (85.29)
Mode of delivery							
VD	264 (73.13)	182 (68.94)	82 (31.06)	182 (68.94)	82 (31.06)	36 (13.64)	228 (86.36)
LSCS	97 (26.87)	52 (53.61)	45 (46.39)	77 (79.38)	20 (20.62)	23 (23.71)	74 (76.29)
Type of family							
Nuclear	26 (7.20)	11 (42.31)	15 (57.69)	17 (65.38)	9 (34.62)	9 (34.62)	17 (65.38)
Joint	335 (92.80)	223 (66.57)	112 (33.43)	242 (72.24)	93 (27.76)	50 (14.93)	285 (85.07)
P^a		0.0005*		0.4775		0.4273	
P^b		0.0069*		0.0508		0.0217*	
P^c		0.0126*		0.4546		0.0089*	

^aAssociation between parity and breastfeeding practices, ^bAssociation between mode of delivery and breastfeeding practices, ^cAssociation between type of family and breastfeeding practices. VD: Vaginal delivery; LSCS: Lower segment cesarean section

regional levels could be explained by the fact that it was a hospital-based study, with most women being literate (>80% were high school pass and above). In our study, only 16.35% of the babies received prelacteal feeds in contrast to 33.6% reported by Rathaur *et al.* The higher percentage of early initiation of breastfeeding along with low prelacteal feeds could be due to better acceptance of breastfeeding initiatives by family members also. With increased literacy rates and promotion of institutional deliveries with monetary schemes, families are trying to balance their cultural beliefs with current advancements. More and more women now try to access health-care facilities which were also evident by almost 100% of the women registering for antenatal care, as shown in this study.

Mother's health-related factors such as being unconscious after delivery^[21,22] and fatigue^[23] have been cited as potential factors in delaying breastfeeding. In our study, the reasons for delay in initiation of breastfeeding were mainly no milk (6.92%), mother having pain (6.37%), baby slept (1.93%), mother was in labor room (14.13%), baby did not accept (3%), and mother tired and slept (2.77%).

Various factors are known to influence breastfeeding practices. High age, education and economic status of mother have a positive effect on BF. Birth weight more than 3 kg and gestation more than 38 weeks have also been found to have positive effect on BF.^[24-26] No significant association was noted in terms of working status of mother and initiation of breastfeeding, but working mothers were noted to discard colostrum as compared to those who were unemployed. Cesarean section is also seen as a hindering factor in early initiation of breastfeeding.^[27] In this study, majority (73.13%) underwent VD, and it was noted that women undergoing VD were more likely to breastfeed and less likely to give prelacteal feeds as compared to those delivering by cesarean sections, difference being statistically significant.

Studies have shown that primiparous women are less likely to initiate breastfeeding within 1 h of birth.^[16] Similarly, in our study also, primiparous mothers were less likely to initiate breastfeeding within 1 h of birth as compared to those having multiple births.

Women living in nuclear families are more likely to exclusively breastfeed as compared to those living in joint families. This could be due to less family inhibitions and interference faced in nuclear families. Romola *et al.*^[17] showed that 23.8% of the mothers from nuclear family initiated breastfeeding within 1 h of delivery as compared to 11.9% from joint families. This was in contrast to our study wherein women living in joint families (66.57%) were more likely to initiate breastfeeding as compared to those living in nuclear families (42.31%) with significant difference noted between the groups.

Strengths and limitations

There are two major limitations of this study. First, conducting a hospital-based interview might have influenced some of the respondents to give socially desirable responses rather than their own thinking. Second, the sampling was a convenient sampling in hospital setting, with majority of attendees having received prior antenatal care. Hence, the data cannot be generalized to all women delivering in the same region. A major strength of this study was that the interview was conducted in hospital settings prior to discharging mother, thereby avoiding the errors related to recall bias.

Conclusion

The results from our study showed that major population had adequate knowledge of breastfeeding and the rate of early initiation of breastfeeding was high as compared to the state data. We recommend that suitable hospital policies with staff training need to be implemented along with public health education campaigns so as to support mothers

in initiating breastfeeding soon after giving birth. Focus should be to provide breastfeeding counseling sessions during antenatal checkups, especially for first-time mothers, to enhance and improve their knowledge and attitude regarding breastfeeding.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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