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*RESEARCH ARTICLE*

# KNOWLEDGE REGARDING BREASTFEEDING - A CROSS-SECTIONAL SURVEY AMONG POSTPARTUM MOTHERS IN A NORTH INDIAN STATE

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## Abstract

**Objective:** To assess the level of knowledge regarding breastfeeding among postpartum mothers who attended immunization clinics in four maternity hospitals in Allahabad, Uttar Pradesh.
**Design:** Descriptive cross-sectional survey design.
**Setting:** Four maternity hospitals in Allahabad, Uttar Pradesh, India.
**Participants:** 400 postpartum mothers (up to 6 months)
**Methods:** The data was collected after obtaining University ethical clearance and administrative permissions from the four maternity hospitals in Allahabad, Uttar Pradesh, India. 400 postpartum mothers who attended the immunization clinics (up to 6 months) were approached through convenience sampling technique. The participants were explained about the purpose of the study. Based on the inclusion and exclusion criteria, the participants were selected. Informed consent was taken from the participants. The demographic data and breastfeeding related knowledge questionnaire was collected from the participants.
**Results:** Only [46(11.5%)] postpartum mothers had good breastfeeding knowledge, [255(63.7%)] had average knowledge and [99(24.8%)] mothers had poor breastfeeding knowledge. The mean knowledge score was 4.94±1.92 (maximum score = 12 with mean score % = 41.16).
**Conclusions:** Mothers' knowledge is a key factor for improving breastfeeding rates. The majority of the mothers attending immunization clinics were having insufficient knowledge regarding breastfeeding. This underlines the need for the involvement of health care professionals in educating mothers about breastfeeding.
**Implications for Practice:** While developing countries strive to increase institutional births, there is a growing demand for a healthy atmosphere for breastfeeding in health care facilities. Improving the knowledge of expecting mothers in the antenatal period itself can bring in a lot of change in practice of breastfeeding as breastfeeding knowledge is an important factor for improving breastfeeding outcomes. Antenatal counseling regarding breastfeeding, arrangement of child birth classes to couples, provision of guidance and support, are

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some of the steps which can enhance confidence in mothers and can lead to successful establishment of breastfeeding.



## Introduction:-

Breastfeeding is well accepted as being beneficial to both newborns and mothers.[1] It has important and far-reaching consequences on children's cognition, behavior, and mental health in addition to being an essential source of nutrients for the infant.[2] The World Health Organization (WHO) recommends that breastfeeding begin as soon as possible after birth, preferably within one hour.[3] Despite the World Health Organization's (WHO) and other international organizations continued recommendations to promote exclusive breastfeeding (EBF) for at least 6 months, the rate of EBF continues to fall in most countries.[4]

For both the mother and the infant, breastfeeding should be started as soon as possible. Colostrum, which is extremely nutritious and contains antibodies that shield the newborn from illnesses, is found in the initial breastfeeding. Regular breast milk production is made easier by early breastfeeding since it promotes the mother and child's attachment. Thus, it is advised that children be put to the breast as soon as possible after birth, preferably within an hour[5] but it is found that only 45% of all babies globally are breastfed within one hour after birth.[4] Only 41% of infants were breastfed in the first hour after delivery, and 87% of the newborns started breastfeeding within a day.[5]

As per NFHS-5, exclusive breastfeeding among children under six months increased from 55 percent in 2015-16 to 64 percent in 2019-21. Despite significant progress in some areas, exclusive breastfeeding is still uncommon in many parts of the developing world.[5]

In Uttar Pradesh, children under age 3 years who were breastfed within one hour of birth are only 23.9%. Similarly, children under age 6 months who were exclusively breastfed are only 59.7%.[6]

For newborns and young children to develop at their best, proper and adequate eating practices are essential. Breastfeeding has been identified by the World Health Organization and the United Nations Children's Fund as the only feeding method that should be used for enhanced baby survival and well health.[7,8] One factor in the low EBF rate is the lack of information women have about the advantages of breastfeeding, as well as the lack of encouragement and support they receive from their loved ones or attending obstetricians.[9,10]

Step 3 of the Baby Friendly Hospital Initiative's (BFHI) Ten Steps to Successful Breastfeeding discusses the necessity of informing all pregnant mothers on the advantages and management of breastfeeding.[11] As a result, multiple studies have revealed the importance of having a brief session during antenatal care visits to review breastfeeding benefits in order to boost breastfeeding rates among pregnant and postnatal mothers. According to Mattar et al., a single session of breastfeeding education and counseling during antenatal care visits may increase breastfeeding knowledge and practice over the first three months following birth.[12]

Different factors, such as mothers' attitudes and planning, which are influenced by their awareness and the help they get, shape the trend variation in breastfeeding practice. Therefore, the present study assesses the postpartum mothers' knowledge regarding breastfeeding and explores the different areas of their breastfeeding knowledge deficit so as to provide necessary support and motivation from the antenatal period.

## Methods:-

**Design –**

A descriptive cross-sectional survey design was used for this study.

**Study Setting & Population –**

The study was conducted among postpartum mothers from four maternity hospitals in Allahabad, Uttar Pradesh, India from July to October 2021. The target study population was composed of postpartum mothers who had delivered live healthy baby at term. 100 mothers from each of the four maternity hospitals (n=400) were selected using convenience sampling technique.

**Study Instrument –**
A semi-structured questionnaire was designed which consisted of two parts - Section A included 8 items related to the demographic data of the postpartum mothers and section B included 12 knowledge based questions related to breastfeeding. Each correct answer was allotted one mark while wrong answer was given zero score and the total score was 12. Based on the score obtained, it is interpreted as Good Knowledge (9–12), Average Knowledge (4–8) and Poor Knowledge (0–3). Informed consent was taken from the participants before data collection.

**Data Collection –**
The data was collected after obtaining ethical clearance from the institution and administrative permission from the Medical Directors of each of the four maternity hospitals in Allahabad. Postpartum mothers who were attending the immunization clinics (up to 6 months postpartum) meeting the inclusion and exclusion criteria were approached. The inclusion criteria included those mothers who had delivered live healthy baby at term while those mothers who were suffering from conditions like pre-eclampsia, HIV etc that affects the breastfeeding outcomes, whose babies were diagnosed with fetal congenital anomalies like cleft lip and cleft palate and/or having any psychiatric illness were excluded from the study. Informed consent was taken from each participant after explaining the purpose of the study and ensuring their willingness to participate. Mothers' demographic data as well as breastfeeding knowledge was assessed using a semi-structured questionnaire.

**Data Analysis –**
The data was organized using the MS Excel software programme, coded, and analyzed using the Statistical Package for Social Sciences (SPSS) version 23. For numerical data, means and standard deviation (S.D.) were utilized, whereas for categorical data, percentages were employed. Chi-square test was conducted to assess the association between knowledge and selected demographic variables.

## Results:-
The demographic characteristics of the postpartum mothers are given in Table 1.

**Table 1:-** Demographic data of the postpartum mothers n = 400.

| S.No. | Demographic Data | Frequency (f) | Percentage (%) |
|---|---|---|---|
| **1.** | **Age** | | |
| | (a) 22-28 yrs | 266 | 77.4 |
| | (b) 29-35 yrs | 134 | 22.6 |
| **2.** | **Maternal Education** | | |
| | (a) No formal education | 62 | 15.5 |
| | (b) Primary | 144 | 36.0 |
| | (c) Secondary | 127 | 31.8 |
| | (d) College/ University | 67 | 16.8 |
| **3.** | **Religion** | | |
| | (a) Hindu | 339 | 84.8 |
| | (b) Muslim | 59 | 14.8 |
| | (c) Sikh | 1 | 0.3 |
| | (d) Christian | 1 | 0.3 |
| | (e) Others | 0 | 0 |
| **4.** | **Working status** | | |
| | (a) Working | 76 | 19.0 |
| | (b) Non-working | 324 | 81.0 |
| **5.** | **Parity** | | |
| | (a) One | 195 | 48.8 |
| | (b) Two | 173 | 43.3 |
| | (c) Three | 31 | 7.8 |
| | (d) More than three | 1 | 0.3 |

| | | | |
|---|---|---|---|
| **6.** | **Type of Family** | | |
| | (a) Nuclear | 294 | 73.5 |
| | (b) Joint | 106 | 26.5 |
| **7.** | **Type of delivery** | | |
| | (a) Normal vaginal delivery | 117 | 29.5 |
| | (b) Assisted delivery | 54 | 13.5 |
| | (c) Caesarean section | 229 | 57.3 |
| **8.** | **Family support for breastfeeding** | | |
| | (a) Yes | 400 | 100 |
| | (b) No | 0 | 0 |

Table 1 show that majority of the postpartum mothers [266(77.4%)] were in the age group between 22 years and 28 years and most of them [144(36%)] had primary education. Majority of the mothers [339(84.8%)] were Hindu by religion and showed non-working status [324(81%)]. Among the subjects, [195(48.8%)] mothers were primigravida and had nuclear family [294(73.5%)]. All the mothers [400(100%)] reported good family support for breastfeeding.

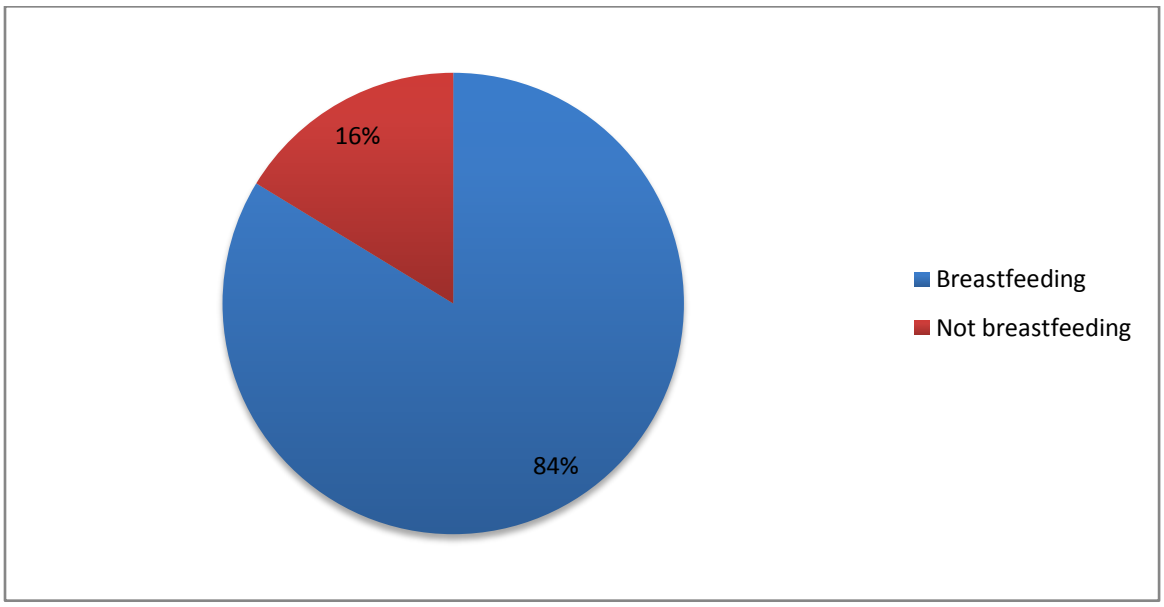


**Figure 1:-** Distribution of postpartum mothers based on their breastfeeding status (n=400).

Figure 1 show that majority of the mothers [377(84%)] were breastfeeding their babies while [63(16%)] mothers were not giving breastfeeds to their babies.

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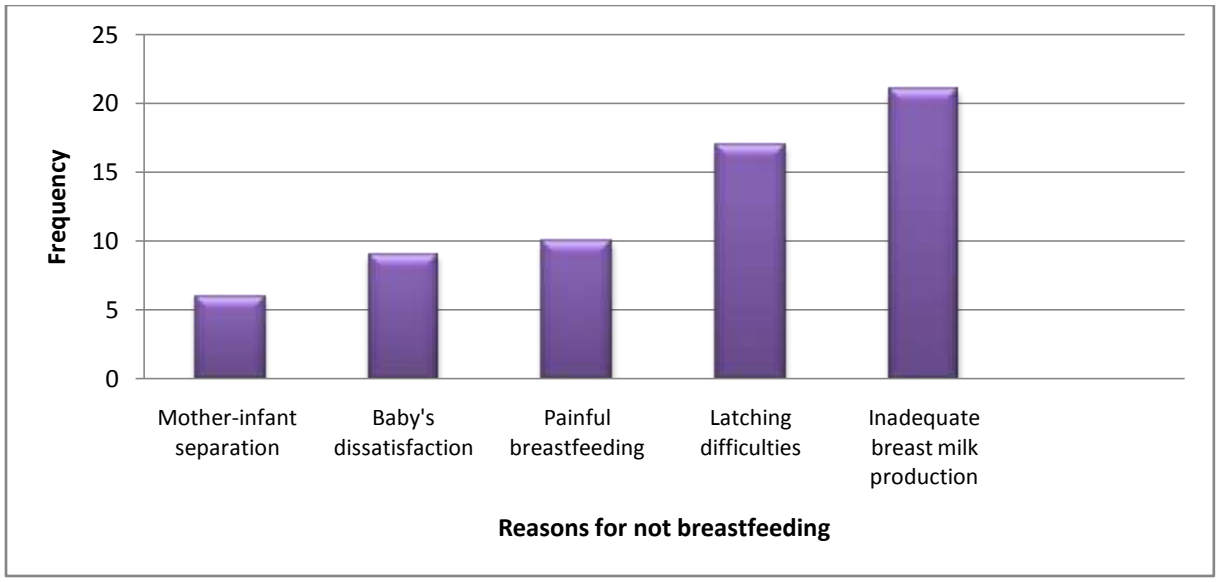


**Figure 2:-** Distribution of postpartum mothers based on their reasons for not breastfeeding their babies (n = 400)

Figure 2 depicts the common reasons given by the postpartum mothers for not breastfeeding their babies were mother-infant separation at the time of birth (6), baby's dissatisfaction of breast milk (9), painful breastfeeding experience (10), latching difficulty (17) and inadequate breast milk production (21).

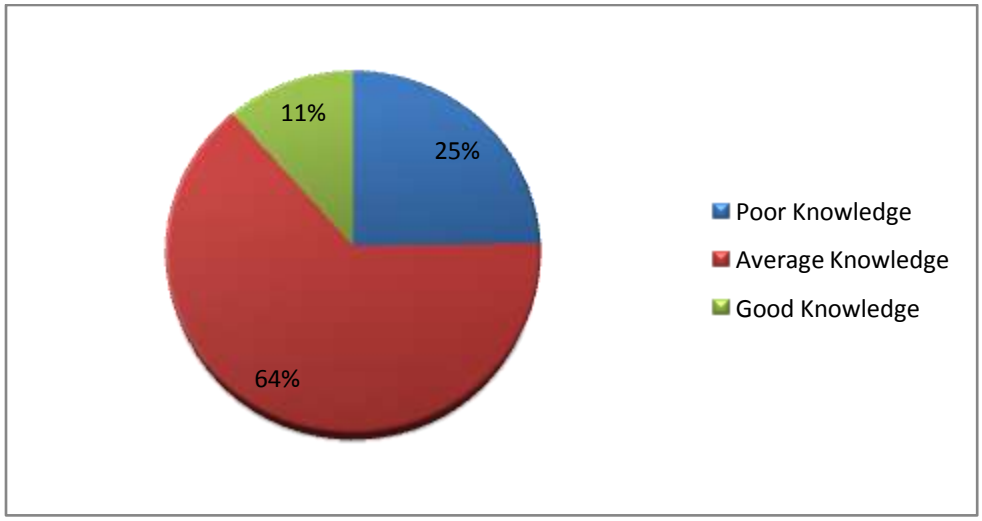


**Figure 3:-** Pie-diagram shows breastfeeding knowledge scores of postpartum mothers (n = 400).

The distribution of postpartum mothers based on their breastfeeding knowledge is depicted in Figure 3. The study results revealed that [99(24.8%)] mothers had poor knowledge, [266(63.7%)] mothers had average knowledge and only [46(11.5%)] mothers had good knowledge. The mean knowledge score obtained by the postpartum mothers was 4.94 with a standard deviation of 1.92 (maximum score=12).

The mean score of knowledge in different areas of breastfeeding is presented in Table 2.

**Table 2:-** Mean score of knowledge in different areas of breastfeeding n = 400.

| S.No. | Domains of Breastfeeding | Maximum Score | Mean±S.D. | Mean score% |
|---|---|---|---|---|
| 1. | Benefits of breastfeeding | 4 | 2.16±0.74 | 54.0 |
| 2. | Breastfeeding initiation and duration | 5 | 1.80±0.69 | 36.0 |

| | | | | |
|---|---|---|---|---|
| 3. | Breastfeeding promotion and techniques | 3 | 0.98±0.49 | 32.6 |
| | **TOTAL** | **12** | **4.94±1.92** | **41.16** |

From the above table, it is concluded that the least score of knowledge was identified for the section on breastfeeding promotion and techniques (0.98±0.49). The maximum score on knowledge was noted for the section benefits of breastfeeding (2.16±0.74).

**Association between knowledge and selected demographic variables**
Statistically significant correlations were found between breastfeeding knowledge and maternal education (p=0.000), working status (p=0.000) and parity (p=0.012). No association was noted between breastfeeding knowledge and other demographic variables.

The distribution of postpartum mothers based on awareness regarding specific aspects of breastfeeding is depicted in table 3.

**Table 3:-** Distribution of postpartum mothers based on awareness regarding specific aspects of breastfeeding (n=400).

| S.No. | Items | Correct Response | |
|---|---|---|---|
| | | f | % |
| 1. | Advantages of breastfeeding | 124 | 31.00 |
| 2. | Benefits of breastfeeding | 80 | 20.00 |
| 3. | Benefits of skin to skin | 349 | 87.25 |
| 4. | Importance of colostrums | 311 | 77.75 |
| 5. | Breastfeeding frequency | 166 | 41.50 |
| 6. | Breastfeeding adequacy | 156 | 39.00 |
| 7. | Breastfeeding exclusivity | 374 | 93.50 |
| 8. | Initiation of breastfeeding after normal delivery | 21 | 5.25 |
| 9. | Initiation of breastfeeding after c-section | 2 | 0.50 |
| 10. | Signs of good attachment | 218 | 54.50 |
| 11. | Factors that influence breast milk production | 140 | 35.00 |
| 12. | Positioning of baby after breastfeeding | 33 | 8.25 |

From the above table, it is concluded that the postpartum mothers were least aware about initiation of breastfeeding after c-section [2(0.50%)], initiation of breastfeeding after normal delivery [21(5.25)] and positioning of baby after breastfeeding [33(8.25%)]. The mothers were highly aware about breastfeeding exclusivity [374(93.50%)].

## Discussion:-

In terms of baby nutrition, exclusive breastfeeding is the gold standard. There are several factors that influence a mother's decision to breastfeed, including breastfeeding knowledge. In this study, it has been reported that out of 400 mothers' 24.8% mothers had poor knowledge, 63.7% average knowledge, and only 11.5% mothers had good knowledge regarding breastfeeding. A good degree of breastfeeding knowledge helps to prevent early exclusive breastfeeding discontinuation.

A study was done in Abu Dhabi by Ketbi et al assessing the knowledge, attitudes and practices of breastfeeding among women attending Primary Health Care Clinics. 344 mothers were selected and based on their breastfeeding experience with the last child, their breastfeeding knowledge, attitudes, and practices were assessed. Exclusive breastfeeding for 6 months was reported by only 46 mothers (16.9%, 95% CI 0.10, 0.17, n = 272). 79 (28.7%, n = 275) of the participants were breastfeeding and planning to continue after the child was ≥24 months. Working mothers, relatives living with them, having never previously breastfed exclusively, and being given ready-made liquid formula in the hospital were all linked to lower odds of exclusive breastfeeding. The most frequent work-related reason for discontinuing breastfeeding was insufficient maternity leave (24/89, 15%), followed by insufficient milk production (68/89, 76%).[13]

A study has been conducted by Stuebe and Bonuck who looked at the link between intention to exclusively breastfeed and the level of breastfeeding knowledge among 883 women. Findings shows that exclusive

breastfeeding, mixed feeding, and exclusive formula feeding intentions of the women were 45.9%, 46.1%, and 8.0%, respectively. It was concluded that the aim to exclusively breastfeed was directly associated to maternal knowledge about infant health benefits as well as comfort with breastfeeding in social contexts. Prenatal therapies that address these factors may increase the intention and duration of exclusive breastfeeding.[14]

This study also showed knowledge level of postpartum mothers in different areas of breastfeeding. The total knowledge score of different areas was 4.91±2.78. The least score of knowledge was identified for the section on breastfeeding initiation (0.05±0.16). The maximum score on knowledge was noted for the section breastfeeding duration (1.74±0.49). A study done by Shobo et al in public primary healthcare facilities (PHCs) in Northeast Nigeria adopted explanatory mixed method approach. The study included 393 mothers for the quantitative data and 27 mothers for the qualitative data of the study, respectively. The quantitative data shows that 39% of mothers did not breastfeed their newborns within 1 hour of birth. The qualitative data shows that 37% of mothers did not breastfeed within 1 hour of birth.[15]

A study was done by Srivastava S & Chaturvedi N in Behraich district of Uttar Pradesh, India. The researchers investigated the knowledge and compliance of early initiation of breastfeeding among mothers of children 0-24 months. Findings show that mother's knowledge level is average about infant and young child feeding components. 68.3% mothers have knowledge on initiation of breastfeeding within an hour of birth while 23.3% of mothers had initiated the breastfeeding within 6 hours after the birth of child. Thus, it is concluded that there is a noticeable deficiency in the application of knowledge into practice.[16]

The present study also focused on the maternal reasons for not offering breastfeeds to their infants and the common reasons stated by them were mother-infant separation at the time of birth, baby's dissatisfaction of breast milk, painful breastfeeding experience, latching difficulties and inadequate breast milk production. A study was done in Iran by Olang et al that focuses on the maternal reasons for discontinuing breastfeeding. Findings showed that only 5.3% of infants younger than six months old quit breastfeeding. The advice of doctors (54%) and not producing enough breast milk were the two most often mentioned reasons mothers gave for stopping exclusive breastfeeding (28%). In the other category of infants who were more than six months of age, only 11% of infants were not offered breastfeeding. Insufficient breast milk was the main cause of cessation at this age (45%). Infant illness (6%), return to work (3%) and maternal illness or medications (10%) were other infrequent causes.[17]

## Conclusion:-

In a developing country like India, breastfeeding is done by the majority of mothers, with a high proportion of continuing breastfeeding beyond six months. Mothers, on the other hand, have a considerable gap in knowledge and appropriate breastfeeding behaviors. Breastfeeding mothers can be encouraged to breastfeed by obtaining good advice from health care professionals and arranging educational programs aimed at women with poor education and limited resources. Following suggestions may assist in promoting successful breastfeeding behavior:

1. Breastfeeding counseling should be encouraged to all health care personnel who work with mothers and young children.
2. At each visit, during the pregnancy and postpartum periods, a policy should be in place to review breastfeeding practices, problems of mothers and assessment of breastfeeding outcomes.
3. During these times, special workshops for women and family members should be held to share the knowledge and skills needed for effective breastfeeding.

## Recommendations:-

1. A study can be done to assess the breastfeeding practices of postpartum mothers.
2. A study can be done to assess the effectiveness of planned teaching program on the level of breastfeeding knowledge among postpartum mothers.

**Conflict of interest**

We declare that we do not have any conflicts of interest.

**Ethical approval**

The study was approved by Institutional Ethics Committee (Registration No.: ECR/483/Inst/UK/ 2013/RR-16, Dt. 23.8.2017)

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