A Descriptive Study to Assess the Knowledge and Practice Regarding Colostrum Feeding Among Postnatal Mother Admitted At NMCH, Rohtas, Bihar

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***Abstract*—Background: The postnatal period is a critical stage in maternal and newborn care, during which appropriate feeding practices are essential for ensuring optimal growth, development, and survival of the infant. Colostrum, the first milk produced after childbirth, is rich in nutrients, antibodies, and protective factors that provide immunity and support the newborn's health. Despite its well-established benefits, misconceptions and inadequate feeding practices regarding colostrum still exist among postnatal mothers. Therefore, assessing mothers' knowledge and practices related to colostrum feeding is important for improving neonatal health outcomes. Aim: To assess the knowledge and practice regarding colostrum feeding among postnatal mothers and determine their association with selected socio-demographic variables.**

Methodology: A quantitative research approach was adopted for the study. The approach was selected to facilitate the collection of measurable data and objective assessment of knowledge and practice regarding colostrum feeding among postnatal mothers. Data were collected using structured instruments and analyzed using appropriate statistical methods to determine the level of knowledge and practice as well as their association with selected socio-demographic variables.

Results: The findings revealed that the majority of postnatal mothers possessed a moderate level of knowledge and practice regarding colostrum feeding. Significant associations were observed between knowledge and practice levels with selected socio-demographic variables, particularly education and parity. The results also indicated a gap between knowledge and actual practice among some mothers.

Conclusion: The study concluded that postnatal mothers have moderate knowledge and practice regarding colostrum feeding. Although awareness of the importance of colostrum exists, there remains a need to strengthen both knowledge and practical application through health education, counselling, and supportive interventions. Improving maternal awareness and promoting appropriate colostrum feeding practices can contribute significantly to better neonatal health outcomes.

***Index Terms*—Colostrum Feeding, Postnatal Mothers, Knowledge, Practice, Neonatal Health.**

I. INTRODUCTION

The postnatal period is a critical phase in maternal and child health, during which the newborn undergoes physiological adaptation from intrauterine to extrauterine life. Adequate nutrition during this period is essential for ensuring optimal growth, development, and survival. Breastfeeding is widely recognized as the most effective and economical method of infant feeding, providing complete nutrition and protection against various childhood illnesses. Early breastfeeding practices have a profound influence on neonatal health outcomes and long-term well-being.[1]

Colostrum, the first milk secreted by the mammary glands during the initial days after childbirth, is often referred to as the newborn's "first immunization." It is thick, yellowish fluid rich in proteins, immunoglobulins, vitamins, minerals, growth factors, and antimicrobial components. Colostrum contains high concentrations of Immunoglobulin A (IgA), which provides passive immunity by protecting the gastrointestinal and respiratory tracts from infections.

These immunological properties are particularly important during the neonatal period when the infant's immune system is still immature.[2]

In addition to its protective effects, colostrum plays a significant role in the physiological adaptation of the newborn. It promotes the passage of meconium, reduces the risk of neonatal jaundice, supports intestinal maturation, and encourages the growth of beneficial gut microbiota. The small volume and concentrated nutrient content of colostrum are ideally suited to meet the nutritional requirements of the newborn during the first few days of life.[3]

The early initiation of breastfeeding within the first hour after birth facilitates timely colostrum feeding and offers benefits for both the infant and mother. It promotes mother–infant bonding, supports exclusive breastfeeding practices, stimulates oxytocin release, and contributes to uterine involution, thereby reducing the risk of postpartum hemorrhage. Despite these well-documented benefits, colostrum feeding practices remain suboptimal in many settings due to cultural beliefs, misconceptions, lack of awareness, and inadequate health education.[4]

Several studies have reported that some mothers continue to discard colostrum because of traditional beliefs that it is impure, stale, or harmful to the newborn. Such practices can deprive infants of the nutritional and immunological advantages of colostrum and may negatively affect neonatal health. Maternal knowledge and feeding practices are influenced by various socio-demographic factors, including educational status, parity, occupation, family support, and access to healthcare information.[5]

Assessing the knowledge and practices of postnatal mothers regarding colostrum feeding is essential for identifying existing gaps and developing targeted educational interventions. Therefore, the present study was undertaken to assess the knowledge and practice regarding colostrum feeding among postnatal mothers and to determine their association with selected socio-demographic variables.[6]

II. NEED OF THE STUDY

Neonatal health is an important component of maternal and child healthcare. The neonatal period, comprising the first 28 days of life, is the most vulnerable stage for an infant's survival. Many neonatal deaths and illnesses occur due to preventable causes such as infections, malnutrition, and inappropriate feeding practices. Therefore, promoting proper infant feeding practices is essential for improving neonatal health outcomes.[7]

Colostrum feeding is a simple, natural, and cost-effective intervention that provides essential nutrients and immunological protection to newborns. Rich in antibodies and growth factors, colostrum acts as the infant’s first immunization and helps protect against infections. It also supports gastrointestinal development and promotes healthy growth. Despite these benefits, colostrum feeding practices remain inadequate in many communities.[8]

Lack of knowledge and prevailing misconceptions among postnatal mothers often result in the discarding of colostrum and delayed initiation of breastfeeding. Cultural beliefs and traditional practices, including the use of pre-lacteal feeds, further contribute to poor feeding practices. Such practices can increase the risk of neonatal infections and interfere with successful breastfeeding.[9]

Postnatal mothers are the primary caregivers of newborns, and their knowledge and practices directly influence infant feeding behaviors. However, many mothers receive limited counselling regarding the importance of colostrum feeding. Assessing maternal knowledge and practices is essential to identify existing gaps and develop effective educational interventions. Therefore, the present study was undertaken to assess the knowledge and practice regarding colostrum feeding among postnatal mothers and determine their association with selected socio-demographic variables.[10]

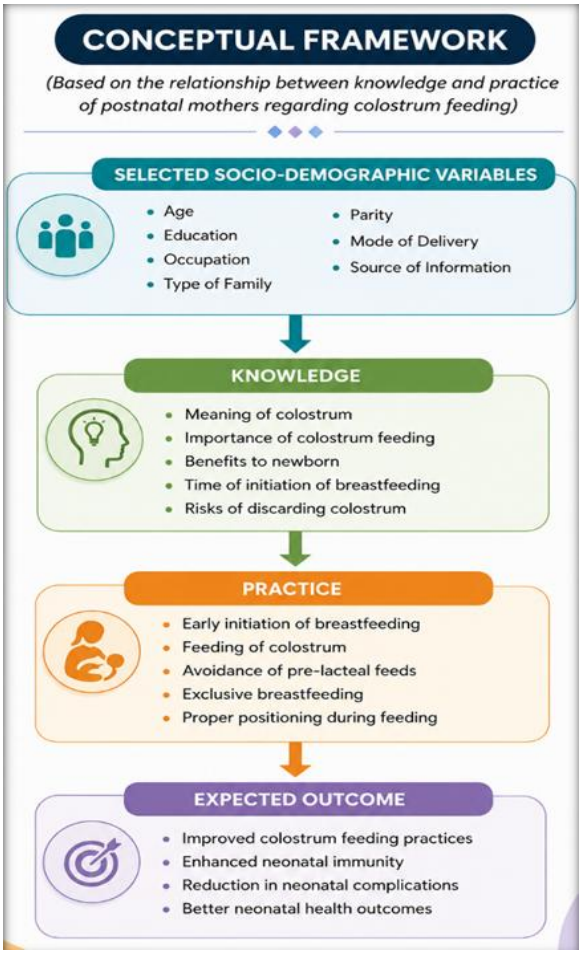
Objectives

1. To evaluate the level of knowledge regarding colostrum feeding among postnatal mothers.
2. To examine the colostrum feeding practices followed by postnatal mothers.
3. To determine the relationship between the knowledge of postnatal mothers regarding colostrum feeding and selected socio-demographic variables.
4. To identify the association between colostrum feeding practices and selected socio-demographic variables among postnatal mothers.

Hypothesis

RH_1: There is a significant association between the knowledge of postnatal mothers regarding colostrum feeding and selected socio-demographic variables.

RH_2: There is a significant association between the practice of postnatal mothers regarding colostrum feeding and selected socio-demographic variables.



Conceptual Framework.

III. METHODOLOGY

Research Design

A descriptive cross-sectional research design was adopted for the present study. This design was considered appropriate as it enabled the researcher to assess the existing level of knowledge and practices regarding colostrum feeding among postnatal mothers at a single point in time without implementing any intervention.

Research Setting

The study was conducted in the postnatal ward of Narayan Medical College and Hospital, Jamuhar, Rohtas, Bihar. The hospital provides comprehensive maternal and child healthcare services, including antenatal, intranatal, and postnatal care. The setting was selected based on feasibility, accessibility, availability of participants, and administrative support.

Population

Target Population

The target population comprised all postnatal mothers irrespective of age, parity, educational status, religion, and socio-demographic background.

Accessible Population

The accessible population consisted of postnatal mothers admitted to the postnatal ward of Narayan Medical College and Hospital during the period of data collection and who fulfilled the eligibility criteria.

Sample Size

The sample size for the study consisted of 60 postnatal mothers admitted to the selected hospital during the study period.

Sampling Technique

A non-probability convenience sampling technique was used to select the study participants. Mothers who met the inclusion criteria and were available during the data collection period were recruited for the study.

Variables

Study Variables

- Dependent Variables:

Knowledge and practice regarding colostrum feeding among postnatal mothers.

- Independent Variables:

Selected socio-demographic variables such as age, religion, educational status, occupation, type of family, parity, type of delivery, and source of information regarding colostrum feeding.

Inclusion Criteria

- Postnatal mothers admitted to the selected hospital.
- Mothers who were willing to participate in the study.

- Mothers available during the period of data collection.
- Mothers able to understand and respond to the questionnaire.

Exclusion Criteria
- Postnatal mothers who were critically ill.
- Mothers who were not willing to participate.
- Mothers whose newborns required intensive medical care.
- Mothers who were unable to communicate effectively during data collection.

Tool for Data Collection
Data were collected using a structured interview schedule developed after an extensive review of literature and expert consultation. The tool consisted of three sections:

Section A: Socio-demographic Variables
This section included information related to age, religion, educational status, occupation, type of family, parity, type of delivery, and source of information regarding colostrum feeding.

Section B: Structured Knowledge Questionnaire
This section contained multiple-choice questions related to the meaning, benefits, importance, and practices of colostrum feeding. The questionnaire was designed to assess the knowledge level of postnatal mothers.

Section C: Practice Checklist
This section assessed the actual practices related to colostrum feeding, including initiation of breastfeeding, administration of colostrum, avoidance of pre-lacteal feeds, and breastfeeding support received from healthcare providers.

IV. DATA COLLECTION PROCEDURE

Prior permission was obtained from the hospital authorities before initiating the study. The purpose of the study was explained to the participants, and informed consent was obtained. Data were collected through face-to-face interviews using the structured questionnaire and checklist. Confidentiality and anonymity were assured. Each interview lasted approximately 20–30 minutes. Data collection was completed within the specified time frame.

V. PLAN FOR DATA ANALYSIS

The collected data were coded, entered, and analyzed using appropriate statistical software. Both descriptive and inferential statistics were used to achieve the study objectives.

Descriptive Statistics
- Frequency and percentage were used to describe the socio-demographic characteristics of postnatal mothers.
- Mean and standard deviation were used to determine the overall knowledge and practice scores regarding colostrum feeding.
- Knowledge and practice levels were categorized and presented using frequency and percentage distributions.

Inferential Statistics
- The Chi-square test was used to determine the association between knowledge levels and selected socio-demographic variables.
- The Chi-square test was also used to determine the association between practice levels and selected socio-demographic variables.
- A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations
Ethical approval was obtained from the Institutional Ethics Committee and permission was secured from the concerned hospital authorities before conducting the study. Written informed consent was obtained from all participants after explaining the purpose of the study. Participation was voluntary, and participants were informed of their right to withdraw from the study at any time without any consequences. Confidentiality and anonymity of the information provided were maintained throughout the study. The study did not involve any physical, psychological, or social harm to the participants.

VI. DATA ANALYSIS

This chapter presents the analysis and interpretation of data collected from 60 postnatal mothers regarding

knowledge and practice of colostrum feeding. The data were organized, tabulated, and analyzed using descriptive and inferential statistics. The findings are presented under the following sections:

Section I: Socio-Demographic Variables
This section describes the distribution of postnatal mothers according to selected demographic variables such as age, education, occupation, family type, and parity. Frequency and percentage were used to summarize the data.

Section II: Knowledge Regarding Colostrum Feeding
This section presents the level of knowledge regarding colostrum feeding among postnatal mothers. Knowledge scores were categorized as poor, average, and good and analyzed using frequency and percentage distributions.

Section III: Practice Regarding Colostrum Feeding
This section describes the colostrum feeding practices of postnatal mothers. Practice scores were categorized into poor, moderate, and good levels and presented using frequency and percentage.

Section IV: Association Between Knowledge, Practice, and Selected Socio-Demographic Variables
This section presents the association between knowledge and practice regarding colostrum feeding with selected socio-demographic variables. The Chi-square test was used to determine statistical significance, and a p-value of less than 0.05 was considered significant.

VII. RESULT

A total of 60 postnatal mothers participated in the study. Most participants belonged to the age group of 18–24 years (40%), followed by 25–30 years (35%). Regarding educational status, 35% had secondary education and 35% were graduates, while 20% had primary education and 10% were illiterate. The majority of participants were homemakers (70%), belonged to nuclear families (60%), and were multiparous (55%).

Knowledge Regarding Colostrum Feeding
Assessment of knowledge revealed that 30 (50%) postnatal mothers had average knowledge regarding colostrum feeding, 20 (30%) had good knowledge, and 10 (20%) had poor knowledge. These findings indicate that although most mothers possessed a basic understanding of colostrum feeding, there remains a need to improve awareness regarding its nutritional and immunological benefits.

Table 1. Distribution of Postnatal Mothers According to Knowledge Level (N = 60)

Knowledge Level	Frequency	Percentage (%)
Poor	10	20.0
Average	30	50.0
Good	20	30.0

Practice Regarding Colostrum Feeding
The findings showed that 25 (45%) mothers demonstrated moderate practice regarding colostrum feeding, while 20 (30%) had good practice and 15 (25%) had poor practice. This suggests that a considerable proportion of mothers were not fully adhering to recommended colostrum feeding practices.

Table 2. Distribution of Postnatal Mothers According to Practice Level (N = 60)

Practice Level	Frequency	Percentage (%)
Poor	15	25.0
Moderate	25	45.0
Good	20	30.0

Association Between Knowledge and Selected Demographic Variables
A statistically significant association was observed between knowledge regarding colostrum feeding and educational status of postnatal mothers ($\chi^2 = 18.42$, $p = 0.005$). Mothers with higher educational attainment demonstrated better knowledge compared to those with lower educational levels. No significant association was found between knowledge and other selected demographic variables such as age, occupation, and family type.

Table 3. Association Between Knowledge and Educational Status (N = 60)

Educational Status	Poor	Average	Good	χ^2 Value	p-value
Illiterate	8	2	0	18.42	0.005*
Primary	7	10	3		
Secondary	5	20	10		
Graduate	0	18	17		

*Significant at $p < 0.05$

Association Between Practice and Selected Demographic Variables

A statistically significant association was found between colostrum feeding practice and parity ($\chi^2 = 6.13$, $p = 0.047$). Multiparous mothers demonstrated better feeding practices compared to primiparous mothers. This may be attributed to prior experience and increased exposure to breastfeeding information during previous pregnancies.

Table 4. Association Between Practice and Parity (N = 60)

Parity	Poor	Moderate	Good	χ^2 Value	p-value
Primipara	15	20	10		
Multipara	10	25	20	6.13	0.047*

*Significant at $p < 0.05$

VIII. SUMMARY OF DATA ANALYSIS

The study findings revealed that most postnatal mothers had average knowledge (50%) and moderate practice (45%) regarding colostrum feeding. Educational status was significantly associated with knowledge regarding colostrum feeding, while parity showed a significant association with feeding practices. These findings highlight the importance of maternal education and breastfeeding counselling in improving colostrum feeding practices among postnatal mothers.

IX. DISCUSSION

The present study was conducted to assess the knowledge and practice regarding colostrum feeding among postnatal mothers admitted to a selected hospital. The findings revealed that the majority of postnatal mothers possessed average knowledge (50%) regarding colostrum feeding, while 30% had good knowledge and 20% had poor knowledge. These findings indicate that although mothers were aware of colostrum feeding, their understanding was not adequate in all aspects. Lack of complete knowledge may affect appropriate breastfeeding practices during the neonatal period.

Regarding practice, the study found that 45% of postnatal mothers had moderate practice, 30% had good practice, and 25% had poor practice regarding colostrum feeding. This suggests that despite having some knowledge, many mothers were not fully implementing recommended colostrum feeding practices. Traditional beliefs, cultural influences, and inadequate counselling may contribute to inappropriate feeding practices.

The study also revealed a significant association between knowledge and educational status ($p = 0.005$). Mothers with higher educational qualifications demonstrated better knowledge regarding colostrum feeding than those with lower educational levels. Education enhances access to health information and improves understanding of newborn care practices.

A significant association was also observed between practice and parity ($p = 0.047$). Multiparous mothers showed better colostrum feeding practices compared to primiparous mothers. Previous childbirth experience may have increased their confidence and awareness regarding appropriate infant feeding practices.

Overall, the findings indicate that although postnatal mothers possess moderate knowledge and practice regarding colostrum feeding, there is still a need for continuous health education, counseling, and support to promote optimal breastfeeding practices and improve neonatal health outcomes.

X. CONCLUSION

Based on the findings of the study, it can be concluded that postnatal mothers had moderate knowledge and practice regarding colostrum feeding. While most mothers were aware of the importance of colostrum, gaps in knowledge and practice still existed.
The study identified education as a significant factor influencing knowledge and parity as a significant factor influencing practice. Mothers with higher educational status demonstrated better knowledge, whereas multiparous mothers exhibited better colostrum feeding practices than primiparous mothers.

The findings emphasize the need for effective breastfeeding education and counseling during the antenatal and postnatal periods. Strengthening maternal awareness regarding the benefits of colostrum feeding can help improve feeding practices and contribute to better neonatal health and survival. Continuous support from healthcare professionals is essential to promote early initiation of breastfeeding and appropriate colostrum feeding among postnatal mothers.

XI. NURSING IMPLICATION

NURSING IMPLICATIONS
The findings of the present study have important implications for nursing practice, nursing education, nursing administration, and nursing research.

Nursing Practice

- Nurses play a vital role in promoting colostrum feeding and early initiation of breastfeeding among postnatal mothers.
- Health education and counseling should be provided to mothers regarding the benefits of colostrum feeding and the harmful effects of pre-lacteal feeding.
- Nurses should identify mothers with inadequate knowledge and provide individualized guidance and support.
- Continuous monitoring and reinforcement of correct breastfeeding practices can help improve neonatal health outcomes.

Nursing Education

- Nursing curricula should emphasize the importance of colostrum feeding and evidence-based breastfeeding practices.
- Nursing students should be trained to educate and counsel mothers regarding newborn feeding practices.
- Educational materials such as pamphlets, posters, and audiovisual aids should be used to enhance maternal awareness.
- Continuing nursing education programs should be organized to update nurses on current breastfeeding guidelines and recommendations.

Nursing Administration

- Nurse administrators should ensure the availability of breastfeeding counseling services in maternity and postnatal units.
- Policies promoting early initiation of breastfeeding and colostrum feeding should be effectively implemented.
- Regular in-service education and training programs should be conducted for nursing personnel.
- Adequate staffing and resources should be provided to facilitate breastfeeding support and counseling activities.

Nursing Research

- Similar studies can be conducted on a larger sample to improve the generalizability of findings.
- Comparative studies can be undertaken in different healthcare settings and communities.
- Interventional studies may be conducted to evaluate the effectiveness of educational programs on knowledge and practice regarding colostrum feeding.
- Further research can explore barriers and factors influencing colostrum feeding practices among postnatal mothers.

Overall, the findings of the study highlight the significant role of nurses in improving maternal knowledge and practices regarding colostrum feeding, thereby contributing to better neonatal health outcomes.

REFERENCES

[1] World Health Organization, *Guideline: Protecting, Promoting and Supporting Breastfeeding in Facilities Providing Maternity and Newborn Services*. Geneva, Switzerland: World Health Organization, 2017.

[2] World Health Organization and United Nations Children's Fund, Capture the Moment: Early Initiation of Breastfeeding, the Best Start for Every Newborn. New York, NY, USA: UNICEF, 2018.

[3] C. G. Victora, R. Bahl, A. J. D. Barros, G. V. A. França, S. Horton, J. Krasevec, et al., "Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect," The Lancet, vol. 387, no. 10017, pp. 475–490, 2016.

[4] N. C. Rollins, N. Bhandari, N. Hajeebhoy, S. Horton, C. K. Lutter, J. C. Martines, et al., "Why invest, and what it will take to improve breastfeeding practices?" The Lancet, vol. 387, no. 10017, pp. 491–504, 2016.

[5] O. Ballard and A. L. Morrow, "Human milk composition: Nutrients and bioactive factors," Pediatric Clinics of North America, vol. 60, no. 1, pp. 49–74, 2013.

[6] American Academy of Pediatrics, "Breastfeeding and the use of human milk," Pediatrics, vol. 150, no. 1, Art. no. e2022057988, 2022.

[7] V. Khanal, J. A. Scott, A. H. Lee, R. Karkee, and C. W. Binns, "Factors associated with prelacteal feeding in Nepal: Findings from the Nepal Demographic and Health Survey," International Breastfeeding Journal, vol. 8, no. 1, Art. no. 9, 2013.

[8] A. Patel, N. Badhoniya, S. Khadse, U. Senarath, K. E. Agho, and M. J. Dibley, "Infant and young child feeding indicators and determinants of poor feeding practices in India," Indian Journal of Pediatrics, vol. 77, no. 11, pp. 1273–1279, 2010.

[9] A. Gupta, J. P. Dadhich, and M. M. A. Faridi, "Breastfeeding and complementary feeding as a public health intervention for child survival in India," Indian Journal of Pediatrics, vol. 77, no. 4, pp. 413–418, 2010.

[10] United Nations Children's Fund, Infant and Young Child Feeding: Programming Guide. New York, NY, USA: UNICEF, 2020.