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# Assessment of Knowledge Regarding Exclusive Breastfeeding among Mothers in a Metropolitan City

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## Abstract

Breastfeeding serves as a vital health intervention, offering multifaceted benefits for both mothers and infants. The purpose of this study was to outline breastfeeding-related practices and determine the prevalence of mothers having sufficient knowledge about exclusive breastfeeding. Conducted at an Anganwadi Centre in a metropolitan city, the six-month descriptive cross-sectional study involved 121 mothers selected through simple random sampling. Data on knowledge levels linked to exclusive breastfeeding were gathered by face-to-face interviews using a pre-designed questionnaire.

Results revealed that only 50.4% of mothers demonstrated adequate knowledge of the assessed topics, and less than half received breastfeeding counselling during antenatal care. Knowledge gaps were identified in various areas, including health benefits for mothers and infants and colostrum administration. The study underscores the need for comprehensive breastfeeding education during routine antenatal care, with a particular focus on improving counselling rates.

Despite limitations such as the relatively small sample size and potential underestimation of counselling rates based on mothers' reports, the findings emphasize the critical role of closing knowledge gaps in promoting optimal breastfeeding practices. Strategies for improvement include integrating lactation consultants into antenatal clinics, training healthcare staff, and instituting standardized counselling models.

In conclusion, enhancing breastfeeding education and counselling is pivotal for empowering mothers to make informed feeding decisions. This study contributes valuable insights to public health programming, advocating for targeted interventions to bridge knowledge disparities and support mothers in achieving their breastfeeding goals.

**Keywords;** Breastfeeding, exclusive breastfeeding, prenatal education, antenatal counselling, maternal knowledge, infant feeding practices.

## INTRODUCTION

Breastfeeding stands as a profound gift that a mother bestows upon herself and her child, offering a cascade of health benefits. In addition to protecting newborns from illnesses, breastfeeding may reduce mothers' chance of developing ovarian and breast cancer [1]. It is nature's optimal nourishment for babies, fostering not only physical health but also playing a role in stabilizing households and contributing to national economic well-being [1]. Exclusive breastfeeding, recognized by major health organizations as the physiological norm, is pivotal for infant feeding, as it significantly reduces the risks of diarrheal diseases, pneumonia, and various infections during the first six months of life [1].

UNICEF and the World Health Organization (WHO) highly recommend starting breastfeeding within the first hour of life and continuing to do so exclusively for the first six months, which means that no other meals or liquids—including water—should be introduced [2]. Only 44% of babies between the ages of "0 and 6 months were exclusively breastfed between 2015 and 2020", despite these international standards [2, 3].

While there have been modest improvements in breastfeeding rates over the past decade, they still fall short of global targets. Many mothers, initially opting for breastfeeding, often transition to formula feeding and eventually discontinue breastfeeding.

WHO guidelines further emphasize breastfeeding on demand, without the use of bottles, teats, or pacifiers. [2]. As per “the National Family Health Survey-5 (2019-21)”, 75.7% of infants and children under 2 years were exclusively breastfed, showcasing progress [3]. However, challenges persist, with 17.8% of urban and 14.7% of rural areas reporting the administration of pre-lacteal feeds to children under 2 years of age, posing potential risks of infection [3].

Early breastfeeding initiation within "the first hour of birth" is a critical protective measure, substantially reducing newborn mortality. Yet, the data reveals that only 44.2% of urban and 40.4% of rural areas adhere to this recommended practice [3]. Furthermore, a startlingly low 18% of children aged 6-23 months obtain a balanced meal from the proper number of food categories, and only one-third of them achieve the necessary minimum daily feeding frequency [3]. Moreover, only 9% of children are fed in accordance with all three recommended practices [3].

This study aims to address these challenges by determining the prevalence of mothers receiving adequate knowledge regarding exclusive breastfeeding (EBF) during the prenatal period. There is a consistent inverse correlation between "infant mortality rates in developing countries and exclusive breastfeeding", as evidenced by research. According to the World Health Organization, exclusive breastfeeding is the best way to increase a child's chances of survival [2]. Understanding “breastfeeding knowledge and practices among mothers” is important for designing interventions that promote exclusive breastfeeding and improve infant health outcomes.

#### **METHODOLOGY:**

This descriptive cross-sectional research, which spanned six months, was carried out in an Anganwadi Center in a large metropolitan city. With an 80% confidence level, a 5% margin of error, and an exclusive breastfeeding prevalence of 75.7% based on NFHS-5 data, the sample size was determined using "the single population proportion calculation". An 80% confidence level was selected considering the feasibility of recruitment and the limited number of eligible mothers available during the study period. It was expected that 121 mothers would be the minimal sample size needed.

“Face-to-face interviews” with mothers utilized a pre-designed questionnaire focusing on exclusive breastfeeding knowledge. Sections on sociodemographic traits, exclusive "breastfeeding knowledge, breastfeeding practices, and attitudes" about breastfeeding made up the questionnaire. Attitude-related questions assessed mothers' perceptions regarding the benefits of “breastfeeding for both infants and mothers”. Inclusion criteria involved willing mothers aged 18 or older without medical constraints on breastfeeding for themselves or their infants under six months. Exclusion criteria included unwilling participants, children over six months, and seriously ill or hospitalized mothers or children.

Permission was obtained from the ethical committee, and data collection involved structured proforma interviews at the Anganwadi Centre. Data entry and analysis were performed using Excel and SPSS version 26. Participants were categorised as having appropriate knowledge if they scored at or above the 50th percentile, and as having inadequate knowledge if they scored below the 50th percentile. The data was summarised using "descriptive statistics (frequencies and percentages)", and the findings were displayed in tables.

#### **RESULTS:**

##### ***Demographic Details:***

Among the 121 participating mothers attending an Anganwadi Centre in a metropolitan city, the majority (40.4%) fell within the age group of 25-29 years. The sample predominantly comprised Hindu mothers (88.4%), and educational qualifications varied, with 35.5% completing an Intermediate or Post high school diploma. Husbands' occupations were primarily unskilled (29.7%), and the monthly family income was highest in the 19,575 groups (65.28%). Joint families were predominant (52.89%), and the majority of mothers were non-working (76.85%). (**Table 1**)

##### ***Maternal and Infant Care Practices:***

In terms of breastfeeding practices, 47.1% of mothers received counselling during antenatal visits, and 43% practised skin-to-skin contact after delivery. Notably, 36.36% initiated breastfeeding within one hour. The administration of pre-lacteal feed was reported by 38% of participants. Exclusive breastfeeding was prevalent among 76% of mothers, and 74.3% breastfed their infants six or more times in 24 hours. Nighttime feeding was predominantly on demand (90.9%). Colostrum was given by 88.42% of mothers. (**Table 2**)

### **Knowledge Levels:**

Regarding knowledge levels, 50.4% of mothers demonstrated an adequate understanding of breastfeeding practices. (Table 2)

### **Introduction of Formula and Reasons**

Among the mothers, 61.98% did not introduce formula. Among those who did, reasons included insufficient milk production (18.18%), dissatisfaction with the baby (4.13%), physician advice (2.47%), caesarean delivery (9.91%), premature delivery (3.3%), and other medical conditions (1.65%). (Table 2)

### **Attitude**

Most mothers demonstrated positive attitudes towards breastfeeding. A majority (81.8%) believed that breastfeeding protects infants from infections and allergies, while 42.2% believed that “breastfeeding” decreases “the risk of breast cancer among mothers”. (Table 3)

## **DISCUSSION**

Food that is naturally balanced and nutritious for infants is human breast milk. “Breastfeeding” is viewed as the optimal method of infant feeding that provides many benefits to both infant and mother. [1]. Breastmilk is proven to protect against child infections and malocclusion, increases in intelligence, and probable reductions in overweight and diabetes [1]. Therefore, assessing breastfeeding knowledge, attitudes, and practices among mothers is important for strengthening breastfeeding promotion programmes.

The present “cross-sectional study” was conducted at Community- Anganwadi Center in a metropolitan city. The purpose of the study was to characterise mothers' breastfeeding-related practices and evaluate their knowledge about exclusive breastfeeding.

### **Sociodemographic profile**

The investigation included a total of 121 mothers. The findings showed that 22.31% of mothers were in the 30- to 39-year-old age group (Table 1). A research by Mashail et al. on the prevalence and factors of "exclusive breastfeeding practice among mothers" likewise revealed 28.4% of mothers in this age group [4]

According to the study's findings, 88.4% of mothers were Hindu (Table 1). Similar study conducted by Swastika et al. on “factors affecting exclusive breastfeeding (EBF) among working mothers” also included Hindu mothers accounting for 77.4% of the total sample [5].

Out of all study participants, nearly 5.7% completed their primary school education (Table 1). Swastika et al. found similar results. in the investigation of the variables influencing working mothers' exclusive breastfeeding (EBF) [5]. They also found 8.8% mothers who has completed their primary school education [5]. Kok Leong Tan et al. found very identical results in their investigation of the characteristics linked to exclusive breastfeeding among infants, where 5.9% of mothers had a primary school diploma [6]. Additionally, Mashail et al.'s study on the prevalence and predictors of "exclusive breastfeeding practice among mothers" revealed that 4.9% of mothers had completed their basic school certificate [4]. In this study it was observed that participants with nuclear type of family comprised of 45.4% (Table 1), Joint 52.89% and for Third generation was 1.65% which is similar to the study conducted by Swastika et al. which involved 56.2% of nuclear type of family. 43.1% of Joint family type and around 0.7% of Third generation family type. [5]

In the current study it is observed that non-working mothers were 76.85% (Table 1) and working mothers comprised of 23.1% out of the total participants. A similar trend was observed by Mashail et al. which included 30% working women and 70% of non-working women in the study. [4] Also, similar study was conducted by Novitria et al. which involve 29% of working women in the study. [7]

It was observed in present study that the counselling received during the antenatal visits were around 47.1% (Table 2) and mothers not receiving any counselling regarding breastfeeding comprised of about 52.89%. A study conducted by Mashail et al. in Saudi Arabia showed that around 77.7% of mothers received counselling during antenatal visits and about 22.3% did not receive any counselling during these visits which is relatively high as compared to present study [4].

In present study the majority of infants were Female which constitutes to about 50.42% (Table 1) and 49.6% of males. Similar findings were observed by Kok Leong Tan et al. in peninsular Malaysia were around 46.3% of females and 53.7% of males were observed in the study [6]. Additionally, Paola et al.'s investigation in the Amazon, which comprised 50.1% of men and 49.9% of females, had a similar outcome [8]

### **Prevalence of Breastfeeding:**

Mothers with infants under six months of age had an overall prevalence of 76% for exclusive breastfeeding

**(Table 2).** According to NFHS-5 (2019-21), Percentage of infants and children's (<2 years of age) who were exclusively breastfed were 75.7%. According to other research, "the prevalence of exclusive breastfeeding" ranged from 50.7% by Mashail *et.al* [4] to 55.1% by Huang *et.al* [9].

Administration of colostrum by the respondents in this study is 88.42% **(Table 2)**. This is comparatively higher than 76.8% in a research by Mashail *et.al* in Saudi Arabia [4] and 60.2% in a study in the Ethiopian town of Mizan Aman [10].

#### **Knowledge:**

The purpose of this study was to ascertain the prevalence of mothers who had appropriate knowledge of exclusive breastfeeding throughout pregnancy. The results showed significant gaps, with only 50.4% **(Table 2)** of mothers demonstrating adequate overall knowledge based on the topics assessed. Additionally, less than half of the mothers reported receiving any breastfeeding counselling during antenatal care.

These knowledge gaps are consistent with other studies in developing country settings reporting limited dissemination of proper infant feeding guidance among mothers by Ayed *et.al* [11]. However, the counselling rates were lower compared to a 2017 study in Saudi Arabia that saw 77.7% of mothers receiving breastfeeding counselling antenatally [4], which is similar than a study conducted in Abha city, Saudi Arabia, which was 55.3% by Adil Ali Nassir Ayed *et.al* [11] on knowledge, attitude, and practices regarding exclusive breastfeeding among mothers.

This suggests substantial room for improvement in the study population in providing routine, comprehensive "breastfeeding education as part of routine antenatal care".

Breastfeeding knowledge has been consistently associated with improved exclusive breastfeeding practices and duration. Studies have demonstrated that mothers receiving breastfeeding counselling exhibit better knowledge and are more likely to adopt recommended feeding practices, including exclusive breastfeeding and colostrum feeding. Therefore, the low knowledge and counselling rates observed in the present study may contribute to suboptimal breastfeeding patterns locally, highlighting the need for targeted "educational and public health interventions". [12]

#### **Practice:**

With regards to giving formula, 21.5% **(Table 2)** did give formula to their infants with breast milk, while 92 (76%) did not give formula to their infants which is quite low than that of a study conducted in Ethiopia by Alemnesh Abebe Taye *et.al*. which showed the prevalence of formula feeding was 46.2%. [13]

#### **Attitude:**

Most mothers demonstrated positive attitudes towards breastfeeding. A majority (81.8%) believed that breastfeeding protects infants from infections and allergies, while 42.2% **(Table 3)** believed that "breastfeeding reduces the risk of breast cancer among mothers". Similar findings were observed by Mashael Alsheby *et.al*. that most of the mothers almost 89% believe that breastfeeding can decrease the risk of breast cancer. [14]

The challenges related to the availability of trained lactation counselors and standardized guidance on exclusive breastfeeding (EBF) messaging are well-documented. Integrating lactation consultants into antenatal clinics, training all antenatal healthcare staff on breastfeeding best practices, and implementing minimum standards for EBF counseling through models like the Baby-Friendly Hospital Initiative (BFHI) are recognized strategies to address these issues. The BFHI emphasizes the importance of training healthcare staff and establishing policies that support breastfeeding, which have been shown to improve breastfeeding outcomes. [15]

Study strengths included assessing multiple knowledge areas through face-to-face interviews. However, the small sample makes generalizability difficult. Additionally, relying on mothers' reports of counseling may underestimate true rates. Still, by demonstrating gaps in both knowledge and counseling rates, this study makes a case for targeting these areas to support mothers in optimal infant feeding decisions.

Ensuring mothers receive and understand proper guidance on breastfeeding duration, exclusivity, and techniques is essential to enable women to meet their own feeding goals. Closing knowledge gaps through improved counseling and education of all mothers should be a priority.

#### **CONCLUSION**

The present study demonstrated satisfactory breastfeeding practices among many mothers; however,

important gaps remained in breastfeeding knowledge, counselling coverage, “early initiation of breastfeeding, and skin-to-skin contact practices”. Only about half of the mothers demonstrated adequate knowledge, and less than half reported receiving breastfeeding counselling during antenatal care. Formula feeding was introduced by a considerable proportion of mothers, primarily due to perceived insufficient milk supply and delivery-related factors. These findings highlight the need for strengthened breastfeeding education and counselling services throughout the antenatal and postnatal periods. Enhancing maternal knowledge, promoting evidence-based breastfeeding practices, and providing timely support through healthcare workers and community-based programmes may contribute to improved infant feeding practices and better maternal and child health outcomes.

#### **LIMITATIONS**

The study may not be typical of all mothers in metropolitan areas because it was carried out at a single Anganwadi Center. The results' causal interpretation is limited by the cross-sectional design.

#### **RECOMMENDATIONS**

The findings of this study highlight the need to strengthen breastfeeding promotion and support services at both healthcare facility and community levels. Antenatal and postnatal counselling should be routinely provided to all mothers, with particular emphasis on early initiation of breastfeeding, exclusive breastfeeding, skin-to-skin contact, and appropriate management of common breastfeeding concerns. Capacity building of healthcare providers, Anganwadi workers, and community health workers may improve the quality and consistency of breastfeeding messages delivered to mothers. Community-based educational interventions and awareness programmes should be implemented to address existing knowledge gaps and misconceptions regarding infant feeding. Further studies involving larger and more diverse populations are recommended to better understand factors influencing breastfeeding practices and to guide the development of targeted interventions.

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#### **Conflict of interest**

The study's authors disclose that they have no conflicts of interest.

#### **Authors' contributions:**

Ms. Astha Singh helped with the study's conceptualisation and design, data collecting, data analysis, findings interpretation, and manuscript writing. The work was supervised by Dr. Prajwal Kather, who also gave methodological guidance, evaluated the manuscript critically, and approved the final draft. The final manuscript was reviewed and approved by all authors.

#### **Ethical approval and consent to participate:**

The "Grant Government Medical College, Mumbai's" Institutional Ethics Committee examined and approved the study procedure. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Written informed consent was obtained from all participants before data collection. Participants were made aware of the research's objectives, that participation was entirely voluntary, that their information would be kept private, and that they could leave the study at any time without facing any consequences.

#### **Consent for publication:**

Not applicable. There is "no identifiable data, images, or personal information" included in this manuscript that necessitates consent for publication.

#### **REFERENCES**

- [1] Srilakshmi B. *Dietetics*. 8th ed. New Delhi: New Age International Publishers; 2018.
- [2] World Health Organization. *Breastfeeding*. Geneva: World Health Organization; 2024.
- [3] International Institute for Population Sciences (IIPS), ICF. *National Family Health Survey (NFHS-5), India, 2019–21: National Report*. Mumbai: International Institute for Population Sciences; 2021.

- [4] Mashail Basheir Alshammari, Hassan Kasim Haridi. Prevalence and determinants of exclusive breastfeeding practice among mothers of children aged 6–24 months in Hail, Saudi Arabia. *Scientifica (Cairo)*. 2021;2021:2761213.
- [5] Chhetri S, Rao A, Guddattu V. Factors affecting exclusive breastfeeding (EBF) among working mothers in Udupi taluk, Karnataka. *Clin Epidemiol Glob Health*. 2018;6:131–135.
- [6] Tan KL. Factors associated with exclusive breastfeeding among infants under six months of age in Peninsular Malaysia. *Int Breastfeed J*. 2011;6:2.
- [7] Dwinanda N, Hegar BS, Sjarif DR. Factors affecting exclusive breastfeeding in term infants. *Paediatr Indones*. 2018;58(1):25–35.
- [8] Mosquera PS, Lourenço BH, Gimeno SGA, Malta MB, Castro MC, Cardoso MA. Factors affecting exclusive breastfeeding in the first month of life among Amazonian children. *PLoS One*. 2019;14(7):e0219801.
- [9] Huang P, Ren J, Liu Y, Luo B, Zhao X. Factors affecting breastfeeding adherence among Chinese mothers: a multicenter study. *Medicine (Baltimore)*. 2017;96(38):e7619.
- [10] Tadele N, Habta F, Akmel D, Deges E. Knowledge, attitude and practice towards exclusive breastfeeding among lactating mothers in Mizan Aman town, Southwestern Ethiopia: descriptive cross-sectional study. *Int Breastfeed J*. 2016;11:3.
- [11] Ayed AAN. Knowledge, attitude and practice regarding exclusive breastfeeding among mothers. *Int J Med Sci Public Health*. 2014;3(11):1355–1358.
- [12] Sahu, B., Thakur, A., Gupta, D., Singh, M. P., Shrivastava, A., Diwakar, P., & Sabin, L. L. (2024). Factors associated with exclusive breastfeeding knowledge and practices in a tertiary hospital of Central India. *International Journal of Contemporary Pediatrics*, 11(4), 435–443. <https://doi.org/10.18203/2349-3291.ijcp20240733>.
- [13] Taye, A.A., Asegidew, W., Taderegew, M.M. *et al*. Formula feeding practice and associated factors among mothers with infants 0–6 months of age in Addis Ababa, Ethiopia: a community-based cross-sectional study. *Ital J Pediatr* 47, 55 (2021). <https://doi.org/10.1186/s13052-021-01010-x>.
- [14] Alshehly M, Alshehri E, Alzahrani N, Kalantan A. Relationship between breastfeeding and risk of breast cancer in Saudi women. *Obstet Gynecol Int*. 2017;6(5):119-121. doi:10.15406/ogij.2017.06.00219.
- [15] Balogun OO, Dagvadorj A, Yourkavitch J, da Silva Lopes K, Suto M, Takemoto Y, Mori R, Rayco-Solon P, Ota E. Health Facility Staff Training for Improving Breastfeeding Outcome: A Systematic Review for Step 2 of the Baby-Friendly Hospital Initiative. *Breastfeed Med*. 2017 Nov;12(9):537-546. doi: 10.1089/bfm.2017.0040. Epub 2017 Sep 20. PMID: 28930480.

**Table 1: Distribution according to socio-demographic characteristics (n=121)**

Characteristics	n	%
Mother's Age (in years)		
20 – 24	45	37.1
25 – 29	49	40.4
30 – 34	24	19.8
35 – 39	3	2.48
Religion		
Hindu	107	88.4
Muslim	11	9
Buddhist	3	2.6
Educational Qualification		
Graduate or Postgraduate	39	32.2
Intermediate or post high school diploma	43	35.5
High school certificate	32	26.4
Primary school certificate	7	5.7
Husband's occupation		
Profession	12	9.9
Semi profession	20	16.5
Clerical, Shop-owner, farmer	13	10.7
Skilled	7	5.7
Semi-skilled	33	27.2
Unskilled	36	29.7
Monthly family income (Rs.)		
19,575	79	65.2
9788 – 19575	37	30.5
7323 – 9757	5	4.1
Type of Family		
Nuclear	55	45.4
Joint	64	52.9
Third Generation	2	1.7
Gender of Infant		
Male	60	49.6
Female	61	50.4
Occupation		
Working	28	23.1
Non- Working	93	76.8

**Table 2 : Knowledge and Practice regarding Breastfeeding**

	n	%
Overall Knowledge		
Adequate	61	50.4
Inadequate	60	49.6
Skin – to – skin contact		

Given	52	43
Not given	69	57
Colostrum Administered		
Yes	107	88.4
No	14	11.6
Initiation of Breastmilk		
Within one hour	44	36.4
>1 to 24 hours	57	47
>24 hours	20	16.6
Prelacteal Feed		
Yes	46	38
No	75	62
Breastfeeding Practice		
Breastfeeding exclusively	92	76
Breastfeeding and breast - milk substitute	26	21.5
Only breast-milk substitute	3	2.5
Frequency of breastfeeding in 24 hours		
<6 times	9	7.4
6 or more times	90	74.3
As often as the baby demands	22	18.3
Night time feeding		
Twice	9	7.4
On Demand	110	90.9
Not Feeding	2	1.7
Counselling Received		
Yes	57	47.1
No	64	52.9

**Table 3: Attitude towards Breastfeeding**

	n	%
<b>Breastfeeding protects infants from infections and allergies</b>		
Yes	99	81.8
No	22	18.2
<b>Breastfeeding reduces the risk of breast cancer among mothers</b>		
Yes	51	42.2
No	70	57.8