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**Original Research Article**

# Exploring breastfeeding patterns and barriers in a Kerala tertiary care hospital: a cross-sectional study

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## ABSTRACT

**Background:** Exclusive breastfeeding is vital for maternal and child health, yet challenges persist. This study in a Kerala tertiary care hospital aimed to assess prevalence, identify barriers, and explore cultural influences. Aim was to determine the prevalence of exclusive breastfeeding, uncover the barriers mothers face, and explore cultural factors affecting infant feeding choices.
**Methods:** Utilizing Google forms, 274 postpartum women were surveyed. Participants provided data on awareness, practices, challenges, and factors influencing their infant feeding choices.
**Results:** While 94.9% were aware of the ideal breastfeeding duration, only 74.1% practised exclusive breastfeeding until six months. Inadequate breast milk, sore nipples, and family pressure emerged as challenges. The timing of solid food introduction significantly impacted exclusive breastfeeding.
**Conclusions:** Our study offers insights into exclusive breastfeeding practices. Culturally sensitive interventions, comprehensive support systems, and healthcare provider engagement are crucial. This study echoes recent research, emphasizing the multifaceted nature of exclusive breastfeeding practices, calling for diverse and context-specific strategies to empower mothers and ensure infants receive the best nutritional start.

**Keywords:** Kerala, Prevalence, Barriers to implementation, Cultural influences, Maternal-child health, Exclusive breastfeeding

## INTRODUCTION

According to WHO, Exclusive breastfeeding involves giving the infant solely breast milk, without introducing any other liquids or solids, including water.[1] The only exceptions are oral rehydration solutions and drops/syrups containing vitamins, minerals, or medicines. Breastfeeding offers health advantages to both infants and mothers. It provides optimal nutrition for babies, promoting their growth and development.[2] Additionally, breastfeeding can contribute to immune protection, benefiting both the baby and the mother by reducing the risk of certain illnesses and diseases.

Worldwide, according to WHO, approximately 44% of infants aged 0 to 6 months are exclusively breastfed.[2] In India, according to the National family health survey, 63.7% was the prevalence of exclusive breastfeeding during 2019-21 compared to the prevalence of 54.9% during 2015-16. Long hailed as a healthcare bastion with high literacy rates and robust infrastructure, the human developmental index and neonatal and maternal mortality rates are comparable to the developed nations as opposed to its neighboring states and the country averages.[3] Kerala is a state in India that has traditionally embraced breastfeeding as a fundamental facet of maternal and child care. Yet, When the neighboring states and the Union Territories like Andhra Pradesh (68%), Telangana

(68.2%), Lakshadweep (67%), and Maharashtra (71%) achieved high levels of exclusive breastfeeding, Kerala had a percentage of 55.5% in the year 2019-21 with 2.2 % improvement from the survey of 2015-16.[4] Myriad challenges now impede mothers from exclusively breastfeeding. These obstacles span from misconceptions surrounding formula feeding and societal pressures to returning to work and a dearth of adequate support, as well as medical conditions. In the unique context of Kerala, where healthcare infrastructure and cultural norms intersect, these challenges assume unique dimensions. Our study aims to determine the prevalence of exclusive breastfeeding, uncover the barriers mothers face, and explore cultural factors affecting infant feeding choices.

## METHODS

This is an observational cross-sectional study where we aimed to investigate exclusive breastfeeding practices among postpartum mothers who had given birth in a Kerala tertiary care hospital. The study was conducted between January 2022 to December 2022 at Apollo Adlux hospital, Kochi. The inclusion criteria of the study defined as mothers who have given birth within the specified hospital within the last 1 year. Exclusion criteria were any mother who were not reachable after 2 phone calls. The data collection method involved the use of Google Forms to ensure efficiency and accessibility. Postpartum mothers were contacted via phone, and the Google Forms survey link was sent to them through WhatsApp. The data was transferred to Microsoft Excel. Statistical analysis was done using SPSS software version 20. To be eligible for participation, mothers must have given birth within the specified hospital within the last 1 year. Any mothers who were not reachable after 2 phone calls were excluded from the study. The survey encompassed inquiries about delivery type, ideal and actual breastfeeding durations, encountered issues, reasons for discontinuation before six months, breastfeeding practices, mothers' educational qualifications, and the type of family in which the child resided. All the authors were involved in the data collection of this study. Any repeated entries were deleted.

## RESULTS

The study included a total of 274 postpartum women within the last 1 year and evaluated their awareness of breastfeeding. The (Figure 1) denotes the awareness of breastfeeding among the studied population and the majority (94.9%) were aware of the ideal duration regarding the same. About 2.9% marked the duration as 8 months and 2.2% as 4 months. It denotes the high level of maternal education regarding exclusive breastfeeding in Kerala.

The (Figure 2) indicates the prevalence of exclusive breastfeeding among the study population as reported by themselves. About 74.1% reported to exclusively breastfeed till 4-6 months, 21.2 percentage; 2-4 months, 3.6%; 1-2 months and 1.1% to less than 1 month. This indicates that a high proportion of the mothers has practiced breastfeeding exclusive breastfeeding upto or more than 6 months.

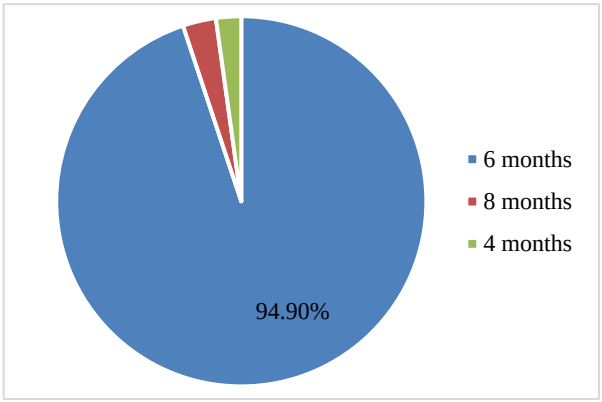


**Figure 1: Awareness of exclusive breastfeeding.**

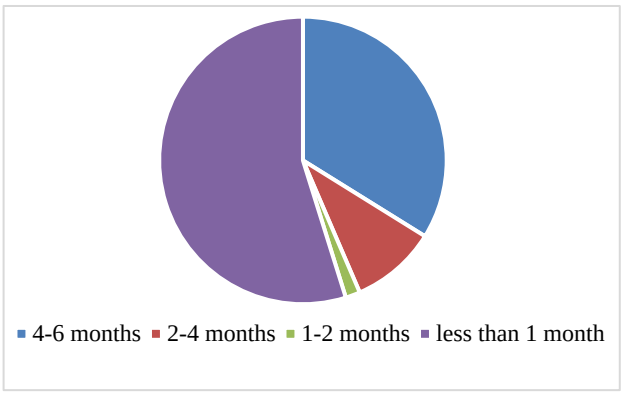


**Figure 2: Breastfeeding practices.**

Figure 3 denotes the difficulties faced by breastfeeding women. Inadequate breast milk was reported the most time (29.2%) followed by sore nipples (21.9%) and nipple retraction (17.2%). 32.5% of the women reported no significant concerns during the period of breastfeeding. The (Figure 4) denoted the reasons preventing them from exclusive breastfeeding till 6 months. Excessive crying of baby (44.9%), Not having adequate breast milk (40.1%) and family pressure and elders' advice (36.7%) were the major issues faced followed by joining work (23.1%) and illness in the baby (16.3%). As supported by the (Figure 1), lack of knowledge was reported by only a small proportion of the study population. Medical advice contributed to 6.8% and adequate latching not being obtained contributed to 12.2%. Figure 5 denotes the breastfeeding practice of the study population.44.5% of the mothers were reported to have done exclusive breastfeeding, 18.2% predominant breastfeeding where in addition to breastmilk, water or water-based fluids were given, and 36.5% reported as having given non-human milk or formula feeds in addition to breastmilk.

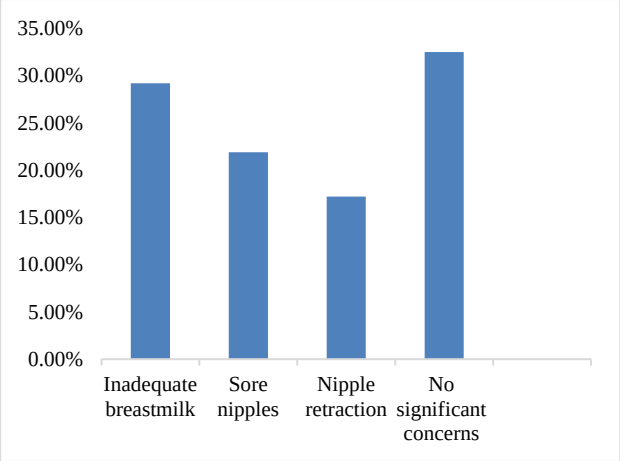


**Figure 3: Breastfeeding related difficulties.**

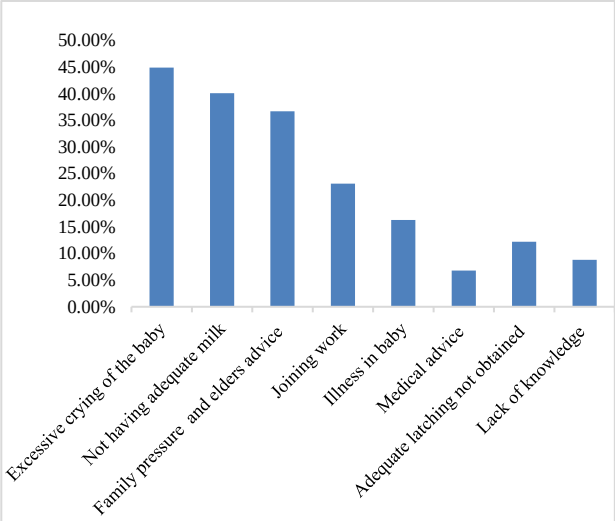


**Figure 4: Reasons for early cessation.**

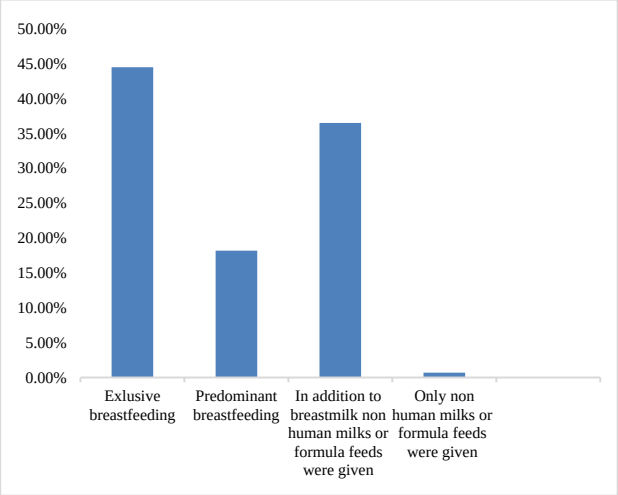


**Figure 5: Breastfeeding summary.**

Only 0.7 % reported as just formula feeds or cows' milk were given to the child. The (Table 1) examines the relationship between women's awareness of the ideal duration for exclusive breastfeeding and their reported prevalence of exclusive breastfeeding. The results indicate a statistically significant association ($p<0.001$) between awareness and practice. Notably, as the awareness of the recommended duration increased, there was a corresponding increase in the prevalence of exclusive breastfeeding. For instance, 75.4% of women who were aware of the ideal 6-month duration reported exclusive breastfeeding, compared to only 0.8% in the 4-month awareness group. This suggests that promoting awareness can positively impact exclusive breastfeeding practices.

**Table 1: Association between women's awareness of the ideal duration for exclusive breastfeeding with their prevalence of exclusive breastfeeding.**

| Category | | Exclusive breastfeeding (months) (%) | | | | P value |
|---|---|---|---|---|---|---|
| | | <1 | 1-2 | 2-4 | 4-6 | |
| **The ideal duration of exclusive breastfeeding (months)** | 4 | 22 | 11.1 | 55.6 | 11.1 | <0.001 |
| | 6 | 0.8 | 4.2 | 19.7 | 75.4 | |
| | 8 | 12.5 | 0 | 25 | 62.5 | |

Table 2 explores the relationship between the timing of introducing solid foods to babies and the prevalence of exclusive breastfeeding. The results reveal a statistically significant association ($p=0.002$) between the age at which solid feeds were introduced and the practice of exclusive breastfeeding. Specifically, a higher percentage of women who introduced solid feeds after 6 months reported exclusive breastfeeding (74.4%) compared to those introducing solid feeds earlier. This underscores the importance of delaying the introduction of solid foods for promoting exclusive breastfeeding.

**Table 2: Association between when did you start solid feeds for your baby with their prevalence of exclusive breastfeeding.**

| Category | | Exclusive breastfeeding (months) (%) | | | | P value |
|---|---|---|---|---|---|---|
| | | <1 | 1-2 | 2-4 | 4-6 | |
| **When did you start solid feeds for baby (months)** | <4 | 25 | 25 | 25 | 25 | 0.002 |
| | 4 to 6 | 9.1 | 18.2 | 18.2 | 54.5 | |
| | After 6 | 1.1 | 3.4 | 21.2 | 74.4 | |

Table 3 delves into the association between the educational qualification of mothers and the prevalence of exclusive breastfeeding. While there are variations in exclusive breastfeeding practices among different educational groups, the analysis indicates that this relationship is not statistically significant ($p=0.182$). This suggests that, in this study, educational qualification

alone may not be a determining factor in exclusive breastfeeding practices. Additional factors may contribute to the observed variations, such as cultural, socio-economic, or healthcare support considerations.

**Table 3: Association between educational qualification of mother with their prevalence of exclusive breastfeeding.**

| Category | | Exclusive breastfeeding (months) (%) | | | | P value |
|---|---|---|---|---|---|---|
| | | <1 | 1-2 | 2-4 | 4-6 | |
| **Educational qualification of mother** | 10th standard or below | 0 | 0 | 1 | 1 | 0.182 |
| | 12th standard or below | 8.3 | 2.8 | 27.8 | 61.1 | |
| | Undergraduate | 1.1 | 5 | 19.3 | 74.6 | |
| | Postgraduate | 0 | 3.2 | 21 | 75.8 | |

## DISCUSSION

Our study delves into the complex landscape of exclusive breastfeeding among postpartum mothers in a tertiary care hospital in Kerala, India. The data collected and analyzed provides valuable insights into the prevalence of exclusive breastfeeding, the challenges faced by mothers, and the factors influencing their infant feeding practices.

Our study demonstrated an exclusive breastfeeding rate of 44.5% which is lower than the state average according to the National family health survey-5 which was reported as 55.5%, and also much lower than a recent study done in a tertiary care hospital in Kerala which reported 70.4% of exclusive breastfeeding.[5,6] These results denote a significant amount of regional variation and denote the significance of assessing the factors affecting the level of exclusive breastfeeding among different regions. However, unlike where the mothers were asked about their breastfeeding by their doctors there is a probability of overreacting to the actual prevalence of breastfeeding as opposed to the self-reporting nature of our study.[5]

The issues faced by mothers were noted as sore nipples, nipple retraction and inadequate breast milk. However, studies such as denote the importance of relactation and its high success rate rather than resorting to other lactagogues.[7] Skilled health workers play a crucial role in providing robust professional support to help overcome initial challenges during relactation. Our study delves into the major reasons hindering mothers from exclusive breastfeeding for 6 months. The major reason came out to be excessive crying of the baby followed by not having adequate breast milk. Excessive crying of the child is a major factor affecting the social well-being of the family as a whole. Adequate soothing techniques and social support should be provided to the parents and if necessary, shall be asked to contact the doctor for further of the cause.[8] Observing clinical signs such as steady growth, ample elimination, infant alertness, and breasts feeling full before feeds and soft after feeds can instil confidence in the sufficiency of milk intake. A study done in Australia found that the rate of perception of insufficient breast milk was about 44% by the 3rd week of breastfeeding and most of them did not assess the clinical signs for adequate breastfeeding and had already started on other feeds.[9] This is a possible explanation for the findings of our study where 40.1% of the women reported having stopped exclusive breastfeeding due to inadequate breast milk. Adequate education given to the mother regarding how to check if the amount of breastfeeding is enough can prevent this major cause.

Going back to work was recognised by our study as an important cause that resonated with the findings of a study conducted in Somali, Ethiopia.[10] The maternity benefit (Amendment) Act 2017 increased maternity leave from 12 weeks to 26 weeks.[11] Moreover, it mandates that employers inform female employees about their rights under this Act at the time of their appointment. Even though 6 years have passed since the law was passed, this staggering percentage indicates the lack of implementation and support system being provided to the mothers at workplaces.

Another major factor that came up as a factor was that of family pressure to stop exclusive breastfeeding before the age of 6 months. This resonates with the findings of a study conducted in Ghana.[12] This points to the necessity of educating the family as a whole while giving awareness regarding the need for exclusive breastfeeding and its benefits rather than just the parents. Societal awareness classes could also play a part in spreading the message. The majority of mothers were aware of the ideal duration for exclusive breastfeeding, with a remarkable 94.9% acknowledging the recommended six months. A community-based cross-sectional study in Tanzania showed a statistically significant association between the awareness and prevalence of exclusive breastfeeding which resonated with our study finding ($p<0.01$).[13] This is also in accordance with a cross-sectional study from Tanzania.[14] The study also proved an association between the educational qualification of the mother and the level of exclusive breastfeeding. In our study although there was variation in the level of exclusive breastfeeding, a statistically significant association was not found ($p=0.182$). This underscores the intricate interplay of various factors in maternal decision-making. While education remains a critical determinant of health-related behaviours, our findings indicate that it may not be the primary influencing factor in the context studied.

Furthermore, our study elucidates the relationship between the timing of solid food introduction and exclusive breastfeeding. The statistical significance (p=0.002) observed highlights that mothers who delayed solid food introduction until the recommended age were more likely to exclusively breastfeed. These findings mirror other studies that stresses the importance of appropriate complementary feeding timing in preserving the benefits of exclusive breastfeeding.[15] The global breastfeeding collective advocates for enhanced funding and improved implementation of policies, programs, and interventions to offer mothers the necessary support for breastfeeding.[16] Governments can take seven specific actions to advance breastfeeding initiatives and elevate the worldwide rate of exclusive breastfeeding to a minimum of 50 per cent by 2025. Ensuring exclusive breastfeeding (EBF) for the initial six months involves a collaborative community approach, encompassing antenatal counselling, postnatal lactation support, family backing, employee benefits, and paid maternity leave. The positive outcomes of EBF extend beyond the mother-infant relationship, fostering healthier communities and enhancing the country's economic well-being.

Our study, while offering valuable insights into exclusive breastfeeding practices among postpartum women in a tertiary care hospital in Kerala, India, is not without limitations. The primary constraint lies in the limited generalizability of our findings. Our study's scope was limited to a specific geographic location, which may restrict the applicability of the results to a broader population. Variations in cultural practices, socioeconomic conditions, and healthcare infrastructure across different regions were not fully considered, potentially impacting the exclusive breastfeeding rates and challenges faced by mothers in diverse contexts. Another limitation relates to the self-reported nature of the data. The study relied on data provided by postpartum women, which introduces the possibility of recall bias and social desirability bias. Participants may not have accurately recalled or may have over-reported their exclusive breastfeeding practices due to societal pressure or perceived expectations, potentially influencing the accuracy of the prevalence and duration of exclusive breastfeeding reported. Additionally, our cross-sectional study design captured data at a single point in time, preventing the exploration of changes in exclusive breastfeeding practices over time or the establishment of causality between variables. To obtain a more comprehensive understanding of the factors influencing exclusive breastfeeding, longitudinal studies and qualitative data collection may be necessary.

## CONCLUSION

Our investigation into breastfeeding practices among postpartum mothers in a Kerala tertiary care hospital brings to light crucial insights that extend beyond statistical figures. Despite a commendable high level of awareness of the recommended six-month breastfeeding duration, the actual prevalence of exclusive breastfeeding stands was much lower, this marked disparity unveils the intricate web of challenges and factors influencing maternal choices in this region. Our findings not only corroborate existing literature but also offer a granular perspective on the multifaceted nature of exclusive breastfeeding practices in Kerala. The study thus helps in identifying the primary obstacles faced by the state of Kerala in achieving a higher percentage of exclusive breastfeeding compared to the country and neighboring states average and points to specific factors contributing to these. A targeted intervention focusing on these aspects can improve the exclusive breastfeeding prevalence thus on a whole improve the health of the newborns and providing the children with all the health benefits of exclusive breastfeeding.

### *Recommendations*

Challenges such as inadequate breast milk, sore nipples, and family pressure emerged as significant barriers, emphasizing the need for robust support systems tailored to the unique cultural landscape of Kerala. The timing of solid food introduction revealed a noteworthy impact on exclusive breastfeeding, underlining the importance of appropriate complementary feeding practices. The lower prevalence rate compared to state averages and regional studies underscores the need for targeted interventions. The prevalence of challenges like inadequate breast milk and societal pressures points to the necessity of comprehensive education, support, and societal awareness. The impact of workplace dynamics on breastfeeding practices calls for a re-evaluation of existing policies, urging the implementation of supportive measures for working mothers. In the broader context of maternal and child health, our research advocates for a holistic approach. Culturally sensitive interventions, comprehensive support systems, and healthcare provider engagement are identified as crucial elements in promoting exclusive breastfeeding.

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