



# Breastfeeding Indicators Among Mothers in Kerala, India: A Descriptive Cross-sectional study

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## Abstract

**Introduction:** The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) advocate for comprehensive breastfeeding indicators to enhance current breastfeeding rates in the community. These include the early initiation of breastfeeding, six-month exclusive breastfeeding, and continuation of breastfeeding, along with complementary feeds for at least a biennial span or beyond. This study aimed to ascertain the prevalence of breastfeeding among mothers in the community.

**Methods:** A descriptive cross-sectional study was undertaken among 945 mothers having children aged from two to three years in the community. A multistage cluster sampling was done to select the mother-baby dyads. The data were collected using a validated semi-structured interview schedule and analyzed by descriptive statistics (Frequency and percentage) using SPSS version 27.

**Results:** The early-initiation rate of breastfeeding in the study group was 76%. Among this 65% (breastfed within half an hour) for normal delivery, and 48% (within 0 - 1 hour) for Caesarean section. The exclusive breastfeeding rate was 71% and the continuation of lactation till two years and beyond was 77.78%.

**Conclusion:** The present study shows the breast milk feeding within the first-hour after birth and exclusive breastfeeding were 76% and 71% respectively. Although there has been improvement, Kerala needs to improve the early-commencement of breastfeeding and exclusive breast feeding.

## Introduction

Breastfeeding represents the utmost economical and readily accessible comprehensive nourishment for infants during their initial stages of life. It represents one of the most efficient ways to reduce neonatal sickness and fatality rates from diarrheal diseases, respiratory diseases, and other infections in children.<sup>1,2</sup> The World Health Organization (WHO) proposes three main indicators for feeding practices of infants and young children; early initiation of breastfeeding, exclusive breastfeeding up to six months, and continuation of lactation for two years or beyond.<sup>3</sup> Breastfeeding could prevent 13% of under-five deaths in low-income countries.<sup>4</sup> Early initiation of breastfeeding protects the new-born from acquiring infections and reduces infant mortality.<sup>5,6</sup> The State of Kerala has high health indices including the lowest Infant mortality rate (6 per 1000 live births), and maternal mortality rate (19 per 1 lakh population).<sup>7</sup> However, as per the DLHS-4 (District Level House Hold

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Survey-Kerala, 2012-13) the exclusive breastfeeding rate was 69.8% but in NFHS-5 data (National Family Health Survey 2019-21), the rate has plummeted to 55.5% which is below the national level (63.7%).<sup>8</sup> The number of mothers who breastfeed their babies within one hour of birth has increased in Kerala. As per the most recent NFHS survey in Kerala, around 66.7% mothers now commence breastfeeding within the first hour. The DLHS-4 showed a breastfeeding initiation rate and rate of continuation of lactation for 12 - 23 months as 78.8% and 69.3%. Despite NFHS-5 showing a slight improvement in the breastfeeding trend, the comparison with DLHS- 4 revealed a significant decline.<sup>9</sup> Kerala stands as the initial state in India to implement MBFHI (Mother and Baby Friendly Hospital Initiative) in hospitals in the year 2021.<sup>10</sup> So far, 44 hospitals in the State, including 17 Government and 27 private hospitals, have received the MBFHI certification.<sup>11</sup> This initiative helped to enhance the breastfeeding status of the state.

This study has been conceptualised to study the state of breastfeeding among mothers in the community in Kerala, India.

## Methods

A descriptive cross-sectional design was planned for the study. The research was commenced after ethical authorization was granted by a competent human ethics committee, and informed consent was garnered from every participant. The research was conducted in three districts of Kerala, India (Thiruvananthapuram, Thrissur, and Wayanad) from 01 Feb 2022 to 01 Mar 2023. The sample comprised 945 mother-baby dyads selected from randomly selected Anganwadis. The sample-size was estimated using the exclusive breastfeeding rates 55.5% (NFHS-5-Kerala) and the relative precision of 10% and the calculated sample-size was 945 with a design effect of 2. The eligible mothers with children ranging in age from two to three years were approached through Anganwadi workers. Mothers who did not provide consent were excluded. The study variables were initiation of breast-feeding of the new-born within 60 minutes of delivery, delayed initiation of breastfeeding, initiation of breastfeeding of the new-born later than 60 minutes of delivery and exclusive breastfeeding. Demographic variables were noted. Data was collected with validated semi-structured questionnaire. Information was collected using the interview technique and record review. Descriptive statistics including frequencies and proportions were used for categorical variables. The data were analysed using SPSS version 27.

## Results

The breastfeeding indicators revealed satisfactory outcomes among mothers in the local populace. Total of 75.7% mothers started their first feeding within 60 minutes after delivery. The majority (71%) of the participants had exclusive breastfeeding, and around 29% had lactation failure. Majority (77.79%) of the mothers continued their lactation for two years or more.

**Table 1:** Socio-demographic variables of the mother and baby (N = 945)

Study variables	Frequency (N)	Percentage (%)
Age of mother (Years) (26 – 35)	619	65.5
Religion (Christian)	438	46.3
Education (Degree)	356	37.7
Occupation of mother (Housewife)	674	71.3
Type of the family (Nuclear)	491	52.0
Socio-economic status (BPL)	535	56.6
Gender- of the baby (Male)	510	54.0

**Table 2:** Clinical variables of mother and baby (N = 945)

Study- Variables	Frequency (N)	Percentage (%)
Type of delivery (Normal)	645	68.3
Place of delivery (Private hospital)	517	54.7
No. of antenatal visits ( $\geq 8$ )	652	69.0
Antenatal advice received	643	68.0

**Table 3:** Breastfeeding indicators among the mothers in the community (N = 945)

Breastfeeding indicators / Rates	Frequency (N)	Percentage (%) 95% CI
Initiation of the breastfeeding in one hour of delivery	715	75.7 (72.8-78.3)
Exclusive breastfeeding for 6 months	674	71.3 (CI 68.3 to 74.2)
Continuation of lactation, till 2 years	735	77.8 (CI 74.9 to 80.3)

**Table 4:** Initiation of breastfeeding among the mothers

within the community categorized by different types of delivery (N = 945)

Type of delivery	Initiation time	Frequency (N)	Percentage (%)
After normal delivery (N = 645)	0 - 30min	419	65.0
	31 - 60min	152	23.6
	> 60 min	74	11.4
After Caesarean section (N = 300)	0 - 60 min	144	48.0
	> 60 min	156	52.0

## Discussion

The demographic variables of participants revealed that a predominant proportion of the mothers (65.5%) fell within the age category of 26 - 35 years, and the least (3.5%) belonged to 36 - 45 years. The mean (SD) age of the mothers was 28 ( $\pm$  3.92 years), with a median age of 27 years. In terms of educational qualification, 37.7% of mothers were degree holders contrasting with the 2.9% with primary-level education. Housewives formed the major bulk (71.3%) and the remaining 28.7% were employed. Comparable trends were seen in a study conducted in Kochi, Kerala on practices and problems related to breastfeeding among mothers of under-five children which reported that 48.3% of mothers were in the 24 - 29 years age group, 35% were graduates and the majority (86.3%) were non-working.<sup>12</sup>

Additionally, 52% of the mothers in this study belonged to nuclear families. This aligns with the outcomes of a study performed in Thrissur, India that reported 51.4% of the study subjects residing in nuclear families.<sup>13</sup> The household socioeconomic status indicated that 56.6% were below the poverty line (BPL). These results were similar to those found in the international inequalities in exclusive, breastfeeding practices in India-analysis of NFHS data, which showed that an excess of two-thirds of the children were born to poor families.<sup>14</sup>

Considering the gender of the children, 54% of the participants had male children and 46% had female children. In the present study, 68% had normal vaginal delivery and the remaining 32% of the mothers had undergone Caesarean section. Among the institutional deliveries, 54.7% delivered in private hospitals and 45.3% delivered in Government hospitals. Similar findings had been reported in a cross-sectional study conducted in Central Kerala where the proportion of Caesarean section was 41%, and almost 59% of the mothers delivered in the private hospital.<sup>12</sup> As per the Kerala State report -Health dossier-2021 by NHSRC-NHM, 31.8% of deliveries were conducted in public institutions and 68.2% in private hospitals.<sup>15</sup>

Despite challenges posed by the COVID-19 pandemic on the

antenatal care of the participants from 2019 to 2020, 69% of mothers had eight or more antenatal check-ups. A noteworthy 53.3% received antenatal advice on breastfeeding. These results were corroborated by a survey in Attappadi, Kerala, India where 92% of mothers had five or more antenatal check-ups, predominantly in Government health facilities.<sup>16</sup> In this study, 53.4% of the mothers obtained no advisory input on breastfeeding during their discharge after delivery from the hospital. The study noted that 72.7% of the mothers knew that the initiation of feeding should start within one hour, and 76.3% were aware of the time of starting complementary feeding. Similarly, a cross-sectional study undertaken in Thrissur, Kerala showed that 70.8% mothers possessed moderate understanding of breastfeeding, and 55% displayed a good attitude towards breastfeeding practice. Additionally, 57.5% accorded priority to giving colostrum, and 85% gave breast milk as the initial nourishment.<sup>13</sup> Another research also reported similar findings where 73% of the maternal group had knowledge of the significance of exclusive breastfeeding, and 55% were aware of the prompt commencement of breastfeeding post-delivery.<sup>17</sup>

The present study reported that 75.7% mothers commenced breastfeeding in the first hour. This finding is also corroborated with another study on comprehensive nutrition assessment of the tribal population in Attappadi Taluk, Kerala, India. This study reported commencement of breastfeeding and exclusive breastfeeding as 69.5% and 71.4% respectively.<sup>16</sup> Another cross-sectional study conducted in Central Kerala, India from 2019-2020 showed that 70.4% of babies were exclusively-breastfed for the initial half-year and 80.9% were breastfed within the initial hour of being born.<sup>18</sup>

The present study showed that 88.6% mothers who experienced vaginal delivery began breastfeeding within an hour following birth, while 52% mothers who had a Caesarean section started breastfeeding after an hour. The majority (71%) of moms exclusively breastfed their children, but 29% of mothers failed to do this practice. A multitude of studies has shown that infants born by Caesarean section may experience a delayed onset of breastfeeding. As per the NFHS (2015) data,

low rates of early breastfeeding initiation (37% in Telangana and 40% in Andhra Pradesh) are linked to a high prevalence of Caesarean section births (58% in Telangana and 40% in Andhra Pradesh) in these States where 92% of deliveries are attended by qualified healthcare professionals.<sup>19</sup>

One of the major objectives of the National Guideline on Infant and Young Child Feeding is a continuation of breastfeeding for up to two years along with complementary feeding.<sup>20</sup> The current study showed 77.78% of mothers maintained lactating for two years or longer and 22.22% of the mothers had discontinued their feeding. In India over the past ten years, NFHS data revealed 8.4% increase in exclusive breastfeeding, along with a 3.3% decline in the continuation of breastfeeding up to the first year and a 1% decrease up to the second year.<sup>21</sup> Although the data reports increase in exclusive breast feeding, we still need to work upon targeting increasing the exclusive breast feeding rate.

The strengths of the present study include the generalizability of the results because of the extensive sample size representing the south, middle, and north parts of the Kerala state, the ease of data collection with minimum cost as the exposure and outcome variables were collected concomitantly and generation of valuable hypotheses for subsequent program planning and further research. The limitations include the lack of a comparison group, hindering testing of any hypothesis, and biases such as socially desirable responses and recall bias. The results of this study can motivate policymakers to develop further evidence-based interventions to support lactation practice, including the policies that promote the linkages between healthcare institutions and the community in pursuit of advocating breastfeeding.

## Conclusion

The present study shows the breast milk feeding within the first-hour after birth and exclusive breastfeeding were 76% and 71% respectively. Breastfeeding rate in Kerala is above the WHO-recommended levels and although there has been improvement, Kerala needs to improve the early-commencement of breastfeeding and exclusive breast feeding.

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