

Assessment of Breastfeeding Practices among Children Under Two Years of Age in Urban Slums: A Cross-Sectional Study

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Abstract

Introduction: The nutritional well being of a population is both an outcome and an indicator of national development. Reducing infant and child deaths and improving the level of nutritional status of the child is one of the important priority areas for Government of India. One of the important ways to achieve desired reduction of infant mortality is to ensure 100% exclusive breastfeeding for first 6 months followed by appropriate complementary feeding along continuation of breastfeeding.

Objective: To study the prevalence of Breastfeeding practices of children less than 2years

Methodology: The present study is a cross sectional study conducted in slums of AMC during June 2018 to August 2019. A total of 840 children between 0 to 2 years were selected using cluster sampling method. The Predesigned pre-tested proforma comprised of socio demographic details, components of antenatal care and breastfeeding practices of infants up to 24 months was used. The data so collected was entered into computer using appropriate software. The data was then analyzed for various parameters and cross tabulation was done using appropriate software.

Results: Breastfeeding within one hour was received by 53.2% of children. 61.9% of the children were given pre lacteal feeding after birth as a part of ritual. Only (70.8%) of the children had received colostrum. One third (33.3%) of children less than 24 months of age, were receiving feedings other than breast-milk. Majority (60%) of children had received breastfeeding for 6 months.

Key words: breastfeeding, knowledge, practices, urban slum.

Introduction

Nutrition stands at the core of human survival, health, and development, profoundly impacting

present and future generations. Persistent challenges such as female illiteracy, ignorance regarding the nutritional needs of infants and young children, and limited access to healthcare facilities significantly

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contribute to the prevalence of malnutrition among children¹. In this context, appropriate feeding practices emerge as indispensable determinants of healthy growth and development in infants. The National Nutrition Policy, instituted by the Government of India through the Department of Women and Child Development in 2000, underscored the critical importance of maternal nutrition and health education in promoting optimal infant and young child feeding practices². Efforts aimed at instigating behavioral changes among mothers were recognized as direct interventions to combat malnutrition among children.

The first year of life marks a period of unparalleled growth in human beings, during which infant feeding practices, encompassing both breastfeeding and complementary feeding, play a pivotal role in shaping the nutritional status of the child³. Emerging scientific evidence underscores the grave impact of malnutrition, directly or indirectly accounting for a staggering 60% of all deaths among children under five years annually⁴. Alarming, more than two-thirds of these fatalities are often attributed to inappropriate feeding practices, with a significant portion occurring within the initial year of life. The Integrated Management of Neonatal and Childhood Illnesses (IMNCI) program has underscored the paramount importance of optimizing child feeding practices to mitigate the burden of malnutrition.

Despite the presence of accessible healthcare facilities, health indicators in urban areas often fail to surpass those of rural counterparts⁵. Hence, this study endeavors to elucidate the prevailing landscape of Infant and Young Child Feeding (IYCF) practices and their consequential impact on the nutritional status of children residing in the slum areas under the purview of the Ahmedabad Municipal Corporation (AMC)⁶. By examining the intersection of feeding practices and nutritional outcomes in urban slum settings, this study aims to inform targeted interventions and policies geared towards ameliorating child nutrition disparities in underserved urban communities.

Methodology

The study was conducted with the aim of assessing the prevalence of breastfeeding practices among children under 2 years old in the slums of Ahmedabad Municipal Corporation (AMC) from June 2018 to August 2019⁸. Ahmedabad, a city with a total population of 6.8 million, of which 32.4% reside in slum areas, served as the study area⁹. To determine the sample size, a proportion of 48.5% for the initiation of breastfeeding within one hour of birth was considered, with a precision level of 5% and a non-response rate of 5%¹⁰. Consequently, a sample size of 840 children aged 0 to 2 years was established. The sampling method employed a two-stage cluster sampling approach. Initially, 30 clusters were selected from a list of 275 clusters, proportionate to the population size, followed by the random selection of households within each cluster. Data collection utilized a pre-designed and pre-tested proforma, encompassing socio-demographic details, antenatal care components, and breastfeeding practices of infants up to 24 months. Informed consent was obtained from all participants involved in the study. The survey methodology involved dividing each cluster into quadrants and randomly selecting households for interviews with mothers. During the interviews, physical measurements such as weight, length, and mid-upper arm circumference were recorded for the children. Subsequently, the collected data were entered into a computer using appropriate software on the same day of collection. Following data cleaning and validation, analysis for various parameters and cross-tabulation was conducted using suitable statistical software.

Results and Discussion

As shown in Table 1, Out of the total 840 children included in the study, 454 (54%) were females and 386 (46%) were males. The sex ratio of the study population favored females, with 1174 females per 1000 males, which is higher than the sex ratio reported for Ahmedabad city (891:1000) and the child sex ratio according to Census 2011 (853:1000).

Table 1: Distribution of children aged 0 to 24 months according to socio-demographic profile (n=840)

Variable	Frequency	Percentage%
Age wise distribution		
0 to 6 months	253	30.1
7 to 12 months	193	23
13 to 24 months	394	46.9
Gender wise distribution		
Female	454	54
Male	386	46
Religion		
Hindu	730	86.9
Muslim	107	12.7
Christian	3	0.4
Type of family		
Nuclear	286	34.0
Joint	376	44.8
Three generation	178	21.2
Education of mother		
Illiterate	86	10.2
Primary	491	58.5
Secondary	195	23.2
Higher secondary	27	3.2
Graduate	41	4.9
Occupation of mother		
Housewife	717	85.4
Working	123	14.6
Socioeconomic status (Modified Prasad's Classification & AICPI-1046)		
Class I	0	0
Class II	43	5.1
Class III	147	17.5
Class IV	399	47.5
Class V	251	29.8

The Government of India recommends initiating breastfeeding immediately after birth, preferably within one hour¹. In this study, 53.2% of the children had received breastfeeding within one hour after birth, which is higher than the National Family Health Survey-3 (NFHS-3) reported rate of 30.3%⁵. However, a notable proportion (36.2%) of women in this study had initiated breastfeeding after one day, with a significant number of them having delivered by cesarean section (33.8%) and reportedly not being allowed to breastfeed according to respondents.

Similar findings were observed in a study by Sanjay V. Wagh et al., where approximately 80.48% of lactating mothers initiated breastfeeding practices within half an hour after delivery⁷.

Among the children who experienced late initiation of breastfeeding beyond 1 hour after birth (n=393), the primary reason reported was not enough secretion or no secretion (36.4%). The next most common reason was due to cesarean section (CS), with 33.8% of mothers initiating breastfeeding after 1 day, which ideally should commence within 4 hours of CS. This highlights the importance of providing proper counseling to mothers during the third trimester of the antenatal period to address such concerns and promote timely initiation of breastfeeding.

A study by Sanjay Wagh et al. reported similar findings, where the most common causes of delay in breastfeeding initiation were cesarean section (50.0%), complications during delivery (22.91%), baby kept in NICU after birth (14.58%), and not enough breast milk secretion (12.50%)⁸.

In comparison to the National Family Health Survey-3 (NFHS-3), where 24.7% of male and 24.5% of female infants were breastfed within 1 hour of birth⁵, the current study observed a higher proportion of children (53.4%) receiving breastfeeding within 1 hour, with 62.9% of males and 44.9% of females initiating breastfeeding within this timeframe as shown in Table 2. Additionally, the study found that 37.5% of first-born children, 60.8% of second-born children, and 59.7% of children with a birth order greater than three were breastfed within 1 hour after birth, indicating an increase in the practice of early breastfeeding initiation after the first delivery. Similar findings were reported by Devang Raval, where 41.2% of males and 33.3% of females received breastfeeding within 1 hour, with 12.5% of first-born children and 69.2% of second-born children initiating breastfeeding within this timeframe⁹. Furthermore, the study observed a higher rate of breastfeeding initiation within 1 hour in institutional deliveries (86%) compared to home deliveries (14%). Among institutional deliveries, 58.4% of women initiated breastfeeding within 1 hour in government hospitals, while 52.6% did so in private hospitals. Regarding prelacteal feeding, 71.8% of women who did not give prelacteal feed initiated breastfeeding within 1 hour, whereas only 41.7% of those who gave prelacteal feed did so.

Table 2: Distribution of children of 0 to 24 months with respect to time of initiation of breastfeeding (n=840)

Variables	Initiation of breastfeeding after birth		Total
	Within 1 hour(n=447)	After 1 hour(n=393)	
Gender			
Male	243(62.9)	143(37.1)	386
Female	204(44.9)	250(55.1)	454
$\chi^2 = 49.20$, df = 1, p < 0.0001 (significant)			
Place of Delivery			
Private	312(52.6)	281(47.4)	593
Government	132(58.4)	94(41.6)	226
Home	3(14.2)	18(85.8)	21
$\chi^2 = 20.34$, df = 2, p < 0.0001 (significant)			
Birth Order			
1	99(37.5)	165(62.5)	264
2	216(60.8)	139(39.2)	355
≥3	132(59.7)	89(40.3)	221
$\chi^2 = 38.25$, df = 2, p < 0.0001 (significant)			
Prelacteal feeding			
No	230(71.8)	90(28.2)	320
Yes	217(41.7)	303(58.3)	520
$\chi^2 = 85.9$, df = 1, p < 0.001 (significant)			

Among the children included in the study (n=840), 61.9% received prelacteal feed, consistent with the prevalence reported by Devang Raval (61.9%) but higher than the NFHS-3^{5,9}. As shown in Figure 1 The most common prelacteal feed provided to the infants was ghee & jaggery water (49.1%), followed by honey (18.3%) and rab (13.2%). Some respondents (11.4%) even gave tea to the newborns. These practices are often rooted in cultural rituals. Interestingly, 100% of the reasons for providing prelacteal feed were beliefs held by the respondents and their family members, highlighting the importance of education during antenatal care to dispel such misconceptions. Notably, 65.7% of respondents who did not provide prelacteal feed after birth reported that they were not allowed to do so in hospitals as per doctor's advice, indicating the influential role of healthcare professionals in promoting proper infant feeding practices.

Prelacteal Feed

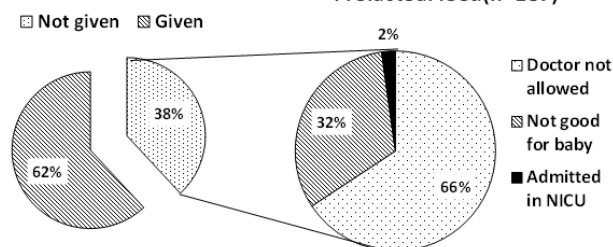


Figure 1: Distribution of children of 0 to 24 months with respect to prelacteal feeding (n=840) and reasons for not giving prelacteal feed (n=187)*

*Only one important answer was considered.

In a study by Vandana Sabharwal, 69.5% of respondents gave prelacteals to their infants, with 11% of mothers perceiving prelacteal feeds to be healthier than breast milk¹⁰. The most commonly administered prelacteals were diluted animal milk and sugar water, followed by reconstituted powdered milk and others.

The distribution of children aged 0 to 24 months according to prelacteal feeding practices varied significantly across different demographic and healthcare factors. Among the study participants, a higher proportion of females (67.6%) received prelacteal feed compared to males (55.2%), consistent with previous findings⁷. Notably, children whose mothers received proper antenatal care were less likely to receive prelacteal feed (41.8%) compared to those whose mothers did not receive proper antenatal care (31.3%), indicating a potential gap in educating mothers about prelacteal feeding practices during the antenatal period. Although a higher prevalence of prelacteal feeding was observed in home deliveries (85.7%) compared to institutional deliveries, there was no statistically significant difference between government hospitals (58.4%) and private hospitals (62.4%). However, children who did not receive colostrum were more likely to receive prelacteal feed (72.2%) compared to those who received colostrum (57.6%), highlighting the importance of early initiation of breastfeeding practices. These findings underscore the need for targeted healthcare interventions and education programs aimed at promoting optimal breastfeeding practices and addressing cultural beliefs surrounding prelacteal feeding.

The distribution of infants aged 0 to 24 months by colostrum feeding practices and breastfeeding frequency is presented in this study. Colostrum, known for its protective properties against childhood infections, is ideally provided to every newborn. However, the findings indicate that 70.8% of the infants in the study received colostrum, with only 23% of caregivers aware of its benefits, primarily through information provided by healthcare staff. Conversely, 29.2% of infants were deprived of colostrum, with 14% of parents believing it could cause illness, reflecting misconceptions. Similar findings were observed in a study by Vandana Sabharwal, where 44.5% of infants initiated breastfeeding on the 2nd or 3rd day postpartum, partially receiving colostrum's benefits, while 5% were entirely deprived of it. Additionally, 43.5% of mothers reportedly discarded the first few drops of colostrum due to customs, considering it old or spoiled milk, or for other reasons such as clearing blocked ducts.

Regarding breastfeeding frequency, it is recommended that infants up to 6 months should be breastfed at least 8 times a day. In this study, the majority (88.6%) of infants met this criterion. This aligns closely with the findings of the National Family Health Survey-3 (NFHS-3), where 89% of breastfeeding infants up to 6 months were breastfed at least 6 times a day⁵. Furthermore, it is important for infants to receive night feeds at least once or twice, a practice observed in 94.0% of infants in this study.

These results underscore the importance of promoting optimal breastfeeding practices, including the provision of colostrum and ensuring adequate breastfeeding frequency, to support infant health and development. Misconceptions surrounding colostrum need to be addressed through targeted education and awareness campaigns, emphasizing its vital role in protecting newborns against infections and promoting their overall well-being.

In this study, the distribution of children aged 0 to 24 months according to the introduction of artificial feeding alongside breastfeeding during the first 6 months of life was examined. Ideally, all infants should receive exclusive breastfeeding during this period, as recommended by the Infant and Young Child Feeding (IYCF) guidelines of 2011¹¹. However, the findings reveal that 33.3% of women introduced

other substances along with breastfeeding during the first 6 months of their child's life. This practice is concerning, as it deviates from the recommended exclusive breastfeeding practice.

Among the substances introduced alongside breastfeeding, water was the most commonly given, with 47.1% of infants receiving it. Animal milk from local vendors and Amul milk were also frequently introduced, accounting for 30.7% and 10.4% of cases, respectively. Additionally, gripe water and formula milk were given to a smaller proportion of infants, comprising 6.4% and 5.4% of cases, respectively. These findings suggest a lack of awareness among caregivers regarding the sufficiency of breast milk as the sole source of nutrition for infants up to 6 months of age.

A similar study by Katara P.S. et al. reported a comparable trend, with only 15.5% of infants receiving exclusive breastfeeding, as the majority were given water alongside breast milk¹². This highlights the need for educational interventions to emphasize the importance of exclusive breastfeeding during the first 6 months of life, without the introduction of any other substances.

Furthermore, among children aged 6 to 24 months, only 50.3% received exclusive breastfeeding until the age of 6 months. This indicates a gap in adherence to the recommended breastfeeding practices and emphasizes the importance of proper training and sensitization of healthcare personnel regarding exclusive breastfeeding. It is worth noting that some respondents (33 women) could not recall the exact duration of exclusive breastfeeding for their children aged 12 to 24 months, potentially introducing recall bias into the study findings.

Overall, these results underscore the need for targeted interventions and education programs to promote exclusive breastfeeding practices and discourage the introduction of other substances during the first 6 months of an infant's life, thus ensuring optimal nutrition and health outcomes.

Conclusion

In examining the feeding practices of 840 mothers with children aged 0 to 24 months, several noteworthy observations have emerged. The

distribution of children across age groups revealed that a significant proportion fell within the 13 to 24-month category, highlighting the importance of addressing feeding practices beyond infancy. Gender distribution showed a slightly higher prevalence of female children, indicating potential variations in care practices. While over half of the children received breastfeeding within the recommended one-hour window after birth, a concerning number were subjected to prelacteal feeding, underscoring the persistence of cultural rituals over evidence-based practices. Colostrum feeding, a crucial source of nutrition and immunity, was not universal, with a notable percentage of infants deprived of this essential nourishment. Equally troubling was the introduction of non-breast milk feedings to a significant portion of infants, suggesting gaps in knowledge and adherence to recommended feeding guidelines. However, a positive trend was observed in the duration of breastfeeding, with the majority of children receiving breastfeeding for the recommended six-month period.

Recommendations:

To address the identified gaps and improve infant feeding practices, targeted interventions and strategies are essential. Antenatal counseling sessions should be fortified to provide comprehensive education on Infant and Young Child Feeding practices, emphasizing the importance of exclusive breastfeeding and timely initiation. Additionally, regular sensitization and counseling sessions should be integrated into routine healthcare visits for mothers with children under 2 years, aiming to reinforce correct feeding practices and dispel misconceptions. Community-wide awareness campaigns, facilitated through mass media platforms, workshops, and community engagement initiatives, are crucial for instilling a culture of informed feeding practices and fostering supportive environments for optimal infant nutrition. By implementing these recommendations, healthcare systems can effectively promote exclusive breastfeeding, improve infant feeding practices, and ultimately contribute to better health outcomes for infants and young children.

Ethical Clearance: Informed consent was obtained from all participants involved in the study. Ethical clearance was obtained from the Institutional

Review Board (IRB) of Smt. NHL Municipal Medical College with approval letter number NHLMMC/IRB/2013/58 dated 02/05/2013 prior to the commencement of the study.

Conflict of Interest: NIL

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