

A Comparative study to assess the knowledge and practice regarding colostrum-feeding among women in rural and urban community of Gurugram, Haryana

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ABSTRACT

Introduction: Colostrum feeding, the practice of feeding newborns the first breast milk, is critical for infant health due to its high nutritional and immunological value. However, disparities in knowledge and practice of colostrum feeding may exist between rural and urban communities.

Aim & Objectives: This study aims to assess and compare the knowledge and practices regarding colostrum feeding among women in rural and urban communities of Gurugram, Haryana. The objectives were to assess the knowledge and practices regarding colostrum feeding among women in rural and urban areas, compare these between the two groups, and determine the correlation between knowledge and practice scores.

Methodology: A community-based comparative cross-sectional study (April 2024) recruited 150 postpartum women (≤ 12 months after delivery)—75 each from rural Joniawas and urban Farrukhnagar, Gurugram. A validated 20-item knowledge questionnaire and 6-item practice checklist (Cronbach $\alpha = 0.98$) were administered face-to-face. Scores were extracted from the master data sheet and analysed with Python 3.11 (pandas/scipy). Knowledge categories were: poor 0-6, moderate 7-12, adequate 13-20. Independent t-test, χ^2 , and Pearson's r assessed group differences and associations ($\alpha = 0.05$).

Results & Discussion: The study found significant differences in the knowledge and practices of colostrum feeding between rural and urban mothers. While 100% of mothers in both areas had prior knowledge, 57.3% of urban mothers reported health professionals as their information source compared to 49.3% of rural mothers who relied on family or friends. Less than 50% of urban mothers and less than 30% of rural mothers had an adequate level of knowledge. Most mothers (92% urban, 89.3% rural) practiced colostrum feeding, but only 21.3% in urban areas and 22% in rural areas continued it for at least three days. Urban mothers had higher mean knowledge and practice scores, with a statistically significant difference at the 0.0001 level. The correlation between knowledge and practice scores was weakly positive but significant in urban areas ($p < 0.05$), while it was not significant in rural areas. The weak positive correlation between knowledge and practice indicates that while knowledge is an important factor, it is not the sole determinant of proper feeding practices. This suggests that other factors, such as cultural practices, support systems, and healthcare accessibility, play significant roles in influencing behavior.

Conclusion: The study indicates that while awareness of colostrum feeding is high in both communities, actual knowledge and optimal practices are significantly lower, particularly in rural areas. Targeted educational programs, enhanced healthcare services, and community engagement are recommended to improve knowledge and practices of colostrum feeding, especially in underserved rural areas.

Keywords: Colostrum feeding, Knowledge, Practice, Rural and Urban Communities, Comparative Study, Gurugram.

1. INTRODUCTION

Colostrum—the viscous, yellow “first milk” rich in antibodies and growth factors—acts as a neonate’s first immunisation. Yet in many Indian communities, cultural taboos lead to delayed initiation or discarding of colostrum, exposing newborns to infection and malnutrition. Prior studies show inconsistent rural-urban patterns and often lack robust comparative

statistics . We therefore quantified knowledge and practice differences and their correlation in Gurugram, Haryana, a rapidly urbanising district with adjoining agrarian pockets.

2. NEED OF THE STUDY

One of the most significant psychological advantages of colostrum feeding is the production of oxytocin, which is sometimes referred to as the "bonding hormone." A neurochemical called oxytocin is released when a mother breastfeeds or comes into contact with her infant. It is essential for developing a strong emotional bond between the mother and her child. The act of breastfeeding involves mothers and infants in intimate, close-knit physical moments that strengthen the link between them. Studies reveal that the bonding effects of oxytocin improve the emotional health of both the mother and the child. Therefore reduces postpartum depression and anxiety. A 2021 survey revealed that 46.7 percent of women in urban areas and 48% of women in rural areas had moderate levels of knowledge, while 22.7% of mothers in rural areas had inadequate knowledge. Compared to mothers in rural areas, urban mothers had greater knowledge of colostrum feeding and its significance. Colostrum feeding was used by most of the women (92% in urban areas and 89.3% in rural areas). This led to the conclusion that both urban and rural areas had inappropriate breastfeeding practices and insufficient knowledge of colostrum feeding. Compared to moms in rural areas, mothers in urban areas possessed superior understanding and feeding methods. Programs to raise awareness in the community and among individuals about the value of colostrum feeding are still necessary.

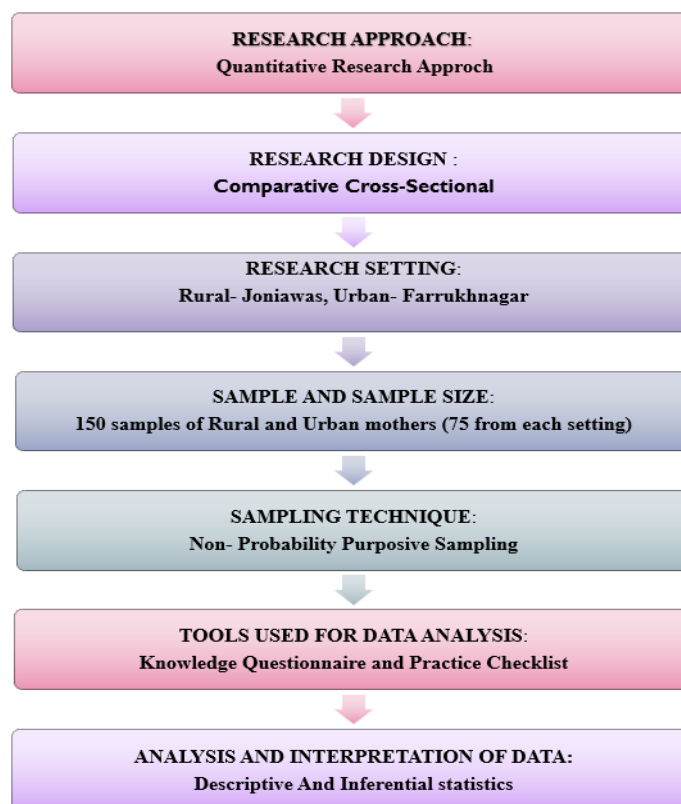
3. AIM OF THE STUDY

The aim of this study is to assess the knowledge and practice regarding colostrum feeding among women in rural and urban communities of Joniawas and Farrukhnagar, Gurugram, Haryana.

4. RESEARCH METHODOLOGY

In the current study, the Quantitative Research approach and Comparative Cross-sectional Research Design were used. The information was gathered from the 150 mothers (75 from each setting of rural and urban) at Village Joniawas and Farrukhnagar, Gurugram by using Non-Probability Purposive sampling technique .The data was collected using a Knowledge Questionnaire and Practice Checklist. The tool was validated to ensure content validity by 7 experts. The reliability of the tool was determined by Karl Pearson's split-half test and was found to be 0.98. Formal permission, consent & ethical clearance were obtained prior to the final research process. The researcher initially established rapport with the study samples and assured confidentiality and the purpose of the study was explained to the samples. The collected data were encoded in SPSS version 22 for further analysis.

SYSTEMATIC REPRESENTATION OF RESEARCH METHODOLOGY



5. RESULTS

Participant profile

Most urban mothers were 21–30 y (58.7 %); half of rural mothers were <20 y. Hindu religion predominated (urban 89.3 %, rural 54.6 %). Joint families were common (~60 %). All women reported prior awareness of colostrum; principal information channels differed by residence .

Table 1 Knowledge Level Distribution

Level	Urban n = 75	Rural n = 75
Adequate (≥ 13)	17 (22.7 %)	8 (10.7 %)
Moderate (7-12)	51 (68.0 %)	45 (60.0 %)
Inadequate (≤ 6)	7 (9.3 %)	22 (29.3 %)

Urban mean 10.49 ± 3.58 vs rural 8.60 ± 3.53 ($t = 3.26, p = 0.001$). Adequate knowledge attained by 22.7 % urban and 10.7 % rural mothers ($\chi^2 = 6.12, p = 0.013$).

Table 2 Practice Scores Distribution (Yes %)

Item	Urban	Rural
Gave colostrum	92.0	89.3
Initiated ≤ 1 h	86.7	72.0
Continued ≥ 3 days	21.3	22.7
Proper latch	88.0	49.3
Fed during infant illness	66.7	72.0
Fed during maternal illness	54.7	36.0

Urban mean 11.91 ± 2.32 vs rural 5.83 ± 4.14 ($t = 11.10, p < 0.0001$). Although >89 % in both groups offered colostrum, only 21–23 % continued beyond 3 days .

Table 3 Comparison of Mean Scores

Score (max)	Urban \pm SD	Rural \pm SD	Mean diff.	<i>t</i>	<i>p</i>
Knowledge (20)	10.49 ± 3.58	8.60 ± 3.53	1.89	3.26	0.001
Practice (15)	11.91 ± 2.32	5.83 ± 4.14	6.08	11.10	<0.0001

Table 4 Knowledge–Practice Correlation

Group	Pearson <i>r</i>	<i>p</i>
Urban	0.07	0.53
Rural	0.12	0.29

Pearson correlation non-significant (urban $r = 0.07$, rural $r = 0.12$). High practice scores in urban mothers suggest supportive environments may override limited knowledge, whereas rural deficits persist despite awareness.

6. DISCUSSION

Our findings confirm substantial rural-urban disparities. The proportion of adequate knowledge in Joniawas (10.7 %) mirrors Ethiopian rural reports (8–17 %), underscoring global commonalities of cultural barriers. Conversely, universal offering of colostrum (≈ 90 %) surpasses earlier Indian estimates of 21–41 %, indicating successful message penetration. However, continuation beyond three days remains poor, suggesting misconceptions about fore-milk transitions.

The absence of significant knowledge-practice correlation echoes prior work where structural support and immediate postpartum counselling, not maternal cognition alone, predicted optimal feeding . Strengths include rigorous tool validity

and raw-sheet analysis, but cross-sectional design and non-probability sampling limit causality and generalisability.

7. CONCLUSIONS

1. Urban mothers in Gurugram demonstrate significantly higher knowledge and superior colostrum-feeding practices than their rural counterparts.
2. Knowledge alone does not guarantee optimal practice; enabling environments are critical.

Targeted rural interventions—professional lactation support, culturally tailored education, and family engagement—are warranted.

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