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Do Mothers from Urban Area Optimally Breastfeed Their Babies as Compared to Mothers in Village? - A Cross-Sectional Community Survey in Vadodara District

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ABSTRACT

Introduction: In India, despite numerous initiatives by government and private NGOs on breastfeeding, there has been poor improvement in rate of exclusive breastfeeding. Current study aimed to perform comparative analysis of rural and urban community's perspectives on exclusive breastfeeding in Vadodara city

Methods: Hundred mother-newborn babies' pairs (n=50 from village and n=50 from town)were selected for this cross-sectional survey. Demographic information along with knowledge, attitude and practices' details about exclusive breastfeeding was obtained. Differences in approaches were assessed using chi square and t-test for categorical and continuous variable respectively.P<0.05 was considered to be criteria to prove statistical significance.

Results: Almost half of the subjects (N=54) had incomplete knowledge about breastfeeding attachment and positioning. No significant differences in EBF practices were found in both rural and urban mothers. None of the mothers practiced use of top feed, artificial nipple like means for feeding their infants.

Conclusion: Rural and Urban mothers had no difference in breastfeeding approaches with poor knowledge about breastfeeding attachment and positioning. Thus it could be recommended to have inclusive policy interventions for regarding awareness and strategic implementation on breastfeeding.

Keywords: Breast feeding, knowledge, newborn, EBF

INTRODUCTION

Maternal and Child Health, being one of the major public health concerns, has gained great attention. Due to innovative solutions, there is a gain in advocacy for maternal and child development. Exclusive Breastfeeding has paramount importance in the child nutrition and maternal health[1]. Studies have demonstrated breastfeeding to have strong positive effect on infant survival, growth and development[2,3]. It is also proven that even for HIV positive mothers, exclusive breastfeeding has shown positive clinical impact[4].Lack of exclusive breastfeeding has shown risk of mortality due to diarrhoea[5] and long term complications like diabetes[6]. Despite plenty of awareness campaigns, there remains skill-gap in form of inappropriate feeding practices with suboptimal outcomes[7]. It is studied that majority problems related to breastfeeding could be avoided with proper breast attachment[8].

In India, despite numerous initiatives by government and private NGOs on breastfeeding, there has been no improvement in rate of exclusive breastfeeding. As per National Family Health Survey (NFHS-3) report[9], only 47% of the newborn babies were breastfed in early period with exclusive breast-milk. Moreover, several misconceptions regarding breast milk's effectiveness has led to replacement feeding or mixed feeding[10] especially in rural area. It has been noted that Indian women were prone to give up early breastfeeding due to

ineffective positioning and attachment[11]. It is proven fact that two-third of total malnutrition associated deaths in under five infants could be attributed to inappropriate feeding practices[12].

Current study aimed to perform comparative analysis of rural and urban community's perspectives in terms of knowledge, attitude and practice on exclusive breastfeeding in Vadodara city.

MATERIAL AND METHODS

After study approval by Institutional Ethics Committee, sample size calculation and sample selection procedure was carried out at Waghodiya village and town near Smt. B.K. Shah Medical Institute and Research Centre-Pipariya.

Sample Selection: Considering previously reported prevalence of exclusive breastfeeding to be 37% in South Gujarat[13] and sampling error assumption as 0.1, the calculated sample size for the study was 90 as a whole[14].Assuming 10% drop-outs, number of subjects to be selected was 100. It was decided to select study population through quota sampling so as to make equal sized groups (n=50) for both urban and rural population. For village level subject selection, community health centres of Waghodiya talukas were approached and mothers who gave birth to single baby within previous year were considered for quota sampling. For urban level subjects, govt. and private maternity homes were contacted. Thus, total hundred subjects (50 rural and 50 urban breastfeeding mother-infant pairs) were selected for this cross-sectional study. Those mothers who showed willingness to participate in this survey were considered for this cross-sectional descriptive study. Those who were HIV positive or any other complications and those who did not breastfeed their children were excluded from the study. The study duration was from Aug-2016 to Nov-2016.

Data Collection: Using structured pre-tested proforma, information about socio-demographic characteristics as well as knowledge, attitude and practice about breastfeeding was collected. The knowledge was assessed in terms of feeding frequency, duration, weaning period and breast sucking quality perceived by mothers. Wherever needed, the translation of the proforma questions was done in local dialect. The data was compiled using MS-Excel Office 2010 version. After data compilation, the entered data was cross-checked for its accuracy by two independent research associates. After necessary data cleaning, statistical analysis was performed using EPI Info version 7.0.

Statistical analysis: Continuous variables were presented in mean+-SD and Dichotomous variables were presented in form of proportion of total population in tabular format. The difference in variables between two groups was assessed using chi-square test and t-test. $P<0.05$ was considered to be criteria for statistical significance.

RESULTS

All 100subjects (Response Rate: 100.00%) showed willingness and provided consent to participate in the KAP survey. The mean age of child subjected to breastfeeding was 7.3+-4.83 months. There was dominance of college level education in male population (n=54, 54%) and school level education in female population (n=65; 65%).None of the mothers was found to be working in service sector, whereas service (n=36; 36%) and business (n=43; 43%) were found to be common occupation for majority male population. The baseline socio-demo graphic information is shown in table 1.

Table: 1 Baseline Characteristics of participants

Variables	Rural (n=50) (%)	Urban (n=50) (%)	Total (n=100)	P-Value
Mean Age of Child(months)	6.8±3.20	7.8±6.04	7.3±4.83	0.303
Gender of Child				
Male	14 (7)	22 (11)	36	0.0721
Female	36 (18)	28 (14)	64	
Education (Mother)				
School-level(primary-secondary)	42 (21)	23 (11.5)	65	***<0.001***
College-level(Graduate & Post-graduate)	8 (4)	27 (13.5)	35	
Education(Father)				
School-level(primary-secondary)	41 (20.5)	5 (2.5)	46	***<0.001***
College-level(Graduate & Post-graduate)	9 (4.5)	45 (22.5)	54	
Occupation(Mother)				
Business	0 (0)	1 (0.5)	1	0.250
Housewife	50 (25)	49 (24.5)	99	
Occupation(Father)				
Farming	10 (5)	1 (0.5)	11	***<0.001***
Business	15 (7.5)	28 (14)	43	
Labour	9 (4.5)	1 (0.5)	10	
Service	16 (8)	20 (10)	36	

Table 2: Knowledge about Breastfeeding frequency, duration and weaning

Particular (unit)	Measurement (mean ± SD)		
	Rural	Urban	P-Value
Breastfeeding Frequency(Day)	6.08±1.27	6.36±1.99	0.4055
Breastfeeding Frequency (Night)	3.58±1.27	3.64±1.19	0.8087
Breastfeeding Duration(Minutes)	10.08±3.24	11.08±3.39	0.1351
Weaning Time (after n months of EBF)	7.29±1.10	7.25±0.96	0.8885

Significant difference in terms of distribution was observed in terms of maternal and paternal education and occupation of father in both the groups.

Knowledge related to breastfeeding:

Knowledge regarding breastfeeding was assessed in three aspects (Table 2): 1) Ideal breast feeding duration; 2) Weaning Time; and 3) Signs of proper sucking (breastfeeding attachment's correct method). It was found that none of the participants knew ideal time of breastfeeding. Weaning time was reported to be around seven months. However, no participant had clarity on breastfeeding practices after weaning and complementary feeding (continuation of family foods with breastfeeding) as per WHO recommendations[15].

Out of 100, only fifty four mothers were found to have comprehensive idea (knowledge of all four signs of proper breastfeeding attachment- *chin touching to breast, mouth wide open, lower lip turned outward, more areola visible*) regarding breastfeeding techniques. Moreover, only 51% of participants reported the quality of their infant's breast sucking to be effective (Table 3). The quality of breast sucking was considered from participant's point of view by confirming whether their infant sucked in slow, deep and intermittent manner.

Table 3: Knowledge about observation of breastfeeding attachment signs

Breastfeeding attachment signs	Knowledge observed (n=100)		
	Yes	No	Not Known
Chin Touch to Breast	85	15	**0**
Mouth Wide Open	73	27	**0**
Lower lip turned Outward	74	26	**0**
More Areola Visible	70	25	**5**

Overall knowledge of good attachment 54(54%)

Table 4: Comparative analysis of attitudes and practices regarding Exclusive Breastfeeding in Rural and Urban Population

Particulars	Rural	Urban	Total	p-Value
Breastfeeding attachment				
Not attached at all	26 (52)	20 (40)	46	0.1189
Good attachment	24 (48)	30 (60)	54	
Pre-Lacteal Feed				
No	43 (86)	39 (78)	82	0.1569
Yes	7 (14)	11 (22)	18	
Breastfeeding Time				
At fixed time	14 (28)	15 (30)	29	0.4149
On Demand	36 (72)	35 (70)	71	
Quality of Breastfeeding Attachment				
Not sucking at all	7 (14)	4 (8)	11	0.4932
Not effectively sucking	20 (40)	18 (36)	38	
Effectively sucking	23 (46)	28 (56)	51	
Use of Social Media in Breastfeeding Awareness				
Yes	21 (42)	14 (28)	35	0.094
No	29 (58)	36 (72)	65	

It was observed that all the mothers (100%) have attitude to provide colostrums to their infants. None of them were found to practice top feed, pacifier or artificial nipple as an exclusive breast feeding method. Despites several inconsistencies, all the mothers provided positive feedback about satisfaction of their child after breastfeeding. Majority women preferred to breastfeed as per demand of their child (n=71).

It was observed that there was no significant difference in pattern of observation of all attachment signs of breastfeeding (P=0.1189), pre-lacteal feeding supplementation (P=0.1569), breastfeeding time (P=0.4149), quality of breastfeeding attachment (P=0.4932) and use of social media for breastfeeding awareness (P=0.094) (Table 4).

It was studied that there was least participation of front line public health workers (Anganwadi Workers) as compared to other sources responsible for knowledge dissemination.

Table 5: Source responsible for Knowledge Dissemination regarding EBF

Source used for knowledge	Participants
Family	81%
Doctor	93%
AWW	10%
Poster/Banner	34%
Social Media	18%

DISCUSSION

Present study was cross-sectional analysis on 100 mothers practicing breastfeeding for nutritional growth of their infants. Though the assumption of 10% drop-outs was kept in sample size calculation, none of the candidates refused to participate in the survey due to any reason. This was a noticeable finding as reluctance due to social stigma related to breastfeeding is observable even in western countries in spite of their open mindset and life-style. But, present study population was found to be positive in terms of sharing their views and also found receptive to novel insights for betterment of their breastfeeding practices. The subjects included in study were breastfeeding women only. Thus, it was not possible to assess prevalence of EBF in both groups due to methodological constraints. Also, to have equal distribution, we adopted quota sampling technique. This methodology was found similar to the one published by Motee et al.[7]

The mean age of breastfeeding infant was 7.3 ± 4.83 months. Majority of study population (n=65; 65%)was found to have education upto school level. None of the mother was found to work on service basis outside the home except a single candidate with business. This could have strong possibility to reflect in regularity of breastfeeding due to continuous realization of feeding need ensuring immediate access to breast milk. Mean frequency for daytime and night time breastfeeding of study population was 6.22 ± 1.67 times and 3.58 ±1.23 times respectively. Thus, total frequency of breastfeeding could be summed upto 8-10 times, which falls within recommended range of breastfeeding frequency by worldwide experts. As reported by all mothers, weaning period was 7.2 months. None of the women were found to have clarity on complementary feeding after weaning from exclusive breastfeeding. Thus, a knowledge gap was identified in terms of weaning procedure adopted by our study population as per comprehensive recommendations from World Health Organization (WHO) on weaning and complimentary feeding[16], which is continuation of complimentary feeding for two years.

Present study found that majority participants adopted demand feeding(n=71;71%), which was higher than proportion of participants with demand feeding identified by a similar Indian study done by Ashwini et al, which was 56.41%. Another study by Tadele N et al. presented 66% of total population with breastfeeding on demand basis[17].The difference in prevalence could be because of larger sample size of the other study. However, there was no significant difference in rural and urban demand feeding scenario in present study (P value=0.4149).Similarly, the prevalence of prelacteal feeding practice in the study by Ashwini et. Al [13] was 55.64%, where present study found only 18% prevalence for prelacteal feeding. Another study from rural northern India by Roy et al.[18] found that 40.1% of total population used to practice prelacteal feeding. Out of 100 subjects, only 51 infants were found to have effective breastfeeding. This could be attributable to lack of comprehensive knowledge about breast feeding attachment signs, as only 54% mothers were found to have comprehensive knowledge with all four attachment signs of breastfeeding. However, all the subjects perceived their infants with 100% satisfaction regarding breast suckling.

Another important finding from implementation point of view was realized that though Anganwadi Worker (AWW) was considered to be the integral component of Breast Feeding Promotion Network of India (BPNI) for Infant and Young Child Feeding (IYCF)[19], the study revealed the least participation (10%) from them, which is the matter of crucial concern.

There were several limitations of this study: 1. Unlike random sampling, to equalize the differences between rural and urban population, quota sampling techniques was adopted. Thus, there may exist risk of bias regarding selection. Thus, the selected sample could not be considered to have exact representation of target population. 2. Our study's objective was to assess the differences in breastfeeding approaches of rural and urban population. Thus, it was out of scope of this paper to have random sample to identify prevalence of EBF from whole community. 3. The sample size was very small due to time and methodological constraints, which might be deterrent to identify real difference even if it existed for any particulars. Nevertheless, it has provided a great snapshot with highlighting crucial points for comprehensive breastfeeding policy interventions.

CONCLUSION

To conclude, both rural and urban population deserve equal attention in terms of awareness about exclusive breastfeeding techniques, avoidance of other products than breast milk before weaning along with drive to practice breastfeeding in line

with latest WHO recommendations especially on weaning and mixed feeding with formula feeding thereafter. Secondly, It could be envisaged that enhanced engagement of frontline health workers would dramatically improve the current level of awareness.

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