ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 10 | October - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

DETERMINING BARRIERS TO EXCLUSIVE BREASTFEEDING IN URBAN SLUM AREAS OF JAMNAGAR CITY, GUJARAT -A CROSS-SECTIONAL STUDY

Community Medicine

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ABSTRACT

The best feeding method for infants during the first few months of life is exclusively breastfeeding, which has significant advantages for both mothers and their infants. Despite all of its advantages, exclusive breastfeeding is very low and there is little knowledge about the determining factors, particularly from slum areas. The objective was to determine what percentage of lactating mothers in urban slum practice exclusive breastfeeding and estimate its prevalence and identify the obstacles to exclusive breastfeeding in Jamnagar, Gujarat's urban slums. Methods-A cross-sectional study was conducted among 420 lactating mothers for a period of six months in the urban slums of Jamnagar. Results- The prevalence found in our study for exclusive breastfeeding was 59.76%. Conclusion- Insufficient maternal secretions (48.52%), an inverted or sore nipple (21.89%), and early introduction of formula or additional lacteal feeds for the baby's growth were the biggest barriers to exclusive breastfeeding in this study. 17.16% of working women cited their jobs as the reason for early weaning.

KEYWORDS

exclusive breastfeeding, barriers, cross-sectional study, newborn

INTRODUCTION

A special window of opportunity for the best possible growth and development of a newborn exists during the first 1000 days, which also establishes the underlying principles of wellness throughout life.(1) For the child's health and well-being at this time, proper infant and young child feeding practises (IYCF) are essential.(2) Early breastfeeding initiation, exclusive breastfeeding (EBF) for the first six months of life, ongoing breastfeeding until the child is two years old, and the timely introduction of suitable supplementary foods are essential elements of IYCF practises.(3) The cornerstone of ideal infant nutrition is EBF, which is defined as the practise of providing a newborn solely breast milk for the first six months of life without any additional food or water.(3) Notably, EBF lowers the infant's chance of developing diarrheal disorders, upper respiratory tract infections, obesity in later life, and EBF may enhance the child's neurocognitive abilities.(4) India has the second highest under-five mortality rate in the world (0.783 million deaths in 2020), which can be attributed to a number of factors including poverty, poor access to healthcare, poor water and sanitation, and non-EBF.(5) Infant feeding issues including unwillingness to eat, colic, and vomiting among others frequently have an impact on the weaning process. These elements provide difficulties for mothers, which could have an impact on the feeding pattern either directly or indirectly. According to a study, urban slums have a higher risk of poor child-feeding habits because families there lack the typical support of a combined family system. These medically underdeveloped urban slums are a growing issue in India.(6) Therefore the present study aims to determine the barriers to exclusive breastfeeding in the urban slums of Jamnagar, Gujarat.

METHODOLOGY

(a) Study design:

Study type: A community based cross sectional study.
Study period: November 2021 to April 2022.

(b) Study settings:

Study area:

The population of Jamnagar is estimated to be 0.586 million. A little over 23% of people reside in slum or slum-like conditions. There is a network of 12 urban primary health centres in the city that are overseen by the local government. They rely on a network of about 296 anganwadi centres for their outreach efforts. For antenatal and intranatal care, slum dwellers use both public and private health services. For postpartum care, public health facilities provide home visits.

Study population:

Inclusion criteria:

All women of childbearing age attending the Anganwadi, having children of the age group of 6 months to 2 years, who were born as term gestation with a birth weight of >2.5 kilograms, and who volunteered to take part in the study were included.

Exclusion criteria:

Those mothers who were not willing to participate, mothers whose children were born as Preterm (gestational age <37weeks), low birth weight babies (birth weight <2.5kg), and babies with congenital heart defects and mother or child being sick at the time of assessment, were excluded from the study sampling.

(c) Sample size:

Based upon a previous study carried out by viral et al in the urban slums of Ahmedabad, the prevalence of exclusive breastfeeding (EBF) was found to be at 64%.

Considering the prevalence of exclusive breastfeeding rate as 64% (p) with 95% confidence interval and an allowable error (l) of 5% and using formula:

$n = [(Z1-\alpha/2)2 \times p \times q] \div (l)\,2$
$= [4*(64)(36)] \div [(5)(5)]$
$= 368.64$

Sample size has been calculated as 368.64 at 95% confidence coefficient and 5% allowable error and considering 10% non-response

rate minimum sample came around 405.264 and finally 420 mothers were included in the study.

(d) Study sampling:
The list (census 2011) prepared by Jamnagar Municipal Corporation administration was used for selecting study areas.

There are 27 urban slum areas under 12 Urban Health Training Centres (UHTCs) among 9 different wards of Jamnagar city, assuming to get 420 study subjects.

Of them, 4 UHTCs (Bedi bandar, Vambe, Kamdar and Panvada) were selected with minimum 4 urban slum areas in each and 105 study subjects were selected from randomly selected 1 urban slum area under each UHTC. 3 Anganwadi under each urban slum area were randomly selected and 35 study subjects were randomly selected from each Anganwadi under each urban slum area under above-mentioned UHTCs. House of the eligible mothers under each Anganwadi was identified with the help of respective ANMs and ASHA staffs of Anganwadi.

(e) Study tool:
Written informed consent was obtained from the study participants who volunteered, after explaining in detail the purpose of the study in the local language to the mothers and their right to withdraw from the study at any time maintaining their confidentiality.

Data collection was carried out using a self-developed questionnaire with inputs from previous studies.11-15 with two sections.

Section A was based on the socio-demographic characteristics of the participants which included the age of the mother, education of the mother, occupation of the mother, socioeconomic status, caste, religion, birth order of the child, spacing between births, gender of the child, mode of delivery and place of delivery.

Section B included questions regarding antenatal comorbidities, intranatal/postnatal problems, antenatal counselling given during pregnancy, post- natal counselling after birth, the people involved in counselling, whether breast feeding was initiated after birth along with the day of initiation, number of times the baby is breast fed in a day and total duration of exclusive breast feeding.

The use of pre-lacteal feeds like sugar, honey etc., awareness on the significance of colostrum, knowledge on proper/ effective breast-feeding techniques, reasons for defaulting from exclusive breast feeding, type of extra lacteal feeds given, from whom the advice was taken, and the mothers feedback on such practices were also sought. The answers to the above questions were noted in the written prescribed proforma.

(f)Data analysis:
Data were entered in Microsoft excel 2019. Data are expressed in frequency and percentage.

Association between sociodemographic factors and exclusive breastfeeding was calculated through the Chi-square test. A p-value of <0.05 has been considered significant.

The study was conducted after getting approval from the Institutional Ethics Committee of Shri M P Shah Government Medical College, Jamnagar.

(g) Exclusive breastfeeding (operational definition under the study):
In our study, EBF meant providing only breast milk, not even water. However, medicine or oral rehydration solution was accepted if it was prescribed by a qualified doctor. The interviewer retrospectively collected information about EBF among lactating mothers having 06-24 months old children.

RESULTS

A total of 420 lactating mothers were interviewed and analysis was carried out. Majority of them (48.33%) were in the age group of 21-25 years. Most of the participants (82.62%) were Hindu by religion, and 72.61% were non-working (housewives and students). Out of 420 subjects, 39.29 % belonged to the general category, 31.19% scheduled caste, 10.24% OBC, and 18.33% scheduled tribe. Based on socio-economic (SE) condition (classified based on Modified BG Prasad), 34.76% were in SE class II, 28.81% were in SE class III and 23.10% were in SE class IV. Education-wise distribution showed that 22 (5.24%) mothers were illiterate while 197 (46.90%) had primary education.

Table 1: Descriptive statistics on the study population's socio-demographic characteristics and breastfeeding practices (N=420).

Characteristics / Practices		Number (n)	Percentage (%)
Mother's age	≤20 years	53	12.62
	21-25 years	203	48.33
	26-30 years	133	31.67
	> 30 years	31	7.38
Mother's Education	Illiterate	22	5.24
	Primary school	197	46.90
	Secondary school	123	29.29
	Higher secondary school	44	10.48
	Graduate	34	8.10
Mother's Occupation	Employed	33	7.86
	Labourer	59	14.05
	Housewife	294	70.00
	Farmer	23	5.48
	Student	11	2.62
Socio-economic class (According to Modified BG Prasad's classification)	I	41	9.76
	II	146	34.76
	III	121	28.81
	IV	97	23.10
	V	15	3.57
Caste	General	165	39.29
	OBC	131	31.19
	SC	43	10.24
	ST	77	18.33
Religion	Hindu	347	82.62
	Others	73	17.38
Birth order	1	119	28.33
	2	163	38.81
	3	73	17.38
	4	39	9.29
	>4	26	6.19
Spacing between births (for birth order >1) (n=301)	<2 years	95	31.56
	>2 years	206	68.44
Gender of child	Male	259	61.67
	Female	161	38.33
Place of delivery	Home	31	7.38
	Institutional	389	92.62
Mode of delivery	Vaginal	271	64.52
	Caesarean	149	35.48
Antenatal comorbidities	Absent	339	80.71
	Present	81	19.29
Intranatal and Postnatal issues	Nil	361	85.95
	NICU stay of the Baby	47	11.19
	Problems during pregnancy requiring intensive treatment	12	2.86
No. of Antenatal care (ANC) visits	> 4 antenatal visits	289	68.81
	≤ 4 antenatal visits	131	31.19
Breastfeeding counselling during pregnancy	Yes	347	82.62
	No	73	17.38

If yes, antenatal counselling given by (n=347) (Multiple responses)	Mother / Mother-in-law	19	5.48
	Husband / family members	11	3.17
	Doctor / Nurse	257	74.06
	AWW/ASHA	79	22.77
Postpartum counselling for exclusive breastfeeding	Yes	393	93.57
	No	27	6.43
If yes, postnatal counselling given by (n=393) (Multiple responses)	Mother / Mother-in-law	185	47.07
	Husband / family members	31	7.89
	Doctor / Nurse	367	93.38
	AWW/ASHA	109	27.74
Exclusively breastfeeding (EBF) given or not?	Yes	251	59.76
	No	169	40.24
Which day of life did you begin breastfeeding?	Day 1 of life	361	85.95
	Day 2-3 of life	48	11.43
	Beyond day 3 of life	11	2.62
Knowledge of colostrum (n=393)	Yes	191	48.60
	No	202	51.40
What were the barriers to Exclusive Breastfeeding? (n=169)	Insufficient secretion	82	48.52
	Nipple problems	37	21.89
	Prejudice against growth-promoting formula milk	21	12.43
	Work / Job	29	17.16
Extra lacteal feeds advised by (n=169)	Mother / Mother-in-law	49	28.99
	Husband / family members	53	31.36
	Friend / Others	7	4.14
	Healthcare professionals	21	12.43
	Self-decision	39	23.08
Do you think extra lacteal feeds are an advantage? (n=169)	Yes	81	47.93
	No	88	52.07
Why do you think early additional lacteal feeding is not having any advantage? (n=88)	Zero anticipated weight increase	51	57.95
	Recurring illnesses or respiratory infections	10	11.36
	Episodes of frequent diarrhoea	27	30.68
Bottle feeding (n=169)	Yes	106	62.72
	No	63	37.28

Among the total study population, 28.33% had a single child, the remaining mothers multiparous 71.67%, of which around 68.44% stated they had a gap of >2 years between deliveries. Most mothers (92.62%) reported having had institutional deliveries with assistance given by a trained staff nurse or doctor at the time of delivery.

Only 35.48% of post-natal mothers had their delivery by caesarean section. Regarding the sex of the child of the mothers had male babies (61.67%), the remaining (38.33%) being females. Around 19.29% of the mothers had uneventful antenatal comorbidities and, 14.04% of mothers had intra-natal and post-natal problems. Majority (68.81%) of the mothers had > 4 antenatal care (ANC) visits while only 31.19% of the mothers had ≤ 4 ANC visits. The total percentage of mothers in the above study group who practiced exclusive breastfeeding for six months was only 59.76% (Table 1).

Table 1 also shows awareness and practices regarding breastfeeding of mothers. 82.62% of mothers had received antenatal counselling on breastfeeding, of which most (74.06%) were given by Doctor / Nurse and 93.57% of mothers had received postnatal counselling on breastfeeding, of which most (93.38%) were given by Doctor / Nurse followed by Mother /mother-in-law (47.07%).

Among all lactating mothers, 85.95% of mothers had started breastfeeding on day 1 of the life of the baby but only 48.60% of mothers had awareness regarding colostrum. Among all lactating mothers, 40.24% of them did not give exclusive breastfeeding (EBF) to their child and of them, bottle feeding was given by 62.72% of mothers.

Table 2: Association of various socio-demographic factors with exclusive breastfeeding. (Dependent variable - exclusive breastfeeding).

Characteristics	χ2 value	P value
Mother's Age (>25 years /<25 years)	2.033	0.154
Mother's Education (Literate / Illiterate)	3.431	0.064
Mother's Occupation (Unemployed / Employed)	1.633	0.201
Ante-Natal Care (ANC) visits (>4 visits / ≤4 visits)	5.878	0.015*
Birth order (>2 / ≤2)	4.975	0.026*
Sex of child (Male / Female)	2.828	0.093
Spacing of birth (>2 years / <2 years) (n=301)	4.605	0.032*
Mode of delivery (Caesarean delivery/Vaginal)	4.286	0.038*
Parity (Multipara / Primipara)	4.991	0.025*
Place of delivery (Institutional / Home)	4.423	0.035*
χ2= Chi-square value; *p value <0.05 - significant		

Table 2 shows an association of various socio-demographic factors with exclusive breastfeeding. (Dependent variable - exclusive breastfeeding). There were significant (p-value < 0.05) association observed between Exclusive Breast-Feeding (EBF) and ANC visits (>4 visits / ≤4 visits), birth order (>2 / ≤2), spacing of birth (>2 years / <2 years), mode of delivery (caesarean/vaginal), parity (multipara / primipara) and place of delivery (institutional / home).

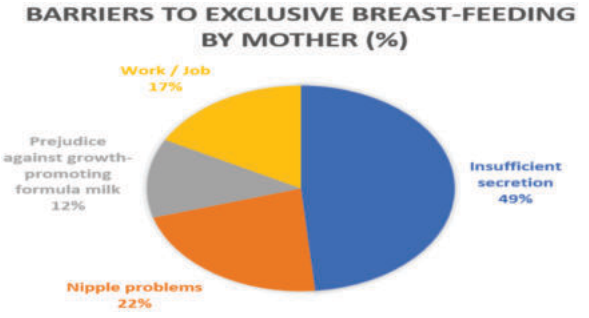

Figure 1: Barriers in continuation of Exclusive Breast-Feeding (EBF) by mother (n=169).

The major barriers against EBF in this study were insufficient maternal secretions (48.52%), inverted/sore nipple (21.89%) while 12.43% chose that they were prejudiced to adding formula/extra lacteal feeds early for their baby's better growth. Among working mothers, 17.16% attributed their jobs as the cause for early weaning (Figure 1).

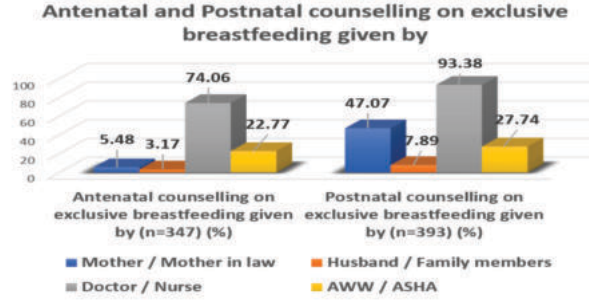

Figure 2: Antenatal counselling and Postnatal counselling on Exclusive Breastfeeding given by.

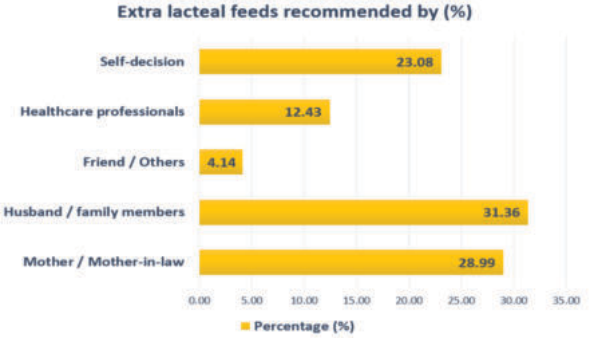

Figure 3: People who recommended Extra Lacteal feeding to the mothers.

Almost 64.50% of the mothers disclosed that their parents/ in-laws/ husbands'/ friends /others were responsible for them having to start

extra-lacteal feeds, 12.43% of mothers revealed that their health care professional was also supportive of starting extra-lacteal feeds earlier than 6 months, while 23.08% of mothers said it was their own decision (Figure 3). However, 52.07% of these mothers revealed that they felt such extra lacteal feeds had not helped their baby, as they did not observe the weight gain as they expected (57.95%), in addition to frequent episodes of diarrhoea (30.68%) or repeated episodes of falling ill/respiratory infections (11.36%) (Table 1).

DISCUSSION & CONCLUSION

According to research, EBF is the healthiest, safest, and best-recommended infant feeding option for every infant for the first 6 months of life(7) (8) (9). EBF protects against child morbidity and mortality during the first six months of life. However, it is not yet widely used, and the decline in the rate of EBF is seen as a severe issue, particularly in developing nations(10) (11)As per the National Health and Family Survey 5 (NHFS 5, 2019-2021), the children exclusively breastfed in urban area in Gujarat is 70.3%(10). The fact that the sample population came from urban slums may have contributed to the prevalence of 59.76% that our study found. Likewise, the percentage of institutional births in our study was 92.62% and caesarean sections 35.48% as against 97.8% institutional births and 30.7% caesarean sections documented for Gujarat in the NFHS 5(10).

In a study in Ahmedabad in Gujarat by Dave V et al, the prevalence of EBF was 64%(12). A study in Puducherry by Nair GG et al, showed a prevalence of 44.3%(13). A study in Tripura by Mog C et al, showed a prevalence of 60.5% of EBF(14). Studies from various parts of India showed the prevalence of EBF 55.9%, 85% and 50.7%, respectively in Karamsad(15), Surat(16) and Anand (17) in Gujarat, 27.6% in urban slums in Bihar, India(18), 66.6% in Bengaluru (19) to 21.2% in Bhubaneshwar (20) and 46.5% in Uttar Pradesh(21) respectively.

The findings were in contrast with our study report. The difference in the population studied, sample sizes, geographic locations, as well as the year of the survey might be the possible explanation for the difference in exclusive breastfeeding rates among these studies.

An association between several dependable characteristics and exclusive breastfeeding habits is shown in Table 2. In the current study, mothers who had frequent prenatal care (>4 visits) had a higher likelihood of practising EBF than mothers who received fewer visits. This result is consistent with research studies from Bhubaneshwar(20), Tripura(14), Addis Ababa(22), Debre Markos(23), Dilla Zuria(24) and Chencha(25). Increased counselling efforts and health checks performed during these visits may be the determining elements in the promotion of EBF practise.

As shown in table 2, a significant association was found between caesarean sections, shorter duration of spacing of subsequent childbirth (<2yrs), and exclusive breastfeeding. Studies by Senthilvel et al(26), and Radhakrishnan et al(27), also showed a similar association with caesarean section deliveries. More than three-fourth (82.62%) of the mothers in the study recalled they were counselled during their antenatal period. This was almost similar to the results obtained by Dhandapany et al, (78-87%) on antenatal mothers in Puducherry(28).

Most (92.62%) of the mothers in our study had delivered at a healthcare facility and 85.95% of the mothers stated they initiated breastfeeding soon after birth (first day). The increase in the number of institutional deliveries may have a positive influence on the early initiation of breastfeeding by the mothers as seen with similar trends in other studies(29–32). In addition, 6.43% of mothers mentioned not receiving post-natal counselling on EBF. Of those counselled, around less than half (48.60%) of mothers only were aware of the importance of colostrum which is significantly less than earlier studies conducted in India, where between 75 and 90 percent of women were aware of the value of colostrum(33–35).

The majority of difficulties faced by mothers against EBF were insufficient maternal secretions (48.52%) and inverted/ sore nipples (21.89%). Similar findings were also reported by Parmar et al(36), Aggarwal et al(37), Parekh et al(38), and Mallikarjun et al(39). In the study done by Kashif et al, in Uttar Pradesh(21), the above reasons attributed to 20-30% of the total barriers. Around 12.43% of the mothers started early weaning, as they were prejudiced that it was required for their baby's better growth. Studies by Ratnayke et al(40), Li et al,(41) and Kashif et al(21), had similar observations. Almost 17.16% of the mothers in the study population attributed their jobs as the barrier to EBF. Observations by Renitha et al(42), Suganya et al (43)and Ratnayke et al(40), also stated mothers had difficulty in breastfeeding while working owing to job timings, inability to express breastfeeds or no proper facility to breast-feed at work.

Ratnayke et al(40), observed that over 50% of the mothers were advised to start other feeds early by their family members and 12% by a health care worker on the same. Our study too showed the influence of family was 60.35% and health care professionals was 12.43%. However, the mothers who were not satisfied with having given extra-lacteal feeds were dissatisfied for not achieving the expected weight gain (57.95%) in addition to frequent respiratory (11.36%) /diarrheal diseases (30.68%). The infants who were early weaned had a noticeably higher chance of developing the diseases listed above than those who were exclusively breastfed, according to these studies.(27,44)

Limitations of the study

The study could be limited by the following factors. First, because the study is cross-sectional, it is challenging to determine the temporal relationship between the outcome and the exposure.

Second, recall bias may affect the information gathered from the study's participants since some women may not recall precisely when they added additional liquids or solids. However, as the memory period is shorter for women with younger children than it is for those with older children, bias may be reduced by including women with infants aged 6 to 12 months and single-child mothers.

Third, due to social desirability bias, women may overreport their use of exclusive breastfeeding, which could lead to an overestimation of its prevalence.

Despite these drawbacks, the study has a number of significant implications. In the slum areas, there should be a real attempt to promote EBF practise. Mothers from the slum areas need to learn about proper newborn and child feeding techniques as well as how to keep clean while feeding their children. Improving EBF practise may benefit from workplaces setting up breastfeeding-friendly environments. Regular antenatal and postnatal visits should be prioritised in the current schemes for the promotion and awareness of EBF practise to promote adequate baby feeding.

CONCLUSION

The prevalence of exclusive breastfeeding is still low despite having a fairly literate study group.

Although there was no gross significant association with socio-demographic factors, lacunae have been identified.

Antenatal breastfeeding counselling combined with good post-natal lactation support, especially for the initiation of breastfeeding in caesarean section mothers, proper breastfeeding techniques, and facilities to continue exclusive breastfeeding in working mothers may overcome the major barriers.

More objective counselling, especially in the post-natal period for mothers and their caregivers, may also facilitate exclusive breastfeeding to a great extent.

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