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Original Research Article

A comparative study on breastfeeding in rural and urban areas of Kanpur nagar, Uttar Pradesh

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ABSTRACT

Background: Appropriate infant feeding, with early initiation of breastfeeding along with colostrum as the first food, exclusive breastfeeding to six months, followed by the introduction of complementary foods with continued breastfeeding, is important for survival as well as physical growth and mental development of the child. World breastfeeding week (WBW) is celebrated every year from 1 to 7 August to encourage breastfeeding and improve the health of children around the world. Our objective was to determine the knowledge and practice of EBF among study subjects. To compare knowledge and practice of EBF among rural and urban study subjects.
Methods: The study was a cross-sectional study conducted amongst mothers having children between 0-24 months of age group in the area of RHTC and UHTC of department of community medicine, GSVM Medical College Kanpur. Data was collected using a predesigned and pretested questionnaire after the house-to-house survey and Chi-square test used.
Results: Pre-lacteal feeds were given in 21.25% of children. Colostrum was given in 67.2% of babies. 18.5% of mothers initiate breastfeeding within 1 hour after delivery. 31.75% of babies were exclusively breastfed for more than 6 months. The majority of the mother (72.25%) continues breastfeeding up to 2 years. Majority (73%) of mothers give breastfeeding from both sides.
Conclusions: In our study, awareness about breastfeeding, early initiation of breastfeeding and avoiding pre-lacteal feed. It supplies all the necessary nutrients in the proper proportions and protects against allergies, sickness, and obesity.

Keywords: Antenatal care, Breastfeeding, Exclusively breastfeeding, Postnatal care, Pre-lacteal feeds

INTRODUCTION

Appropriate infant feeding, with early initiation of breastfeeding along with colostrum as the first food, exclusive breastfeeding to six months, followed by the introduction of complementary foods with continued breastfeeding, is important for survival as well as physical growth and mental development of the child.[1,2]

World Breastfeeding Week (WBW) is celebrated every year from 1 to 7 August to encourage breastfeeding and improve the health of children around the world.[3]

Breast milk as a source of nutrition and prevent and protect children from diarrhea and acute respiratory infections, as well as its psychological benefits, have been reported in several studies.[4,5]

Breastfeeding is the most crucial health intervention for infants in the developing world for reducing the risk of life-threatening infections.[6]

Failure to breastfeed or nonadherence to EBF, resulting in partial breastfeeding, accentuates health risks for both mothers and infants.[7]

The Indian National Family Health Survey-4 (2015-2016), a large-scale cross-sectional study, revealed that 54.9% of mothers exclusively breastfed their infants aged below 6 months.[8] Breastfeeding is a nearly universal cultural trait among Indian women, but changing sociocultural landscapes and erosion of traditional support networks threaten the practice.[9]

Objectives

To determine the knowledge and practice of EBF among study subjects. To compare knowledgeand practice of EBF among rural and urban study subjects.

METHODS

The present study was a cross-sectional study conducted amongst mothers having children between 0-24 months of age in the area of Rural Health Training Centre (RHTC) and urban health training centre (UHTC) of the Department of Community Medicine GSVM Medical College Kanpur.

The formula was used to calculate the minimum sample size with the assumption of 55% proportion of EBF practice, 95% with confidence level, and 5% margin of error.[10] Sample size after calculation was 396 by formula minimum sample size $=\frac{4pq}{d^2}$ where P = prevalence, q = (1-p), d = margin of error.

Four hundred pregnant women were observed, to avoid difficult calculations. 200 from rural and 200 from urban areas. A house-to-house visit was made to get the information about women with children 0 to 24 months till 400 mothers were enrolled in the study (purposive sampling). Ethical clearance was obtained from the institutional ethical Committee of GSVM Medical College, Kanpur.

Written informed consent was obtained from all participating mothers. Mothers were interviewed at this time using a semi-structured questionnaire after getting verbal consent from them. Those mothers who were not willing to participate and/or who did not give their consent were excluded from the study. The questionnaire included demographic profile, details on breastfeeding and weaning practices, and place of delivery.

The study was carried out in two months i.e. from September 2021 to November 2021 which included the collection of data and development of study tools.

Data were collected using a comprehensive, pretested, predesigned self-administered questionnaire and a master table was made accordingly. which sought information such as age, sex, educational status, occupation, awareness, understanding of EBF, acceptance, practice, and benefits of EBF, and which was explored from the study subjects. Quantitative data were coded, entered and analyzed using Statistical Package for the Social Sciences (SPSS)trial Version. P value and Chi-square values were used to test associations. P<0.05 was considered statistically significant. P value was calculated using the Chi-square test and the difference was accepted confidence interval (CI) at more than 95%. The socioeconomic status of the participants was calculated based on the modified BG Prasad scale updated for 2021.

RESULTS

A cross-sectional survey with a 100% response rate. Total 400 participants were involved in the study, 200 from RHTC areas and 200 from UHTC areas. Breastfeeding provides benefits to both mother and child. Breastfeeding reduces obesity, overweight and prevents diarrhea and respiratory infection.

Table 1: Sociodemographic characteristic of study subjects.

Variable	Frequency (n=400)	Percentage
Age (in years)		
≤24	262	65.50
25-29	57	14.25
30-34	44	11.00
≥35	37	9.25
Religion		
Hindu	317	79.25
Muslim	72	18.00
Others	11	2.75
Education status of mothers		
Illiterate	99	24.75
Primary	57	14.25
Middle	66	16.50
High School	108	27.00
Intermediate	46	11.5
Graduate and postgraduate	24	6.00
Employment		
Unemployed	223	55.75
Employed	177	44.25
Type of family		
Nuclear	76	19.00
Joint	324	81.00
Socioeconomic class		
Class I	109	27.25
Class II	133	33.25
Class III	98	24.50
Class VI	46	11.5
Class V	14	3.5
Gender of baby		
Male	205	51.25
Female	195	48.75
Birth order		
1	173	43.25
2	118	29.50
3	25	6.25
≥4	84	21.00

The sociodemographic and breastfeeding characteristics of participants are shown in Table 1. Out of 400 study subjects, 65.5% belonged to the ≤24 years age group, 14.25% belonged to the 25-29 years age group and least 11% and 9.25% belonged to 30-34 years and ≥35 years age group. 79.25% of study subjects were Hindus, 18% were Muslims and least belonged to other religious groups. Most of the subjects (27%) were educated up to high school only 6% were literate up to graduate and postgraduate. More than half (55.7%) of the subjects were not working and less than half (44.25%) study subjects were non-working. The majority 33.25% and 27.25% belonged to class II and class 1 of the modified BG Prasad socioeconomic status scale (2021). About 81.0% were living in joint families, and only 19% living in nuclear families. Majority of mothers 43.25% with birth order one (Table 1).

About more than 56.75% of mothers were multiparous and 43.5% were primiparous. In rural areas, 41% were primiparous and 59% multiparous while in urban areas 45.5% were primiparous and 54.5% were multiparous. There was no statistically significant difference was observed in parity and residence (p>0.05). Out of 400 participants, the majority of mothers (91.5%) utilize ANC services, utilization of ANC services was significantly high in urban areas as compared to rural areas (p<0.05). 79% was counseled during ANC visit regarding breastfeeding and only 34% of mothers visit more than four or more visits during ANC periods. 87.25% of mothers received PNC counseling regarding breastfeeding. Only 31% of participants use contraceptive practices within 6 months after birth. In rural areas, only 26% study subjects use contraceptive practices and in urban areas, 36% mothers use contraceptive practices. There was a statistically significant difference observed in use of contraceptives in rural and urban areas (p<0.05). The majority (81.75%) of delivery were institutional and only 18.25% were home delivery. Out of 400 mothers, 73.25% had a normal vaginal delivery and only 26.73% delivered by cesarean section. Institutional delivery and cesarean section delivery were significantly high in urban areas as compared to rural areas (Table 2).

Table 2: Prenatal, perinatal and postnatal services used by study subjects.

Variable	Rural (n=200) No. (%)	Urban (n=200) No. (%)	Total (n=400) No. (%)	95% CI, χ^2, (p-value)
Parity				
Primiparous	82 (41)	91 (45.5)	173 (43.25)	χ^2=0.825
Multiparous	118 (59)	109 (54.5)	227 (56.75)	p=0.36
ANC service utilization				
Yes	177 (88.5)	189 (94.5)	366 (91.5)	χ^2=4.6287
No	23 (11.5)	11 (5.5)	34 (8.5)	(p=0.03*)
Number of ANC visits				
No visit	21 (10.5)	13 (6.5)	34 (8.50)	
One visit	19 (9.5)	12 (6.0)	31 (7.75)	
Two visits	54 (27.0)	41 (20.2)	95 (23.75)	χ^2=23.9162
Three visits	61 (30.5)	43 (21.5)	104 (26.00)	(p<0.001*)
Four or more visit	45 (22.5)	91 (45.5)	136 (34.00)	
Counseling during ANC visit (regarding breastfeeding)				
Yes	153 (76.5)	163 (81.5)	316 (79.00)	χ^2=1.5069
No	47 (23.5)	37 (18.5)	84 (21.00)	p=0.21
Counseling during PNC visit (regarding breastfeeding)				
Yes	170(85)	179(89.5)	349 (87.25)	χ^2 =1.8203
No	30(15)	21(10.5)	51 (12.75)	p=0.17
Contraception use within the first 6 months of birth				
Yes	52 (26)	72 (36)	124 (31.00)	χ^2=4.6751
No	148 (74)	128 (64)	276 (69.00)	(p=0.03*)
Place of delivery				
Home	57 (28.5)	16 (8.0)	73 (18.25)	χ^2=28.1681
Institutional	143 (71.5)	184 (92.0)	327 (81.75)	(p=0.001*)
Mode of delivery				
Vaginal	159 (79.5)	134 (67)	293 (73.25)	χ^2=7.9742
Cesarean	41 (20.5)	66 (33)	107 (26.75)	p=0.004

*Statistically significant

Table 3: Distribution of breastfeeding practices in rural and urban areas.

Variable	Rural (n=200) No. (%)	Urban (n=200) No. (%)	Total (n=400) No. (%)	95% CI, χ^2, (p value)
Gestational age (weeks)				
<37	30 (15)	21 (10.5)	51 (12.75)	χ^2=4.258 p =0.11
37-42	162 (81)	163 (81.5)	325 (81.25)	
>42	8 (4)	16 (8)	24 (6.00)	
Birth weight of baby at the time of delivery				
<2500	43 (21.5)	25 (12.5)	68 (17.00)	χ^2=7.756 (p=0.02*)
2500-3500	149 (74.5)	159 (79.5)	308 (77.00)	
>3500	8 (4)	16 (8)	24 (6.00)	
Pre-lacteal feeds				
Given	33 (16.5)	52 (26)	85 (21.25)	χ^2=5.3931 (p=0.02*)
Not given	167 (83.5)	148 (74)	315 (78.75)	
Colostrum				
Given	130 (65)	139 (69.5)	269 (67.25)	χ^2=0.9194 p=0.33
Not given	70 (35)	61 (30.5)	131 (32.75)	
Initiation of breastfeeding				
Within 1 hour	27 (13.5)	47 (23.5)	74 (18.5)	χ^2=7.112 (p=0.007*)
More than 1 hour	173 (86.5)	153 (76.5)	326 (81.50)	
Exclusive breastfeeding				
<6 Months	144 (72.0)	129 (64.5)	273 (68.25)	χ^2=2.5958 p=0.10
>6 Months	56 (28.0)	71 (35.5)	127 (31.75)	
Continuation of breastfeeding				
Up to 1 year of age	27 (13.5)	84 (42)	111 (27.75)	χ^2=40.5125 (p=0.001*)
1 to 2 years	173 (86.5)	116 (58)	289 (72.25)	
Breastfeeding frequency				
On-demand	181 (90.5)	161 (80.5)	342 (85.50)	χ^2=8.0661 (p=0.004*)
At regular intervals	19 (9.5)	39 (19.5)	58 (14.50)	
Mode of breastfeeding				
From one side	47 (23.5)	61 (30.5)	108 (27.00)	χ^2=2.486 p=0.11
From both side	153 (76.5)	139 (69.5)	292 (73.00)	

*Statistically significant.

The majority (81.25%) of children born on the term, in rural areas 81% female delivered at term and in urban areas 81.5% female delivered at term. There was no statistically significant difference were observed in gestational age in rural and urban areas. 12.75% delivered at preterm and only 6% delivered after term (post-term). 77% child delivered with normal birth weight, 17% were delivered with low birth weight and only 6% were delivered with high birth weight. Pre-lacteal feeds were not given in 78.75% of children and in 21.25% of children pre-lacteal feeds were given. Colostrum was given in 67.2 % of babies and only 87% of babies were not fed colostrum. The majority of mothers (81.5%) Initiate breastfeeding after 1 hour and only 18.5% of mothers initiate breastfeeding within 1 hour after delivery. 31% of babies were exclusively breastfed for more than 6 months. The majority of the mother (72.25%) continues breastfeeding up to 2 years and only 27.75% mother discontinues breastfeeding before 1 year of age. The majority 85.5% of mother provide feeding to their babies on demand and only 14.5 % gives feeding at regular intervals. Majority (73%) of mothers give breastfeeding from both sides and only 27% of mothers give breastfeeding from one side (Table 3).

DISCUSSION

The majority of study subjects were ≤24 years age groups. Approximately 79.25% were Hindu, most of the study subjects (27%) were found educated up to high school, approximately more than half of the study subjects (55.7%) were unemployed, 81% belonged to the nuclear family, the majority (33.25%) belonged to socioeconomic class II. Approximately half (51.25%) of the babies were male, majority (43.25%) of females with birth order one. Almost similar results were observed in the study by Junaid et al.[11]

In the present study, the majority of study subjects (56.75%) were multiparous. Similar findings were shown in a study conducted by Basu et al.[12] conducted at the urban primary health center in Delhi. While in the study by Dong et al conducted on the tertiary hospital in China showed that 64.3% of mothers were primiparous.[13] In urban areas 45.5% were primiparous and 54.5% were

multiparous. There was no statistically significant difference was observed in parity and residence (p>0.05). Almost similar observation showed in a study conducted by Karkee et al.[14] Majority of mothers (91.5%) utilize ANC services, utilization of ANC services was significantly high in urban areas as compared to rural areas (p<0.05). while the study by Azeze et al showed that only 80.6% of study subjects utilize ANC services.[15] The reason could be due to differences in health care infrastructure in both countries. Only 34% of mothers visit more than four or more visits during ANC periods. Similar results were observed in the study by Azeze et al.[15] The finding in our study, majority of study subjects (73.25%) were normally delivered and only 26.75% were delivered by Cesarean section. Finding in a study conducted by Azeze et al in Ethiopia showed different findings.[15] The reason for different findings could be due to different health care infrastructures.

In the present study, majority (78.75%) of mothers not gave pre-lacteal feed only 21.25% of mothers gave pre-lacteal feed to their newborns. A similar result showed by Sinha et al conducted a study in rural Bihar.[16] While the study by Raut et al conducted in the Vidarbha region of Maharashtra showed differences in pre-lacteal feeding.[17] There were two most popular methods being practiced by the mothers are honey and ghutti. It is due to some social customs and beliefs.In the present study, 67.25% of mothers gave colostrum to their baby in our study. Similar results were found by Junaid et al (64.15%), Davara et al (68.75%), Singh et al (63.57%).[11,18,19] Reason for not giving colostrum was home delivery, lack of awareness on the advantage of colostrum and mother heading households. This study showed that initiation of breastfeeding within 1 hour was done in 18.5% of babies. While in a study by Mandal et al showed a lower percentage of initiation of breastfeeding.[20] An almost similar finding showed by Khan et al reason for the difference was a different time period used in the initiation of breastfeeding.[21] And the reason for the similar finding was almost similar customs in North India. Exclusive breastfeeding protects against various diseases, it is safe and economical. Six-month exclusive breastfeeding has improvedthe growth of the baby. In our study prevalence of exclusive breastfeeding was 68.3% as compared to Patil et al where prevalence was 61.5%.[22] The reason for the difference was studied was done in different areas like rural and urban areas. Six months of exclusive breastfeeding has improved substantially over time.[23] Initiated breastfeeding, better support is required to improve the duration and exclusivity of breastfeeding.

The sample size was not too large to draw conclusion and random sampling was not applied so it was not a real representative of the population. recall error on breastfeeding practices and duration during the personal interview could not be ruled out.

CONCLUSION

The study showed that there was a huge difference in ANC service utilization and the number of ANC visits in rural and urban areas. In urban areas, more mothers use contraceptive practices within first 6 months of birth. Use of contraceptive practices could be increased by counseling of mother by GATHER model. Awareness about contraceptives should be increased in rural areas. Most of the delivery were institutional and higher percentage of institutional delivery was in the urban areas as compared to rural areas. In rural areas, most of the delivery was vaginal while in urban areas most deliveries were cesarean section. Those differences could be reduced by strengthening the health care infrastructure in rural areas and the utilization of health care services in both rural and urban areas. In rural areas, most of the babies were low birth weight as compared to urban areas. Those were could be due to poor nutrition to mothers at ANC periods. Rejection of pre-lacteal feed was more common in rural areas; colostrum was more commonly given in urban areas. Early initiation of breastfeeding was common in urban areas and late initiation of breastfeeding was common in rural areas. Exclusive breastfeeding up to six months was more common in rural areas exclusive breastfeeding up to six months should be encouraged because it prevents many diseases and complete food for the body up to six months.

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