ORIGINAL RESEARCH ARTICLE
pISSN 0976 3325 | eISSN 2229 6816
Open Access Article
www.njcmindia.org
DOI: 10.5455/njcm.20210304044810

An Epidemiological-Association of Infant and Young Child Feeding Practices In Rural Area of Bareilly District: A Cross Sectional Study

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ABSTRACT

Introduction: In developing countries, malnutrition is a major public health concern. Infant and young child feeding (IYCF) is a set of well-known, common and scientific recommendations for optimal feeding of newborn and children under two years of age including initiation of breastfeeding within one hour of birth, exclusive breastfeeding for first six months, after which appropriate and safe complementary foods should be given along with continuing breastfeeding up to two years of age and beyond.

AIM: To find out the epidemiological association of IYCF practices in rural area of Bareilly district.

Material and methods: The study was conducted in rural area of Bareilly, Uttar Pradesh from January 2020 to February 2020 in children aged ≤ 1 year.

Results: There were significant associations ($p < 0.05$) between pre-lacteal feed and age of mother, sex of child, education of father and religion.

Conclusion: There have been considerable developments in the status of IYCF practices in Bareilly. However exclusive breastfeeding was not fully practiced. Hence promotion of IYCF is needed.

Keywords: Infant and young child feeding, rural population, evaluation, infant

INTRODUCTION

The nutritional well-being of the population especially of the under 5 children is both the outcome and an indicator of national development. Therefore, nutrition is an issue of survival, health and development of current and next generation. Child is the main victim of interplay of nutrition and the socioeconomic factors. The under-five population of India stands at an overwhelming 112.8 million.[1] Malnutrition in children is more an interplay of female illiteracy, ignorance about nutritional needs of infants and young children and poor access to health care. Appropriate feeding is crucial for the healthy growth and development of an infant. It is estimated that 10.9 million children under the age of 5 years die per year worldwide.[2]

Proper infant and young child feeding practices alone can have the potential to prevent an estimated 19% of all under 5 deaths, more than any other single prevention intervention.[3] Therefore World Health Organization (WHO) and United Children's Funds (UNICEF) has recommended core indicators for infant and young child feeding , of which, initiation of breastfeeding within one hour of birth, breastfeeding exclusively for the first six months, continuing to breastfeeding for two years, giving on colostrum, no pre-lacteal feed, no bottle feeding and timely introduction of solid and semi solid food at six months,

How to cite this article: Agarwal M, Sinha A, Katyal R. An Epidemiological-Association of Infant and Young Child Feeding Practices In Rural Area of Bareilly District: A Cross Sectional Study. Natl J Community Med 2021;12(3):57-61. DOI: 10.5455/njcm.20210304044810

Financial Support: None declared **Conflict of Interest:** None declared

Date of Submission: 04-03-2021; **Date of Acceptance**: 29-03-2021; **Date of Publication**: 31-03-2021

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minimum dietary diversity, minimum meal frequency, minimum acceptable diet, consumption of iron rich or iron fortified food, age appropriate breast feeding, predominant breastfeeding under six months and milk feeding frequency for non-breastfeed children.[4]

Infant and young child feeding practice is suboptimal or poor throughout the world[5], especially late initiation of breastfeeding, pre-lacteal feeding, early or late introduction of complementary foods, and using a bottle to fed the child are common practices in developing countries.[5-6]

METHODS

Study design: The community based cross sectional study was conducted in rural area of Bareilly district, Uttar Pradesh from January 2020 to February 2020.

The survey was designed to evaluate IYCF practices and association with epidemiological variants.

Study participants: The study participants for this survey were the mothers of all children of age ≤1 year residing in the study area. If more than one child present in one house, then one child is chosen by lottery method and we exclude all the mothers of children aged one year or more than one year and that mother who not give consent to participate at the time of data collection.

Study area: Study was conducted in rural area of Bareilly district, Uttar Pradesh. Study universe has population of 4,465,344 residing in 2437 villages and wards of 6 sub-districts. The district has a population density of 1080 inhabitants per square kilometer. Its population growth rate over the decade i.e. from 2001 to 2011 was 23.4%.

Sampling methodology & sample size: 30 clusters have been chosen from the population by applying two stage 30*7 cluster probability proportional to size (PPS) sampling technique having 210 of sample size. From these clusters, houses were taken out by simple random sample technique and from which randomly one child of age ≤1 year was selected. A total of 7 individuals were selected from each cluster by simple random sampling method using random table to achieve the sample size. If more than one child present in one house, then one child is chosen by lottery method.

Data collection & analysis: Data was collected by using pre-tested semi-structured questionnaire. An interview with mothers of index child was conducted at their home ensuring privacy. A standard questionnaire on IYCF practices recommended by UNICEF was used to gather information from mothers.[7] The information collected included IYCF practices and socioeconomic characteristics. Privacy and confidentiality were maintained throughout the study period by excluding personal identifiers during data collection. Ethical clearance was approved from Institutional Ethics Committee. There is no conflict of interest present. Consent was taken from participants. Data was compiled and analyzed using SPSS statistics Ver. 22.0.

RESULTS

A total of 210 mothers having children of age 0 – 12 months were participated in the current study with 100 % response rate for analysis. Nearly half (n=102, 49%) of the mothers were aged between 25–30 while a very small proportion (n=19, 9%) of mothers were more than 30 years of age and almost all mothers (n=209,100%) were housewives by occupation. In our Study more than half, (n=119, 57%) of mothers were illiterate whereas fathers number in illiteracy is 79 (38%). Of the 210 children, gender proportion was almost equal that is nearly half (103) were male and half (107) were female aged between 0 and 12 months. 161 (77%) fathers were daily laborers.

Table 1: Socio-demographic characteristics of mothers and their children in rural area of Bareilly district, Uttar Pradesh

Variable	Frequency (%) (n=210)
Age of Mother	
<25	89 (42)
25-30	102 (49)
>30	19 (9)
Occupation of Mother	
House wife	209 (100)
Maid	1 (0)
Education of Mother	
Illiterate	119 (57)
5th - 8th	58 (27)
9th – 12th	21 (10)
Graduate	12 (6)
Sex of Child	
Male	103 (49)
Female	107 (51)
Age of Father	
< 25	24 (11)
25-30	103 (49)
>30	83 (40)
Occupation of Father	
Labor	161 (77)
Farmer	29 (13)
Job	16 (8)
Not Work	4 (2)
Education of Father	
Illiterate	79 (38)
5th - 8th	58 (28)
9th – 12th	52 (24)
Graduate	21 (10)
Religion	
Hindu	116 (55)
Muslim	94 (45)
Caste	
General	42 (20)
OBC	121 (58)
SC/ST	47 (22)
Type of Family	
Nuclear	139 (66)
Joint	71 (34)

Table 2: Association between Epidemiological variants & Ever breastfeed practice (n=197)

Variable	Ever breast fed		X^2	df	P value
	Yes	No			
Age of Mother					
<25	82	7	1.7	2	0.427
25-30	96	6			
>30	19	0			
Occupation of Mother					
Housewife	196	13	0.66	1	0.938
Maid	1	0			
Education of Mother					
Illiterate	114	5	16.212	3	0.001
5^{th} - 8^{th}	55	3			
9^{th} – 12^{th}	20	1			
Graduate	8	4			
Sex of Child					
Male	98	5	0.621	1	0.309
Female	99	8			
Age of Father					
< 25	19	5	10.126	2	0.006
25-30	98	6			
>30	80	3			
Occupation of Father					
Labor	154	7	5.189	3	0.159
Farmer	25	4			
Job	14	2			
Not Work	4	0			
Education of Father					
Illiterate	75	4	13.133	3	0.004
5^{th} - 8^{th}	55	3			
9^{th} – 12^{th}	51	1			
Graduate	16	5			
Religion					
Hindu	107	9	1.097	1	0.226
Muslim	90	4			
Caste					
General	40	2	0.188	2	0.91
OBC	113	8			
SC/ST	44	3			
Type of Family					
Nuclear	132	7	0.944	1	0.247
Joint	65	6			

Table 3: Association between Epidemiological variants & pre-lacteal feed practice (n=197)

Variable	Pre-lacteal feed		X^2	df	P value
	Yes	No			
Age of Mother					
< 25	12	77	8.401	2	0.015
25-30	23	79			
>30	8	11			
Occupation of Mother					
Housewife	43	166	0.259	1	0.795
Maid	0	1			
Education of Mother					
Illiterate	28	91	3.317	3	0.345
5^{th} - 8^{th}	12	46			
9^{th} – 12^{th}	2	19			
Graduate	1	11			
Sex of Child					
Male	27	76	4.087	1	0.032
Female	16	91			
Age of Father					
<25	4	20	4.427	2	0.109
25-30	16	87			
>30	23	60			
Occupation of Father					
Labor	37	124	3.455	3	0.327
Farmer	4	25			
Job	1	15			
Not Work	1	3			
Education of Father					
Illiterate	24	55	9.596	3	0.022
5^{th} - 8^{th}	11	47			
9^{th} – 12^{th}	7	45			
Graduate	1	20			
Religion					
Hindu	15	101	9.06	1	0.002
Muslim	28	66			
Caste					
General	6	36	5.156	2	0.076
OBC	22	99			
SC/ST	15	32			
Type of Family					
Nuclear	26	113	0.792	1	0.237
Joint	17	54			

Majority of the study subjects belongs to the Hindu by religion (n=116, 55%) and OBC by caste (n=121, 58%). Out of 210, 139 (66%) of mother-child pair belongs to the nuclear family (Table 1).

Out of the total 210 children, it was found that a majority that is 197 (93.8%) mothers reported having put their children to the breast (ever breastfeed). It was noted that education of both mother and father plays a significant role in ever breastfeeding practices. Increasing level of education implies adoption of modern ideas while gradually leading to the dereliction of traditional practices regarding child care and thus decreases in the rate of breastfeeding practices. In our study age of mother, occupation of both mother and father, sex of child, religion, caste and type of family did not have any influence on ever breastfeeding practices statistically while association with age of father found significant (Table 2).

Chi square (X^2) test confirms that there is significant association ($p< 0.05$) between pre-lacteal feed and age of mother, sex of child, education of father and religion while occupation of mother, education of mother, age of father, occupation of father, caste and type of family were not statistically significant ($p > 0.05$). It was noted that education level of mother did not have any influence on pre-lacteal feed; in contrast to it education of father plays a significant role in determining the pre-lacteal feed (Table 3).

Table 4 shows that after removing all the confounding factors on application of linear regression it was found that the religion and caste of the mother were significantly associated with the exclusive breastfeeding practices and even the type of delivery and time taken for initiation of breast feeding was found to be significant.

DISCUSSION

Adequate nutrition is critical for child health and development.[8] The period from birth to two years of

Table 4: Evaluation of IYCF practices in Rural Area of Bareilly District (n=210)

Variable	Frequency (%)
Ever Breastfed (0-12 months)	
Yes	197 (93.8)
No	13 (6.2)
Started Breastfeeding within 1 hour ((0-12 months) (n=197)	
Yes	137 (69.5)
No	60 (30.5)
Baby delivered(n=210)	
Vaginally	191 (91)
Cesarean	19 (9)
Exclusively breastfed in last 24 hours in 0-6 months babies(n=197)	
Yes	81 (41.1)
No	116 (58.9)
Exclusively breastfed in last 24 hours in 0-4 months babies(n=197)	
Yes	46 (23.3)
No	151 (76.7)
Exclusively breastfed in last 24 hours in 4-6 months babies(n=197)	
Yes	36 (18.3)
No	161 (81.7)
Any Breastfed baby fed any food or drink or bottle fed (0-12 months, n=197)	
Yes	148 (75.2)
No	49 (24.8)
Children age 6-9 months receiving complementary food while continuing to breast fed(n=197)	
Yes	61 (31.1)
No	136 (68.9)
Pre-lacteal feed given	
Yes	43 (20.5)
No	167 (79.5)

age is particularly important because of the rapid growth and brain development.[9]

The period is often marked by growth faltering, micronutrient deficiencies and common childhood illnesses such as diarrheal diseases, as a child is introduced to solid foods in addition to breast milk.[10-15]

As a global public health recommendation, infants should be fed breast milk only for the first six months.[16] Breast milk is hygienic compared with other fluids and contains all the nutrients and antibodies that are very important to prevent disease months.[17]

In this study a total of 210 mothers having children of age 0 – 12 months were participated with 100 % response rate for analysis. In rural India; it is customary for to take care of the infant during the first month of confinement. This situation leads to better opportunity for breastfeeding. Non-working mothers were positively associated with exclusive breastfeeding. This result does not necessarily mean that working leads to failure to exclusively breastfeed. Additional factors such as weaning in preparation to return to work, maternal fatigue and the difficulty in juggling the demands of work and breastfeeding may also contribute to this issue.

Exclusive breastfeeding was more common among mothers with illiterate husbands on breastfeeding compared to literate husbands. The husband plays a major role in decision making about family and household matters. There is a highly paternalistic pattern of behaviour where husbands have traditionally held authority over many aspects of family life including intra-household decisions especially among families in rural India; husbands were authoritative over intra-household decision-making.

This study has several potential limitations. The information on breastfeeding focuses within a one-month period and information bias is likely the respondent. These could lead to overestimation of the prevalence of exclusive breastfeeding in this study. The cross-sectional nature of this study prevents drawing causal inferences from the association between the determinant factors and exclusive breastfeeding. This is the new type of study so can't draw the comparative studies from the available sources.

CONCLUSION

This study identified various factors associated with exclusive breastfeeding and giving pre lacteal feeds nationwide studies conducted in India that utilized the 2005–2006 India Demographic and Health Survey (DHS) reported that limited access to health services, low socioeconomic status and no or low maternal education were associated with inappropriate complementary feeding practices.[18] The findings from these studies may not be strictly applicable to the current Indian population due to wide differences in the sample sizes between the 2005–2006 and 2019–2020 India DHS.[19]

There have been considerable developments in the status of IYCF practices in Bareilly as compared to National Family Health Survey-3 at national level yet the scope for further progress is substantial.[20] Exclusive Breast Feeding was not fully practiced in the study area. Therefore promotion of IYCF is needed in the area to strengthen EBF practices.

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