ORIGINAL ARTICLE
pISSN 0976 3325 | eISSN 2229 6816
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www.njcmindia.org

INFANT FEEDING PRACTICES IN RURAL FIELD PRACTICE AREA OF MEDICAL COLLEGE IN KARNATAKA: A CROSS-SECTIONAL DESCRIPTIVE STUDY

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Financial Support: None declared
Conflict of interest: None declared

How to cite this article:
Narayanappa RR, Ranganath TS, Gowda K. Infant Feeding Practices in Rural Field Practice Area of Medical College in Karnataka: A Cross-Sectional Descriptive Study. Ntl J of Community Med 2015; 6(4):508-512.

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Date of Submission: 04-09-15
Date of Acceptance: 17-12-15
Date of Publication: 31-12-15

ABSTRACT

Background: Infant nutrition is a key factor for child survival, optimal growth and development and breastfeeding improves immunity to prevent childhood illnesses. We aimed to estimate exclusive breastfeeding rates and assess complementary feeding practices among 9 months old infants.

Methods: A cross-sectional study was carried out among mothers of infants coming for measles vaccination at three Primary Health Centres from January to December, 2013. Trained medical interns interviewed the mothers about breastfeeding and feeding practices using a structured pretested questionnaire.

Results: Of the 4232 women, 954 children came for measles vaccination. Majorities (94%) were fed with colostrum, and about 83% were initiated breastfeeding within an hour after delivery. Only about 34% were exclusively breastfed up to six months. A total of 602 infants (66%) were given herbal drops (*janam ghutti*), animal milk, formula feeds were introduced at various ages prior to 6 months and the main reason cited by the mothers was insufficient breast milk production.

Conclusions: Though feeding practices at birth were good, prevalence of exclusive breastfeeding was low. Measures should be undertaken to improve exclusive breastfeeding. Mothers attending vaccination clinics should be counselled about child feeding practices.

Key words: Infant nutrition; Exclusive Breastfeeding; Complementary feeds; weaning foods; India

INTRODUCTION

Infant nutrition is a key factor for child survival, optimal growth and development[1] and breastfeeding improves immunity to prevent childhood illnesses.[2,3] Therefore, the World Health Organization (WHO) recommends exclusive breastfeeding (EBF) for the first 6 months of life followed with feeding nutritionally adequate, safe and hygienic weaning foods, and continued breastfeeding up to 2 years. [4] Thus breastfeeding is one of the most effective interventions to reduce child mortality.[5]

Early onset of complementary foods is undesirable as breastfeeding meets all nutritional requirements and also it could be harmful.[6] Well-established guidelines have been implemented for exclusive breastfeeding (EBF), yet adherence to EBF is quite low in many settings.[7-10] In LMICs more than half of the under-5 children are undernourished or have growth faltering during childhood which usually starts during infancy likely cause being inadequate breastfeeding and improper feeding practices.[11,12] National Family Health Survey (NFHS-III) 2005/6, reported a low EBF at 4-5 months.[13]

However, descriptions of feeding practices may vary from place to place due to cultural and socio-economic variations. Also it is important to assess the impact for campaigns for promotion of breast-feeding.[14] hence, a clinic-based cross sectional survey to assess in detail about breastfeeding and complementary feeding practices.

METHODS

Study area: A cross-sectional study was conducted in vaccination clinics of three Primary Health centres (PHC) located 25 kilometres north-west of Bangalore. The PHCs are attached to Bangalore Medical College and Research centre (BMCRI), and the area covered by these three PHCs has a total population of 88,000 inhabitants, majority of them are farmers, semi-skilled or unskilled labourers. The vaccination clinics in the PHC are run once a week with an average attendance of 90-120 children in each vaccination day.

Selection of participants: We chose infants' coming for measles vaccination, as this is the last regular contact with primary health centre for vaccination and at a time when it is feasible to collect data on breast feeding as well as complementary feeding practice. Infants without specific feeding problems (cleft lip or palate, severe illness during neonatal period or delayed developmental milestones) were included for the survey. For an absolute precision of 5% and an assumed prevalence of 50% for EBF, the required sample size was 902 infants.

Survey procedure: Ethical clearance was given by research review and ethical committee of Bangalore Medical College and Research Institute. The survey was conducted from January to December 2013. A questionnaire was developed in English language and piloted among 20 mothers who came for vaccination. Medical interns were trained in interviewing using the questionnaire by the principal researcher. Trained medical interns during their rural postings consulted the mothers who brought their infants for measles vaccination requesting them to participate in the survey. If eligible, informed consent was sought from the mothers after explaining the survey procedure to them. Then the questionnaire was administered to the mothers in the local language, Kannada.

Definitions of breastfeeding categories: We classified breastfeeding categories as defined by WHO and UNICEF.[1, 4] Exclusive breastfeeding was defined if the infant was only given breastfeeding either directly from mother or expressed breast milk and no other liquids or solids were given with an exception of drops or syrups. Predominant breastfeeding was if predominantly breastfeeding was given but infant also received water and water-based drinks like tea and local herbal drops. Partial breastfeeding if the infant was receiving breast milk with animal/powdered/condensed milk and solid and/or semi-solid food (i.e. cereals, vegetables, fruits, lentils or meat).

Data analyses: All the completed questionnaires were checked manually for completeness and consistency and the data were entered into Microsoft excel and analyses were done on Statistical Package for Social Sciences (SPSS-17) package. Descriptive statistics namely mean and standard deviation for continuous variables and frequency or proportions for categorical variables were calculated.

RESULTS

A total of 4232 women came to clinic for their child's vaccination of them 980 children was for measles vaccination. Twenty women refused to participate, and 4 children were having feeding problems (2 each had oral thrush, cleft lip). Most of the infants (73%) were from joint families and were the first born child (57%).

Table 1 Background characteristics of mother-infant pairs (N=954)

Characteristics	Mother (%)
Child's sex	
Male	520(54.5)
Female	434(45.5)
Mother's age	
25 years and younger	513(53.8)
>25 years	441(46.2)
Mode of childbirth	
Normal delivery	699(73.3)
Caesarean section	255(26.7)
Mother's education	
Illiterate or primary	252(26.5)
High school or above	702(73.5)
Mother's occupation	
No work or agriculture	739(77.4)
Working outside home	215(32.6)
Received information on breastfeeding during antenatal visit?	
Yes	434(45.5)
No	492(51.6)
Did not have antenatal check-up	28(2.9)
How long mother think only breast milk will be enough for child?	
<6 months	655(68.6)
6 month or more	256(26.8)
Do not know	43(4.6)
Why did you feed your child with other food before six month of age?*	
Insufficient breast milk production	787(72.1)
Child was crying excessively	359(37.3)
Mother working outside her home	156(16.3)
Family member's advice	102(10.7)
Mother had illness	8(3.1)

* Some mothers cited more than one reason

Ninety percent of infants were 9 months and remaining with 10 months of age (data not shown). Mothers were aged from 19 to 44 years and 65% of them were aged 21-30 years (table 1). Half of the mothers had not received any information about breastfeeding during the antenatal visits. For 631 (66.1%) infants other foods (semi/solid or animal milk) were introduced before 6 months of age for which the main reason cited was mother's perception that she produces insufficient breast milk (72%), followed by having to return to working outside the home (37%). Some (11%) women cited more than one reason for early introduction of complementary foods (table 1).

Table 2: Breastfeeding initiation, pr lacteal feeding patterns and EBF rates (n=954)

Breastfeeding practices	Mother (%)
Any breastfeeding	941(98.7)
Prelacteal feeds were given	255(26.7)
Breastfeeding started within 1 hour after birth	653(68.4)
Breastfeeding started within 24 hours after birth	819(85.8)
Colostrum feeding	801(83.9)
EBF rate at 1 month	881(92.3)
EBF rate at 3 months	555(58.2)
EBF rate at 6 months	319(33.4)

Table 3: Type of complimentary foods given to the infants

Food/drinks	% of children who were given	Age when food was introduced (month)	IQR
Sugar water	75	1.5	1-4
Janam ghutti	56	1	1-1
Peanuts	54	2.5	1-5
Cerelac or nestum etc.	72	4	2-6
Bottle milk	31	3	1-5
Animal milk	49	3.5	3-7
Biscuits	73	6	5-7
Rice with lentil soup	93	4.5	6-7
Mashed potato	79	6	6-7
Bread	40	7	6-8
Mashed banana	35	7	6-8
Maggie Noodles	25	8.5	6-8
Boiled eggs	67	7	6-8
Meats	8	7	6-8

IQR=Inter quartile range

Breastfeeding initiation, breastfeeding practices and EBF rates are presented in table 2 and figure 1) whereas type of complimentary foods and their time of initiation are shown in table 3. Infants who were still breast at the time of survey were 824 (86.2%). Most of the children received any breastfeeding after birth; however, only 34% were exclusively breastfed. After birth breastfeeding was initiated within one hour for only 68%, whereas 86% of infants received breastfeeding within 24 hours. Majority of the infants received colostrum; however, pre-lacteal feeds were given to 123 infants. The most common prelacteal feeds given were honey (45), holy water (40), and sugar water (25 and others (13). EBF rates at 1, 3 and 6 months were 92%, 58% and 34%, whereas partial breastfeeding rates were 8%, 42% and 66%, respectively. Water and local herbal drops (*janam ghutti*) were the two most commonly introduced drinks within 2 months of age followed by local semisolid porridge (ragi millet porridge) which was given to nearly half of the infants within 4 months of age and bottle feeding was given to 31% of the infants (table 3).

DISCUSSION

Infant feeding practices in the rural areas of Bangalore rural district were fairly good, however, prelacteal feeding, early weaning are of concern. Initiation of breastfeeding was early but EBF rate was very low. Our findings are in accordance with findings of national survey of India[13] and a study from urban areas of Nepal.[16] In a study from urban slums of Gwalior, EBF rates were very low (8%) and pre-lacteal feeds were given to two-thirds of the infants.[15]

In our study, initiation of breastfeeding and colostrums feeding were comparable to a study from Nepal.[16] EBF rates across the studies may not be comparable as the definitions used for EBF and data collection methods vary across the studies.[7, 9, 13, 15-18] To overcome this problem and make the data comparable internationally, we adopted the WHO definition for EBF whether or not an infant was EBF and asked detailed questions about feeding other foods and during first year of life. EBF rates reported by NFHS survey were based on point estimation of breastfeeding and complementary feeding status

24-hour recall for children less than 6 months of age. Thus EBF rates could be under-estimated because those classified as EBF in NFHS may have indeed consumed other foods at other times that were not registered by the survey.

Prelacteal feeding practice in our study was slightly lower, than the other Indian study[15, 17, 18] which is comparable with the Multiple Indicator Cluster Survey Report of Bangladesh.[10]

Providing prelacteal feeding in our area may be a ritual of bless the newborn or a belief to give sugar water or honey provide energy or make the infant grow-up as good individual according to cultural beliefs.[7, 16] Our study was done in a small rural area, hence, the findings cannot be generalised to entire Bangalore rural district. However, we believe that the findings may be representative of regions having a similar socio-economic milieu. Another limitation of our study was recall bias, as mother were interviewed about 9 months after delivery and asked about breastfeeding initiation, prelacteal and colostrums feeding.

Breastfeeding is a norm and universal practice in most LMICs and EBF practice may be associated with socio-economic and cultural factors. [15-17] Mothers perceptions of insufficient breast milk reduction' resulting in early weaning foods is similar to findings of studies in China,[12] Nepal,[19] and Zambia[20] and is hindering achievement of optimal EBF rates. Interestingly some mothers did not cite any reason early weaning indicating that early weaning may be common practice in rural this community. Use of '*janam ghutti*' herbal drops among infants living in joint families or illiterate mothers may suggest that following cultural practices may be guided by mother-in-law or grandmothers

Despite having guidelines from WHO and UNICEF for promotion of EBF results suggest communities are still not educated about EBF and good infant feeding practices since only half of the surveyed mother could correctly answer that breast milk only is sufficient up to 6 of age. Existing cultural food taboos, faiths and beliefs ingrained in the communities and impediments to improving the community breastfeeding practices.[9] For example, local herbal drops (*janam ghutti*) are usually given when at one month of age with a belief that herbal drops will remove the unnecessary contents by inducing vomiting/regurgitation

CONCLUSIONS

Breastfeeding initiation rates were good but potentially harmful practices such as prelacteal feeding; discarding colostrums were prevalent and should be stopped. As EBF rates are low and early weaning is common practice for wrongly perceived reason of '*insufficient milk production*' there is an urgent need for health workers to initiate health promotional activities to improve mother's knowledge and practice about breastfeeding

Acknowledgement: We thank the staff at primary health centres, interns and postgraduate students for their help in conducting this survey.

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