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Role of mother's education and antenatal counselling on breast feeding practices among women in coastal Karnataka: a community based cross sectional study

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ABSTRACT

Background: Breastfeeding has been a universal practice. A number of factors influence the breastfeeding practices of the mothers. This study was conducted to assess the breast-feeding practices and its association with mother's education and antenatal counselling.

Methods: A community based cross sectional study was conducted among 167 mothers with infants who were residing in field practice area of a medical college. A pretested semi-structured validated questionnaire was administered to assess the breast-feeding practices followed. Towards the end of each interview the investigator observed the mothers as they breast fed their children to assess the appropriateness of positioning and attachment. Chi-square test and Fischer's exact probability test were used to test the associations.

Results: 19.8% of the mothers were illiterate. 64.1% had received antenatal counselling on breast feeding. 62.3% initiated breast feeding within one hour. Colostrum was discarded by 6% of the mothers and 28.7% gave pre-lacteal feeds. 72.3%, 86.1% and 77.3% of them practiced appropriate position of feeding, held their children in the appropriate position and had good attachment to the breast, respectively. Mother's education had a statistically significant association with pre-lacteal feeds administration, exclusive breastfeeding and breast-feeding position. Antenatal breast-feeding counselling had a statistically significant association with appropriate positioning of the child, attachment and practicing burping.

Conclusions: Breast feeding practices in the current study was far from satisfactory. Mother's education and antenatal breast-feeding counselling had a major role in the feeding practices.

Keywords: Antenatal counselling, Breast feeding, Colostrum, Exclusive breast feeding, Prelacteal feed

INTRODUCTION

Breastfeeding has been a practice, which is universal and a life line for the newborns as it provides all the energy and nutrients needed during the initial months of life. WHO recommends colostrum as the perfect food for the newborns, and feeding should be initiated as early as possible ideally within the first hour after birth. Exclusive breastfeeding is recommended up to 6 months of age,

with continued breastfeeding along with appropriate complementary foods up to two years of age or beyond. It is said to provide up to half or more of a child's nutritional needs between six months to one year, and up to one-third during the second year of life.²

There are several well-established benefits of breastfeeding on health and wellbeing of both the mother and baby.³ It is said to be highly effective intervention

against the major three causes for the child mortality (neonatal sepsis, diarrhea and pneumonia). A crossnational analysis of 57 low and middle income countries revealed that, 10 percentage-points increase in exclusive breastfeeding was associated with a reduction of 5 child deaths per 1,000 live births. Correct information, timely initiation and duration of breast feeding, family support and weaning practices are important aspects, which have to be learnt, practiced and it needs a lot of determination, patience and effort on the part of the mother. Health care professionals play a critical role in influencing decisions about feeding practices among mothers and families.

WHO has set global targets 2025 for infant and young child feeding (IYCF) practices in 2012 in its 65th World Health Assemble. To improve maternal, infant and young child nutrition, one of the targets is to increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%.6 In low income countries breastfeeding represents the only way of giving a child a fair chance of survival and good health. However, with the artificial feeding substitutes readily available and the traditional universal breast feeding on a decline, in terms of incidence as well as duration, it is now a public health concern. Scenario in India reflects that, the rates of early initiation, exclusive breastfeeding and timing complementary feeds are far from desirable. Also, there are substantial differences in breastfeeding and infant feeding practices between regions and states.⁷

A number of factors including ignorance, undesirable socio-cultural beliefs and misconceptions, counselling by health workers and practices among peers or other community members influence the breastfeeding practices of the mothers. Considering the above aspects a study was conducted to assess the breast feeding practices and the association of mother's education and antenatal counselling on breast feeding practices among mothers having infants.

METHODS

A community based cross sectional study was conducted in the urban field practice area of a medical college in Mangaluru, Karnataka from January 2016 to July 2016. Requisite permission from the Institutional Ethics Committee was obtained and informed written consent was obtained from the study participants selected for the study.

Sample size was calculated based on the findings of a previous study assuming the prevalence as 70.1% with 95% confidence interval and an allowable error of 10%, sample size estimated for the study is approximately 167.8 All mothers with infants, who were residing for more than a year in the study area, were enlisted and selected randomly, using table of random numbers to attain the desired number of participants. Mothers with infants, who were visiting the area for family obligations, were excluded.

A pretested semi-structured validated questionnaire was administered by the investigator during the house to house survey. The questionnaire was divided into four parts, Part A (socio demographic profile), Part B (obstetric history, regarding antenatal counselling of breast feeding and infant details), Part C (breast feeding practices followed by the mother including initiation, administration of colostrum and pre-lacteal feeds, exclusive breast feeding) and Part D (checklist to assess the appropriateness of positioning of mother, child and attachment). Towards the end of each interview, Part D was filled by the investigator while observing the mothers as they breast fed their child. Socio-economic classification was done according to modified B. G. Prasad socioeconomic classification for 2016.

The position of the mother, child and attachment were observed and using a checklist the appropriateness was assessed. Mother in any position that is comfortable to her and baby either sitting or lying down with her back well supported, holding her child secured and not be leaning on her baby was considered appropriate position for the mother. Infant's whole body should be supported, head and body should be in line without any twist in the neck, infant's body turned towards the mother and touching her and infant's nose is at the level of the nipple was considered appropriate child position. Good attachment was considered when infant's mouth is wide open, most of the nipple and areola in the mouth with only upper areola visible and not the lower one, chin touches the breast and lower lip is everted.³

Statistical analysis

Data entered was analyzed using SPSS (Statistical Package for Social Sciences trail version 16). Results were expressed as frequencies and proportions for categorical variables. Chi-Square test was used to test the association between variables such as mother's educational status and antenatal counseling with various breast-feeding practices like initiation of breast feeding, exclusive breast feeding, attachment to the breast etc. Fischer's Exact probability test was considered if more than 20% of the cells had an expected count of less than 5. The statistical significance level was fixed at p<0.05.

RESULTS

The mean age of the mothers was 24.65±3.9 years. Majority of the mothers belonged to the age group of 21-25 years (53.9%). In this study, it was observed that, 19.8% of the mothers were illiterate. Majority, 61.7% were Hindus and 15% were working mothers. 63.5% lived in joint families, while 82.6% of the mothers belonged to socio-economic class of upper middle and above (Table 1).

Table 1: Socio-demographic profile of the mothers (n=167).

Variable	Categories	Numbers	%
Age groups (years)	16-20	22	13.2
	21-25	90	53.9
	26-30	43	25.7
	31-35	9	5.4
	≥36	3	1.8
Educational	Illiterate	33	19.8
status	Literate	134	80.2
Religion	Hindu	103	61.7
	Muslim	64	38.3
Type of family	Nuclear family	61	36.5
	Joint family	106	63.5
Employment	House wife	142	85.0
status	Employed	25	15.0
	Upper high	10	6.0
Canianan amia	High	66	39.5
Socioeconomic Status*	Upper middle	62	37.1
Status.	Lower middle	25	15.0
	Poor	4	2.4

^{*}Modified B G Prasad socioeconomic classification.9

The mean age at marriage was 19.7±3.4 years and mean age at first child birth was 21.4±3.3 years. Among the mothers, 41.3% were primipara, while 79% had normal deliveries and 21% delivered by caesarean section. Among the child characteristics, female sex had a slight preponderance accounting for 52.1%, showing a favorable sex ratio. 55.8% of the infants were six months

and below and 44.2% were above six months. About 64.1% of the mothers had received antenatal counselling on breast feeding.

Mothers who were able to initiate breast feeding within one hour in accordance to IYCF guidelines were 62.3%. Caesarean section was the most common reason for delayed initiation of breast-feeding accounting to 35%, followed by reasons like baby in the NICU (23%), baby slept (16%), elder's advice (10%) and mother unwell (10%). Colostrum was discarded by 6% of the mothers and 28.7% gave pre-lacteal feeds to their children. The most common reason for discarding colostrum was elder's advice (50%) followed by baby in NICU (30%) and custom (20%). The most common pre-lacteal feed given in this study was honey (35%), followed by infant formula (25%), sugar water (21%), plain water (10%) and glucose water (8%). Also, 13.2% of all infants were bottle fed. 74.7% of the mothers practiced demand feeding. Overall the prevalence of exclusive breast feeding was 48.5% (Table 2).

In this study, one mother (0.6%) did not breast feed the child after initiation due to lactation failure. Among the mothers, 72.3%, 86.1% and 77.3% of them practiced appropriate position of feeding, held their children in the appropriate position and had good attachment to the breast, respectively. 79.5% of the mothers burped their children (Table 2). Also, 78.9% cleaned their breast with cloth before and after feeding. 84.9% of the mothers practiced feeding alternate breasts at a time.

Table 2: Breast feeding practices and its association with educational status of the mother (n=167).

Breast feeding practices		Mothers educational status		Total	Danalus
		Illiterate, N (%)	Literate, N (%)	N (%)	P value
Initiation	Within an hour	20 (60.6)	84 (62.7)	104 (62.3)	0.82
	Beyond one hour	13 (39.4)	50 (37.3)	62 (37.7)	
Colostrum	Given	29 (87.9)	128 (95.5)	157 (94.0)	0.97*
	Discarded	4 (12.1)	6 (4.5)	10 (6.0)	0.97
Prelacteal feeds	Given	18 (54.5)	30 (22.4)	48 (28.7)	<0.001
	Not given	15 (45.5)	104 (77.6)	119 (71.3)	
Exclusive breast	Practiced	10 (30.3)	71 (53)	81 (48.5)	0.02
feeding [#]	Not practiced	23 (69.7)	63 (47)	86 (51.5)	
Frequency of breast feeding ^{\$}	Demand feeding	23 (69.7)	101 (75.9)	124 (74.7)	0.46
	Periodic/fixed time feeding	10 (30.3)	32 (24.1)	42 (25.3)	
Position of the	Appropriate	18 (10.8)	102 (76.7)	120 (72.3)	0.01
mother ^{\$}	Inappropriate	15 (9.0)	31 (23.3)	46 (27.7)	
Position of the child ^{\$}	Appropriate	22 (13.3)	121 (91)	143 (86.1)	<0.001*
	Inappropriate	11 (6.6)	12 (9)	23 (13.9)	
Attachment \$	Good	23 (13.9)	107 (80.5)	130 (77.3)	0.18
	Poor	10 (6)	26 (19.5)	36 (22.7)	
Burping after feeding ^{\$}	Practiced	18 (10.8)	1114 (85.7)	132 (79.5)	<0.001
	Not practiced	15 (9.0)	19 (14.3)	34 (20.5)	

Test of significance: Pearsons Chi square test and *Fischers exact test used. *Exclusively Breast Fed include currently exclusively breast fed and those who were exclusively breast fed upto 6 months. Sone mother with lactation failure was excluded.

Mother's education had a very high statistically significant association with pre-lacteal feeds administration (p<0.001). The proportion exclusively breast-fed infants were higher among literate mothers as compared to illiterate mothers and this association was statistically significant (p=0.02). Literate mothers positioned self (p=0.01) and positioned their child

(p<0.001) more correctly as compared to illiterate mothers and these associations were found to be statistically significant (Table 2). Also, among mothers who had normal delivery, initiation of breast feeding within one hour was higher (74.2%) as compared to mothers delivered by caesarean (17.1%) and this association was statistically significant (p<0.001).

Table 3: Practice of breast feeding and its association with antenatal breast-feeding counselling (n=167).

Selected breast feeding practices		Breast feeding cour	Breast feeding counselling	
		Received N (%)	Not received N (%)	P value
Initiation	Within an hour	65 (60.7)	39 (65)	0.58
	Beyond an hour	42 (39.3)	21 (35)	0.38
Exclusive breast feeding [#]	Practiced	55 (51.4)	26 (43.3)	0.31
	Not practiced	52 (48.6)	34 (56.7)	0.31
Colostrum	Given	102 (95.3)	55 (91.7)	0.49*
	Discarded	5 (4.7)	5 (8.3)	0.49
Prelacteal feeds	Given	27 (25.2)	21 (35)	0.18
	Not given	80 (74.8)	39 (65)	0.18
Position of the mother ^{\$}	Appropriate	82 (76.6)	38 (64.4)	0.09
	Inappropriate	25 (23.4)	21 (35.6)	0.09
Position of the child ^{\$}	Appropriate	98 (91.6)	45 (76.3)	0.006
	Inappropriate	9 (8.4)	14 (23.7)	0.000
Attachment ^{\$}	Good	91 (85)	39 (66.1)	0.005
	Poor	16 (15)	20 (33.9)	0.003
Burping after feeding ^{\$}	Practiced	90 (84.1)	42 (71.2)	0.04
	Not practiced	17 (15.9)	17 (28.8)	0.04

Test of significance: Pearsons Chi square test and *Fischers exact test used. ^{\$\\$} one mother with lactation failure was excluded. [#]exclusively breast fed include currently exclusively breast fed and those who were exclusively breast fed up-to 6 months.

There was a statistically significant association between appropriate positioning of the child (p=0.006), attachment to the breast (p=0.005) and practicing burping (p=0.04) among those who received antenatal breast-feeding counselling. However, antenatal breast-feeding counselling did not show statistically significant association with the other practices of breast feeding (Table 3).

DISCUSSION

This study addressed the different practices involved in breast feeding. Early initiation of breast feeding within one hour of birth was done by 62.3% of the mothers. Similar to the present study the DLHS-4 statistics from Karnataka, showed 65.2% children were initiated within one hour of birth. Similar results was reported by Amit et al (57.3%). In a review by Aguayo et al, an increase in the rates of early initiation of breastfeeding in India was observed. Caesarean section was the most common reason for delayed initiation of breast feeding accounting to 35%. The other reasons were baby in the NICU (23%), baby slept (16%), on elder's advice (10%) and mother was unwell (10%). Similar reasons were reported by Ekambaram et al and Shafee et al. 13,14

Colostrum was discarded by 6% of the mothers and 28.7% gave pre-lacteal feeds to their children in our study, also the most common reason for discarding was elder's advice. The most common pre-lacteal feed given in this study was honey. The percentage of discarding colostrum and pre-lacteal feeds was variable in different studies. ¹⁵⁻¹⁷ A study by Takalkar et al, 50% of mothers who discarded colostrum did this on elder's advice which was similar to our study. ¹⁸ Different studies across the state have quoted different pre-lacteal feeds like sugar water, honey etc. ^{16,17,19,20} The differences in colostrum and pre-lacteal feeding, from study to study is attributable to the reasons, especially the customs and beliefs.

In the present study, overall 48.5% mothers exclusively breast fed their child for less than or up to six months duration. This was similar to study undertaken by Amit et al showed that, 50.7% babies had been exclusively breast fed for first 6 months. 11 74.3% of the mothers practiced demand feeding in the present study. Similarly, demand feeding was higher in studies by Joseph et al (87.1%) and Madhu et al (84%). 19,20 Bottle feeding percentages were 10.2% in Sinhababu et al, study and 13.3% in Amit et al study, similar to the present study results. 11,21

It was observed in our study that, 72.3%, 86.1% and 77.3% of them practiced appropriate position of feeding, held their children in the appropriate position and had good attachment to the breast, respectively. According to Dasgupta et al, 53.9% of the post-natal mothers had correct practice regarding position of the baby and 73.9% of the postnatal mothers correctly attached their baby to the breast. Further, study done by Krishnan et al, showed that 22 (11%), 38 (19%), 43 (21.5%) of the mothers had poor positioning, latching and sucking issues. Similarly, study by Kamath et al, showed 69%, 80% and 60% of mothers practiced appropriate position of feeding, held their children in the appropriate position and had good attachment to the breast, respectively.

Antenatal breast-feeding counselling was received by 64.1% of the mothers. Women receiving antenatal counselling were 21%, 34.1% and 60% in studies by Bagulet al, Krishnan et al and Dhandapany et al respectively. ^{23,25,26} This variability implies the difference in access to health information in different areas.

In the present study, mother's education had a statistically significant association with pre-lacteal feeds administration, practices of exclusive breast feeding, burping and position of the mother and child during feeding. Similar findings were seen in studies by Bagulet al and Srivastava et al for association with exclusively breastfeeding. Association of mother's literacy with giving pre-lacteal feeds was reported by Joseph et al. Mothers literacy, family type and place of delivery had a statistically significant association with breastfeeding attachment and positioning Technique in a study by Parashar et al. 28

Study by Ahmad et al, reported statistical significant association between antenatal counselling and initiation as well as exclusive breast feeding.²⁹ Reviews suggest that community-based group counselling and home-based individual counselling focusing on infant feeding decision-making and preparation for breastfeeding increased the likelihood of early initiation of breast feeding. 30,31 Whereas, in the present study statistically significant association between appropriate positioning of the child, attachment to the breast, and practicing burping was seen among those who received antenatal breast feeding counselling. Though the present study did not show significant association for initiation and exclusive breast feeding, it was found in higher proportion among the counselled mothers. This study suggests that female literacy and antenatal counselling are the major determinants of breast-feeding practices.

Limitations of this study was the study was carried out, keeping in mind that by one year of age the child is expected to be consume the modified family diet. However, breast feeding is often continued after one year of age. Prolonged breast-feeding practices were not assessed in this study due to selection of mothers with infants only. The prevalence of exclusive breast feeding

was based on current children below 6 months who were exclusively fed and once who were fed up to 6 months. No follow up was done to ascertain the continuity of feeding up to 6 months in children less than 6 months. Further research which may include follow up is desirable.

CONCLUSION

Breastfeeding has been a universal; however, this practice is on the decline, both in terms of incidence and duration. Breast feeding practices in the current study was far from satisfactory, with certain unacceptable beliefs still prevailing. Mother's education continues to be one of the most important factors influencing breast feeding practices. Breast feeding counselling was also found to have a major role in the correct method of feeding infants. The decline in traditional universal breast feeding is of public health concern and makes it necessary to further strengthen the female literacy, as well as antenatal counselling through improved mother and child health care services.

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