
PRELIMINARY REPORT

Breastfeeding Practices and Factors Associated With It: A Cross Sectional Study Among Tribal Women in Khardi Primary Health Centre, Thane, India

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ABSTRACT

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Introduction	India is home to large number of under-five deaths and underweight children in the world which is mainly because of improper breastfeeding practices. Hence the study was conducted to assess the breastfeeding practices in tribal settings so that proper interventions can be planned by the health system staff to reduce infant morbidity and mortality.
Methods	Cross-sectional study of three months duration from June 2011 to August 2011 was conducted in tribal area of Khardi in Thane district amongst women who had delivered within one year of the study. This study was conducted in Khardi Primary Health Centre (PHC) which comprises of eight sub-centres. Five sub-centres among these eight sub-centres were selected randomly using lottery method. All tribal women, with infants between six months to twelve months of age, registered with these five sub-centres during their antenatal period were included as subjects. 153 such women were identified using universal sampling with the help of Auxillary Nurse Midwives (ANM) and Anganwadi Workers (AWW). 21 women were excluded due to non availability. House to house visits were paid to these subjects & they were then interviewed face to face using a questionnaire after taking their informed consent. Dependent variable was breastfeeding practices including exclusive breastfeeding and independent variables were all the socio-demographic factors influencing breastfeeding. Analysis was done with SPSS version 16.
Results	More than half (67.4%) infants were exclusively breast fed (EBF) up to six months of age. Pre-lacteal feeds were given to 23.5% infants while colostrum was not given to 15.2% infants. Practice of EBF was found to be significantly associated with advice regarding EBF during antenatal period, education status, parity of mother and sex of child.
Conclusions	67.4% of the infants were exclusively breastfed till six months of age. Religion, education of the mother, number of children of study subjects, sex of the baby and knowledge about EBF was found to be significantly associated with exclusive breastfeeding.
Keywords	Breastfeeding - exclusive breastfeeding – tribal – Initiation – Colostrum - Pre-lacteal feeds.

INTRODUCTION

Breastfeeding is one of the most effective ways to ensure child health and survival⁽¹⁾. Breastfeeding is the best way to provide newborns with the nutrients they need. WHO recommends exclusive breastfeeding until a baby is six months old and continued breastfeeding with the addition of nutritious complementary foods for up to two years or beyond⁽²⁾. A lack of exclusive breastfeeding during the first six months of life contributes to over a million avoidable child deaths each year⁽¹⁾. The health benefits of breastfeeding to both mother and infant have been well established^(3, 4). Low rates and early cessation of breastfeeding have important adverse effects on health, social and economic implications for women, children, the community and environment, and results in greater expenditure on national health care provision⁽⁵⁾. It is estimated that only 35% of infants aged 0 to 6 months are exclusively breastfed in the world today. But if all babies and young children were breastfed exclusively for their first six months of life and then given nutritious complementary food with continued breastfeeding up to two years of age, the lives of an additional 1.5 million children under five would be saved every year⁽⁶⁾. Clinicians, public health advisors, nutritionists and others have been attempting to increase breastfeeding rates for the last few decades, with varying degrees of success⁽⁷⁾. Wide variations exist in breastfeeding and other infant feeding practices between countries and among subgroups of populations. For mothers to be able to breastfeed exclusively to the recommended six months, it is important to understand the factors that influence EBF. Various factors have been found to be associated between EBF and breastfeeding initiation and duration; socio-demographic factors (education level, urban versus rural residence, monthly household income and parity); biosocial factors (breastfeeding support); cultural factors (beliefs, norms and attitudes towards breastfeeding) and employment policies^(8, 9, 10). Studies have also shown the importance of recognizing the social circumstances in improving the understanding of infant feeding, thereby improving the ability to increase breastfeeding in the communities⁽¹¹⁾. The identification of the determinants of breastfeeding practices will inform the design of targeted interventions to promote breastfeeding and the formulation of national public health policy⁽¹²⁾. Studies have shown that women who receive encouragement to breastfeed from health care providers are more likely to initiate and maintain breastfeeding than women who did not receive encouragement⁽¹³⁾. The international Baby-Friendly Hospital Initiative (BFHI) was launched in 1991 by UNICEF and WHO to promote and protect maternal and child health by ensuring support for breastfeeding in maternity care facilities

⁽¹⁴⁾. A maternity facility can be designated 'baby-friendly' when it does not accept free or low-cost breast milk substitutes, feeding bottles or teats, and has implemented 10 specific steps to support successful breastfeeding⁽¹⁵⁾. As there is hardly any hospital in tribal areas which implement BFHI standards, the study was conducted in tribal area of Thane district in Mumbai. In addition, there are many unusual breastfeeding practices prevalent in the area such as delay in initiation of breastfeeding even in normal delivery, pre-lacteal feeding in the form of honey or sugar syrup, restricting feeding of colostrum, etc. So this study was planned with the objectives of assessing the knowledge and practices about breastfeeding among tribal women and to study the socio – demographic variables affecting breastfeeding practices.

METHODOLOGY

A Cross-sectional community based study of three months duration from June 2011 to August 2011 was conducted in a tribal area of Khardi in Thane district amongst women who had delivered within one year of the study. This study was conducted in Khardi Primary Health Centre (PHC) which comprises of eight sub-centres. Five sub-centres among these eight sub-centres i.e. Khardi, Dahegaon, Tembha, Raatandhale, Dhamni were selected randomly using lottery method.

Inclusion criterion - tribal women with infants between six months to twelve months of age were included. 153 such women were identified using **universal sampling** with the help of Auxillary Nurse Midwives (ANM) and Anganwadi Workers (AWW).

Exclusion criteria - women having child less than six months or more than one year of age, women who did not give consent for the study and women who were unavailable at the time of study. 21 women were excluded.

House to house visits were paid to these subjects & they were then interviewed face to face using a pre-tested semi-structured questionnaire after taking their informed consent. A semi-structured questionnaire was prepared based on the study objectives and a pilot study was done to validate the questionnaire in the study settings. The questionnaire was suitably modified based on the findings of the pilot study. Data regarding maternal socio-demographic variables (area of residence, age, marital status, education level, occupation, monthly household income), biomedical variables (parity, number of antenatal visits, mode of delivery, infant gender, gestational age, birth weight, breastfeeding counseling during delivery) were collected. Kuppaswamy's scale of socio-economic status classification was used to classify

socio-economic class into upper, middle and lower⁽¹⁶⁾. Dependent variable was breastfeeding practices including exclusive breastfeeding and independent variables were all the socio-demographic factors influencing breastfeeding. Interview was conducted in the local language (Marathi). Approval from the Institutional Ethics Committee was taken prior to the start of the study. Analysis was done with SPSS version 16. Descriptive statistics were used to summarize the data. Difference between groups was tested using Pearson Chi-square test and Fisher's Exact test where required.

EBF was defined as providing only breast milk and no other liquids or solids except for those containing vitamins, minerals or medicines to the baby from birth^(17, 18). EBF is considered superior at least until an infant is six months of age^(17, 19). Knowledge of EBF was assessed using two questions; meaning or definition of EBF and recommended duration of six months. Respondents

who answered both questions correctly were categorized as having 'adequate knowledge' of EBF. Prevalence of EBF was measured using questions on introduction of pre-lacteal feeding, age of introduction of liquids/ semisolid or solid foods and breastfeeding duration of six months. Respondents, who scored three points i.e. did not give any pre-lacteal feeding, breastfed infants for six months and did not introduce any liquids/solids before six months were categorized to have practiced "EBF". Others were categorized to have "mix fed" the infants.

RESULTS

Majority (63.6%) of the study participants were from 20 – 25 years age group, 67.4% were Hindu, 65.9% were housewives, 61.4% from nuclear family and 18.2% were primipara.

Table 1 Breastfeeding practices among the study participants.

Breastfeeding practices		f	%	
Initiation of breastfeeding	Normal delivery (n=91)	< 1hour	32	35.1
		1 - 2 hours	34	37.4
		2 – 4 hours	15	16.5
	Caesarean delivery (n=41)	4 – 8 hours	9	9.8
		After 1 day	1	1.1
		< 4 hours	6	14.6
	Colostrum feeding	4 – 8 hours	11	26.8
		8 – 12 hours	5	12.2
	Pre-lacteal feeding	After 1 day	19	46.3
Yes		112	84.8	
Exclusive breastfeeding up to 6 months	No	20	15.2	
	Yes	31	23.5	
Type of feeding	No	101	76.5	
	Yes	89	67.4	
	No	43	32.6	
	Exclusive breastfeeding	89	67.4	
Posture of mother while breastfeeding*	Mixed feeding	34	25.8	
	Top feeding	9	6.8	
	Sitting	45	34.1	
Frequency of breastfeeding	Semi-prone / supine	37	28	
	Any comfortable position	68	51.5	
	Every 2 hours	42	31.8	
	Every 4 hours	19	14.4	
Cleaning of nipple before/after feeding the baby	Whenever baby cries	51	38.6	
	Other	20	15.2	
	Does not clean	19	14.4	
	With water	65	49.2	
	With soap & water	48	36.4	

*multiple responses

Table 1 shows the breastfeeding practices amongst the tribal women. Breastfeeding was initiated in 35.1% infants within one hour of normal delivery and only in 14.6% infants within four hours of caesarean section. Pre-lacteal feeds

were given to 23.5% infants while colostrum was not given to 15.2% infants. Only 67.4% infants were exclusively breast fed up to six months of age. 25.8% infants were given mixed feeding while 6.8% were completely top fed. 85.6% of the

Breastfeeding practices in a tribal area

mothers were using water or soap for cleaning of nipple before/after feeding the baby. 51.5% of mothers were feeding their child in any of the position in which she was comfortable. 31.8%

subjects fed their babies every two hourly while 38.6% fed the baby whenever the baby cries.

Table 2 Practice of exclusive breastfeeding according to socio-demographic parameters.

Socio-demographic parameters		Exclusive breastfeeding		p value (chi square test)
		Yes	No	
Age group (years)	< 20	7 (46.6%)	8 (53.4%)	>0.05
	20 – 25	61 (72.6%)	23 (27.4%)	
	25 – 30	17 (62.9%)	10 (37.1%)	
	>30	4 (66.6%)	2 (33.4%)	
Religion	Hindu	66 (74.1%)	23 (25.9%)	<0.05
	Muslim	23 (53.4%)	20 (46.6%)	
	Housewife	59 (67.8%)	28 (32.2%)	
Occupation	Unskilled	9 (69.2%)	4 (30.8%)	>0.05
	Semi skilled	16 (61.5%)	10 (38.5%)	
	Professional	5 (83.3%)	1 (16.7%)	
Type of family	Nuclear	32 (62.7%)	19 (37.3%)	>0.05
	Joint	57 (70.3%)	24 (29.7%)	
	Illiterate	6 (35.3%)	11 (64.7%)	
Education	Primary	22 (64.7%)	12 (35.3%)	<0.05
	Secondary	33 (67.3%)	16 (32.7%)	
	Higher secondary & above	28 (87.5%)	4 (12.5%)	
	Upper middle	9 (75%)	3 (25%)	
Socio-economic class	Lower middle	29 (67.4%)	14 (32.6%)	>0.05
	Upper lower	34 (62.9%)	20 (37.1%)	
	Lower	17 (73.9%)	6 (26.1%)	
Number of children	1	10 (41.6%)	14 (58.4%)	<0.05
	2 or more	79 (73.1%)	29 (26.9%)	
Sex of the baby	Male	59 (74.7%)	20 (25.3%)	<0.05
	Female	30 (56.6%)	23 (43.4%)	
Knowledge about EBF	Adequate	74 (77.1%)	22 (22.9%)	<0.01
	Inadequate	15 (41.7%)	21 (48.3%)	
Advised about EBF during pregnancy	Yes	68 (81.9%)	15 (18.1%)	<0.01
	No	21 (42.9%)	28 (57.1%)	

Table 2 shows the association between exclusive breastfeeding and socio-demographic factors. It is observed that majority 76.4% of the study subjects up to 25 years of age were practicing EBF. It was found that a higher percentage (74.1%) of Hindu women practice EBF compared to Muslim women (53.4%) and the association between religion and practice of EBF was statistically significant ($p < 0.05$). No significant association was found between EBF and occupation of the mother, type of family and socio-economic status. 64.7% of the illiterate subjects did not practice EBF while 68.5% subjects educated up to secondary and higher level practiced EBF. Thus, a significant association was found between level

of education and practice of EBF ($p < 0.05$). Out of the 24 primipara subjects, only 41.6% were practicing EBF while among the rest of subjects 73.1% were practicing EBF. Significant association was observed between being primiparous and not practicing EBF. 22.9% subjects were not practicing EBF despite having adequate knowledge about EBF. Out of the 83 subjects who were advised about EBF, 81.9% subjects practiced EBF. 74.7% of the male babies were on EBF while only 56.6% female babies were on EBF. Significant association was thus, observed between the sex of the baby and practice of EBF.

DISCUSSION

WHO recommends exclusive breastfeeding until a baby is six months old and continued breastfeeding with the addition of nutritious complementary foods for up to two years or beyond⁽²⁾. The health benefits of breastfeeding to both mother and infant have been well established^(3, 4). In our study, only (67.4%) infants were exclusively breast fed up to six months of age. (25.8%) infants were given mixed feeding while (6.8%) were completely top fed. In a KAP study to assess exclusive breastfeeding practices in primiparous mothers it was observed that 41.5% of the women breastfed exclusively while 58.5% bottle-fed only or did so together with breastfeeding⁽²⁰⁾. While in an assessment of infant feeding practices at a tertiary care hospital it was observed that EBF was not maintained up to recommended age of six months i.e. exclusiveness of breastfeeding decreased from 60% at (0-2 months) to 40% (3-5 months)⁽²¹⁾. However, studies done in Iran reveal the EBF rates varying from 27.7% to 56.6% at six months of age^(22, 23). The comparison of results from studies done across the globe suggests that prevalence of EBF was better in our study area despite being a tribal region. The most probable reasons for such findings could be the natural tendency of breastfeeding among Indian women, intensive efforts taken by the healthcare staff of the primary health centre, Khardi on information, education and counseling of antenatal women about exclusive breastfeeding and its advantages.

In the current study breastfeeding was initiated in (35.1%) infants within one hour of normal delivery and only in (14.6%) infants within four hours of caesarean section. In rural Punjab, it was observed that (23.8%) subjects started breastfeeding their babies on the first day of birth, but in terms of early breastfeeding only (13.5%) respondents put their babies on the breast within four hours of birth⁽²⁴⁾. While in Nepal it was observed that Caesarean deliveries were associated with delay in timely initiation of breastfeeding⁽²⁵⁾. Initiation of breastfeeding immediately after birth was found to be only 19% in Bangladesh and 16% in Brazil^(26, 27). In an analysis of National Survey Data across nine East and Southeast Asian countries it was recorded that timely initiation of breastfeeding varied from 32% in Indonesia to 46% in Timor-Leste. EBF rate in infants under six months of age ranged from 11% in Myanmar to 60% in Cambodia⁽²⁸⁾. In a study done in West Bengal, it was observed that only 16.5% initiated breastfeeding within an hour of giving birth and about half did not start breastfeeding until at least 24 hours after the birth (47.9%). The reasons cited for delaying breastfeeding were that 'it was harmful for the baby' and that there was 'insufficient milk'⁽²⁹⁾. Even though, in the current study, early initiation of breastfeeding was found to be better

than few of the other studies, but the figures suggest a sorry state of affair and a lot needs to be done with regards to timely initiation of breastfeeding following delivery. Initiation of breastfeeding was delayed after birth because of the belief that mother's milk is 'not ready' until two-to-three days postpartum. Some of the other probable reasons for such findings could be poor general condition of the women post partum, lack of awareness regarding early initiation of breastfeeding, initial insufficient milk output, baby refused to suckle, familial pressures / beliefs / superstitions, etc.

In the present study, pre-lacteal feeds were given to (23.5%) infants while colostrum was not given to (15.2%) infants in contrast to a study conducted in four hospitals in Kuwait where almost 81.8% subjects were given pre-lacteal feeds⁽³⁰⁾. In a study in Nairobi it was observed that 40% infants were given something to drink other than the mothers' breast milk within three days after delivery⁽³¹⁾. In a similar study done in Bangalore, it was found that a total of 13% of the babies were fed with sugar water alone for more than 48 hours. Honey (6%) and ghee (3%) were also commonly used pre lacteal feeds⁽³²⁾. The probable explanation for the above findings in our study could be the strong beliefs and rituals among tribal population about not feeding initial milk i.e. colostrum and giving pre lacteal feeds in the form of honey or sugar syrup. These beliefs still persist in tribal population despite the efforts of the healthcare staff. Thus, in order to bring about a substantial improvement in such wrong beliefs, behavioral change communication strategy needs to be developed.

In our study it was observed that majority (76.4%) of the study subjects up to 25 years of age were practicing EBF. (46.6%) of the Muslim subjects were not practicing EBF and a significant association was observed between religion and practice of EBF. Practice of EBF was found to be significantly associated with advice regarding EBF during antenatal period, adequate knowledge about breastfeeding, education status, parity of mother and sex of child. No significant association was found between EBF and occupation of the mother, type of family and socio-economic status. Higher literacy level leads to higher level of awareness in general about healthy living including breastfeeding and its advantages. Multiparous women were more likely to be aware about correct breastfeeding practices as compared to primiparous women who are new to motherhood and hence there is need of stressing the importance of antenatal counseling about breastfeeding among such women. It was also observed in the study that male child was more likely to be breastfed than female child; this again reflects the attitude of the tribal population towards female child and

preferential treatment towards male child. Women with adequate knowledge about breastfeeding and those who were advised about EBF during antenatal period were practicing EBF correctly again pointing towards importance of antenatal counseling about breastfeeding. In contrast to our findings, in a study done in Saudi Arabia, increased maternal age, multiparity (three or more children), and vaginal delivery were significant positive predictors for early breastfeeding initiation as revealed by stepwise logistic forward regression. Furthermore, early initiations and exclusivity were significantly influenced by socio-demographics, especially maternal educational and employment status⁽³³⁾. In a study done in Gujarat, India, it was observed that 38.1 % of newborns received breastfeeding within hour. 49.1% and 14.8% of literate and illiterate mothers respectively had started breastfeeding within one hour ($p < 0.01$)⁽³⁴⁾. There is potential for recall bias in the current study. Also possibility of confounding factors for breastfeeding cannot be ruled out. It might be more useful and scientific to conduct a longitudinal interventional study among antenatal women with follow up in post natal period to assess their breastfeeding practices.

CONCLUSIONS

Breastfeeding is the universally accepted means of infant feeding with proven benefits to the mother, infant and the economy. Undoubtedly, it is invaluable in the developing world, particularly amongst the lower socioeconomic and disadvantaged groups. This study identified education status, religion, parity of mother, advice regarding EBF during antenatal period, prior adequate knowledge about breastfeeding, and sex of child to be significantly associated with EBF. The practice of withholding the breast milk after birth, discarding valuable colostrum and giving pre-lacteal feeds to the newborn needs to be urgently addressed through programs and breastfeeding interventions that infiltrate in to the tribal areas across the country.

Strengthening of information, education & counseling for antenatal women with active involvement of ASHA / AWW / ANM regarding timely initiation of breastfeeding following delivery, duration of exclusive breastfeeding, and importance of feeding colostrum.

The women who have timely initiated breastfeeding, not given pre-lacteal feeds, fed colostrum to their child and successfully exclusively breastfed their child for six months should be made role models for other antenatal women. A group of such women should be formed (Mother Support Group) at the community level where they share their experiences regarding breastfeeding do's and don'ts. These women along with the support of healthcare staff can tackle the

issues of insufficient milk output, myths and beliefs about breastfeeding and optimal duration of breastfeeding.

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