

Research Article

Factors associated with early initiation of breastfeeding among mothers of tribal area of Madhya Pradesh, India: a community based cross sectional study

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ABSTRACT

Background: The World Health Organization recommends that all neonates be breastfed within one hour of birth. Breastfeeding in the first hour of life is associated with prolonged duration of breastfeeding and reduction of infant mortality. Present study was conducted with the objective to assess the prevalence of early initiation of breastfeeding and factors associated with early initiation of breast feeding in tribal area of Madhya Pradesh.

Methods: A community based cross-sectional study carried in tribal area of Madhya Pradesh. A total of 210 mother-infant pairs who delivered in last one year were selected for study by “30 cluster sampling method” in Nainpur block of Mandla district.

Results: Among 210 mother- infant pairs, 82.4% mothers were 15-24 years with mean age 23.2 ± 3.79 years and the early initiation of breastfeeding were found only in 38.6%. The education and occupation of mothers, education of husband, income, counseling of mother during antenatal visits about need of breast feeding, hospital delivery, delivery conducted by trained person and mother who received Post natal advice were significantly associated with early initiation of breastfeeding.

Conclusions: All mothers should be counselled during antenatal care visit about initiation of breastfeeding within one hour of birth with identifying and giving further follow up to those mothers at higher risk of not initiating timely breastfeeding.

Keywords: Early initiation, Breast feeding, Tribal area

INTRODUCTION

The World Health Organization (WHO) recommends that all neonates be breastfed within one hour of birth.¹ Early initiation of breastfeeding is the easiest, cost effective and life-saving interventions for the health of the newborn.^{2,3} Breastfeeding in the first hour of life is associated with prolonged duration of breastfeeding and reduction of infant mortality.⁴⁻⁸ A study from Ghana has documented

that 22.3% of all neonatal deaths might be prevented if all women could initiate breastfeeding within one hour of birth and if breastfeeding is started within 24 hours after birth, 16% neonatal deaths can still be prevented.⁷ An epidemiological evidence of a causal association between early breastfeeding and infection specific mortality in the new-born infants has also been documented.⁹ The milk on its first days, contains the epidermal growth factor, which accelerates the development of the intestinal mucus, as

well as the immunological bioactive factors that provide immunological protection to the new-borns, preventing intestinal colonization by pathogenic microorganisms.¹⁰ The suction of the nipple right after birth stimulates the secretion of prolactin and oxytocin, hormones that induce the production and ejection of milk.^{11,12} The oxytocin also reduces puerperal bleeding and accelerates uterine involution, presenting additional benefits to the mother.¹³ In spite of the strong evidence supporting immediate and long term health benefits early initiation of breastfeeding in South Asia remains low with the varying rate between the countries: 36.4% in India, 24% in Bangladesh and 8.5% in Pakistan.¹⁴⁻¹⁶ Therefore, present study was conducted with the objective to assess the prevalence and factors associated with early initiation of breast feeding in tribal area of Madhya Pradesh.

METHODS

Study area

The study has been carried out in the Nainpur block of Mandla district which is tribal dominated district, located in east-central part of Madhya Pradesh. The population of district is 10, 53,522 and there are 9 blocks, 6 tehsils and 1221 habitable villages in the district.

Study design and participation

It was a community based cross-sectional study, carried out from 1st December, 2012 to 20th February, 2013. The study population comprised mothers who delivered in last one year, and residing in Nainpur block of Mandla district. Multi-Indicator Cluster Survey (MICS) was done by "30 clusters sampling method", proposed by the WHO, which is a standard method for rapid assessment of coverage evaluation.¹⁷

Sample size

The sample size was calculated by using the formula $n = Z^2pq/d^2$ (where $Z=1.96$ at 95% confidence; p =early initiation of breastfeeding; $q=1-p$; d = absolute allowable error. For this study, we presumed maximum variability that is early initiation of breastfeeding were 50%, therefore $p=0.5$; $q=0.5$; $d=20\%$ of p . Taking design effect of two, the required sample size was 192.16.¹⁸ For a 30 cluster technique, number of subjects to be selected per cluster $192/30=6.4$ (rounded up to 7). That means we had to select 30 clusters, each cluster with 7 mother- infant pairs making a total sample size of $30 \times 7=210$.

Selection of study clusters

The list of villages in the Community Development Block with their population was obtained from the tehsil office of Nainpur Block. The 30 clusters were selected on the basis of systematic random sampling from the probability of the cluster selection based on the population size of the cluster.

The data collection was done on house to house basis; 7 mother- infant pairs who delivered in last one year were recognised. If all 7 mother- infant pairs who delivered within last one year were not found in that cluster/village, the remaining mother- infant pairs to be covered from next cluster/village.

Data were collected by interview, using pretested structured questionnaire, after obtaining informed consent from mother. The questionnaire consisted of two parts. First part recorded the socio-demographic information including age of mother; education of mother, occupation of mother, type of family, family size, cast, family income, education of husband, and occupation of husband. Second part of questionnaire was consist of timing of initiation of breast feeding, counselling of mother during antenatal visits about need of breast feeding, number of live birth, place of delivery, person conducting delivery and post natal advice. The timing of initiation of breast feeding was defined as when after birth the mother initiated breastfeeding. Breastfeeding for the latest child was included in the study. We used the term early initiation to indicate timely initiation (within one hour), according to the WHO recommendation and late initiation to indicate after one hour of birth.¹

Data were analysed using Statistical Package for Social Sciences (SPSS, version 20). Descriptive statistics was computed to determine the prevalence of early initiation of breastfeeding. Chi square tests (χ^2) were performed to evaluate the association of the independent variables with the early initiation of breastfeeding. We present the results as proportions, output of the logistic regression as Odds Ratios (OR) with 95% Confidence Intervals. A p -value <0.05 was considered statistically significant.

RESULTS

Of the 210 mother- infant pairs the mean age of mother was 23.2 ± 3.79 years. As shown in Table 1, out of 210 mothers who delivered in last one year, the early initiation of breastfeeding to their infant, i.e. within 1 hour of the birth, were found in 81(38.6%) while 129(61.4%) breast after 1 hour of birth.

Table 1: Timing of breastfeeding initiation after birth (n=210).

	%	Frequency
Within 1 hour of birth	81	38.6
1-24 hour of birth	73	34.8
25- 72 hour of birth	41	19.5
> 72 hour of birth	15	7.1
Early initiation of breastfeeding	81	38.6
Late initiation of breastfeeding	129	61.4

As shown in Table 2, early initiation of breastfeeding can be affected by several factors. It was observed that education of mothers ($P=.000$) were important

contributing factor with early initiation of breastfeeding (OR =13.500; 95%CI: 6.192-29.435) and mother who were house wife 3.088 times (95%CI: 1.686-5.655) early initiated breast feeding (P=.000). The study also showed husbands who had some schooling 8.038 times mother initiate early breastfeeding (95%CI: 2.746-23.530) than no schooling (P=0.000). Mother who were counselled during antenatal check-up of about need of breast feeding were more likely (OR =7.681; 95%CI: 1.750-33.711) to breast feed within one hour (P=.002) then there counterpart who not counselled. The study also showed

that mother who delivered in hospital 6.405 times (95% CI: 1.445-28.395) more timely breast feed their infant (P=.006) then the mother who delivered at home. Similarly mothers whose delivery conducted by trained person 8.571 times (95%CI: 1.963-37.425) early breast feed their infant (P=.001) and also mother who received post natal advice 31.271 times (95%CI: 7.367-132.742) early breast feed infant (P=0.000). No significant association was found between timely initiation of breastfeeding and maternal age, type of family, family size, cast, occupation of husband, live birth.

Table 2: Variables affecting timely initiation of breastfeeding.

Variables		Initiation of breastfeeding		Chi-square (χ^2)	OR	95% CI	P-value
		Early (n=83)	Late(n=127)				
Age(in years)	15-24	71(41.0)	102(59.0)	2.526	1.879	0.856-4.126	.112
	25-34	10(27.0)	27(73.0)				
Education of mother	Some schooling	72(60.0)	48(40.0)	54.264	13.500	6.192-29.435	.000
	No schooling	9(10.0)	81(90.0)				
Occupation of mother	House wife	60(49.2)	62(50.8)	13.829	3.088	1.686-5.655	.000
	Agriculture/Labour/Service/business	21(23.9)	67(76.1)				
Types of family	Joint	47(41.2)	67(58.8)	.743	1.279	0.730-2.240	.389
	Nuclear	34(35.4)	62(64.6)				
Family size	Large	75(39.3)	116(60.7)	0.431	1.401	0.510-3.846	.511
	Small	6(31.6)	13(68.4)				
Cast	General/SC/Other	36(40.0)	54(60.0)	0.136	1.111	0.634-1.947	.713
	ST	45(37.5)	75(62.5)				
Income	<2250	11(61.1)	7(38.9)	4.221	2.739	1.015-7.387	.040
	>2250	70(36.5)	122(63.5)				
Education of husband	Some schooling	77(45.8)	91(54.2)	18.696	8.038	2.746-23.530	.000
	No schooling	4(9.5)	38(90.5)				
Occupation of husband	Service/Business	8(47.1)	9(52.9)	0.562	1.461	0.540-3.955	.453
	Agriculture/Labour	73(37.8)	120(62.2)				
Counselling of mother during antenatal visits about need of breast feeding	Yes	79(42.2)	108(57.8)	9.730	7.681	1.750-33.711	.002
	No	2(8.7)	21(91.3)				
Live birth	Two or more	56(41.5)	79(58.5)	1.351	1.418	0.786-2.557	.245
	One	25(33.3)	50(66.7)				
Place of delivery	Hospital	79(41.6)	111(58.4)	7.616	6.405	1.445-28.395	.006
	Home	2(10.0)	18(90.0)				
Person conduct delivery	Trained person	79(42.7)	106(57.3)	11.194	8.571	1.963-37.425	.001
	Untrained person	2(8.0)	23(92.0)				
Post natal advise	Yes	79(52.3)	72(47.7)	42.864	31.271	7.367-132.742	.000
	No	2(3.4)	57(96.6)				

OR: Odds ratio; CI: Confidence interval

DISCUSSION

A cross sectional, descriptive study was done to estimate the prevalence of the early initiation of breast feeding and factors associated with early initiation of breast feeding in tribal area of Madhya Pradesh. Right after birth the sucking reflex is most active and babies are more alert during the first 60 minutes and if babies are put to mother's breast within this period, chance of exclusive breastfeeding increase. In the present study the early initiations of breastfeeding to their infant were found in 38.6%, but 73.3% mothers were initiated breast feeding within first 24 hour of birth. Gupta et al. reported that 40% of their respondents initiated breast-feeding within one hour of birth.¹⁹ Fotedar R et al study shown that 20% women initiated breastfeeding new-borns within 1hr, while 30% women initiated breastfeeding their baby after 24 h.²⁰ A cross-sectional descriptive study to estimate the prevalence of early initiation breast feeding in Tamilnadu, southern India reveal 97.5% of the study subjects had been initiated breast feeding within one hour of birth, which was higher than present study.²¹ Patel A et al shown that in hospital-delivered infants in India timely initiation of breastfeeding rates was 36.4%.²² Al-Mouzan MI et al reported 23.2% of mothers were breastfed their babies within 1 hour after birth and El-Gilany H et al were found only 11.4% of mothers initiated breastfeeding within 1 hour after birth in Saudi Arabia.^{23,24}

It is evident that factors such as place of delivery, number of live birth, person conducted delivery whether trained or untrained, counselling of mother during antenatal visits about need of breast feeding, post natal advice have an impact on time of initiation of breastfeeding. In addition to these factors educational level, occupation, economic status, type of family, family size and caste are also important factors which associate with time of initiation of breastfeeding. The present study demonstrates that education and occupation of mother, economic status and education of husband were found to be significantly associated with early initiation of breastfeeding. Setegn et al reported that mothers who had formal education were 1.4 times as likely to initiate breastfeeding with in the first hour after delivery as compared to those mothers who had no formal education [OR: 1.4 (95% C.I: 1.03-2.03)].²⁵ Sandor M and Dalal K demonstrated that women with no education are almost 50% less likely to start breastfeeding compared to women with higher education.²⁶ Patel A et al revealed that higher maternal education (adjusted OR 2.00, 95% CI: 1.10- 3.60) were associated with timely initiation of breast feeding.²² The present study it was found that mother who were counselled during antenatal visits about need of breast feeding were more likely to associated with breast feeding within one hour. Patel A et al shown that counselling on breastfeeding during antenatal visits (adjusted OR 3.60, 95% CI 2.00- 6.20) were associated with timely initiation of breast feeding.²² Tsedeke Wolde et al also reported that advice given to mother on breast feeding at ANC visit was also statistically significant

with timely initiation of breast feeding ($p < 0.05$).²⁷ In other study, the use of antenatal care (ANC) has also been found to be positively associated with timely initiation of breastfeeding.^{14,28,30} ANC visit is an entry point for women to have contact with the health care providers and counselling on timely initiation. Having ANC visit makes the women to start timely initiation breast feeding for the women.²⁹ The study also showed that, hospital delivery, delivery conducted by trained person and mothers who received post natal advice had a significant effect on early initiation of breast feeding. Setegn et al reported that mothers who delivered in health institutions were twice as likely initiate breastfeeding as compared to those delivered at their home [OR = 1.9 (95% C.I: 1.30-2.71)] and also mothers who were counselled about breastfeeding during postnatal care were about 52% more likely to initiate breastfeeding within the first hour of delivery [OR: 0.52(95% C.I: 0.38-0.72)].²⁵ Adhikari et al observed in study of factors associated with early initiation of breastfeeding among Nepalese mothers that health facility delivery was positively associated with early initiation of breastfeeding.³⁰ Like our study similar finding also reported in other study^{31,32} this is because of health professionals are immediately present to advice and inform the mother on appropriate feeding practices and hence support postpartum mothers for timely initiation of breastfeeding.^{33,34}

CONCLUSION

The present study revealed that role of education, especially of female education in tribal area, is important contributing factor associated with early initiation of breastfeeding. Female education is related with enhancing the economic status of mothers, female empowerment, awareness of mother, and independent decisions making capacity in them. The counselling of mother during antenatal visits about need of breast feeding other important factor so all mother should counsel during antenatal visit with identifying and giving further follow up to those mothers at higher risk of not timely initiating breastfeeding

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