Breastfeeding initiation practice and factors affecting breastfeeding in South Gujarat region of India

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Citation

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Abstract

Objective: to assess the determinants of exclusive breastfeeding in newborn infants in South Gujarat region of India.Design & Settings: Cross sectional study, conducted at maternity unit of New Civil Hospital, Surat.Participants: Present study was conducted among 480 women, who have delivered at the New Civil Hospital, Surat during July, 2008 to September, 2008. Subjects were selected consecutively until the desired sample size was attained. Various socio-demographic variables, obstetric & health service related factors, and breastfeeding initiation & difficulties were assessed for any influence on exclusive breastfeeding by univariate & logistic regression analyses.Results: Among 480 infants, 85% newborns have received only exclusive breast milk. Remaining 15% newborn infants have received either formula milk (8.5%), or water (2.5%) or honey (4.0%). Various possible determinants for exclusive breastfeeding has shown significant association with newborn`s exclusive breastfeeding situation in logistic regression.Conclusion: Exclusive breastfeeding prevalence rate found higher than at national level indicating better feeding practices which is encouraging. Also, factors classically considered as supportive for breastfeeding had shown association with exclusive breastfeeding pattern in present study.

INTRODUCTION

There is a universal consensus about the fundamental importance of breastfeeding for children`s adequate growth and development and for their physical and mental health. Breastfeeding, particularly exclusive breastfeeding, and appropriate complementary feeding practices are universally accepted as essential elements for the satisfactory growth and development of infants as well as for prevention of childhood illness. This has culminated in a publication by the World Health Organization (WHO) recommending that infants upto 6 months of age should be exclusively breastfed (1). Benefits of breastfeeding like a decrease in the incidence, severity of infectious diseases such as diarrhea, respiratory tract infections, otitis media and urinary tract infection; decreased incidence of types 1 and 2 diabetes mellitus, overweight, obesity and asthma were reported (2). Too early introduction of breast milk substitutes and too late introduction of semi solid complementary feeds are common and are responsible for rapid increase in the prevalence of under nutrition between 6-24 months (3). Exclusive breastfeeding defined by World Health Organization (WHO) as practice of feeding only breast milk (including expressed breast milk) and allows the baby to receive vitamins, minerals or medicines and water, breast milk substitutes, other liquids and solid foods are excluded.

Some studies (4) reveal factors, positively associated with exclusive breastfeeding, such as higher maternal educational level, gestational age greater than 37 weeks, mothers with previous experience of breastfeeding. There are also studies that relate factors leading to interruption of exclusive breastfeeding such as low family income, low maternal age, primiparity and mothers returning to work (5). Several studies intended to define determinant variables in the success or failure of breastfeeding (6, 7), which could ease the planning of promotional strategies. Nevertheless, it is always prudent to consider that, as an eating habit, breastfeeding is intrinsically related to social, cultural and traditional patterns of a given population. This fact justifies need for regional studies that allows more efficient action in regard to measures for intervention, based on knowledge of local reality. The objective of this study was to assess the determinants of exclusive breastfeeding in newborn infants in South Gujarat region.

METHODS

Present study was done in Surat from July, 2008 to September, 2008. Total 480 women who have delivered at

the New Civil Hospital, Surat, India during this period were recruited within three days of delivery. Subjects were selected consecutively until the desired sample size was attained. The sample size calculated was 478 infants, using EPI 6 software with 46% children exclusive breastfed upto 6 months (8), & standard error of 5%. The women who delivered in the district hospital were interviewed during their postpartum period in the hospital. Informed consent was obtained from mothers who agreed to participate in study. Limitation of present study was selection bias as it was a hospital based study. Women recruited for study were from homogenous group and their sociodemographic variables did not differ from those who did not participate in the study.

During interview, we used forms with direct, easy to answer questions and did not open many answering possibilities, requiring short answers. Questions included information on demographic and socio-economic variables of the mothers and on local maternal and infant assistance in addition to children`s eating habits. Questionnaires were checked and coded and a database was created in Epi Info version 3.5.1 software. Logistic regression analysis was then undertaken to explore factors affecting the exclusive breastfeeding.

INDEPENDENT VARIABLES

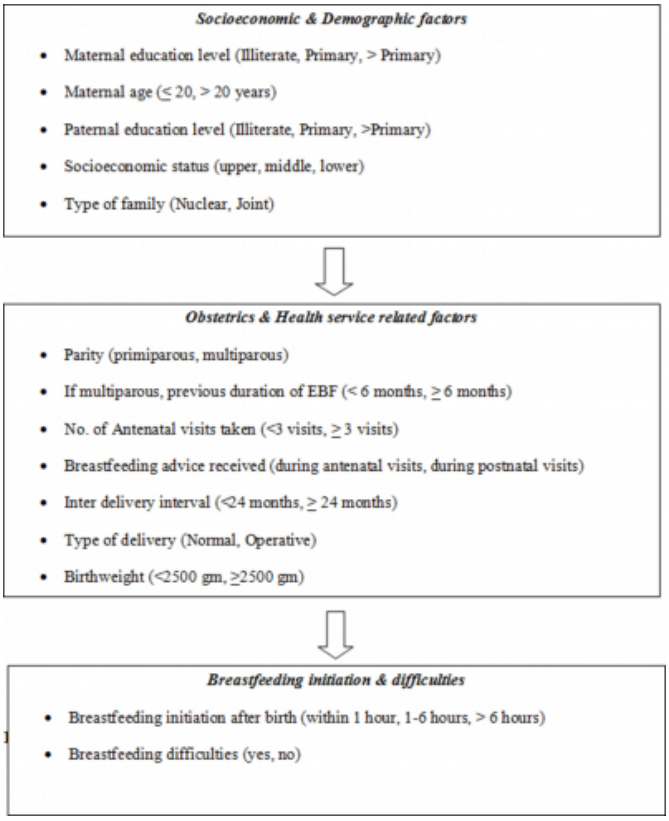
The research variables were selected on the basis of literature, because they were supposed to be factors capable of influencing (yes-no) the infant`s exclusive breastfeeding situation. These factors were grouped in blocks according to hypotheses about the order of precedence in which they influence the type of breastfeeding the child receives (figure 1). Socioeconomic and demographic factors (maternal education, maternal age, paternal education, socioeconomic status, & type of family) were considered as the most distal determinants, which can affect all other lower rank factors. Obstetric & health service related factors (parity, if multiparous – previous duration of EBF, no. of antenatal visits taken, breastfeeding advice received during antenatal & postnatal period, inter delivery interval, mode of delivery, birth weight) were considered intermediary factors which can influence breastfeeding initiation and occurrence of difficulties to start breastfeeding (breast engorgement, nipple cracks, mastitis). The later were proximal determinants of the exclusive breastfeeding situation.

DEPENDENT VARIABLE

The dependent variable under study was the infant`s exclusive breastfeeding situation (yes-no), defined as exclusive breast milk consumption on the day before the study, in line with World Health Organization recommendations (9).

Figure 1

Figure 1: Theoretical model of exclusive breastfeeding situation determinants in infants



RESULTS

Total 480 mother infant pair was selected for this study. In present study, 55% infants were male and 45% were female. Table 1 shows distribution of newborn infants as per type of fluid given after birth. Among 480 infants, 85% newborns have received only exclusive breast milk. Remaining 15% newborn infants have received either formula milk (8.5%), or water (2.5%) or honey (4.0%).

Figure 2

Table 1: Distribution of newborn infants as per type of fluids given after birth

Fluids/Foods	Yes		No	
	No.	%	No.	%
Maternal milk	408	85	72	15.0
Other milk	41	8.5	439	91.5
Water	12	2.5	468	97.5
Honey	19	4.0	461	96.0

Table 2 shows the newborn infant`s distribution according to exclusive breastfeeding related factors from the first, second and third block, as well as univariate and multiple logistic regression analysis results. In first block, variables like maternal & paternal education, socioeconomic status and type of family revealed a significant association with newborn`s exclusive breastfeeding situation in logistic regression. Maternal age, which was considered as a potential factor affecting exclusive breastfeeding has not shown any significance.

Similarly, in second block, previous duration of exclusive breastfeeding among multiparous, number of antenatal visits taken, breastfeeding advice received during antenatal visits & postnatal visits and inter delivery interval more than 24 months have shown significant association with exclusive breastfeeding. Initiation of breastfeeding within one hour of delivery & initial breastfeeding difficulties has shown association with exclusive breastfeeding in third block.

Figure 3

Table 2: Logistic regression analysis of factors influencing decision on exclusive breastfeeding in infants

Variables	Exclusive breastfeeding		Odds Ratio	Confidence Interval (CI) 95%
	Yes (n=407)	No (n=73)		
Block 1: Socioeconomic & demographic variables (%)				
Maternal Education				
>Primary	163 (40.0)	15 (20.5)	1	-
Primary	138 (3.9)	34 (46.6)	2.677	(1.39-5.12)
Illiterate	106 (26.0)	24 (32.9)	2.460	(1.23-4.90)
Maternal Age				
>20 years	369 (90.7)	68 (93.2)	1	-
≤20 years	38 (9.3)	5 (6.8)	0.714	(0.27-1.87)
Paternal education				
>Primary	318 (78.1)	28 (38.4)	1	-
Primary	70 (17.2)	17 (23.3)	2.758	(1.43-5.31)
Illiterate	19 (4.7)	28 (38.4)	16.736	(8.31-33.67)
Socioeconomic status				
Upper	103 (25.3)	7 (9.6)	1	-
Middle	152 (37.3)	29 (39.7)	2.807	(1.18-6.64)
Lower	152 (37.3)	37 (50.7)	3.581	(1.53-8.34)
Type of family				
Joint	128 (31.4)	34 (46.6)	1	-
Nuclear	279 (68.6)	39 (53.4)	0.526	(0.31-0.87)
Block 2: Obstetric & Health service related factors (%)				
Parity				
Multiparity	266 (65.4)	56 (76.7)	1	-
Primiparity	141 (34.6)	17 (23.3)	0.572	(0.32-1.02)
If multiparous, previous duration of EBF				
≥6months	217 (81.6)	27 (48.2)	1	-
<6months	49 (18.4)	29 (51.8)	4.756	(2.58-8.74)
No. of Antenatal visits taken				
≥3 visits (ANC)	330 (81.1)	41 (56.2)	1	-
<3 visits (ANC)	77 (18.9)	32 (43.8)	3.344	(1.97-5.65)
Breastfeeding advice received during Antenatal visits				
Yes	371 (91.2)	46 (63.0)	1	-
No	36 (8.8)	27 (37.0)	6.048	(3.36-10.56)
Breastfeeding advice received during Postnatal visits				
Yes	378 (92.9)	52 (71.2)	1	-
No	29 (7.1)	21 (28.8)	5.263	(2.79-9.90)
Inter delivery interval				
≥24 months	208 (78.2)	29 (51.8)	1	-
<24 months	58 (21.8)	27 (48.2)	3.338	(1.83-6.08)
Mode of delivery				
Normal	361 (88.7)	68 (93.2)	1	-
Operative	46 (11.3)	5 (6.8)	0.577	(0.22-1.50)
Birth weight				
≥2500 grams	227 (55.8)	37 (50.7)	1	-
<2500 grams	180 (44.2)	36 (49.3)	1.227	(0.74-2.02)
Block 3: Breastfeeding initiation & difficulties (%)				
Breastfeeding initiated within				
<1 hour	217 (53.3)	6 (8.2)	1	-
1-6 hours	155 (38.1)	26 (35.6)	6.066	(2.43-15.08)
>6 hours	35 (8.6)	41 (56.2)	42.366	(16.7-107.1)
Breastfeeding difficulties				
No	365 (89.7)	30 (41.1)	1	-
Yes	42 (10.3)	43 (58.9)	12.45	(7.07-21.91)

DISCUSSION

The purpose of this study was to describe determinants of exclusive breastfeeding among newborn infants in South Gujarat region. Exclusive breastfeeding is safe, economical and emotionally satisfying means of feeding babies, particularly in developing country like India. Present study revealed that not all the mothers have started breastfeeding. Out of 480 mothers, almost 85% mothers have started exclusive breastfeeding. Remaining 15% mothers have started breastfeeding but with some prelacteal feed like cow milk, formula milk, water, and/or honey. So, in present study the initiation of exclusive breastfeeding was in 85%, which was higher than the national data (8), while prelacteal feed was 15% which was lower than the national data (8) which was encouraging. This shows that though 15% mothers were not practicing exclusive breastfeeding, findings suggests better image than national level. These may be due to implementation of Integrated Management of Neonatal & Childhood Illness (IMNCI) programme in Gujarat state – a modified form of Integrated Management of Childhood Illness (IMCI) programme promoted by UNICEF. There were several studies (10, 11) recommended implementation of IMNCI in India. Some authors have reported that non breastfed or partially breastfed infants were more at risk of dying than exclusive breastfed infants (12).

In present study, some women practicing EBF expressed their desire to use formula if they could afford it. Therefore, once formula milk products become more readily available and affordable in South Gujarat region, may be EBF will drop below current rate of 85%, as reported similarly by Duong DV et al in their study at rural Vietnam (13). In this study, 15% of babies were not fed colostrums/breast milk as their first meal. Some mothers (8%) believed that colostrum has little value or may even harm the baby`s health, while remaining mothers (7%) have some problem regarding initiation of breastfeeding. The patriarchal nature of Indian society may affect the lactation practices. It has been reported that male babies in India were more likely to be breastfed and/or breastfed for longer (14). However, there was no evidence from this study that gender preference significantly influenced breastfeeding patterns at this stage of infancy, also reported by some authors (13).

Present study showed socio-demographic variables like maternal education, paternal education & socioeconomic status has positive association for influencing decision on exclusive breastfeeding. Similar findings were observed by Agampodi SB et al (15) in their study at Sri Lanka. Number of antenatal visits taken, older maternal age (16), and low birth weight (17) reported positive impact on breastfeeding initiation. Present study reported similar positive findings influencing breastfeeding initiation in infants. Association was found between breastfeeding pattern and variables, classically considered as supportive for breastfeeding such as three or more antenatal visits, breastfeeding advice received during antenatal visits, during postnatal visits, delivery interval 24 months or more, & birth weight 2500 grams or more, in contrast to study of Caldeira AP et al (18). The possible justification for such findings could be excellent execution of maternal and infant care which includes promotion of breastfeeding in health services especially after introduction of IMNCI training in Gujarat state, an Indian modification of Integrated Management of Childhood Illness (IMCI) which promotes exclusive breastfeeding for first 6 months of life. Breastfeeding is a maternal option that involves a complex interaction of socioeconomic, cultural and psychological factors and many more. However, as a socially recreated habit, the role of reproductive and child health services in promotion of breastfeeding should by no means be disregarded.

Early breastfeeding initiation immediately after birth had shown positive association with early breastfeeding establishment in this study. The fact that preventable problems of well known treatment, such as nipple cracks & breast engorgement, were identified as risk factors for the initiation & interruption of exclusive breastfeeding during babies` first week of life. Present study reported initial breastfeeding difficulties as positive risk factor for exclusive breastfeeding disruption. Carvalhaes MABL et al (19) have reported similar findings in their study.

Present study alerts us that in spite of prevalent practice of breastfeeding, promoting and strengthening reproductive and child health services is of paramount importance, since unsatisfactory behavior, regarding exclusive breastfeeding is still observed. Further studies are necessary to correlate the interrelations among these several variables and also other psychological and anthropological questions (not considered in this study) that are known to certainly interfere in breastfeeding practice.

There were several limitations in this study. The study was hospital based and it introduces selection bias. Main clientele was from population attending a tertiary care center and hence it may not be a representative of the general population. Overestimation of proportion of exclusively breastfed may be possible due to selection bias.

CONCLUSION

Exclusive breastfeeding prevalence rate found higher than at national level indicating better feeding practices in these part of India which was encouraging. Also, factors classically considered as supportive for breastfeeding had shown association with breastfeeding pattern in present study, needs more promotion & improvement of maternal & child health services.

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