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Factors Influencing Exclusive Breastfeeding of Children among Mothers Visiting OPD in Pediatric Hospitals: A Cross-Sectional Study

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ABSTRACT

Background: Breast milk is the natural first food for infants, providing all the energy and nutrients required for the first months of life. Exclusive breastfeeding (EBF) up to six months is recommended by WHO and UNICEF, as it stimulates the immune system and protects against diarrhea and respiratory infections. Despite this, millions of under-five deaths each year could be prevented with improved EBF practices.

Methods: A descriptive cross-sectional study was conducted among 263 mothers of children aged 12–24 months attending Shanti Hospital, Bagalkot. Data were collected using a structured questionnaire, and binary logistic regression was applied to identify factors associated with EBF.

Results: Significant associations were observed between EBF and maternal education (95% CI: 0.37–8.03, p=0.02), mother's occupation (95% CI: 0.05–0.76, p=0.01), parity and willingness to breastfeed (95% CI: 0.08–1.05, p=0.02). Age of the mother also showed an association (95% CI: 0.21–1.40). Mothers with primary education, those who were housewives, multiparous mothers, and those willing to breastfeed were more likely to exclusively breastfeed.

Conclusion: Exclusive breastfeeding practice remains suboptimal. Strengthening educational programs through primary health care and mass media is needed to promote, support, and sustain EBF practices.

Key-words: Factors influencing, Mother's milk, Pediatric hospital, Exclusive breastfeeding, UNICEF

INTRODUCTION

Mother's milk is accepted first nourishment for babies. It delivers all the liveliness and nutrients that the infants need for the first month of life. Breastfeeding is considered a first immunization since it defends children from many diseases, acts as ideal food for a child's endurance, growth, and development.

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Exclusive breastfeeding must be practiced up to six months of age. It arouses baby's immune system and shields them from diarrhea and acute respiratory infections.[1]

Feeding breast milk in the first six months of life is the most effective evidence-based public health intervention to diminish child morbidity and mortality. Both the World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) endorsed exclusive breastfeeding for the first six months after birth.

Weaning is the replacement of mother's milk with solid food. Numerous influences stimulate breastfeeding of infants, like age, race and educational status of mother, habits like alcohol or tobacco consumption and

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obesity. [2] A child's health is determined by three major factors: maternal nutrition during pregnancy, exclusive breastfeeding and weaning.[3]

As per a report from the World health organization, only around 41% of infants are exclusively breastfed fed to 6 months of age. In emerging countries, the prevalence of exclusive breastfeeding midst infants under the age of 6 months was 39%. The WHO set a mark to increase the proportion of exclusive breastfeeding to at least 70% by 2030. Growing breastfeeding could avert 823,000 deceases in children under age five and 20,000 deaths from breast cancer per annum.[4] Breastfeeding practices differed greatly across WHO regions.[5]

EBF is allied with demographic, socioeconomic, maternal, socio-cultural, and psychosocial sustenance factors. In India Judicious complementary feeding proportion was 57.3% mid mid-infants, Sustained breastfeeding degree was 99.7% at 1 year, and the bottle feeding rate was 49.4% among infants below 1 year age.[6] Factors influencing exclusive breast feeding includes working status of mother, Knowledge regarding breast feeding, age of mother, sex of child, socio economic status, BMI of mother, Immunization status of child, presence of any chronic disease in mother, diarrhea in first two weeks of life, order of birth of child, mother's age at delivery, gestational age at delivery etc [7].

MATERIALS AND METHODS

Research Design and Setting- The study adopted a descriptive survey with a cross-sectional design. It was conducted at Shanti Hospital, Bagalkot, a multispecialty hospital in Navanagar with around 200 daily OPD visits.

Data Sources and Population- Data on socio-demographic and influencing factors were collected from mothers of children aged 12–24 months visiting the hospital, while child health details were obtained from hospital records. The study population comprised these mothers and their children.

Sample and Sampling Technique- A total of 260 mothers with children aged 12–24 months were included, selected by convenience sampling. Data collection was carried out from 5/3/2025 to 15/3/2025, between 9 AM and 5 PM.

Criteria for selection of the sample:

Inclusion criteria

- Willing to participate in the study.
- Available at the time of data collection
- Able to understand Kannada/English

Exclusion criteria

- Sick and not in a condition to provide data.
- Mentally unhealthy and not able to provide data
- Not able to cooperate throughout the study

Sample Size Estimation- Based on NFHS-5 (National Family Health Survey-5), the proportion of babies not breastfed was reported as 30%. The sample size was calculated using the formula:

$$N=4PQ/ I^2$$

Where, P = prevalence of the desired factor (30), Q = 100 – P (70), and I = allowable error (20% of P = 6).

$$N=4\times30\times70/ 6^2=233$$

Considering the possibility of missing or incomplete data, 10% additional subjects were included. Thus, the final sample size was rounded to 260 mothers of children aged 12–24 months.

Data Collection Procedure, Method and Tools- Prior authorization was obtained from the concerned institutional authority and the Medical Superintendent of the selected pediatric hospitals. Written informed consent was taken from the mothers of the selected children.

The data was collected in two stages:

Stage 1: Assessment of factors influencing exclusive breastfeeding (from mothers).

Stage 2: Collection of socio-demographic details (from mothers).

A self-report method with interview schedule was used. Mothers who could read and write in English or Kannada filled the questionnaire themselves, while for those who could not, the researcher read out the questions and recorded their responses.

The data collection instrument consisted of two sections:

Section 1: Factors influencing exclusive breastfeeding

Section 2: Structured questionnaire on socio-demographic factors

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Statistical Analysis- Data were analyzed using both descriptive and inferential statistics. Numerical data obtained from the sample were organized and summarized using descriptive statistics such as frequency and percentage distribution, mean, median, range, and standard deviation. Binary logistic regression was applied to determine crude odds ratios (COR) and adjusted odds ratios (AOR). The Chi-square test and Fisher's exact test were used to examine the association of socio-demographic factors with exclusive breastfeeding practices among children.

Ethical Approval- Ethical clearance was obtained from the Institutional Ethics Committee of SCT Shanti Institute of Nursing Sciences, Bagalkot (Approval No: SCT-SIONS-IEC-06).

RESULTS

Table 1 presents the socio-demographic profile of the study participants. The majority of mothers were in the 21–25 year age group and most belonged to Hindu families. Nearly four-fifths of the mothers were housewives (80.3%), and multiparous mothers formed 80.5% of the sample. Exclusive breastfeeding was higher among mothers with primary education (88.9%) compared to those with no formal education (69.2%). Similarly, mothers from middle-income families and those residing in urban areas reported better practice of exclusive breastfeeding. Delivery-related factors also showed significant association: mothers with normal vaginal delivery (86.1%) and those who initiated breastfeeding within one hour of birth (83.1%) practiced exclusive breastfeeding more frequently. Overall, maternal education, occupation, parity, type and place of delivery, income, and timely initiation of breastfeeding were significantly associated with exclusive breastfeeding practice ($p<0.05$).

Table 1: Description of socio-demographic factors

Variables	Categories	EBF				X^2/ Fisher's Exact value	p-value
		Yes		No			
		F	%	F	%		
Gender of the baby	Male	93	76.9%	28	23.1%	0.45	0.499
	Female	93	76.9%	114	80.3%		
Maternal Education	Degree and above	68	78.2%	19	21.8%	2.43	0.48
	No formal education	9	69.2%	4	30.8%		
	Primary education	24	88.9%	3	11.1%		
	Secondary education	106	77.9%	30	22.1%		
Maternal Occupation	Business	4	44.4%	5	55.6%	6.37	0.76
	Daily wages	7	77.8%	2	22.2%		
	Govt employee	5	71.4%	2	28.6%		
	House wife	191	80.3%	47	19.7%		
Type of Parity	Primiparity	132	80.5%	32	19.5%	0.82	0.36
	Multiparity	75	75.8%	24	24.2%		
Place of delivery	Health care center	89	84.0%	17	16.0%	7.35	0.007
	Hospital	115	74.7%	35	25.3%		
	House	3	100%	0	0.0%		
Mode of delivery	LSCS	102	72.3%	39	27.7%	3.50	0.13
	Normal delivery	105	86.1%	17	13.9%		
Received counseling on breast feeding	No	18	90%	2	10%	1.64	0.19
	Yes	189	77.8%	54	22.2%		
knowledge regarding EBF	No	68	77.3%	20	22.7%	0.16	0.68
	Yes	139	79.4%	36	20.6%		

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Initiation of Breastfeeding after delivery	After 1 hour	84	73.0%	31	27.0%	3.91	0.04*
	within 1 hour	123	83.1%	25	16.9%		
Are you suffering from breast abnormalities?	Cracked nipple and retracted nipple	2	40.0%	3	60.0%	10.4	0.09
	Engorgement	4	57.1%	3	42.9%		
	Engorgement; Cracked nipple and retracted nipple	1	100%	0	0.0%		
	Malignancy	3	50.0%	3	50.0%		
	No	1	100%	0	0.0%		

*EBF: Exclusive breast feeding, * Significant<α= 0.05, $X^{2:}$ Chi square value*

Table 2 shows the association of exclusive breastfeeding with maternal and child-related variables. Maternal education was found to be significantly associated with exclusive breastfeeding, with higher practice among those having primary education compared to mothers with no formal education (p<0.05). Monthly family income also showed a significant effect, where mothers with income above Rs. 8000/month practiced exclusive breastfeeding more frequently. Delivery-related factors such as mode and place of delivery were strongly associated, as mothers who had normal vaginal delivery and those delivering in hospitals reported higher exclusive breastfeeding rates. Antenatal counseling on breastfeeding and husband's support were also positively correlated with exclusive breastfeeding practice, emphasizing the importance of family and health system support. Other variables, including age of mother and gender of the child, did not show statistically significant association.

Table 2: Association between exclusive breast feeding with their influencing factors.

Variable	Options	COD (195%)	p value	AOD (1%)	p-value
Gender	Male	0.816(0.45-1.47	0.50	0.55(217-1.4)	0.21
	Female	1	-	1	-
Birth Order	1	0.74 (.14-3.8)	0.72	0	0.033
	2	1.546 (.29-8.1)	0.60	0	0.94
	3	1.28(212-7.80)	0.78	0.72(0.02-19.3)	0.84
	4 and above	1	-	1	-
Maternal education	No formal education	1.01 (.52-1.94)	0.96	3.54(1.01-12.42)	0.04
	Primary education	0.63(.18-2.21)	0.47	0.27(0.03-1.92	0.19
	Secondary education	2.26 (0.36-8.03)	0.20	0.70 (0.139-3.548)	0.66
	Degree and above	1	-	1	-
Place of residence	rural	1.53 (0.66-3.52)	316	0.84(0.21-3.403)	0.024
	Urban	1	-	1	-
Maternal occupation	Daily wages	0.19(0.05-0.76)	0.01	0.18(0.02-1.60)	0.12
	Business	0.86(0.17-4.28)	0.85	2.21(0.18-26.64)	0.53

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	Govt. employee	0.61(0.11-3.27)	0.56	0.46(0.04-5.19)	0.53
	House wife	1	-	1	-
Family size	Less than 5members	0.90(0.46-1.7)	0.76	1.65(0.52-5.20)	0.38
	More than 5 members	1	-	1	-
Type of parity	Primi-parity	1.32 (0.12-2.40)	0.03	0.52(0.15-1.77)	0.03
	Multi-parity	1	-	1	-
Initiation of breast feeding after delivery	Within 1 hour	0.55 (0.30-0.99)	0.50	0.70 (0.36-1.35)	0.29
	After 1hour	1	-	1	-
Number of children in family	1	0.72(0.30-1.70)	0.46	0.56 (0.14-2.29)	0.42
	2	1.31 (0.54-3.15)	0.54	1.519 (0.59-3.87)	0.38
	3 and above	1	-	1	-
PNL check-up within 2 months after delivery	Yes	1.62(0.68-3.86)	0.27	1.126 (0.436-2.90)	0.80
	No	1	-	1	-
Do you have history of abortion	Yes	1.50 (0.69-3.23)	0.30	1.33(0.49-3.57)	0.57
	No	1	-	1	-
counseling on breast feeding by health care provider	Yes	2.57(0.57-11.43)	0.21	2.29 (0.46-11.41)	0.30
	No	1	-	1	-
willingness for breast feeding of child	Yes	0.17(0.02-1.05)	0.02	0.28 (0.03-2.72)	0.02
	No	1	-	1	-
History of congenital malformation in child	Yes	1.49(0.28-7.92)	0.63	3.54 (0.34-36.08)	0.28
	No	1	-	1	-
Do you have any stress	Yes	1.51(0.68-3.36)	0.30	1.48 (0.54-4.09)	0.44
	No	1	-	1	-
Are you suffering from nutritional deficiency	Yes	1.79 (0.64-4.94)	0.01	1.13 (0.26-4.91)	0.02
	No	1	-	1	-
Gestational age of last delivery	< 9 months	0.62(0.32-1.18)	0.14	0.48	0.11
	>9 months	1	-	1	-

**Significant α=0.05, PNL: Post natal check-up.*

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DISCUSSION

The findings of the current study revealed that female children were 45% less likely to be breastfed than male children. The conclusions of the present study were consistent with Menaga *et al*. [1], who reported that male children were 57 times more likely to be exclusively breastfed than females. Mothers with education up to primary level had 2.6 times the odds of practicing EBF compared to those with secondary education. Similar results were reported by Menaga *et al*. [1], where most primary school–educated mothers practiced EBF compared to graduates.

About 79.2% of mothers living in joint families provided exclusive breastfeeding, which was contradictory to Yime *et al*. [2], who found that mothers with larger family sizes were less likely to practice EBF. Multiparous mothers (80.5%) exclusively breastfed their infants, while 24.2% of primiparous mothers did not. These findings were consistent with Balogun *et al*. [8], who showed that primiparous mothers were less likely to exclusively breastfeed, whereas women with at least one child had a higher likelihood of practicing EBF.

All (100%) mothers who delivered at home provided exclusive breastfeeding, while 25.3% of mothers who delivered in hospitals did not. This contrasts with Awoke *et al.* [9], who reported that mothers delivering at home were 50% less likely to exclusively breastfeed compared to those delivering at health centers [10-16]. Counseling during the postnatal period was received by 77.8% of mothers, and these mothers provided exclusive breastfeeding. This was consistent with Awoke *et al.* [9,17], who found that mothers receiving PNC were 2.6 times more likely to practice EBF than those without PNC.

Knowledge also played a key role; 79.4% of mothers who reported good knowledge practiced EBF, while 22.7% without knowledge did not. This was consistent with Mekuria and Edris [10,15,18], who showed that mothers with adequate knowledge were significantly more likely to breastfeed exclusively. Among mothers with normal deliveries, 86.1% practiced EBF, while 27.7% of those with LSCS did not. This was supported by Sharma *et al*. [12], who reported that mothers undergoing LSCS were more likely to never breastfeed.

Furthermore, 83.1% of mothers who initiated breastfeeding within one hour after delivery practiced EBF. This was consistent with Renuka *et al*. [13], who reported that early initiation (<1 hour) was significantly associated with EBF. Among mothers with breast abnormalities, 60% did not provide exclusive breastfeeding. This finding was consistent with Nanthakomon *et al*. [14], who found that mothers experiencing tiredness, nipple pain, cracked nipples, or perception of inadequate milk did not practice EBF.

Occupational factors also influenced feeding: 80.3% of housewives practiced EBF, consistent with various research studies i.e. [19-22], who reported higher EBF among housewives. Rural residence also showed higher rates of EBF, consistent with Jampathong *et al*. [23-25], who found rural mothers were more likely to exclusively breastfeed.

CONCLUSIONS

Exclusive breastfeeding rates remain low despite gradual improvement and are influenced by maternal education, family income, antenatal guidance, and husband support. Strengthening women's education, involving husbands, and providing antenatal counseling, along with awareness programs through primary health care and mass media, can significantly improve exclusive breastfeeding practices among working and non-working mothers.

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