

EXCLUSIVE BREASTFEEDING PRACTICE AND MATERNAL EMPLOYMENT AMONG MOTHERS OF INFANTS: A COMPARATIVE CROSS-SECTIONAL STUDY

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ABSTRACT

INTRODUCTION

Exclusive breastfeeding (EBF) practices during first six months of life are the most cost-effective intervention for reducing infant and child morbidity and mortality. However, adherence to EBF practices in developing countries remains unsatisfactory, where maternal employment has been identified as one of the influencing factor. The study aims to identify and compare EBF practices and its factors influencing among employed and unemployed mothers.

MATERIAL AND METHODS

An institutional based comparative cross-sectional study was conducted among 362 mothers of infants visiting the immunization clinic of Universal College of Medical Sciences, Bhairahawa, Nepal, from December 2020 to March 2021 following ethical clearance (UCMS/IRC/114/20) and verbal consent from participants. Descriptive statistics was used to compare EBF practices and multivariate logistic regression to identify independent predictors of EBF.

RESULTS

Total 362 (181 employed and 181 unemployed) mothers were interviewed. Prevalence of EBF was 13.8% and 81.2% among employed and unemployed mothers respectively. Further EBF practice had significant association with working status of mothers (AOR= 15.44, 95% CI 6.76-35.25) and monthly family income (AOR=3.31, 95% CI 1.24-8.84). Among employed, EBF practice had significant association with carry infant to work place (AOR= 12.36, 95% CI 4.35-49.87) whereas type of delivery (AOR= 3.88, 95% CI 1.69-8.90) was significantly associated among unemployed mothers.

CONCLUSION

EBF practices among employed mothers were less than that of unemployed mothers. Provisions to provide additional supports, either by revising the period of maternity leave or adopting different alternatives to prolong the period of EBF may be beneficial for employed mothers and their children.

KEYWORDS

Breast feeding practices, Exclusive breastfeeding, Maternal employment status.

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INTRODUCTION

Proper breastfeeding practices are vital for the growth, development and survival of infants as breast milk provides the required nutrients in appropriate quantities which can be digested easily and further protects child against illness.^{1,2} Thus World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life which includes consumption of only breast milk without supplementation of any other food or drink, not even water except medications in need.³ In developing countries, 45% of infectious deaths, 30% of diarrheal deaths and 18% of acute respiratory deaths among under five children is result of suboptimal breastfeeding.⁴ In spite of the clear benefits only 37% of infants under six months are exclusively breastfed in low and middle income countries.⁵ Various factors related to maternal and child including maternal employment status has endure for the low prevalence of EBF practices.^{6,7} Working women aspects challenges combining their work and adherence to EBF practices in both formal and informal sectors. Their need to return to work due to short maternity leave may influence the adherence to EBF practice as per recommendation.^{2,8}

In Nepal breastfeeding is a universal practice, still concern exists as the trend shows exclusive breastfeeding practice among infants under age six months is decreasing from 70% to 66% from 2011 to 2016 respectively.⁹ Despite implementation of different policy and programmatic investment in behaviour change communication to promote optimal feeding practices for infants, reaching the targets set by WHO is evidencing challenges for developing countries including Nepal.¹⁰

There has been an information gap regarding EBF practices and factors influencing EBF among employed and unemployed mothers in Nepal. Thus this study is aimed to provide evidence for further plan and implementation of an appropriate approach to solve the problem.

MATERIAL AND METHODS

Study design

An institutional based comparative cross sectional study was conducted. After obtaining verbal consent from eligible mothers, face to face interview was conducted using a pretested questionnaire. The questionnaire had different sections including: sociodemographic characteristics, obstetrics factors, health services related factors and knowledge and practice about exclusive breastfeeding.

Study place and duration of study

Study was conducted among mothers of infants visiting the immunization clinic of Universal College of Medical

Sciences, Bhairahawa, Nepal, a tertiary care hospital, from December 2020 to March 2021.

Ethical approval and patient consent

Ethical approval was taken from Institutional Review Committee of Universal College of Medical Sciences (UCMS/IRC/114/20). All the mothers included in the study were informed about the purpose of the study and participated with their verbal consent.

Inclusion criteria

All the employed and unemployed mothers having child of age ≤ 12 months and willing to participate were included in the study.

Exclusion criteria

Employed and unemployed mothers with child of age ≤ 12 months who were unable to be interviewed because of illness and time factor, child who visited for immunization with guardians other than their mothers were excluded from the study.

Sample size and sampling technique

Sample size was calculated by using formula $n = z^2 pq/d^2$ where z is level of significance at 5% = 1.96, $p = 0.66$ (prevalence of exclusive breast feeding 66%)⁹ $q = 1 - p = 0.34$, $d =$ allowable error 5%. The final sample size was estimated to be 362 including 5% non-respondent rate. The total sample of 362 was divided in two groups equally having 181 sample for employed and unemployed mothers respectively. Further purposive consecutive sampling method was used to select the mothers visiting immunization clinic with their child.

Statistical analysis and software used

Data editing, coding and cleaning was done on regular basis. Collected data were entered into SPSS software version 20 for analysis. Descriptive analysis was performed to describe study participants according to different characteristics and proportions were calculated to know the prevalence of EBF. Three models were used for binary logistic regression to identify the factors influencing EBF practice- first for whole sample including employed and unemployed mothers, second only for employed mothers and third only for unemployed mothers. Those variables which were significant with $p < 0.05$ in binary logistic regression were taken into consideration for the processing of multivariate logistic regression model to identify factors affecting EBF practices. Crude and adjusted odds ratios (AOR) were presented with 95% confidence interval to measure the strength of association. Variables with p -value of < 0.05 were declared statistically significant.

RESULTS

Sociodemographic characteristics

From a total of 362 participants, that were interviewed the mean age of the mothers were 27.4 years (± 3.8 years).

Concerning the educational status 151 (83.4%) of employed and 30 (16.6%) of unemployed mothers had SLC and higher education respectively. The majority 175 (96.7%) were Hindu among employed and 123 (68%) among unemployed (Table 1).

Table 1. Sociodemographic characteristics of the study participants

Variables	Maternal employment status	
	Employed (n=181) n (%)	Unemployed (n=181) n (%)
Maternal age		
19-22	5 (2.8)	38 (21)
23-26	27 (14.9)	60 (33.1)
27-30	101 (55.8)	70 (38.7)
>30	48 (26.5)	13 (7.2)
Religion		
Hindu	175 (96.7)	123 (68)
Muslim	6 (3.3)	58 (32)
Ethnicity		
Dalit	0	35 (19.3)
Janjati	66 (36.5)	29 (16)
Madhesi	44 (24.3)	40 (22.1)
Muslim	6 (3.3)	58 (32)
Brhamin/Chhetri	65 (35.9)	19 (10.5)
Maternal Education		
No schooling	0	55 (30.3)
Primary	0	59 (32.6)
Secondary	30 (16.6)	37 (20.5)
SLC and Higher	151 (83.4)	30 (16.6)
Father Education		
No schooling	0	4 (2.2)
Primary	0	27 (14.9)
Secondary	43 (23.8)	83 (45.9)
SLC and Higher	138 (76.2)	67 (37)
Father Occupation		
Service	122 (67.4)	51 (28.2)
Business	50 (27.6)	50 (27.6)
Others	9 (5)	80 (44.2)
Monthly family income (NRs)		
10000-30000	22 (12.2)	133 (73.5)
> 30000	159 (87.8)	48 (26.5)
Type of family		
Nuclear	82 (45.3)	61 (33.7)
Joint	99 (54.7)	120 (66.3)
Parity		
One	79 (43.6)	77 (42.5)
Two-three	102 (56.4)	104 (57.5)
Age of infant		
< 6 month	57 (31.5)	69 (38.1)
6-12 month	124 (68.5)	112 (61.9)
Sex of infant		
Male	93 (51.4)	94 (51.9)
Female	88 (48.6)	87 (48.1)

Knowledge, practice and obstetric characteristics

The majority 160 (88.4%) had heard about EBF, 148 (81.8%) knew about the recommended six-month duration of EBF, 82 (45.3%) were also aware about use of expressed milk for EBF

among employed. Among unemployed mothers few 88 (48.6%) had known about EBF and its duration 82 (45.3%).

EBF practice among employed mothers was very less 25 (13.8%) while among unemployed EBF practice was found to be good, 147 (81.2%). Main reason for non-exclusive breastfeeding among employed mothers was being a working mother 156 (100%) while 34 (100%) of unemployed mother could not exclusively breast fed their child because only breast milk was not enough for their child. Majority 181 (100%) of employed and 177 (97.8%) of unemployed mothers had ANC visits during their pregnancy; 178 (98.3%) of employed and 134 (74%) of unemployed mothers had attended ≥ 4 ANC visits. All of the employed women had an institutional delivery 181 (100%) while few among unemployed 10 (5.5%) had delivered at home (Table 2).

Table 2. Exclusive breastfeeding knowledge, practice and obstetric characteristics among the study population

Variables	Maternal Employment status	
	Employed (n=181) n (%)	Unemployed (n=181) n (%)
Heard about EBF		
Yes	160 (88.4)	98 (54.1)
No	21 (11.6)	83 (45.9)
Meaning of EBF		
Feed only breast milk	160 (88.4)	88 (48.6)
Don't know	21 (11.6)	93 (51.4)
Perceived duration of EBF		
Six month	148 (81.8)	82 (45.3)
Other than six month	31 (17.1)	97 (53.6)
Don't know	2 (1.1)	2 (1.1)
Can expressed milk be used for EBF		
Yes	82 (45.3)	6 (3.3)
No	99 (54.7)	175 (96.7)
Timely initiation of breastfeeding		
Yes	103 (56.9)	129 (71.3)
No	78 (43.1)	52 (28.7)
EBF status		
Yes	25 (13.8)	147 (81.2)
No	156 (86.2)	34 (18.8)
*Reason for Non-exclusive breast feeding		
Decreased milk secretion	1 (0.6)	0
Breast milk not enough	10 (6.4)	34 (100)
Working mother	156 (100)	0
Illness of mother	0	0
ANC check up		
Yes	181 (100)	177 (97.8)
No	0	4 (2.2)
Number of ANC visits		
No ANC visits	0	4 (2.2)
1-3	3 (1.7)	43 (23.8)
≥ 4	178 (98.3)	134 (74)
ANC attended		
Government health Institution	52 (28.7)	122 (68.9)
Private	129 (71.3)	55 (31.1)
ANC service provider		
Doctor	135 (74.6)	55 (31.1)
Other than doctor	46 (25.4)	122 (68.9)
Place of delivery		
Home	0	10 (5.5)
Health institution	181 (100)	171 (94.5)
Type of delivery		
Vaginal delivery	66 (36.5)	116 (64.1)
Caesarean section	115 (63.5)	65 (35.9)

*Multiple choice question

Factors associated with exclusive breastfeeding practice

Mothers who were unemployed were 15.4 times more likely to practice exclusive breastfeeding than employed mothers (AOR=15.44, 95% CI 6.76-35.25). Mothers who had family income NRs10000-30000 (AOR=3.31, 95% CI 1.24-8.84) and had vaginal delivery (AOR=2.49, 95% CI 1.33-4.65) were more likely to practice EBF than those who had family income >30000 and had undergone caesarean section respectively. Multivariate analysis of EBF among employed mothers revealed that working mothers who carried infant to work place (AOR=12.36, 95% CI 4.35-49.87) were 12.3 times more likely to practice EBF. Further on multivariate analysis of EBF among unemployed mothers who had vaginal delivery (AOR=3.88, 95% CI 1.69-8.90) were more likely to practice EBF in comparison to those who had undergone caesarean section (Table 3).

Table 3. Factors associated with exclusive breast feeding practices in three groups-among all participants, among employed mothers and among unemployed mothers

Among both employed and unemployed mothers					
Variables	Exclusive breast feeding Yes	No	Crude OR (95% CI)	Adjusted OR (95% CI)	p-value
Maternal education					
Primary	96 (84.2)	18 (15.8)	1	1	0.31
Secondary	38 (56.7)	29 (43.3)	0.25(0.12-0.49)	0.85(0.31-2.33)	
SLC and higher	38 (21)	143 (79)	0.05(0.03-0.09)	0.41(0.11-1.54)	
Father education					
Primary	28 (90.3)	3 (9.7)	1	1	0.37
Secondary	74 (58.7)	52 (41.3)	0.15(0.04-0.53)	0.54(0.14-2.10)	
SLC and higher	70 (34.1)	135 (65.9)	0.06(0.02-0.19)	1.21(0.25-5.96)	
Father occupation					
Service	57 (32.9)	116 (67.1)	1	1	0.88
Business	48 (48)	52 (52)	1.88(1.13-3.110)	0.95(0.43-2.07)	
Others	67 (75.3)	22 (24.7)	6.2(3.48-11.03)	0.80(0.32-2.0)	
Maternal age					
19-22	32 (74.4)	11 (25.6)	1	1	0.64
23-26	51 (58.6)	36 (41.4)	0.49(0.22-1.09)	0.98(0.34-2.79)	
27-30	71 (41.5)	100 (58.5)	0.24(0.11-0.52)	1.42(0.48-4.17)	
>30	18 (29.5)	43 (70.5)	0.14(0.06-0.35)	1.90(0.50-7.21)	
Working status					
Employed	25 (13.8)	156 (86.2)	1	1	<0.001
Unemployed	147 (81.2)	34 (18.8)	26.98(15.34-47.39)	15.44(6.76-35.25)	
Monthly family income (NRs)					
>30000	52 (25.1)	155 (74.9)	1	1	0.017
10000-30000	120(77.4)	35(22.6)	10.22(6.26-16.69)	3.31(1.24-8.84)	
ANC visits					
<4	40 (80)	10 (20%)	1	1	0.63
≥4	132 (42.3)	180 (57.7)	0.18(0.09-0.39)	1.28(0.46-3.59)	
ANC attended					
Government institution	114 (65.5)	60 (34.5)	1	1	0.25
Private	56 (30.4)	128 (69.6)	0.23(0.15-0.36)	0.36(0.06-2.11)	
ANC service provider					
Doctor	58 (30.5)	132 (69.5)	1	1	0.25
Other than doctor	112 (66.7)	56 (33.3)	4.55(2.92-7.10)	0.34(0.05-2.13)	
Type of delivery					
Caesarean section	58 (32.2)	122 (67.8)	1	1	0.004
Vaginal delivery	114(62.6)	68(37.4)	3.53(2.29-5.44)	2.49(1.33-4.65)	
Factors associated with exclusive breast feeding practices among employed mothers					
Variables	Exclusive breast feeding Yes	No	Crude OR (95% CI)	Adjusted OR (95% CI)	p-value
Maternal education					
Secondary	9(30)	21(70)	1	1	0.87
SLC and higher	16(10.6)	135 (89.4)	0.28(0.10-0.71)	1.47(0.08-27.92)	
Monthly family Income					
>30000	17(10.7)	142(89.3)	1	1	0.71
10000-30000	8(36.4)	14(63.6)	4.77(1.75-13.04)	2.36(0.87-8.76)	
Type of family					
Nuclear	20(24.4)	62 (75.6)	1	1	0.87
Joint	5 (5.1)	94(94.9)	0.16(0.06-0.46)	0.37(0.02-7.81)	
Work Location					
Home	7(77.8)	2 (22.2)	1	1	0.42
Away from home	18 (10.5)	154 (89.5)	0.03(0.01-0.17)	0.56 (0.12-1.23)	

Carry Infant to work place

No	1(0.6)	153(99.4)	1	1	<0.001
Yes	17(94.4)	1(5.6)	28.48(16.12- 232.74)	12.36(4.35-49.87)	

Factors associated with exclusive breast feeding practices among unemployed mothers

Variables	Exclusive breast feeding Yes	No	Crude OR (95% CI)	Adjusted OR (95% CI)	p-value
ANC care provider					
Doctor	39(72.2)	15 (27.8)	1	1	0.89
Other than doctor	106 (86.2)	17 (13.8)	2.40(1.09-5.26)	1.34(0.02-112.54)	
Type of delivery					
Caesarean section	44 (67.7)	21 (32.3)	1	1	0.001
Vaginal delivery	103(88.8)	13(11.2)	3.78(1.74-8.22)	3.88(1.69-8.90)	
ANC attended					
Government institution	106 (86.2)	17 (13.8)	1	1	0.90
Private	39 (72.2)	15 (27.8)	0.42(0.19 0.91)	0.75(0.01 62.47)	

DISCUSSION

The study aimed to identify exclusive breastfeeding practices and associated factors among employed and unemployed mothers. The prevalence of EBF was low 13.8% among employed and high 81.2% among unemployed mothers which is in line with findings of the studies conducted in different parts of Ethiopia.^{7,11,12} Employment status was significantly associated with exclusive breastfeeding practice which is supported by the study done in Ethiopia.¹² Similarly, other studies done in different countries like Canada, Malaysia and Saudi Arabia also reported that maternal employment is a limitation factor for EBF practices.¹³⁻¹⁵ The reason could be short maternity leave period, no child care facilities at work place to carry infant, consecutively influences them to discontinue EBF practice and introduce formula feeding.^{2,16} This finding can be further correlated with the result achieved in this study where employed mothers who carried their infant to work place were more likely to practice EBF. Though the significant association with the practice of going to work with infant had no literature available, findings from other studies which revealed that mothers who had home based work were more likely to exclusively breastfeed their child than mothers who worked outside can be connected.^{17,18} This study revealed that mothers with lower monthly income had significant association with EBF practices, this is in accordance with findings from the study done in Ethiopia and South Africa where lower household income retained a positive predictors of EBF.^{11,19} The reason could be because breastfeeding is the only option for mothers with low family income while mothers with high family income can easily go for breastmilk substitutes.

Regarding the associated factors of EBF among unemployed mothers those who delivered vaginally were more likely to breastfeed exclusively than those who delivered by caesarean section which is in line with the finding of the study from Canada and Ethiopia.^{15,20} It might be due to the fact that mothers who delivered vaginally are more comfortable as compared to those who delivered by caesarean section. Most of them complain of pain and difficulty to attain comfortable position for breastfeeding following caesarean section.

The respondents included in this study were limited to one tertiary hospital. The employment characteristics like work area, time duration, was not included and in addition there might be a recall bias in defining some variables like early initiation of breast feeding, health care practices. Thus, this study does not represent all employed mothers.

CONCLUSION

The prevalence of exclusive breastfeeding practice was low among employed mothers in comparison to unemployed mothers. Thus exclusive breastfeeding practice should be encouraged to support working mothers by extending maternal leave, creating work-site day care centres for infants and conducting health programs on exclusive breastfeeding practices including how to use expressed milk when they are away from their child.

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CONFLICT OF INTEREST

Authors declare that there is no any conflict of interest

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