



Original

Exclusive breastfeeding practices and its predictors among female lecturers in Rivers State, Nigeria

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Abstract

Background: Optimal health benefit of breastfeeding is derived from exclusive breastfeeding (EBF) which is low in developing countries and below the global target of 90% recommended by UNICEF/WHO. This study investigated the practice of EBF and its predictors among female lecturers in Rivers State Nigeria.

Method: This is a cross-sectional study of 381 female lecturers in Rivers State Nigeria selected by multistage sampling method. Information on socio-demographic, knowledge of EBF and breastfeeding practices were collected using a validated self-administered structured survey questionnaire. Univariate and bivariate statistics was done at $p < 0.05$, and the results were presented in tables.

Result: Mean age of participants was 40.21 ± 6.641 years, 168 (75.7%) had good knowledge of EBF while 117 (52.7%) practiced it. EBF practice was associated with social support ($X^2 = 7.961$, $P = 0.005$), duration of breast feeding ($X^2 = 43.379$, $P < 0.0001$) and method of breast feeding when at work ($X^2 = 14.721$, $P = 0.001$). Predictors of EBF were breastfeeding babies for six months (OR = 12.93, 95% CI = 1.605 - 104.144) and expressing breastmilk for baby when at work (OR = 2.576, 95% CI = 1.297 - 5.115)

Conclusion: Two-third of the female lecturers in Rivers State Nigeria had good knowledge of EBF and about half practiced it. Predictors of EBF were breastfeeding for six months and expressing breast milk for baby when at work. Spouses should support female lecturers to breastfed for six months and to express breastmilk for their babies when at work.

Keywords: Exclusive breastfeeding, Breastfeeding, Breastfeeding support, Lecturers, Rivers State Nigeria



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Introduction

Breastfeeding provides adequate nutrition required for growth and development of newborns and infants. Breastmilk contains all the macro- and micronutrients and antibodies required for healthy growth and development of children during the first six months of life.^{1,2} It is an effective public health measure to prevent the development of nutritional disorders in childhood.² Breastfeeding is cultural and is practiced in most societies of the world.^{3,4} In Nigeria, 97% of nursing mothers breastfeed their babies for variable length of time after their birth. However only 29% feed their babies exclusively on breast milk for the first six months.⁵ In a study among women in academia in Rivers State 97.5% breastfed their babies for variable duration of time while 61.5% practiced exclusive breastfeeding.⁶ Exclusive breastfeeding is the practice of feeding newborns with breastmilk alone with exception of vitamins and mineral supplements, and medicines, in the first six months of life and continued up to two years with the addition of complementary household foods.^{7,8} It is an effective strategy to protect the newborn and infants from preventable communicable diseases of childhood in addition to guaranteeing safe, adequate, and high-quality nutrition to newborns and infants. Exclusive breastfeeding has beneficial effects on both mother and child. For instance, it has been reported that early initiation of breast-feeding increases bonding between mother and child, prevents breast and ovarian cancers as well as diabetes to mothers and preventable death to the children.¹ Furthermore, it protects against childhood infectious diseases especially diarrheal diseases, asthma and allergic conditions associated with formula milk, improvement in the cognitive functions and educational performance of children under-5.^{1,8-10}

Poor practice of exclusive breastfeeding has been reported despite very high breastfeeding behaviour of nursing mothers.⁶ Several factors have also been reported as reasons for this gap in breastfeeding behaviour and practice of exclusive breastfeeding among mothers despite their awareness of the benefits of exclusive breastfeeding and government policies on exclusive breastfeeding like the International Code on Marketing of Breast milk substitutes.¹ These factors include myths of the inadequacy of breastmilk to provide the required nutrients for the babies, inability of breast milk alone to quench thirst of babies, colostrum is bad milk, strong influence of marketing of breastmilk substitutes which undermines the self-efficacy of mothers to exclusively breastfeed their babies, return to work, cultural practices, and beliefs, etc.^{1,6,11}

A study among mothers attending immunization clinic in Enugu found an association between EBF practice and maternal education, maternal occupation, sex of baby, etc among nursing mothers.¹ Reports on the predictors of exclusive breastfeeding among female lecturers in Rivers State Nigeria is sparse, hence the need for this study. The findings of this study may provide guidance in the development of programs to promote exclusive breastfeeding practices among nursing mothers.

Method

Study area

This study was done in Rivers State, one of the States in Niger Delta Zone of Nigeria. The State is comprised of 23 Local Government Areas (LGAs) with Port Harcourt as its capital and a projected population of 6.2 million.¹² Tertiary institutions in the State are six consisting of three universities, two polytechnics and one College of Technical Education. There are also two public tertiary care health facilities, 18 secondary level health facilities, 384 public and 211 private primary level health facilities that provide healthcare services including prenatal, natal, and postnatal services to women in the State.¹³ Most of these health facilities are baby friendly hospitals that promote exclusive breastfeeding.

Study design and population

This is a cross-sectional study done among female lecturers in the tertiary institutions in Rivers State who have or has had at least one living child and breast fed their last child. Female lecturers who are living with HIV/AIDS, nulliparous, adopted their last babies and those whose last deliveries were more than five years were excluded in this study.

Sample size determination

Sample size determination was done using the Cochran's formula for single population study⁶: $n = Z^2pq/d^2$ where n is minimum sample size required; Z is the standard normal deviate corresponding to 95% confidence level (1.96), p is an assumed prevalence of exclusive breastfeeding (61.5%) = 0.615;¹⁶ $q = 1-p = 0.385$ and d is the degree of precision (5%) = 0.05. A minimum sample size of 364 was determined however this was increased to 400 to accommodate for a 10% non-response.

Sampling method

A multistage sampling method was adopted to select 400 participants for the study. Stage one: four out the six tertiary institutions in Rivers State, Nigeria was selected by simple balloting.

Stage two: a simple random sampling technique was used to select ten departments in each of the selected institutions.

Stage three: a simple random sampling technique was used to select ten female lecturers in each Department using their nominal rolls as sampling frame.

Data collection and analysis

A validated self-administered structured survey questionnaire used in a previous study was used for data collection.⁶ The survey tool consists of four sections.

Section A: socio-demographic characteristics of respondents,

Section B: history of breastfeeding,

Section C: knowledge of exclusive breastfeeding

Section D: breastfeeding practices of respondents.

Data analysis was done using IBM SPSS Statistics version 22 and results were presented in frequency tables. Univariate statistics was done using percentages for categorical variables and means for continuous variables, Chi square (X^2) test was used to determine association between explanatory variables and exclusive breastfeeding while predictors of exclusive breastfeeding were done using binary logistic regression analysis. Explanatory variables with statistically significant association with exclusive breastfeeding were used in the binary logistic regression analysis. The level of statistical significance was set at $P < 0.05$.

Dependent variables

Table 1: Sociodemographic characteristics of respondents (n=222)

Variables	Frequency	Percentage
Age of commencement of complementary feeding (months)*		
≤ 6	222	58.3
>6	159	41.7
Designation		
Graduate assistant	42	18.9
Assistant Lecturer	74	33.3
Lecturer 2	68	30.6
Lecturer 1	19	8.6
Senior Lecturer	13	5.9
Associate Professor	4	1.8
Professor	2	0.9
Marital status		
Married	207	93.2
Single/Separated	7	3.2
Widow	8	3.6
Age (years)		
22 – 29	7	3.2
30 – 39	113	50.9
40 – 49	75	33.8
50 – 59	27	12.2

1. Practice of exclusive breastfeeding: This was determined as the proportion of women who fed their babies with breast milk only for six months and commenced complementary feeding from the sixth month.

2. Knowledge of exclusive breastfeeding: this was determined using a knowledge score derived from a set of eight questions on a three-point Likert's scale that assessed the knowledge of exclusive breastfeeding among the female lecturers. Each correct answer was scored one point and zero for incorrect or I don't know. Respondents who scored 5 points and above were assessed as having good knowledge of exclusive breastfeeding.

Ethical approval

The Ethics and Review Committee of the Rivers State University Teaching Hospital Port Harcourt, Nigeria gave ethical approval for the study. Participants freely gave written informed consent after the assurance of the confidentiality of their information and their safety in the study.

Results

A total of 381 lecturers participated in this study out of the 400 selected, giving a non-response rate of 4.75%. Among the participants, 222 (58.3%) commenced complementary feeding at the sixth months or less and were included in this analysis.

Variables	Frequency	Percentage
Mean age (SD)	40.21(6.64)	
Highest professional qualification of respondent		
< Postgraduate	65	29.3
Postgraduate	157	70.7
Husband's educational qualification		
< Bachelor's degree	89	40.1
Bachelor's degree or more	133	59.9
Religious denomination		
Catholic	33	14.9
Protestant	19	8.6
Pentecostal	137	61.7
Traditional	2	0.9
Muslim	2	0.9
Others	29	13.1
Mean number of children (SD)	3.02 (1.18)	

*n = 381

Table 1 shows that nearly all (n = 207, 93.2%) the participants were married with mean age of 40.21 ± 6.64years. About one in five (n = 19, 8.5%) of them were senior cadre academics: senior lecturer and above while 157 (70.7%) had postgraduate qualifications.

Table 2: Duration of breastfeeding and knowledge of exclusive breastfeeding among respondents (n = 222)

Variables	Frequency	Percentage (%)
Duration of breastfeeding (months)		
1	16	7.2
2	8	3.6
3	30	13.5
4	31	14.0
5	20	9.0
6	117	52.7
Knowledge of EBF		
Poor	54	24.3
Good	168	75.7

Table 2 shows that more than one-half (n = 117; 52.7%) of the mothers fed their babies on only breast milk for six months. Three-quarter (n = 168, 75.7%) of the mothers had good knowledge of exclusive breastfeeding.

Table 3: History of breast feeding of the respondents. (n = 222)

Variables	Frequency	Percentage
First food given at birth of last child		
formula milk	11	5.0
breast milk	204	91.9
gripe water	7	3.2
Frequency of breastfeeding		
> 4 times daily	133	59.9
On demand	79	35.6
three times daily	7	3.2
4 times daily	3	1.4
Duration of each breast feed		
> 20 mins	77	34.7
< 10 mins	20	9.0
10 - 20 mins	125	56.3
Method of breast feeding when at work		
I visit the creche to breast fed my baby	42	18.9
I express milk for my baby at home	98	44.1
I provide formula milk to feed my baby	82	36.9
Received social support		

Variables	Frequency	Percentage
Yes	137	61.7
No	85	38.3
Sources of social support for exclusive breast feeding*		
Husband	58	26.1
House help	41	18.5
Mothers/siblings	83	37.4
In-laws	18	8.1
Neighbours/friends	6	2.7
Experienced breastfeeding problem		
Yes	89	40.1
No	133	59.9
Have knowledge on management of breastfeeding problem		
Yes	102	45.9
No	120	54.1

*multiple options

Almost all the babies (n = 204, 91.9%) had breast milk as first meal, and approximately two-third (n = 133, 59.9%) were fed more than 4 times daily with each breast feed lasting 10 -20 minutes in 125 (56.3%) of the babies. Two-third (n = 137, 61.7%) of the mothers received social support for breast feeding mostly from their mothers/siblings (Table 3).

Table 4: Factors associated with exclusive breastfeeding among the respondents

Variables	Exclusive breastfeeding		X ²	P value
	Yes	No		
Social support				
Yes	62	75	7.961	0.005*
No	55	30		
Had breastfeeding problem				
Yes	42	47	1.810	0.178
No	75	58		
Duration of breastfeeding (months)				
< 6	9	39		<0.000*
6	24	1	43.379	
7 - 12	47	43		
> 12	37	22		
Knowledge of EBF				
Poor	23	31	2.926	0.087
Good	94	74		
Age				
50 – 59	17	10	3.153	0.369
22 – 29	3	4		
30 – 39	54	59		
40 – 49	43	32		
Method of breastfeeding when at work				
I visit the creche to breast fed my baby	21	21	14.721	0.001*
I express milk for my baby at home	65	33		
I provide formula milk to feed my baby	31	51		
Know how to manage breastfeeding problems				
Yes	61	41	3.817	0.051
No	56	64		
Marital status				
Married	108	99		
Single/Separated	5	2	1.031	0.597
Widow	4	4		

* $P < 0.05$ (Statistically significant)

Table 4 shows that there is a statistically significant association between exclusive breast feeding and social support ($X^2 = 7.961$, $P = 0.005$), duration of breast feeding ($X^2 = 43.379$, $P < 0.000$) and method of breast feeding when at work ($X^2 = 14.721$, $P = 0.001$) but not with knowledge of breast feeding ($X^2 = 2.926$, $P = 0.087$) or marital status ($X^2 = 1.031$, $P = 0.597$).

Table 5: Logistic regression analysis of predictors of exclusive breast feeding among respondents

Variables	P value	Adjusted Odd Ratio	95% C.I. of EXP(B)	
			Lower	Upper
Lack of social support	0.095	0.585	0.312	1.098
Had social support	Reference			
Duration of breastfeeding (months)	0.000			
< 6	0.000	0.150	0.059	0.378*
6	0.016	12.930	1.605	104.144*
7 - 12	0.305	0.696	0.348	1.392
>12	Reference			
Method of breastfeeding when at work	0.018			
I visit the creche to breast feed my baby	0.682	1.192	0.514	2.763
I express milk for my baby at home	0.007	2.576	1.297	5.115*
I provide formula milk to feed my baby	Ref			
Constant	0.363	1.448		

a. Variable(s) entered on step 1: social support, duration of breastfeeding, feeding method when at work. * $P < 0.05$ (Statistically significant)

Table 5 shows that only method of breastfeeding at work and duration of breastfeeding are predictors of exclusive breastfeeding. Respondents who express breast milk for their babies at home when at work are two and half times more likely to practice exclusive breastfeeding compared to those who provide formula milk to feed their babies when at work (OR = 2.6; 95% CI = 1.297 – 5.115). Compared to mothers who breastfed their babies for more than 12 months, those who breastfed their babies for only six months were approximately 13 times more likely to practice exclusive breastfeeding (OR = 12.930; 95% CI = 1.605 – 104.144) and those who breastfed for less than six months were about seven times less likely to practice exclusive breastfeeding (OR = 0.150; 95% CI = 0.059 – 0.378).

Discussion

Breastfeeding is an accepted cultural practice in most ethnic groups in Nigeria and children are breastfed for variable period.¹⁴ Feeding babies with milk only for at least the first six months is still low despite proven health benefits to both mother and baby.¹ In sub-Saharan Africa, exclusive breastfeeding rate has been reported to range from 23.7% - 56.5% in the general population.¹⁴ This is below the 90% exclusive breastfeeding coverage recommended by UNICEF.^{6,14,15} This study therefore sought to determine the predictors for the practice of exclusive breastfeeding among female lecturers in Rivers State Nigeria.

This study found that 52.7% of mothers lecturing in the tertiary institutions in Rivers State Nigeria practiced exclusive breastfeeding. This finding agrees with the exclusive breastfeeding rates of 52.6% reported among mothers attending immunization clinic in Owo, Ondo State Nigeria and 58.8% among mothers in South-west Nigeria.^{14,16} Some studies have reported higher prevalence of exclusive breastfeeding.^{6,17} For instance, exclusive breastfeeding rate of 68.3% was reported in a facility-based study in a peri-urban community and 61.5% among women in academia.^{6,17} These studies were institution-based and may account for higher exclusive breastfeeding rate found among their

population. Other studies in Nigeria have reported lower prevalence of exclusive breastfeeding.^{1,2,18} For instance, 42.7% of nursing mothers who were attending immunization clinics in Enugu Nigeria practiced exclusive breast feeding, 28.5% among bankers in Mainland Local Government Area of Lagos Nigeria and 18.6% among nursing mothers employed in healthcare facilities in Kano.^{1,2,18} Women employed in banks and health industry have demanding work schedules which may not allow for exclusive breastfeeding beyond the statutory three months maternity leave.¹⁸ This could account for the lower exclusive breastfeeding rate among this population.

Our study found that social support ($P = 0.005$), duration of breastfeeding ($P < 0.0000$) and method of breastfeeding when at work ($P = 0.001$) were associated with the practice of exclusive breastfeeding. However, only duration of breastfeeding ($P < 0.00001$) and method of breastfeeding at work ($P = 0.018$) predicted exclusive breastfeeding among women lecturing in tertiary institutions in Rivers State Nigeria. Women who breastfed for six months were about 13 times more likely to have practiced exclusive breastfeeding compared to those who breastfed for over 12 months (OR = 12.93; 95% CI: 1.605 – 104.144). Furthermore, women who expressed breast milk for their babies at home when at

work were 2.5 times more likely to have practiced exclusive breastfeeding compared to those who feed their babies with formula milk when at work (OR = 2.576; 95% CI: 1.297 – 5.115). Women who did not receive social support were 58% less likely to have practiced exclusive breastfeeding compared to those who receive social support (OR = 0.585; 95% CI: 0.312 – 1.098). Breastfeeding can be stressful, painful, or pleasurable depending on maternal circumstances.¹⁹ For nursing mothers who have excess academic workload as university lecturers, exclusively breastfeeding their babies beyond the statutory three months maternity leave granted them by their institutions could be an arduous task. Successful practice of exclusive breastfeeding will consequently require commitment on the part of the nursing mother and support from husbands and family members. The findings in our study therefore may suggest that women who aim to feed their babies on breast milk for six months and those who leave expressed milk for their babies when at work are committed to exclusive breastfeeding given its overall benefit to the child and mother.^{1,8-10,16,20} Success at exclusively breastfeeding may also be enhanced if nursing mothers receive social support for breastfeeding. Other studies have reported age of index child, level of education of mother, type of marriage and delivery,¹⁷ single mother parenthood,²⁰ frequency of ANC attendance,¹⁵ or having breastfeeding problem as predictors of exclusive breastfeeding.¹⁴ These factors were not associated with exclusive breastfeeding in our study.

Implications of the findings of the study

The main implication of the findings of this study is that nursing mothers in academics will require motivation to practice exclusive breastfeeding given their challenge of high academic workload. This motivation may be by social supports from their spouses and supportive work environment by the provision of creches at work and flexibility in work schedules that can permit nursing mothers breast feed their babies at work.

Strengths and limitations of the study

The strength of this study is that it has provided information for planning of effective programmes to strengthen exclusive breastfeeding practices, especially among nursing mothers in academia, which will contribute to achieving the SDG 2 targets of ending hunger and all forms of malnutrition among vulnerable populations including infants.¹ This cross-sectional study however suffers the limitation of recall bias as respondents recruited have practiced exclusive

breastfeeding within the last five years prior to the study. Furthermore, the findings may not be generalizable to exclusive breastfeeding practices among mothers in other occupations.

Conclusion

The predictors of exclusive breastfeeding among female lecturers in tertiary institutions in Rivers State, Nigeria were duration of breastfeeding and method of feeding babies when mothers are at work. Therefore, it is recommended that spouses should support their female lecturers to breastfeed for six months and to express breastmilk for their babies when at work. Similarly, institutions, agencies, and governments should support exclusive breastfeeding through flexibility of work schedules and/or increase in maternity leave period for female lecturers in their employment.

Declarations

Ethical Consideration: The Ethics and Review Committee of the Rivers State University Teaching Hospital Port Harcourt, Nigeria gave ethical approval for the study. Participants freely gave written informed consent after the assurance of the confidentiality of their information and their safety in the study.

Authors' Contribution:

BOO: Conceptualization, design of the study, data analysis, final draft

GOI: Data collection, interpretation of data, initial draft, review of final draft

NVB: Literature search, Data collection, review of initial and final draft,

SUK: Literature search, Data collection, review of final draft

Conflict of interest: The authors declare no conflict of interest.

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