



EFFECT OF SOCIO-CULTURAL FACTORS ON THE KNOWLEDGE OF BREASTFEEDING PRACTICES, ATTITUDE TOWARDS EXCLUSIVE BREASTFEEDING AND PRACTICE OF EXCLUSIVE BREASTFEEDING AMONG NURSING MOTHERS IN URBAN AND RURAL HEALTH FACILITIES IN RIVERS STATE, NIGERIA

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ABSTRACT

Background: Breastfeeding is important in child's development and survival. Exclusive breastfeeding (EBF) period of 6 months has been recommended by World Health Organisation (WHO) to reduce infant mortality. However, socio-cultural factors result in sub-optimal breastfeeding practices in many developing countries including Nigeria.

Objective: To compare the effect of socio-cultural factors on the knowledge of breastfeeding practices, attitude towards EBF and EBF practice among nursing mothers attending the child welfare clinic in rural and urban health facilities in Rivers State.

Methods: A comparative cross-sectional study involving 252 nursing mothers who attended child welfare clinic at the selected health facilities in Obio-Akpor and Emohua LGAs and were recruited by systematic sampling. Semi-structured questionnaire was used to collect data on socio-demographic factors, knowledge, attitude and practice of breastfeeding. The results were analyzed using SPSS version 3.2.2 with appropriate tables and figures generated.

Results: The overall knowledge of various breastfeeding practices (P -value= 0.003) and overall attitudes towards EBF (P -value= 0.044) among the participants were statistically significant. The prevalence of EBF among nursing mothers in the urban and rural areas were 66.7% and 54.0% respectively (P -value= 0.039). The determinants of EBF were age, occupation, education, delivery setting and breastfeeding preference of couples, friends and culture.

Conclusion: The knowledge, attitude and practice of various breastfeeding methods are higher in the urban than the rural regions of Rivers State and EBF practice is influenced by socio-cultural factors.

Recommendations: Enlightenment on the importance of breastfeeding should be increased especially in the rural communities. The social well-being of individuals which influences EBF practice should be ensured by the government.

KEYWORDS: Breastfeeding, Exclusive breastfeeding, Knowledge, Attitude, Practice, Urban, Rural, Rivers State



INTRODUCTION

Breastfeeding plays a pivotal role in child's well-being, growth and development by providing essential nutrients¹. Breast milk provides nutritional factors which offer immunity from immediate and long-term illnesses such as obesity, diabetes, asthma and, dermatological diseases in children; it has been found to be the most cost-effective and simplest intervention to protect the lives of babies who are prone to infection². Nursing mothers also derive both physical and mental health benefits during lactation. Irrespective of the fact that breastfeeding helps in postpartum involution of the uterus and acts as a form of postpartum contraception; it also plays part in the return of maternal weight to pre-pregnancy state, reduction in the risk of breast or ovarian cancer, as well as cardiovascular disease³. Early initiation of breastfeeding helps in the composition and stability of the gut microbiome which aid in the easier digestion of solids which in turn prevent gut diseases later in life⁴.

WHO defined EBF as the intake of only breast milk in the first 6 months of life and no food or drinks not even water except oral rehydration salt and syrups (vitamins and other medicine) and if medically indicated⁵. The best easily absorbable nutrients to infants are derived from EBF. It gives passive immunity thereby serving as the first immunization for the baby, contributes in mental development and provides long term protection against non-communicable diseases such as diabetes mellitus and obesity⁶.

Various factors influence exclusive breastfeeding practices. These factors include health, psychosocial, cultural, social, and economic factors⁷. Studies have shown that the decisions regarding exclusive breastfeeding in low-income countries are influenced by education, employment, place of delivery, family pressure, and cultural values⁸⁻¹⁰.

Exclusive breastfeeding practice has been observed to be affected by certain socio demographic factors such as age, marital status, level of education and occupation¹¹. A study conducted in Cross River revealed that 64% of married women practice exclusive breastfeeding while only 8.3% women not married practice exclusive breastfeeding and also many employed mothers were unable to meet up with the once every 2-3 hours requirement of EBF¹².

The positive impacts of breastfeeding mainly EBF in the decline in mortality rates in children of African origin, particularly Nigerians are evident. Despite these benefits, neonatal mortality in African countries particularly in Nigeria has not reduced. Such deaths can be prevented by creating awareness on the socio-cultural factors affecting knowledge, attitude and practice of EBF.

There are minimal studies on the effect of socio-cultural factors on the knowledge, attitude and practice of EBF in Nigeria. Very few of the available studies were conducted in Rivers State and all were conducted in the urban health facilities thus, the nursing mothers in the rural region of the state were not considered. This actually showed a knowledge gap which this study aims to provide answers to. Due to the scarcity of studies on this topic in Nigeria, more studies are needed to increase the body of evidence and also to aid in intervention design to increase the awareness of EBF which will subsequently reduce childhood mortality in Nigeria.

METHODOLOGY

Study Area: The study was conducted in Obio-Akpor and Emohua Local Government Areas (LGAs) which are among the LGAs in Rivers State. Obio-Akpor is in the metropolis of Port Harcourt; one of the major centres of economic activities in Nigeria and one of the major cities of the Niger Delta. It covers 260km² and has a population of 464,789¹³. It is an oil-producing area and the prevalent occupation of indigenes are fishing, farming and trading. It consists of 17 electoral wards and the headquarters is at Rumuodomaya. Emohua consists of fourteen political wards and its headquarters is in the town of Emohua. It has an area of 831km² and a population of 201,901¹³. The predominant occupation of indigenes is farming. This study was conducted in four selected (two from each LGA) baby- friendly hospitals that provided primary level of care in the LGAs.

Study Population: The study population were nursing mothers who satisfied the inclusion criteria and attended child welfare clinic in the selected health facilities in Obio-Akpor and Emohua LGAs.

Study Design: The study was a comparative cross-sectional study of nursing mothers who satisfied the inclusion criteria and attended child welfare clinic in the selected health facilities in Obio-Akpor and Emohua LGAs.

Study Tool: Semi-structured, interviewer-administered questionnaire adapted from WHO.

Sample Size: The sample size was 252 comprising 126 nursing mothers who attended child welfare clinic in two primary health facilities in Emohua LGA representing rural health facilities in Rivers State and equal number of nursing mothers who attended child welfare clinic in two primary health facilities in Obio-Akpor LGA representing urban health facilities in Rivers State. It was determined by a cochrane formula for comparison of proportion. Prevalence estimated from urban (50.0%)¹⁴ and rural (68.0%)¹⁵ studies on breastfeeding. A non-responding rate of 10% was used.



Sampling Techniques: Four primary health facilities (two in Emohua LGA representing rural health facilities and two in Obio-Akpor LGA representing urban health facilities) were selected out of the primary health facilities in these LGAs using simple random sampling technique. Multi-Stage sampling method was used to recruit participants. After obtaining consent, all nursing mothers who attended child welfare clinics of the selected health facilities were screened to determine those who satisfied the inclusion criteria. The first eligible nursing mother who was the starting point of selection was recruited randomly. The sampling fraction was used to recruit other participants until the sample size was complete.

Data Collection: Semi-structured, interviewer-administered questionnaire adapted from WHO was used to obtain information after a signed consent was obtained from the nursing mothers. The data collected were the socio-demographic factors of these nursing mothers and questions on knowledge, attitude and practices pertaining to breastfeeding. The dependent variable was breastfeeding practice while independent variables were socio-demographic factors, knowledge and attitudes that influence breastfeeding practices. The interview was conducted by the researcher and four research assistants. The research assistants were nurses (one from each selected health facility) who were trained on the study protocol (such as the content of the questionnaire and the consent form) for a duration of two days.

Data Analysis: Data were entered, cleaned and analyzed using Epi info statistical package version 3.2.2, CDC, Atlanta Georgia,

USA. Data were summarized using proportions for categorical data and mean and standard deviation for continuous data. Comparison of proportion was determined using chi-square. Significant variables (p value < 0.05) at bivariate level were fed into a multivariate model to compute adjusted odd ratio with a 95% confidence interval. Results were presented using tables and figures.

Ethical Consideration: The ethical approval was obtained from the Ethical Review Committee of the University of Port Harcourt. Participation in the study was voluntary. Written informed consent was obtained from each participant after adequate counseling, and data obtained from the study were treated with confidentiality and solely for the study. The benefits of the study (such as education and enlightenment on breastfeeding practices) and the risks (such as encroachment on participant's time and privacy) were explained to each participant.

Limitations of the Study

1. The study design being a cross-sectional (snapshot) was a limitation. A prospective cohort study which will follow up to observe the long-term benefits of EBF would have been more representative.
2. The findings may not be representative of the situation of breastfeeding practices in the two LGAs since only nursing mothers who attended child welfare clinic in the selected health facilities were recruited for the study

RESULTS

Table 1: Socio-demographic characteristics of the study participants

Variable	Rural n=126(%)	Urban n=126 (%)	Total N=252(%)	χ^2	p-value
Age (years)					
< 20	6 (4.8)	4 (3.2)	10 (4.0)	1.627	0.653
20 – 29	57 (45.2)	61 (48.4)	118 (46.8)		
30 – 39	48 (38.1)	51 (40.5)	99 (39.3)		
≥ 40	15 (11.9)	10 (7.9)	25 (9.9)		
Mean ± SD	30.16 ± 6.33	29.59 ± 6.67		0.698 ^t	0.486
Range	18 – 45	16 – 45			
Marital status					
Married	111 (88.1)	126 (100.0)	237 (94.0)	17.254 ^F	<0.001*
Divorced	3 (2.4)	0 (0.0)	3 (1.2)		
Separated	12 (9.5)	0 (0.0)	12 (4.8)		
Occupation					
Civil servant	34 (27.0)	33 (26.2)	67 (26.6)	13.224	0.010*
Farmer	27 (21.4)	9 (7.1)	36 (14.3)		
Housewife	28 (22.2)	32 (25.4)	60 (23.8)		
Student	0 (0.0)	2 (1.6)	2 (0.8)		
Trader	37 (29.4)	50 (39.7)	87 (34.5)		



Education					
No education	0 (0.0)	4 (3.2)	4 (1.6)	5.176 ^F	0.153
Primary	16 (12.7)	22 (17.5)	38 (15.1)		
Secondary	72 (57.1)	64 (50.8)	136 (54.0)		
Tertiary	38 (30.2)	36 (28.6)	74 (29.4)		
Husband occupation					
Artisan	4 (3.2)	4 (3.2)	8 (3.2)	14.318 ^F	0.007*
Civil servant	39 (31.0)	54 (42.9)	93 (36.9)		
Clergy	4 (3.2)	0 (0.0)	4 (1.6)		
Engineer	0 (0.0)	2 (1.6)	2 (0.8)		
Farmer	28 (22.2)	12 (9.5)	40 (15.9)		
Trader	51 (40.5)	54 (42.9)	105 (41.7)		
Husband education					
No education	3 (2.4)	0 (0.0)	3 (1.2)	5.514 ^F	0.121
Primary	18 (14.3)	16 (12.7)	34 (13.5)		
Secondary	66 (52.4)	57 (45.2)	123 (48.8)		
Tertiary	39 (31.0)	53 (42.1)	92 (36.5)		

χ^2 : Chi square test; F: Fisher's exact test; t: Independent Samples T test; *: *p* value <0.05

A total of 252 respondents were enrolled for the study; comprising 126 nursing mothers from two primary health facilities in Emohua LGA representing rural health facilities in Rivers State and equal number of nursing mothers from two primary health facilities in Obio-Akpor LGA representing urban health facilities in Rivers State.

Maternal age: The highest number of participants in both rural and urban health facilities were within the age range of 20 – 29 years 118 (46.8%) while the lowest number in both facilities were less than 20 years 10 (4.0%). The mean age of participants in the rural health facilities was 30.16±6.33 while that for urban health facilities was 29.59±6.67. The Chi-square value of 0.698 (*P*-value = 0.486) indicated no statistically significant difference in the ages of participants.

Marital status: All the respondents in the urban health facilities were married 126 (100.0%) and 111 (88.1%) rural participants were married. The Chi-square value of 17.254 (*P*-value < 0.001) which was statistically significant.

Occupation: Majority of participants in both rural and urban health facilities were traders, civil servants and house-wives 87

(34.5%), 67 (26.6%) and 60 (23.8%) respectively. This was statistically significant. Chi-square value of 13.224 (*P*-value = 0.010).

Education: Among the 74 (29.4%) respondents who had tertiary level of education; 38 (30.2%) were from the rural health facilities while 36 (28.6%) were from the urban health facilities. Furthermore, 72 (57.1%) out of the 136 (54.0%) participants with secondary level of education lived in the village. These were not statistically significant.

Husband occupation: Of the 252 husbands, 105 (41.7%) were traders and 93 (36.9%) were civil servants. The Chi-square value of 14.318 (*P*= 0.007) which was statistically significant.

Husband education: There was no statistically significant difference in the educational status of the participants' husbands (*P*= 0.121). The total number of those with secondary level of education were 123 (48.8%) and those with tertiary level of education were 92 (36.5%).

Table 2: Knowledge of respondents about various breastfeeding practices

Variable	Rural n=126(%)	Urban n=126(%)	Total N=252(%)	χ^2	<i>p</i> -value
Exclusive breastfeeding is important					
Yes	122(96.8)	126(100.0)	248(98.4)	4.065 ^F	0.122
No	4(3.2)	0(0.0)	4(1.6)		
Colostrum nutritionally beneficial to the child					
Yes	118(93.7)	126(100.0)	244(96.8)	8.262 ^F	0.007*
No	8(6.3)	0(0.0)	8(3.2)		



Exclusive breastfeeding improves child's immunity					
Yes	120(95.2)	124(98.4)	244(96.8)	2.066 ^F	0.281
No	6(4.8)	2(1.6)	8(3.2)		
Is it important to initiate breastfeeding within 1hr of birth					
Yes	111(88.1)	117(92.9)	228(90.5)	1.658	0.198
No	15(11.9)	9(7.1)	24(9.5)		
Exclusive breast feeding can prevent diarrhea in child					
Yes	105(83.3)	108(85.7)	213(84.5)	0.273	0.601
No	21(16.7)	18(14.3)	39(15.5)		
Breastfed infants grow faster than formula fed					
Yes	104(82.5)	116(92.1)	220(87.3)	5.155	0.023*
No	22(17.5)	10(7.9)	32(12.7)		
Duration of EBF					
< 6 months	49(38.9)	81(64.3)	130(51.6)	22.073	<0.001*
6 months	58(46.0)	42(33.3)	100(39.7)		
> 6 months	19(15.1)	3(2.4)	22(8.7)		
Breastfeeding should be combined with other feeding options within 6 months					
Yes	46(36.5)	74(59.2)	120(47.8)	12.949	<0.001*
No	80(63.5)	51(40.8)	131(52.2)		

χ^2 : Chi square test; F: Fisher's exact test; *: p value <0.05

The entire nursing mothers 126 (100.0%) who attended child welfare clinic in the urban health facilities said exclusive breastfeeding was important while 122 (96.8%) of the participants from the rural health facilities agreed that exclusive breastfeeding was important (P -value= 0.122). All the participants 126 (100.0%) from the urban health facilities were of the opinion that colostrum was nutritionally beneficial to the children but 118 (93.7%) of their counterparts from the rural health facilities had similar opinion. The Chi-square value was 8.262 and (P -value= 0.007) which was statistically significant. Of all the participants from the urban health facilities, 2 (1.6%) of them did not agree that exclusive breastfeeding improves child's immunity while the remaining 124 (98.4%) agreed. Furthermore, as 120 (95.2%) respondents from the rural health facilities believed that child's immunity gets improved by exclusive breastfeeding; 6 (4.8%) participants from the same facilities affirmed negatively (P -value= 0.281). One hundred and seventeen (92.9%) nursing mothers from the urban health facilities agreed that initiation of breastfeeding within one hour of birth is important while 111 (88.1%) of participants from the rural health facilities had similar view. However, 9 (7.1%) participants from the urban health facilities and 15 (11.9%) from the rural health facilities disagreed with them. There was no

statistically significant difference between the two arms of study with respect to the importance of initiation of breastfeeding within one hour of birth (P -value= 0.198).

Slightly more of the participants 108 (85.7%) from the urban health centers said that exclusive breastfeeding could prevent diarrhea when compared with 105 (83.3%) from the rural health centers with the same view (P -value= 0.601). One hundred and sixteen (92.1%) positive responses were obtained from the urban health facilities' participants on the knowledge that breastfed infants grow faster than formula fed as opposed to 104 (82.5%) from the rural health facilities' participants (P -value= 0.023). More of the nursing mothers 58 (46.0%) from the rural health facilities were aware that exclusive breastfeeding should be for a period of six months when compared with 42 (33.3%) from the urban facilities and this showed a significant difference statistically, Chi-square value of 22.073 (P -value < 0.001). The knowledge about if breastfeeding should be combined with other feeding options within 6 months of birth showed a statistically significant difference (P -value < 0.001). Eighty (63.5%) respondents from the rural health facilities and 51 (40.8%) from the urban facilities disagreed the addition of other feeding options to breastfeeding within 6 months of birth.



Table 3: Overall knowledge of respondents about various breastfeeding practices

Knowledge of Exclusive breastfeeding	Rural n (%)	Urban n (%)	Total N (%)	χ^2	p-value
Adequate	41 (32.5)	48 (38.1)	89 (35.3)	11.716	0.003*
Moderate	67 (53.2)	75 (59.5)	142 (56.3)		
Poor	18 (14.3)	3 (2.4)	21 (8.3)		

χ^2 : Chi square test; *: p value <0.05

There was statistically significant difference in the overall knowledge of various breastfeeding practices by the participants. Most of the participants 142 (56.3%) had moderate knowledge about various breastfeeding practices. Forty-eight (38.1%) participants from urban health facilities had adequate knowledge

of breastfeeding practices while 41 (32.5%) participants from rural health facilities were adequately knowledgeable about various breastfeeding practices. The Chi-square value was 11.716 (P-value= 0.003).

Table 4: Attitude of respondents towards exclusive breastfeeding

Variable	Rural n (%)	Urban n (%)	Total N (%)	χ^2	p-value
Breastfeeding should be on demand					
Agree	66(52.4)	103(81.7)	169(67.1)	26.557	<0.001*
Disagree	39(31.0)	19(15.1)	58(23.0)		
Unsure	21(16.7)	4(3.2)	25(9.9)		
Mother-child bonding increase by breastfeeding					
Agree	108(85.7)	120(95.2)	228(90.5)	8.657 ^F	0.011*
Disagree	6(4.8)	0(0.0)	6(2.4)		
Unsure	12(9.5)	6(4.8)	18(7.1)		
Formula feeding better than breastfeeding					
Agree	13(10.3)	20(15.9)	33(13.1)	8.430	0.015*
Disagree	94(74.6)	100(79.4)	194(77.0)		
Unsure	19(15.1)	6(4.8)	25(9.9)		
Mothers' shape changes with breastfeeding					
Agree	83(65.9)	111(88.1)	194(77.0)	26.900	<0.001*
Disagree	6(4.8)	9(7.1)	15(6.0)		
Unsure	37(29.4)	6(4.8)	43(17.1)		
EBF is time-consuming/more demanding					
Agree	73(57.9)	114(90.5)	187(74.2)	34.975	<0.001*
Disagree	41(32.5)	10(7.9)	51(20.2)		
Unsure	12(9.5)	2(1.6)	14(5.6)		
Breastfeeding should continue till 2 years					
Agree	88(69.8)	48(38.1)	136(54.0)	28.605	<0.001*
Disagree	36(28.6)	64(50.8)	100(39.7)		
Unsure	2(1.6)	14(11.1)	16(6.3)		
Breast milk only is adequate for first 6 months					
Agree	75(59.5)	89(70.6)	164(65.1)	12.897	0.002*
Disagree	49(38.9)	27(21.4)	76(30.2)		
Unsure	2(1.6)	10(7.9)	12(4.8)		
Babies should be given water while being exclusively breastfed					
Agree	39(31.0)	21(16.7)	60(23.8)	14.500 ^F	<0.001*
Disagree	87(69.0)	97(77.0)	184(73.0)		
Unsure	0(0.0)	8(6.3)	8(3.2)		

χ^2 : Chi square test; F: Fisher's exact test; *: p value <0.05



One hundred and three (81.7%) nursing mothers from the urban health facilities agreed that breastfeeding should be on demand while 66 (52.4%) from the rural health facilities had similar opinion. Chi-square value of 26.557 (P -value < 0.001). Out of the 228 (90.5%) participants that agreed that breastfeeding increase mother-child bonding 120 (95.2%) were from the urban primary health centers while 108 (85.7%) came from the rural primary health centers (P -value= 0.011). One hundred (79.4%) respondents from the urban region and 94 (74.6%) from the rural region disagreed that formula feeding was better than breastfeeding. Thirty-three (13.1%) of participants agreed that formula feeding was better than breastfeeding while the remaining 25 (9.9%) were unsure (P -value= 0.015). One hundred and eleven (88.1%) urban participants and 83 (65.9%) from the rural area affirmed that breastfeeding changes mothers' shape. Thus, a total of 194 (77.0%) out of the 252 participants agreed that mothers' shape changes with breastfeeding (P -value < 0.001).

With respect to exclusive breastfeeding being time-consuming/more demanding. A total of 187 (74.2%) participants were of the view that exclusive breastfeeding was time-consuming/more demanding. One hundred and fourteen (90.5%) of those with this view were from the urban health facilities (P -value < 0.001). The number of participants that agreed that breastfeeding should continue till 2 years were more in the rural health facilities 88 (69.8%) while more of those from the urban health centers believed it should not be continued till 2 years 64 (50.8%). The Chi-square was 28.605 (P -value < 0.001). Regarding adequacy of breast milk only for the first 6 months of life; 75 (59.5%) of mothers from the rural region and 89 (70.6%) from the urban region had similar opinion (P -value= 0.002). Ninety-seven (77.0%) of respondents from the urban centers and 87 (69.0%) of their rural counterparts disagreed that babies should be given water while being exclusively breastfed (P -value < 0.001).

Table 5: Overall attitude of respondents towards exclusive breastfeeding

Attitude towards exclusive breastfeeding	Rural n (%)	Urban n (%)	Total N (%)	χ^2	p -value
Positive	93 (73.8)	106 (84.1)	199 (79.0)	4.038	0.044*
Negative	33 (26.2)	20 (15.9)	53 (21.0)		

χ^2 : Chi square test; *: p value <0.05

A total of 199 (79.0%) of participants had positive attitude towards exclusive breastfeeding comprising 106 (84.1%) from

the urban health centers and 93 (73.8%) from the rural health centers (P -value= 0.044).

Table 6: Breastfeeding practices of respondents

Variable	Rural n (%)	Urban n (%)	Total N (%)	χ^2	p -value
Your child's first feed					
Breast milk	101(80.2)	108(85.7)	209(82.9)	1.460	0.482
Formula	8(6.3)	5(4.0)	13(5.2)		
Glucose water	17(13.5)	13(10.3)	30(11.9)		
Time of initiation of breastfeeding					
After 24 hours	19(15.1)	7(5.6)	26(10.3)	6.203	0.045*
Within 1 hour	69(54.8)	78(61.9)	147(58.3)		
Within 2-6 hours	38(30.2)	41(32.5)	79(31.3)		
Frequency of breastfeeding					
At random	40(31.7)	49(38.9)	89(35.3)	3.519	0.172
At specific intervals	29(23.0)	18(14.3)	47(18.7)		
On demand	57(45.2)	59(46.8)	116(46.0)		
Breastfed baby exclusively					
Yes	68(54.0)	84(66.7)	152(60.3)	4.244	0.039
No	58(46.0)	42(33.3)	100(39.7)		

χ^2 : Chi square test; F: Fisher's exact test; *: p value <0.05

Out of the 209 (82.9%) mothers who gave breast milk to their children as their first feed 108 (85.7%) were from Urban health facilities while 101 (80.2%) were the rural counterparts. Thirty (11.9%) participants fed their babies first with glucose water

while 13 (5.2%) gave formula (P -value= 0.482). Seventy-eight (61.9%) of urban health centers respondents and 69 (54.8%) from the rural health centers initiated breastfeeding within 1 hour of birth. The next in rank was the commencement of



breastfeeding within 2-6 hours of birth 79 (31.3%). Few participants started breastfeeding after 24 hours of birth 26 (10.3%). The number of urban respondents who fed their children on demand were only 2 (1.6%) higher than the rural respondents while those that breastfed at random were almost

twice 89 (35.3%) that of those that breastfed at specific intervals 47 (18.7%). One hundred and fifty-two (60.3%) participants breastfed exclusively comprising 84 (66.7%) urban participants and 68 (54.0%) rural participants while 100 (39.7%) did non-EBF. Chi-square value 4.244 and (P -value= 0.039).

Table 7: Association between determinants of EBF and practice of EBF among respondents in Urban health facilities

Variable	Do you do exclusive breastfeeding?			χ^2	p value
	Yes n (%)	No n (%)	Total N (%)		
Number of antenatal visit					
> 3	34 (66.7)	17 (33.3)	51	0.000	1.000
≤ 3	50 (66.7)	25 (33.3)	75		
Husband's feeding preference					
EBF	70 (87.5)	10 (12.5)	80	42.799	<0.001
Non EBF	14 (30.4)	32 (69.6)	46		
Your feeding preference					
EBF	72 (85.7)	12 (14.3)	84	41.143	<0.001
Non EBF	12 (28.6)	30 (71.4)	42		
Cultural feeding preference					
EBF	67 (74.4)	23 (25.6)	90	8.575	0.003
Non EBF	17 (47.2)	19 (52.8)	36		
Delivery setting					
Home	7 (25.9)	20 (74.1)	27	25.667	<0.001
Hospital	77 (77.8)	22 (22.2)	99		
Delivery method					
C Section	9 (81.8)	2 (18.2)	11	1.245 ^F	0.334
Vaginal	75 (85.2)	40 (34.8)	115		
Friends' breastfeeding practice					
EBF	62 (75.6)	20 (24.4)	82	8.451	0.004
Non EBF	22 (50.0)	22 (50.0)	44		

χ^2 : Chi square test; F: Fisher's exact test

The number of antenatal visits was not statistically significant (P -value= 1.000). Seventy (87.5%) respondents breastfed exclusively based on their spouses preference while 14 (30.4%) whose husbands preferred infant feeding actually breastfed exclusively. The Chi-square was 42.799 (P -value < 0.001). Furthermore, 72 (85.7%) nursing mothers from the urban health facilities practiced exclusive breastfeeding based on their preference while 12 (28.6%) of those who did not prefer exclusive breastfeeding ended up breastfeeding exclusively (P -value < 0.001). Sixty-seven (74.4%) respondent from background that preferred exclusive breastfeeding were noticed to practice exclusive breastfeeding while 17 (47.2%) of their

counterparts from communities that did not encourage exclusive breastfeeding actually practiced exclusive breastfeeding (P -value= 0.003). Seventy-seven (77.8%) participants who had hospital supervised delivery and 7 (25.9%) with home delivery practiced exclusive breastfeeding (P -value < 0.001). Nine (81.8%) participants who had caesarean section breastfed exclusively while 75 (85.2%) of those with vaginal delivery did exclusive breastfeeding (P -value= 0.334). Sixty-two (75.6%) nursing mothers from urban health centers chose similar exclusive breastfeeding method as their friends while 22 (50.0%) participants whose friends did non-EBF actually breastfed exclusively (P -value= 0.004).

**Table 8: Association between determinants of EBF and practice of EBF among respondents in Rural health facilities**

Variable	Do you do exclusive breastfeeding?		Total N (%)	χ^2	p value
	Yes n (%)	No n (%)			
Number of antenatal visit					
> 3	16 (51.6)	15 (48.4)	31	0.092	0.762
≤ 3	52 (54.7)	43 (45.3)			
Husband's feeding preference					
EBF	68 (66.7)	34 (33.3)	102	34.759	<0.001
Non EBF	0 (0.0)	24 (100.0)	24		
Your feeding preference					
EBF	67 (69.8)	29 (30.2)	96	40.637	<0.001
Non EBF	1 (3.3)	29 (96.7)	30		
Cultural feeding preference					
EBF	61 (62.9)	36 (37.1)	97	13.493	<0.001
Non EBF	7 (24.1)	22 (75.9)	29		
Delivery setting					
Home	12 (37.5)	20 (62.5)	32	4.683	0.030
Hospital	56 (59.6)	38 (40.4)	94		
Delivery method					
C Section	9 (52.9)	8 (47.1)	17	0.008	0.927
Vaginal	59 (54.1)	50 (45.9)	109		
Friends' breastfeeding practice					
EBF	60 (74.1)	21 (25.9)	81	36.905	<0.001
Non EBF	8 (17.8)	37 (82.2)	45		

χ^2 : Chi square test; F: Fisher's exact test

It was observed that more women with less antenatal visits practices EBF (P -value= 0.762). Sixty-eight (66.7%) of respondents whose spouses preferred exclusive breastfeeding actually breastfed exclusively while none of those whose husbands preferred non- exclusive breastfeeding practiced exclusive breastfeeding (P -value < 0.001). Sixty-seven (69.8%) of the participants who preferred exclusive breastfeeding ended up practicing it while only 1 (3.3%) participant among those that preferred non-exclusive breastfeeding practiced exclusive breastfeeding (P -value < 0.001). Of all the participants that came from the culture that have preference for exclusive breastfeeding 61 (62.9%) of them breastfed exclusively while 7 (24.1%) of those from background that advocated non-exclusive breastfeeding used exclusive breastfeeding method. Chi-square value of 13.493 and (P -value < 0.001). Of the 68 participants that practiced exclusive breastfeeding 56 (59.6%) had hospital supervised delivery while 12 (37.5%) had home delivery (P -value= 0.030). Fifty-nine (54.1%) of the respondents who had vaginal delivery exclusively breastfed their babies while 9 (52.9%) of those delivered via caesarean section practiced exclusive breastfeeding (P -value= 0.927). Sixty (74.1%) mothers whose friends exclusively breastfed their babies practiced exclusive breastfeeding while 8 (17.8%) of those whose friends used infant feeding option other than exclusive

breastfeeding practiced exclusive breastfeeding (P -value < 0.001).

DISCUSSION

In this study the nursing mothers in the urban region of Rivers State had more knowledge of various breastfeeding practices and also showed more positive attitudes towards breastfeeding as opposed to their counterparts in the rural part of the State. The prevalence of EBF among nursing mothers in the urban and rural regions of Rivers State were 66.7% and 54.0% respectively.

Adequate knowledge about breastfeeding practices is a basic tool that directs the course of EBF practice among mothers¹⁶. The mothers in the urban region of Rivers State had higher (38.1%) adequate knowledge of the different breastfeeding practices compared to (32.5%) found in their rural counterparts. The knowledge of breastfeeding practices in these regions was shown in their EBF practice because it was found out that 66.7% of breastfeeding mothers in the urban health facilities in the State breastfed their babies exclusively while the prevalence of EBF in rural health facilities was 54.0%. This could be explained by the fact that mothers in the urban area are more likely to have access to health information. A cross-sectional study in Osogbo, Osun State Nigeria indicated that 97.6% of



mothers had knowledge of EBF but only 64.6% had adequate knowledge and their higher knowledge about breastfeeding correlated with longer duration of practice¹⁷. Despite the fact that it showed more adequate knowledge of breastfeeding, it was a community-based study, non-comparative and evaluated only EBF. A study by Gurung et al also agreed that good level of knowledge of EBF among women of reproductive age group corresponds to higher EBF practice¹⁸. However, a Nigeria study by Abdulmaleek et al concluded that irrespective of high level of knowledge on EBF and positive attitude only half of the respondents practiced EBF¹⁹.

More of the breastfeeding mothers living in the urban (84.1%) in Rivers State had positive attitudes towards EBF as opposed to 73.8% from the local areas of the State who had similar attitudes. It was also discovered that the EBF was also higher in nursing mothers in the urban region of the State. This agreed to the study by Dukuzumuremyi et al that concluded that positive maternal attitudes towards breastfeeding are associated with the zeal to continue to breastfeed longer and having a greater chance of successful breastfeeding; in addition, mothers with a positive attitude towards breastfeeding were likely to exclusively breastfeed their infants²⁰. Based on the Food and Agriculture Organization (FAO) guidelines thresholds suggestive of nutrition intervention, an attitude score of $\leq 70\%$ is considered urgent for nutrition intervention. All mothers who scored $> 70\%$ in the attitude test were considered to have a positive attitude and those scoring $\leq 70\%$ were considered to be less positive²¹. However, this index study allotted a positive attitude score to be 50%. A Nigerian survey in 2015 reported EBF rate of 23.7% for the country and 27.2% for South-south region²². The survey showed a low prevalence of EBF which could be due to low advocacy on child's survival strategy such as EBF and the knowledge about EBF as at that time.

Socio-demographic characteristics were found to be among the determinants of EBF. Irrespective of the fact that the practice of EBF was higher in mothers who were urban dwellers socio-demographic characteristics such as maternal age (ranged 30-39 years), marriage, occupation such as civil service or trading and higher educational levels were found to increase the practice of EBF in Rivers State. Married nursing mothers were found to practice EBF more than their counterparts who belonged to other marital status. The following factors were found to increase the practice of EBF; couples who preferred EBF, cultural preference of EBF, hospital delivery and mothers whose friends breastfed exclusively. However, it was observed that the higher the number of antenatal visits the reduction in the practice of EBF. A community-based cross-sectional study on factors affecting EBF practice in rural communities of Cross River State, Nigeria agreed that factors that affect EBF include; socio demographic factors such as age, marital status, level of education and occupation¹¹. Though the study took into

consideration the rural dwellers it did not compare them with those living in the urban regions of the State as this current study did. A cross sectional study in three comprehensive health centers located at Neni, Ukpo and Nnewi communities of Anambra State, Nigeria concluded that EBF was significantly associated with maternal older age, parity, delivery at government facility, positive family attitude towards EBF and breastfeeding education from government health facility²³. This had a similar conclusion with respect to family preference of EBF and hospital supervised delivery but deferred with maternal age because in this current study mothers at the extremes of reproductive life had the least EBF practice rate.

CONCLUSION

The knowledge, attitude and practice of various breastfeeding methods are higher in the urban than the rural regions of Rivers State and EBF practice is influenced by socio-demographic and socio-cultural factors.

RECOMMENDATIONS

1. Breastfeeding practices should be given a priority during antenatal health education.
2. Advocacy on the importance of breastfeeding should be stepped-up especially in the rural communities.
3. The social well-being of individuals which influences EBF practice should be ensured by the government.

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