

Knowledge, Attitude and Practice of Exclusive Breastfeeding among Mothers of Under-Five Children in Oshodi/Isolo Local Government in Nigeria

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Research Article

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Abstract

Background: Malnutrition is the underlying contributing factor, making children more vulnerable to severe diseases. Exclusive Breastfeeding (EBF) is critical for achieving global nutritional goals, health and survival, environmental growth, and sustainability.

AIM: This study was carried out to determine the knowledge, attitude, and practice (KAP) of exclusive breastfeeding among mothers of children under five in Oshodi/Isolo Local Government Area, Lagos State.

Methodology: A descriptive cross-sectional study was applied. Three wards were selected using a random sampling method, 10 streets from each ward. Respondents who met the inclusion criteria in each selected ward were used for the study. With this, a total of 274 mothers of under five in Oshodi/Isolo Local Government Area, Lagos State, Nigeria were included. Data was collected using a structured interview administered questionnaire and analyzed with Epi-info version 7.0 software package. The questionnaire is composed of five sections.

Result: More than half (69.71%) of the respondents had a good knowledge of EBF. 95.99% of respondents were found to have a positive attitude towards EBF. The practice of exclusive breast feeding was also found to be good (62.04%). Factors found to be associated with practice of EBF in this study were hindrance from work (49.32%), frequent hunger when breastfeeding (75.91%) and weight gain when exclusively breastfeeding (42.70%). There was a statistically significant association between the comparison of marital status, occupation, and level of education, to knowledge of exclusive breastfeeding of the respondents, the *p* values were 0.02, 0.001, 0.0001, respectively. There was also a statistically significant association between the level of education and practice of exclusive breastfeeding (*p* = 0.003); practice of EBF and its knowledge (*p* < 0.01) and attitude (*p* < 0.019).

Conclusion: Respondents had good knowledge of EBF with a majority reporting a positive attitude towards it. More than half of them had good practice for EBF. However, programs towards correcting the misconceptions of mothers regarding colostrum and breast milk should be intensified.

Keywords: Breastfeeding; KAP; WHO; United Nations children's fund.

Abbreviations

EBF: Exclusive breastfeeding; WHO: World Health Organization; UNICEF: United Nations International Children's Fund; BFHI: Baby Friendly Health Initiative; NDHS: Nigerian Demographic Health Survey; ARI: Acute Respiratory Infection; ORS: Oral Rehydration Solution; HIV: Human Immunodeficiency Virus; NEC: Necrotizing Enterocolitis; AAP: American Academy of Pediatrics; IgA: Immunoglobulin A; IQ: Intelligence Quotient; RDA: Recommended Daily Allowance; EPIC: European Prospective Investigation into Cancer; HAMLET: Human Lactalbumin Made Lethal to Tumor Cells; AML: Acute Myeloid Leukemia; HL: Hodgkin's Lymphoma; ALL: Acute Lymphocytic Leukemia; IYCF: Infant and Young Child Feeding; ILO: International Labour Organization; BF: Breast Feeding; LGA: Local Government Area

Introduction

Background of the Study

Breastfeeding is one of the most effective ways to ensure child health and survival. Breastfeeding is critical for achieving global nutritional goals, health and survival, environmental growth, and sustainability. Breastfeeding should begin within the first hour of life, be sustained exclusively for the first six months, and be supplemented with safe and sufficient foods for up to two years of age, in accordance with recommendations from the World Health Organization, or WHO, and the United Nations Children's Fund (UNICEF). As the ideal form of nutrition for babies and infants, breastfeeding is vigorously advocated by the World Health Organization. If breastfeeding were scaled up to near universal levels, about 820 000 child lives would be saved [1]. Breast milk contains appropriate amounts of carbohydrates, fat, protein, it also provides minerals, vitamins and digestive enzymes and hormones. It also contains antibodies and lymphocytes that help the baby to resist infections. The composition of breast milk changes over a single feed as well as over the period of lactation. Colostrum contains more lactalbumin and lactoprotein, and being rich in antibodies that confer passive immunity to the newborn, also called "foremilk". Colostrum's protective qualities are also important for your baby's digestive system. Babies are born with a permeable gut lining, which is colostrum coats and seals. This is particularly important if your baby is premature, as she'll be more at risk from the dangerous gut condition necrotizing enterocolitis (NEC) [2]. It is also rich in minerals and vitamins, with higher concentrations of vitamins A, E and K than mature breast milk.

A baby that is exclusively breastfed (EBF) only drinks breast milk and isn't given any other supplements, including food, drinkable water, juice, or non-human milk, except for vitamins, minerals, and prescription drugs. The nutrition and energy required for growth and development are supplied exclusively by breastfeeding for the first six months. Breastfeeding maintains food security after six months by giving the energy and nutrients required to fend off malnutrition, hunger, and obesity. Just 40% of babies under the age of six months are exclusively breastfed globally. Exclusive breastfeeding has an important role in the prevention of different forms of childhood malnutrition like stunting, wasting, over and underweight and micronutrient deficiencies. It has been shown to be the best natural resource to improve childhood nutrition throughout the world [3]. EBF is also beneficial to the mother because it provides a cost-effective means of feeding the child while promoting lactation amenorrhea which is a form of contraceptive for the mother, and this is important in child spacing. Apart from this, the potential of certain cancers like breast and ovarian cancer is reduced in mothers that correctly practice EBF [4]. The fundamental cause that increases children's susceptibility to serious illnesses is malnutrition. About 45% of deaths in children under the age of five are caused by variables related to nutrition. Worldwide, approximately 45 percent of

newborns are nursed within the first hour following delivery, and only 25 percent of infants younger than six months are exclusively breastfed [5].

There are significant regional differences in the application of advised EBF. Within an hour of delivery, approximately 40% of babies are nursed in West and Central Africa, South Asia, and Eastern and Southern Africa, and 63% of babies are breastfed in these regions. In East Asia and the Pacific, barely 1 in 4 children aged 20-23 months remain breastfed, whereas over two out of every three in South Asia continue to be breastfed at the 2-year mark. This indicates significant regional differences in breastfeeding rates. Western and Central African children seemed to be at a clear disadvantage compared to their Eastern and Southern African counterparts when data from five breastfeeding-related factors were analyzed regionally [6]. In Nigeria, although underweight rates were stable between 2007 and 2011 at around 25%, the rate increased slightly to 29% in 2013. It was also found that the prevalence of malnutrition was higher in Northwest geographical zone which is the zone with the poorest practice of exclusive breastfeeding [7]. This proves that exclusive breastfeeding protects under five children from malnutrition. Optimal breastfeeding especially exclusive breastfeeding for the six months of a child's life, is therefore a bold step in reducing the level of under nutrition in Nigeria.

Exclusive breastfeeding is an important determinant of whether a child lives or dies. It also affects their quality of life both as children and as adults. Lack of breast feeding, especially lack of exclusive breast feeding, during first few months of life are important risk factors for infant and childhood morbidity and mortality in the world and specifically Nigeria [8,9]. It is estimated that suboptimal breast-feeding, especially nonexclusive breastfeeding in the first six months of life results in 1.4 million deaths. The victims of suboptimal feeding practices are the children who pay with their lives through frequent infections triggered by inappropriate use of substitutes and their mothers whose more frequent pregnancies are detrimental to both their health and socio-economic wellbeing [10].

As of 2021, exclusive breastfeeding for the first six months was poorly practiced in Nigeria. Only about one in ten (13%) infants below six months of age were exclusively breastfed. Younger infants were more likely than older ones to be solely breastfed among those under six months old; 20% of newborns under two months and just 7% of infants between four and five months were exclusively breastfed. Only 75% of children aged 6-9 months are breastfeeding while receiving complementary foods [11]. This raises concerns regarding the low level of exclusive breastfeeding compliance among mothers of children under five, even despite the Nigerian government's encouragement for the practice, which is why this study is necessary. The purpose of the study is to evaluate the knowledge, attitude, and practice (KAP) of EBF in mothers of under-five at Oshodi/Isolo Local Government Area in

Nigeria. Additionally, it seeks to identify the variables linked to KAP of EBF in those mothers. The goal of this study is to increase the body of knowledge about EBF practices and offer more data that can be utilized in the planning of interventions and policy to support mothers who engage in good EBF practices.

Methodology

Description of the Study Area and Design

Lagos is one of the 36 states in Nigeria. It shares boundaries with Ogun State both in the North and East and is bounded on the west by the Republic of Benin. In the South it stretches for 180 kilometers along the coast of the Atlantic Ocean. The city is the most populous in Nigeria with an estimated population size of 21 million as at 2016, which makes it the largest and most populous city in Africa [12]. Lagos is a major financial center in Africa; the megacity has the highest GDP¹ and houses one of the largest and busiest ports on the continent². The total population of under 5 children in Lagos is 1,151,869¹. Oshodi/Isolo is a Local Government Area within Lagos state with a population of 1,000,509¹. Oshodi/Isolo LGA consists of 11 wards, and it shares proximity with Ikeja making it the fifth most populous LGA in Lagos. It is bounded by Ikeja Local Government in the North and on the South by Surulere Local Government, the North-eastern part by Mushin and Alimosho Local Government in the west. This study was designed as a community based descriptive cross-sectional study assessing the knowledge attitude and practice of exclusive breastfeeding among mothers of under-five children in Oshodi/Isolo local government area.

Study Population

The study population is mothers of under 5 children in Oshodi/Isolo Local Government Area, Lagos state. The inclusion criteria were that a woman must be a resident in Oshodi/Isolo LGA for at least six months and must have at least a child under the age of 5 years. Visitors in the LGA and mothers of children with special needs, for example, mothers of premature babies, were excluded.

Sample Size Determination

The minimum sample size was calculated using Cochran's equation³, and the estimated sample size was increased by 5% to give room for attrition arising from missing questionnaires or indirectly/incompletely filled questionnaire. The estimated sample size was 298 mothers of under-five children.

Sampling Method

Multi-stage sampling method was used to select respondents. The first stage was selection of wards/homes. The study was introduced to the Medical Officer of Health (MOH) of the local government after which a list of the wards in the LGA was obtained and three wards were selected randomly by balloting. This is followed by the second stage which was selection of streets. Here, a list of the streets in each ward was obtained and 10 streets were selected from the total number of streets in each selected ward by balloting. Selection of houses was the third stage whereby 10 houses were selected from each selected street. The first house was selected by simple random sampling and subsequently every 3rd house was picked until the required number of 10 houses was achieved. If in a selected house, there was no mother of under 5, the next house was picked. Fourth stage was selection of households. If there were more than one household with a child < 5 years in a selected house, only 1 household was selected by

balloting. The last stage was the fifth stage which is the selection of respondents. Here, mothers of under-five children were selected and interviewed using the questionnaire. The questionnaire is shown in supporting information (S1)

Data Collection Instrument

Data was collected using semi-structured interviewer administered questionnaire written in English Language. The tool comprises of 5 sections:

Section A consists of socio-demographic characteristics such as age, marital status, educational level, ethnicity and occupation, tribe, and religion. Section B tests respondents' knowledge of exclusive breastfeeding and includes questions on time of initiation of EBF, duration of EBF, importance of colostrum. Section C tests respondents' attitude to exclusive breastfeeding and includes statements like breast milk alone is not sufficient for a child less than six months, breastfeeding is stressful and boring. Section D tests respondents' practice of exclusive breastfeeding and includes questions such as have you exclusively breastfed any of your children? How long did you exclusively breastfeed? Section E tests factors related to practice of exclusive breastfeeding by respondents and includes questions like does your spouse encourage you to breastfeed? Do you receive assistance with the house chores when you practice EBF?

Training of Research Assistants

Three research assistants, who are at least secondary school graduates and can speak fluently in English language and Yoruba Language fluently were trained in administering the questionnaire for two days. The training enabled them to have an overview of the project and its objectives and to learn to accurately record information. Grey areas were addressed, and rehearsals done before embarking on the pretesting and subsequently the study proper.

Pre-Testing of Data Collection System

5 questionnaires were administered to residents of Alimosho LGA to pre-test the instrument. The aim of the pre-test was to test the clarity of the study tools, and this was to help in making necessary corrections and adjustments. The restructured questionnaire was administered to mothers of under 5 in Oshodi/Isolo Local Government Area.

Ethical Consideration

Ethical consideration was obtained from the Health Research and Ethics committee of Lagos University Teaching Hospital (LUTH). Permission was sought from the Medical Officer of Health of Oshodi/Isolo Local Government. Paper introduction and description of the research paper was done after which every selected respondent would be given the option of participating or not. Explanation was given to the respondents that participation is voluntary and they could withdraw from the study. The respondents were assured of confidentiality as no names were requested.

Data Management and Analysis

Data was cleaned and analyzed using Epi info software package. Data was represented as frequency tables with mean. Bivariate analysis (chi-square test) was used to test associations between variables. Association is statistically significant if the two tailed probability is less than 5%.

Each correct response to the knowledge questions was scored one mark and any wrong answer or non-response was scored zero.

The highest obtainable mark in Section B was 13 while the lowest was 0. A score of six and above means good knowledge while a score of <6 means poor knowledge. For the attitude section, there were 13 questions, any respondent that strongly agreed with any of the section was awarded 1 mark; any respondent that agreed was awarded 2 marks; any respondent that is indifferent was awarded 3 marks; any respondent that disagreed was awarded 4 marks and respondents that strongly disagreed were awarded 5 marks. Therefore, the total obtainable mark for attitude is 65 and the least mark is 13. A score of 32 and above means good attitude while a score of less than 32 means poor attitude. For the practice section, there were 14 questions, 1 mark was awarded for each right answer while 0 mark was awarded for each wrong answer. The highest obtainable mark in Section D was 14 while the lowest was 0. Any score above 7 means good practice while any score below 7 means bad practice. The total score obtained by each respondent in each section was converted to percentages and graded as either Poor (0-49%) or Good (50-100%).

Results

A total of 298 respondents were interviewed but 274 questionnaires were filled. This gave a response rate of 91.95%. All retrieved questionnaires were used to complete data analysis.

Table 1: Respondents' socio-demographic characteristics.

Variable	Frequency (n=274)	Percentage (%)
Age (Years)		
15-24	31	11.31
25-34	151	55.11
35-44	81	29.56
≥45	11	4.01
Mean age 31.67		
Ethnicity		
Yoruba	181	66.06
Igbo	74	27.01
Hausa	10	3.65
Others	9	3.28
Religion		
Islam	123	44.89
Christianity	149	54.38
Traditional	2	0.73
Marital status		
Married	255	93.07
Single	13	4.74
Widow	2	0.73
Separated	4	1.46
Respondents' occupation		
Skilled	151	55.11
Semi-skilled	61	22.26
Unskilled	62	22.63
Respondents' Level of Education		
No formal education	15	5.47

Primary	29	10.58
Secondary	86	31.39
Tertiary	144	52.55
Spouses' Occupation		
Skilled	175	68.63
Semi-skilled	51	20.00
Unskilled	29	11.37
Total	255	
Spouses' Level of Education		
No formal education	12	4.71
Primary	18	7.05
Secondary	74	29.02
Tertiary	151	59.22
Total	255	
Number of Children		
1	76	27.74
2	70	25.55
>2	128	46.72
Number of Under-five Children		
1	195	71.17
2	58	21.17
>2	21	7.66
Age of index child (in months)		
<6	58	21.17
6-12	90	32.85
13-24	45	16.42
25-36	40	14.60
37-48	28	10.22
49-60	13	4.74

Table 2: Respondents' awareness of exclusive breastfeeding and sources of information.

Variable	Frequency (n=274)	Percentage (%)
Heard of EBF	274	100
Sources of information		
Doctors/Nurses	205	74.82
Television/Radio	70	25.55
Friends	47	17.15
Newspapers/Magazine	35	12.77
School education	40	14.60
Others	3	1.09
Multiple responses were allowed		
Respondents' Knowledge on Exclusive Breastfeeding		
Initiation of Breastfeeding		
Within one hour after delivery	151	55.11
One to six hours after delivery	62	22.63

More than six hours after delivery	46	16.79
I do not know.	15	5.47
Meaning of EBF		
Feeding with breast milk only for the first six months of life	208	75.91
Feeding with breast milk and water	16	5.84
Feeding with breast milk and formula	10	3.65
Variable	Frequency (n=274)	Percentage (%)
Feeding with breast milk and herbs	2	0.73
Others	31	11.31
Exclusive breast feeding practiced during the day only.	49	17.88
Colostrum given.	206	75.18
Clean water can be given to infants under six months	154	56.20
Duration of exclusivity (in months)		
3 months	25	9.12
6 months	200	72.99
9 months	10	3.65
12 months	14	5.11
>12 months	21	7.66
I don't know	4	1.46
Duration of breast feeding (in months)		
3 months	24	8.76
6 months	22	8.03
12 months	99	36.13
18 months	10	3.65
≥ 24 months	119	43.43
Respondents' knowledge of benefits of exclusive breastfeeding		
EBF prevents diarrhoea disease	212	77.37
EBF prevents respiratory disease	195	71.17
EBF prevents heart disease	177	64.60
EBF causes breast cancer	61	22.26
Colostrum important for baby's immunity	206	76.28
Knowledge scores		
Good	191	69.71
Poor	83	30.29

All the respondents were aware of exclusive breastfeeding with their main source of information being from health workers (74.82%). Of the total respondents, 55.11% knew that breastfeeding should be initiated within an hour after delivery. Most of the respondents (75.91%) knew the correct definition of exclusive breastfeeding and 75.18% knew that infants should be breastfed with colostrum. However, more than half of the respondents (56.20%) wrongly said infants under six months could take clean water. Also, less than half of the respondents (43.43%) knew the correct duration of breastfeeding. Majority of the respondents (77.37%) think that EBF can prevent diarrhoea disease. About a quarter (22.26%) of the respondents wrongly think that EBF can cause breast cancer. More than half of the respondents (69.71%) had good knowledge of exclusive breastfeeding.

Table 3: Respondents' attitude toward exclusive breastfeeding.

Attitude towards exclusive breastfeeding	SA	A	IN	D	SD
	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
Formula feds are stronger and healthier than exclusively breast-fed infants	11(4.01)	13(4.74)	44(16.06)	73(26.64)	133(48.54)
Discarding the first breast milk is very important	39(14.23)	28(10.22)	39(14.23)	70(25.55)	98(35.77)
Breast milk alone is not sufficient for child less than six month	24(8.76)	44(16.06)	37(13.50)	76(27.74)	93(33.94)
Starting complementary feed before six month is important	24(8.76)	35(12.77)	42(15.33)	76(27.74)	97(35.40)
Formula feeding keeps the child well shaped and prevents overweight	12(4.38)	33(12.04)	52(18.98)	83(30.29)	94(34.31)
Formula is as healthy for infant as breast milk	9(3.28)	42(15.33)	48(17.52)	77(28.10)	98(35.77)
Formula is the better choice if the mother plans to go to work.	21(7.66)	67(24.45)	56(20.44)	55(20.07)	75(27.37)
Giving breast milk to a newborn within one hour of delivery is not important	24(8.76)	36(13.14)	47(17.15)	71(25.91)	96(35.04)
Exclusive breast feeding is time consuming	20(7.30)	66(24.09)	51(18.61)	61(22.26)	76(27.74)
Exclusive breast feeding alone has no benefit to both the baby and the mother	12(4.38)	18(6.57)	47(17.15)	79(28.83)	118(43.07)
Exclusive breast feeding is stressful and boring to both mother	15(5.47)	28(10.22)	46(16.79)	86(31.39)	99(36.13)
Exclusive breast-feeding cause excessive pain in the nipple	25(9.12)	68(24.82)	48(17.52)	67(24.45)	66(24.09)
Exclusive breast-feeding leads to child malnutrition	7(2.55)	18(6.57)	60(21.90)	79(28.83)	110(40.15)
KEY: SA: Strongly agree A: agree IN: indifferent D: disagree SD: strongly disagree					
ATTITUDE SCORES					
Variable	Frequency (n=274)		Percentage (%)		
Good	263		95.99		
Poor	11		4.01		

Table 4: Practice of EBF among respondents.

Variable	Frequency (n=274)	Percentage (%)
Practised EBF on any child	216	78.13
Practised EBF on index child	201	93.06
Initiation of breastfeeding (in hours)		
<1	119	43.43
1-6	94	34.31
7-24	18	6.57
>24	43	15.69
Duration of breastfeeding (in months)		
< 6	50	24.88
6	106	52.74
12	14	6.57

24	31	15.42
Pre-lacteal feeding		
Yes	106	38.69
No	168	61.31
Pre-lacteal Feeds Given		
Plain water	50	47.17
Baby Formula	12	11.32
Sugar/glucose	33	31.13
Pasteurized milk	5	4.72
Herb/agbo	2	1.89
Others	4	3.77
Times for breastfeeding		
Scheduled time	48	17.52
On demand	226	82.48
Frequency of breastfeeding		
1-2 times	3	1.09
3-5 times	38	13.87
6-8 times	43	15.69
>8 times	190	69.34
Initiation of other feeds (in months)		
<6	163	60.14
6	33	12.18
9	64	23.62
12	9	3.32
>12	2	0.74
Practice scores		
Good	33	12.04
Poor	241	87.96

Amongst all the respondents who had ever practiced EBF, most of them (93.06%) practiced EBF on their index children. More than half of the respondents (60.14%) initiated other feeds before six months. Most of the respondents (87.96%) have poor practices of EBF.

Table 5: Factors associated with EBF practice.

Variable	Frequency (n=274)	Percentage (%)
Initiation of breastfeeding more than one Hour after delivery		
Child was sick	14	10.07
Colostrum was harmful to the baby	15	10.79
Lack of breast milk	82	58.99
Mother was sick	22	15.83
Colostrum was dirty	6	4.32
Reasons for not giving colostrum		
Harmful	34	53.97
Cultural	11	17.46
Religion	12	19.05
Others	6	9.52

Reasons for non-practice		
My work was hindering me	36	49.32
EBF is time consuming	9	12.33
EBF is not enough for my child	15	20.54
No support from family members	1	1.37
EBF is stressful for me	3	4.11
Others	9	12.33
Spouse/Family encouragement to EBF	205	74.82
Assistance with house chores to do EBF	111	40.51
Assistance with care of older children to do EBF	120	43.80
Frequent hunger when EBF	208	75.91
Severe body/nipple pain when EBF	126	45.99
Baby continued to be hungry despite EBF	110	40.15
Weight gain when EBF	117	42.70
Work/business does not affect EBF	147	53.65
Health workers encourage me to EBF	228	83.21
Refusal of other feeds after EBF	84	30.66
Receipt of support from Mother / mother-in-law to EBF	98	35.77

About half of the respondents (49.32%) did not practice EBF because of hindrance from work. 53.97% of the respondents did not give colostrum because they thought it was harmful. Majority of the respondents, (83.21%) received encouragement from health workers to EBF, however, more than half of them (75.91%) could not practice exclusive breastfeeding because they experienced frequent hunger while exclusively breastfeeding.

Table 6: Association between respondents' socio demographic factors and knowledge of EBF

Socio demographics	KNOWLEDGE GRADE		X ²	p-value
	Good (%)	Poor (%)		
Age				
15-24	18(58.06)	13(41.94)	2.64	0.45
25-34	109(72.19)	42(27.81)		
35-44	57(70.37)	24(29.63)		
≥45	7(63.64)	4(36.36)		
Ethnicity				
Yoruba	122(67.40)	59(32.60)	2.81	0.72
Hausa	9(90.00)	1(10.00)		
Igbo	53(71.62)	21(28.38)		
Others	7(77.78)	2(22.22)		
Marital status				
Married	182(71.37)	73(28.63)	3.76	0.02

Others	9(47.37)	10(52.63)		
Occupation				
Skilled	115(76.16)	36(23.84)	12.80	0.001
Semi-skilled	44(72.13)	17(27.87)		
Unskilled	32(51.61)	30(48.39)		
Level of education				
No formal education	8(53.33)	21.67	0.0001	7(46.67)
Primary	17(58.62)	12(41.38)		
Secondary	48(55.81)	38(44.19)		
Tertiary	118(81.94)	26(18.06)		
Religion				
Islam	103(69.13)	46(30.87)	0.90	0.64
Christianity	86(69.92)	37(30.08)		
Traditional	2(100)	0(0.00)		

There was a statistically significant association between the marital status, occupation, level of education and knowledge of exclusive breastfeeding. Married respondents (71.37%), skilled respondents (76.16%) and respondents who had acquired tertiary education (81.94%) had better knowledge of EBF than the others.

Table 7: Association between respondents' socio-demographic factors and attitude towards EBF.

ATTITUDE GRADE				
Socio-demographics	Good (%)	Poor(%)	X ²	p-value
Age				
15-24	29 (93.55)	2(6.45)	2.99	3.99
25-34	144(95.36)	7(4.64)		
35-44	80(98.77)	1(1.23)		
≥45	10(90.91)	1(9.09)		
Ethnicity				
Yoruba	172(95.03)	9(4.07)	3.10	0.38
Hausa	9(90.00)	1(10.00)		
Igbo	73(98.65)	1(1.35)		
Others	9(100)	0(0.00)		
Marital status				
Married	245(96.08)	10(3.92)	0.00	0.55
Others	18(94.74)	1(5.26)		
Occupation				
Skilled	148(98.01)	3(1.99)	4.38	0.11
Semi-skilled	58(95.08)	3(4.92)		
Unskilled	57(91.94)	5(8.06)		
Level of education				
No formal education	14(93.33)	1(6.67)	1.59	0.66
Primary	28(96.55)	1(3.45)		

Secondary	81(94.19)	5(5.81)		
Tertiary	140(97.22)	4(2.78)		
Religion				
Islam	142(95.30)	7(4.70)	0.45	0.80
Christianity	119(96.75)	4(3.25)		
Traditional	2(100)	0(0.00)		

There was no statistically significant association between the socio-demographic factors and the respondents' attitude towards exclusive breastfeeding.

Table 8: Association between respondents' socio demographic factors and practice of EBF.

PRACTICE GRADE				
Socio-demographics	Good (%)	Poor (%)	X ²	p-value
Age				
15-24	18(58.06)	13(41.94)	7.04	0.07
25-34	94(62.25)	57(37.75)		
35-44	55(67.90)	26(32.10)		
≥45	3(27.27)	8(72.73)		
Ethnicity				
Yoruba	118(65.19)	63(34.81)	2.87	0.41
Hausa	6(60.00)	4(40.00)		
Igbo	40(54.05)	34(45.95)		
Others	6(66.67)	3(33.33)		
Marital status				
Married	160(67.25)	95(32.75)	0.40	0.20
Others	10(52.63)	9(47.37)		
Occupation				
Skilled	101(66.89)	50(33.11)	3.43	0.18
Semi-skilled	35(57.38)	26(42.62)		
Unskilled	34(54.84)	28(45.16)		
Level of education				
No formal education	5(33.33)	10(66.67)	14.06	0.003
Primary	15(51.72)	14(48.28)		
Secondary	47(54.65)	39(45.35)		
Tertiary	103(71.53)	41(28.47)		
Religion				
Islam	84(56.38)	65(43.62)	4.76	0.093
Christianity	85(69.11)	38(30.89)		
Traditional	1(50.00)	1(50.00)		

There was a statistically significant association between the level of education and practice of exclusive breastfeeding. Majority of the respondents who had acquired tertiary education (71.53%) had better practice of EBF than others.

When comparison was made between knowledge, attitude, and practice. We observed a statistically significant association (p value = 0.019) between attitude towards EBF and its practice among the respondents. Majority of the respondents with positive attitude towards EBF (63.50%) had good practice of EBF. This is shown in Figure 1a. In addition, there was a statistically

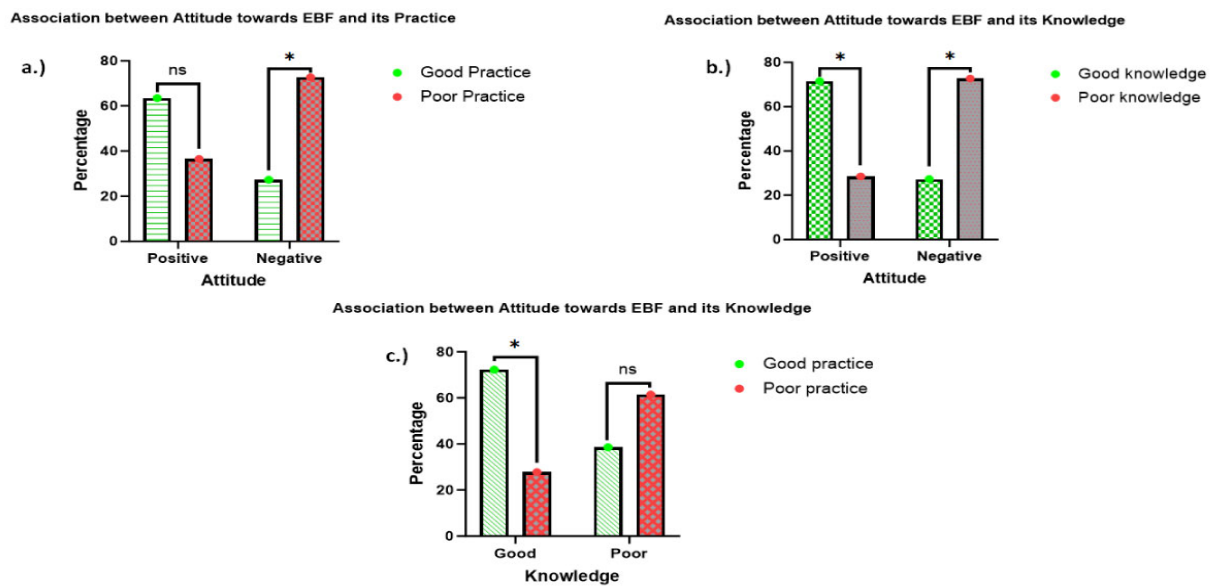


Figure 1: Comparison between knowledge, attitude, and practice of respondents. a.) Association between attitude toward EBF and its practice. b.) Association between attitude towards EBF and its knowledge. c.) Association between attitude towards EBF and its knowledge.

significant association between the respondents' knowledge and attitude towards breastfeeding (p value = 0.004). This is shown in Figure 1b. Also, there is statistically significant association between knowledge of EBF and its practice breastfeeding (p value = 0.01) among the respondents as shown in Figure 1c. Majority of the respondents with good knowledge have a good practice of EBF.

Discussion

Malnutrition is a major cause of death among children under five years of age. Child survival strategies like breastfeeding is a major way of reducing infant mortality rate in Nigeria to achieve target 3.2 of sustainable development goal three. This is also paramount to meeting the WHO recommended standard of 90% exclusive breastfeeding in children below six months [13]. Findings from the study showed that the mean age was 31.67 years. Majority of the respondents were married (93.07%), more than half were Yoruba (66.06%) and about half of them were Christians (54.38%). Similarly, more than half of the respondents had tertiary education (52.55%) and had skilled jobs (55.11%). In this study, all the respondents were aware of exclusive breastfeeding. The main sources of information in this study were the health workers (74.82%), television/radio (25.55%), friends (17.15%), newspaper/magazines (12.77%), school education (14.60%) and others (1.09%). This is comparable to a study in Palestine to determine knowledge of EBF, where the main source of information about breastfeeding were through primary health care workers (52%), media (22%) and retail pharmacy (3.7%) [14]. However, this study demonstrated a higher rate of health workers as a source of information.

In this study, more than half of the respondents (69.71%) had good knowledge of exclusive breastfeeding. This is lower than findings of similar studies on knowledge of exclusive breastfeeding in Mainland Local government and in Palestine where 94% and 85% of the mothers had good knowledge of EBF respectively [15]. This is in contrast to past studies done in Ibadan, 2012, and Navy town, Lagos State, where a high proportion of the respondents

(63.8%) and 80.4% had inadequate knowledge of EBF respectively [16,17]. This could be due to low educational status of the respondents in the Ibadan study as this study was done among hairdresser apprentices.

About half of the respondents (55.11%) knew that breastfeeding should be initiated within one hour after delivery. Majority (75.91%) of the respondents knew the correct meaning of EBF, likewise majority (75.18%) of them knew that infants should be breastfed with colostrum. More than 60% of them knew at least one benefit of breastfeeding. This can be compared to the findings in a study carried out in Northwest Ethiopia, 2016, where 70% of the respondents knew that breastfeeding should be initiated within one hour after delivery, 61.5% of them knew that infants should be breastfed with breast milk only for the first six months of life, 54.7% of them knew that infants should be breastfed with colostrum and 60.9% of them knew that EBF can prevent diarrheal and respiratory diseases in children⁴. Also similar to this is the findings from a study carried out in Navy Town, Lagos state, 2016, where less than half (41.4%) of the respondents knew that breastfeeding should be initiated within one hour after delivery, 78.2% of them correctly knew the meaning of exclusive breastfeeding, 88.2% of them correctly acknowledged that colostrum should be fed to a baby and 74.1% knew that breastfeeding protects a baby from certain diseases [17]. Contrarily, in a study carried out in Ibadan, Nigeria, 2012, the results showed that 32.8% of the respondents knew that breastfeeding should be initiated within 30 minutes of birth, however 27.6% believed that breastfeeding should be initiated when the infant starts crying uncontrollably, only 36.2% of the respondents knew that infants should be fed breast milk only in the first six months of life, about 31% knew that infants should receive colostrum at birth and majority of the respondents, 53.4% and 19.8% could mention two or more health benefits of EBF to infant and mother respectively [16]. Regarding duration of exclusivity of breastfeeding, less than half (43.43%) of the respondents knew the correct duration of breastfeeding. More

than half (56.20%) of the respondents in this study thought that infants under 6 months can be given clean water. This is lower than the finding in the study carried out in Ibadan, 2012, and Kosofe LGA in Lagos where 68.1% and 62.6% of the respondents thought water should be introduced before 6 months [16].

Majority of the respondents had positive attitude towards exclusive breastfeeding as 95.99% of them were graded to had positive attitudes towards EBF. This could be due the fact that the act of breast feeding is cultural, and that Nigerians generally have good attitude towards health matters. This finding agrees with results from a study done in India among post-natal mothers where 83.6% of the participants agreed that breast feeding was more convenient than formula feeding and 73.8% also agreed that it increases mother infant bonding [18]. Similarly in a study carried out Ikosi-Isheri, Lagos, where almost all the women (98.8%) felt that breastfeeding is important, majority 73% believed that breast milk alone is sufficient for the baby in the first six months [19]. Also, in a longitudinal study carried out in US, 33.0% of the respondents reported disagreement with the benefits of breastfeeding [20].

Due to the widespread of breast-feeding culture in Nigeria, and the fact that breastfeeding is is deeply enshrined in various ethnic groups in Nigeria, all respondents in this study initiated breastfeeding as a culture. However, only 43.43% of them initiated breastfeeding within one hour of delivery. This can be compared to a study done in South Africa where only 58.4% started breastfeeding early [21]. Similarly, in a study carried out in south western region of Nigeria, 97.3% of the respondents had ever breastfed while 56.5% of them initiated breast feeding within one hour after delivery. The result from this study is higher than results obtained from a study in Cape Town, where majority (88%) initiated breastfeeding after an hour post-delivery⁵.

A high proportion of the respondents (78.13%) had practiced EBF on at least one of their children while only 52.74% practiced exclusive breastfeeding for six months. This is similar to the findings in a study done in a child welfare clinic in Ghana where the prevalence of EBF among children less than six months was 66% [22]. In contrast to this is the result gotten from studies carried out in south western Nigeria and Ethiopia, where 74.1% and 49% of the mothers practiced EBF for less than six months respectively [16,23].

In this study, less than a quarter (15.42%) of the respondents practiced breastfeeding for two years, this is like the finding in the studies carried out in Navy town and in Kosofe LGA in Lagos state where only 12.3% and 8.4% of the respondents were aware that breastfeeding should last up to 2 years or more respectively [17,24]. This is lower than the finding in a study done in Saudi Arabia where about 38.6% of the mothers stopped breastfeeding before two years because of their work [25]. This could be due to the fact that nowadays, in asisa and Africa, most children would have started schooling before the age of two years and this might make breastfeeding more difficult for their mothers. More than half (69.34%) of the respondents in this study breastfeed more than 8 times in a day. This is higher than the 43% gotten in a study carried out in Kosofe LGA, Lagos [24].

Less than half of the respondents (38.69%) practiced pre-lacteal feeding with the commonest pre-lacteal feed given being water (47.17%). This is higher than the findings from studies carried out in Ethiopia and south-western Nigeria where 13%

and 24.1% of the women practiced pre-lacteal feeding [17,23]. The finding from this current study is however lower than that of a study carried out in Kosofe LGA, Lagos where 95.3% of the mothers were found to give pre-lacteal feeds; mainly as infant formula [17]. This could be because pre-lacteal feeding is an aspect of some cultures in Nigeria.

This study revealed that about half of the respondents did not practice EBF because of hindrance from work (49.32%), and more than half (53.97%) of them did not give colostrum because they thought it was harmful to the child. This is similar to the findings in a study carried out in Mainland local government where the commonest reason (58.8%) for non-practice of EBF was busy work schedule [26]. A study in Singapore revealed that although work status had no effect on initiation of breastfeeding, it did have an effect on the duration of breastfeeding, working mothers (80%) were more likely to stop breastfeeding [27]. A more recent study in Northwest Ethiopia demonstrated similar findings (79.1%) [28]. These values are higher than 49.32% which was obtained in this study, and this could be because about half (44.89%) of the respondents in this study did not have skilled jobs.

There was a statistically significant association between the respondents' marital status, occupation, level of education ($p = 0.02, 0.001, 0.0001$) and knowledge of exclusive breastfeeding. This is similar to the findings in the study conducted in Ibadan, which revealed a positive association between knowledge of breastfeeding and age, marital status, educational status and ethnicity of respondents ($p \leq 0.05$) [16]. It is also in line with the findings from a study carried out in Two Semi-Urban areas in Lagos State, where educational level and professional level were associated with correct knowledge of EBF ($p \leq 0.05$) [29].

There was no statistically significant association between the respondents' socio-demographic factors and their attitudes towards EBF. This is contrary to the findings in a previous study carried out in Jeddah city where there was a significant relationship between occupational status ($p = 0.015$) and mother's attitude towards breastfeeding [30]. This could be due to the fact that breast feeding is an integral part of our culture. However, there was a statistically significant association between the respondents' level of education ($p = 0.003$) and their practice of EBF. Majority of the respondents who had tertiary education (71.53%) had better practice of EBF compared to the other levels of education. This can be likened to the findings in a study in southwestern Nigeria where several factors were significantly associated with breastfeeding practices, some of which were the mother's level of education, marital status and type of marriage, occupation, and child's age ($p < 0.05$) [17].

When respondents' attitude EBF is compared to their knowledge of EBF, we observed a statistically significant association (Fisher's exact = 0.004). Majority (72.73%) of those who had negative attitudes also had poor knowledge of EBF. This can be likened to the findings in a study carried out in Ireland, where there was a statistically significant association ($p < 0.001$) between knowledge of EBF and attitude towards it [31].

There was a statistically significant association between the respondents' knowledge of EBF (Fisher's exact = < 0.01) and its practice. Majority of the respondents with good knowledge of EBF (72.25%) had good practice while more than half (61.45%) of the respondents who had poor knowledge of EBF also had poor practice. This is similar with the findings in a study at Kosofe

LGA, Lagos where there was a statistically significant relationship ($p < 0.05$) between knowledge of EBF and practice of EBF. In addition to this, upon comparison, the attitude to exclusive breastfeeding and its practice among the respondents is statistically significant (Fisher's exact = 0.019). Majority of the respondents with good attitude towards EBF (63.50%) had good practice likewise majority of those with poor attitude (72.73%) had poor practice of EBF. This was however, in contrast to what was found in Indonesia; positive attitude was statistically significant with practice of EBF as well as in a study in Ireland where those who had negative attitudes ($p < 0.05$) were less likely to breastfeed.

Conclusion

This study was a cross-sectional descriptive study conducted to determine the knowledge, attitude, and practice of exclusive breastfeeding among mothers of under 5 in Oshodi/Isolo Local Government Area, Lagos State. The overall knowledge of EBF was found to be 69.71% among the respondents. Almost all (95.99%) of the respondents had positive attitude towards EBF while practice of EBF was found to be 62.04% among the respondents. Less than half of them (43.43%) initiated breastfeeding within one hour of delivery, and 38.69% of them gave pre-lacteal feeds. There was a statistically significant association between the marital status, occupation, level of education and knowledge of exclusive breastfeeding where the p value was 0.02, 0.001, 0.0001, respectively. There was also a statistically significant association between the level of education and practice of exclusive breastfeeding ($p = 0.003$), the knowledge of EBF and its attitude (p value = 0.004), the knowledge of EBF and its practice (p value < 0.01), as well as attitude towards EBF and its practice (p value = 0.019). As a limitation of this study, there was a slight language barrier as some of the respondents did not understand either Yoruba or English fluently. This was a quantitative survey with little opportunity for participants to write down comments or express other concerns that are not catered for by the questionnaire.

In light of this study, we would like to give the following recommendation: a) health workers should increase health education of EBF using the local dialect of the people for better understanding, b) spousal involvement in EBF by creating promoting EBF with media, c) increase health education targeted at correcting the misconceptions about colostrum and breast milk, d) health workers should teach mothers how to maintain breastfeeding when away from their babies through expressing and preserving breast milk, e) organizational bodies should create breastfeeding friendly environment for mothers by providing breastfeeding facilities and creating flexible rules on breastfeeding, f) government should ratify and enforce six months maternity leave for mothers to ease the practice of EBF for mothers, and lastly, g) further surveys should include a qualitative assessment and possibly interviews to add more information to this field of study.

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Statement of Ethics

All respondents gave a written consent. The study was reviewed and approved by the Lagos University Teaching Hospital Institutional review board.

Conflicts of Interest

The authors declare no competing interests.
(Endnotes)

Supporting Information

S1: QUESTIONNAIRE

Knowledge Attitude And Practice Of Exclusive Breastfeeding Among Mothers Of Under 5

Dear Participant,

I am OLANIYAN MUHIBAH, a 500-level student at the College of Medicine, University of Lagos. I am carrying out research on the Knowledge, Attitude and Practice of exclusive breastfeeding among mothers of under five in Oshodi/Isolo LGA, Lagos State. This is in partial fulfillment of the requirement of the award of Bachelor of Medicine and Bachelor of Surgery (MB; BS) degree.

I humbly appeal to you to complete this questionnaire honestly and assure you that any information here will be treated confidentially and used for research purposes only. **Your name is not required.**

SECTION A: Socio-Demographic Characteristics And Sexual History

1. Age (as at last birthday) in years
2. Marital Status
 - a) Single [] b) Married [] c) Widow []
 - d) Divorced [] e) Separated []
3. Tribe
 - a) Yoruba [] b) Hausa [] c) Igbo [] d) Others (Please specify)
4. Religion
 - a) Christianity [] b) Islam [] c) Traditional []
 - d) Others (Please specify)
5. Respondent's level of education
 - a) No formal education [] b) Primary []
 - c) Secondary [] d) Tertiary Education []
6. Spouse's level of education
 - a) No formal education [] b) primary []
 - c) Secondary [] d) Tertiary education []
7. Respondent's occupation
 - a) skilled [] b) semi-skilled [] c) unskilled []
8. Spouse's occupation
 - a) skilled [] b) semi-skilled [] c) unskilled []
9. Age of youngest child.....
10. How many children do you have?
 - a) 1 [] b) 2 [] c) >2 []
11. How many of your children are under the age of 5?
 - a) 1 [] b) 2 [] c) >2 []

SECTION B: Knowledge Of Exclusive Breastfeeding

12. Have you heard of exclusive breastfeeding?
 - a) Yes [] b) No [] c) I don't know []

13. Source of information on exclusive breastfeeding?
(Multiple responses are allowed)
- a) Television/Radio [] b) Newspaper/Magazines []
 - c) School education [] d) friends []
 - e) Doctor/Nurse [] f) others.....
14. Did you attend an antenatal clinic while you were pregnant?
- a) yes [] b) no []
15. If yes, where?
- a) primary health centre []
 - b) secondary health facility []
 - c) tertiary hospitals []
16. Where did you deliver your baby?
- a) hospital [] b) home []
 - c) traditional birth institution []
 - d) others(please specify)
17. What do you understand by exclusive breastfeeding?
- i. Feeding with breast milk and formula
 - a) yes [] b) no [] c) I don't know []
 - ii. Feeding with only breast milk for the first six months of life
 - a) yes [] b) no [] c) I don't know []
 - iii. Feeding with breast milk and water.
 - a) yes [] b) no [] c) I don't know []
 - iv. Feeding with breast milk, water and occasionally formula
 - a) yes [] b) no [] c) I don't know []
 - v. Feeding with breast milk and herbs.
 - a) yes [] b) no [] c) I don't know []
 - vi. Others (please specify)
18. How soon should breastfeeding be initiated after delivery?
- i. Within 1 hour
 - a) yes [] b) no [] c) I don't know []
 - ii. 1-6 hours
 - a) yes [] b) no [] c) I don't know []
 - iii. >6 hours
 - a) yes [] b) no [] c) I don't know []
19. Should you breastfeed your child with the first breast milk produced after delivery
- a) Yes [] b) No [] c) I don't know []
20. If no, why?
- a) Harmful [] b) cultural [] c) religion []
 - d) no reason [] e) others
21. Is the first breast milk secreted important for the baby's immunity?
- a) yes [] b) no [] c) I don't know []

22. How long should an infant be exclusively breastfed?
- i. 3 months a) yes [] b) no [] c) I don't know []
 - ii. 6 months a) yes [] b) no [] c) I don't know []
 - iii. 9 months a) yes [] b) no [] c) I don't know []
 - iv. 1 year a) yes [] b) no [] c) I don't know []
 - v. >1 year a) yes [] b) no [] c) I don't know []
23. How long should breastfeeding last?
- i. 6 months a) yes [] b) no [] c) I don't know []
 - ii. 1 year a) yes [] b) no [] c) I don't know []
 - iii. 2 years a) yes [] b) no [] c) I don't know []
 - iv. Others (please specify).....
24. Can infants under 6 months take clean water?
- a) yes [] b) no [] c) I don't know []
25. Can EBF prevent diarrheal diseases?
- a) yes [] b) no [] c) I don't know []
26. Can EBF prevent respiratory diseases?
- a) yes [] b) no [] c) I don't know []
27. Can EBF prevent heart diseases?
- a) yes [] b) no [] c) I don't know []
28. Can EBF cause breast cancer?
- a) yes [] b) no [] c) I don't know []
29. Can EBF only be practiced during the day time?
- a) yes [] b) no [] c) I don't know []

SECTION C: Attitude Towards Exclusive Breastfeeding

		Strongly disagree	Disagree	Indifferent	Agree	Strongly agree
30	Formula fed infants are stronger and healthier than exclusively breastfed infants					
31	Discarding the first milk produced after delivery is important					
32	Breast milk alone is not sufficient for a child less than 6 months.					
33	Starting complementary feeds before six months is important.					
34	Formula feeding keeps the baby well shaped and prevents overweight					
35	Formula is as healthy for an infant as breast milk					
36	Formula feeding is the better choice if the mother plans to go to work					
37	Giving breast milk to a newborn within 1 hour after delivery is not important					
38	EBF is time consuming					
39	EBF alone has no benefit both the baby and mother					
40	EBF is stressful and boring to mothers					
41	EBF causes excessive pain in the nipple					
42	EBF leads to child malnutrition.					

SECTION D: PRACTICE OF EXCLUSIVE BREASTFEEDING

43. Did you exclusively breastfeed any of your children?
a) Yes [] b) No []
44. If yes, did you exclusively breastfeed your last child?
a) Yes [] b) No []
45. For how long did you exclusively breastfeed?
a) < 6 months [] b) 6 months []
c) 1 year [] d) 2 years []
46. If no, why?
a) My work was hindering me []
b) exclusive breastfeeding is time consuming []
c) exclusive breastfeeding is not enough for my child []
d) no support from family members []
e) exclusive breastfeeding is stressful for me []
f) others (please specify).....
47. When did you start breastfeeding after delivery?
a) <1 hour [] b) 1-6 hours [] c) 7-24 hours []
d) After a day [] e) others (please specify).....
48. If >1 hour, why?
a) Colostrum was dirty []
b) colostrum harmful to the child []
c) lack of breast milk [] d) mother was sick []
e) child was sick [] f) others (please specify).....
49. Before you started breastfeeding your child, did you give anything else?
a) Yes [] b) No []
50. If yes, what did you give?
a) Plain water [] b) baby formula []
c) sugar/glucose water [] d) pasteurized milk []
e) herb/agbo [] f) Others/specify
51. Why did you give other feeds before initiating breastfeeding?
a) Baby crying [] b) mother had no milk []
c) advised by health worker []
d) cultural beliefs [] e) religious beliefs []
f) Others/specify
52. When do you usually breastfeed?
a) A scheduled time [] b) on demand []
c) others/specify []
53. How often do you breastfeed your child in a day (day and night)?
a) 1-2 times [] b) 3-5 times [] c) 6-8 times []
d) more than 8 times []
54. When did you give other foods/fluids?
a) <4 weeks [] b) < 6 months [] c) 9 months []
d) 12 months [] e) > 12 months []
55. What did you give?
a) Water [] b) Pap [] c) baby formula []
d) family diet [] e) herb drink []
f) others/specify.....

56. Why did you start giving other foods/fluids?

- a) New pregnancy []
b) child is old enough to eat family food []
c) mother was ill []
d) child was ill []
e) others (please specify)

57. Are you still breastfeeding the baby?

- a) Yes [] b) No []

SECTION E: FACTORS AFFECTING EXCLUSIVE BREASTFEEDING

58. My spouse/family encourages me to exclusively breastfeed

- a) Yes [] b) no []

59. There are persons who help with the house chores so I can exclusively breastfeed

- a) Yes [] b) no []

60. I receive assistance in the care of the older children so I can exclusively breastfeed my baby

- a) Yes [] b) no []

61. I experience frequent hunger when exclusively breastfeeding

- a) Yes [] b) no []

62. I have severe body pains/nipple pain when exclusively breastfeeding

- a) Yes [] b) no []

63. My baby continued to be hungry despite exclusive breastfeeding

- a) Yes [] b) no []

64. I gain a lot of weight when exclusively breastfeeding

- a) yes [] b) no []

65. Work/ business does not affect exclusively breastfeeding my baby

- a) yes [] b) no []

66. Health workers encourage me to exclusively breastfeed

- a) yes [] b) no []

67. Child would refuse other foods later if I exclusively breastfeed

- a) yes [] b) no []

68. I do not receive support from my mother/mother-in-law to exclusively breastfeed

- a) yes [] b) no []

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