Nutritional Knowledge and Feeding Practice among Mothers of Under-Five Children Attending Primary Health Care Clinic in Ikorodu Local Government Area

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Abstract

Nutrition is an important part of a child's growth and development, especially the first two years of life considered to be the window of opportunity where we can improve the wellbeing of a child. This study, therefore, investigated mother's nutritional knowledge and the nutritional status of their children in a selected health centre in Ikorodu, Lagos, Nigeria. The study employed a descriptive cross-sectional design. Multi-stage sampling technique was used to select 400 participants for the study. A 43-item validated semi-structured questionnaire with Cronbach's alpha of 0.71; 0.72; 0.70 was used to collect data. Frequency, pie chart, Chi-square, and correlation analysis was conducted to give statistical responses to the research question and hypotheses using SPSS version 23. The mean age of the respondents was 30 ± 6.4 years. More than half (56.6%) of the respondents were married, 70% were Yoruba's, and 61.3% were Christians. Respondents mean knowledge score was 5.9±1.96, while most (78.8%) of the respondents had good nutritional knowledge. Respondents mean child feeding practices score was 6.05 ± 1.98 , with more than half (59.2%) of the respondents having good child feeding practices. There was a significant relationship between respondent's knowledge of nutrition and their child feeding practices (r=-0.13, p value= 0.007). In conclusion the mothers' nutritional knowledge was good, the study further showed that there is a significant association between mothers' nutritional knowledge and the nutritional status of the children. The study recommended that women should be educated by trained nutritionists on the types of locally available foods that promote growth in children during ante-natal clinics.

Keywords: Feeding practice, Ikorodu, Nutritional Knowledge, Nutritional Status, Under-five.

Introduction

A child needs the right kind of nutrition in order to thrive and attain optimal development as a millennium development goal No. 4, and indicators are to reduce child mortality rate, it should be supported by the standard practices of Nutrition which is important in child survival, growth and development as well as MDG No. 1 to eradicate extreme poverty focusing on Child Nutrition [1]. To meet these goals as we should consider the mother's knowledge and practice on infant and child feeding as recommended by World Health Organization [2]. As a national public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development, and health. Complimentary feeding should be initiated to supplement the nutritional requirement of the Child [3].

Mother's knowledge on exclusively breastfeeding is not sufficient for mothers to demonstrate practically. Complimentary foods should provide approximately 25.50% of the total dairy requirement and 75 – 100% for phosphorous, zinc, and Iron [4]. The mothers hence the direct caregivers of the child are responsible for fulfilling these requirements to accomplish this. She should have the right kind of knowledge and should practice this accordingly. Poor infant feeding practices coupled with high rates of infectious diseases are the major causes of malnutrition during the first two years of life [5].

Approximately, breast feeding, complementary feeding practices and access to adequate amounts of appropriate foods are essential for optimal infant Nutrition [6]. However, Breastfeeding provides infants with superior nutritional content that is capable of improving infant immunity and possible reduction in future health care spending [2]. It has been reported that 17% of Nigeria Children were exclusively breastfed for less than 4 months, while 13% were exclusively breastfed for less than 6 months [7].

Nutrition education given to mothers should emphasize the importance of breast milk only for the first 6 months of life and promoting appropriate, timely complementary food at six months and above with increased feeding frequency and change in food consistency, quality, and diversity as the child ages [8]. However, inadequate knowledge of appropriate food and feeding practices is often a great determinant of malnutrition [9]. It has also been observed that mothers who are nutritionally informed and educated bring up their children in a healthier way than those who lack appropriate nutritional knowledge [10]. Hence the need to nutrition evaluate the information communicated to mothers of under-five children attending immunization clinic at Ikorodu primary health Centre in Lagos State. This has become important since poor nutritional knowledge and malnutrition can result from suboptimal breastfeeding practices, poor quality complementary feeding, and detrimental feeding practices, which greatly affect the growing child and mother's health.

The study's main objective is to evaluate the nutrition information communicated to mothers of under-five children attending immunization clinics of selected primary health facility in Lagos State. The specific objectives are to assess the level of nutritional knowledge of mothers of under-five children attending immunization clinic of selected primary health facility in Ikorodu LGA Lagos State. It also describes the child feeding practices of mothers of under-five children attending immunization clinics of selected primary health facility in Ikorodu LGA Lagos State. The study is conducted to assess the nutritional status of under-five children attending immunization clinic of selected primary health facility in Ikorodu LGA Lagos State and to determine the relationship between mothers' nutritional knowledge and the nutritional status of the under-five children attending immunization clinic of selected primary health facility in Ikorodu LGA, Lagos State.

Materials and Methods

Study Design and Description of the Study Area

This research study adopted a descriptive cross-sectional research design.

Ikorodu is a city in Lagos State, Nigeria. Located Northeast of Lagos State along the Lagos Lagoon, it shares a boundary with Ogun State. As of the 2006 Census, Ikorodu had an enumerated population of 535,619. All the three main religions co-exist in Ikorodu and there are (6) divisions of LCDA. Following is the list of LCDAs in Ikorodu: Ikorodu central LCDA, Ikorodu west LCDA, ikorodu north LCDA, ikorodu Igbogbo-Bayeku LCDA, Ikorodu Imota-Agbowa LCDA, and IKorodu Ijede LCDA.

Population

The study populations were under-five children and their mothers attending immunization clinics of selected primary health facility in Lagos State.

Inclusion Criteria

1. The mothers of under-five children attending immunization clinic of selected

primary health clinic in Ikorodu, Lagos State.

2. Their under-five children were also included in the study.

Exclusion Criteria

- 1. Mothers of under-five children, with less than 6months.
- 2. Mothers of children of 5years or older.

Sample Size Estimation

The sample size was determined using Cochran's alpha formula for the computation of sample size (1963):

$$Z\alpha\left(N\right)=\frac{Z^2S^2}{d^2}$$

Where:

$$S^{2} = P [1-P] = PQ$$

$$Z^{2} = 1.96^{2}$$

$$P = 0.5$$

$$Q = 0.5$$

$$d^{2} = 0.05^{2}$$

$$S^{2} = PQ$$

$$Z^{2}P$$

$$N = \frac{Z^2 P Q}{d^2}$$

Therefore

$$= \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2}$$
$$= 384.16$$

The minimum sample size was 384.

10% of the minimum sample size was added to take care of attrition.

Approximately 400 participants were considered for the study.

Sample Techniques

Multi-stage sampling technique was used to select the study population, and the stages are as follows.

Stage one: Out of the twenty-three (23) Primary Health Centers in Ikorodu, a total of twelve (12) centers were selected by simple random sampling.

Stage two: In each of the selected Primary Health Centers, there were various major department/units. Stratified sampling technique was used to select two major units/departments that deals with under-five children, which are pediatric unit and the immunization unit.

Stage three: In each selected unit proportionate allocation was done, and seventeen (17) women with under-five children were selected by simple random sampling (balloting).

Stage four: Within the selected women, simple random sampling was used to allocate questionnaire to mothers of all under-five children until the desired sample size was met. Their consent was obtained with the use of consent form.

Instrument of Data Collection

The study instrument was a semi-structured questionnaire; weighing scale and tape rule Questionnaire was done having the following sections:

Section A: contained twelve questions which deals with the socio-demographic and family characteristics of the respondents.

Section B: This section will assess the level of maternal nutritional knowledge, which contains twelve questions.

Section C: This section will assess the level of maternal child-feeding practice, which has nine questions.

Section D: Will be based on anthropometric measurements of the children.

Data Analysis

Data was checked for errors and entered into SPSS version 22. Analysis was done using a statistical package for service solutions (SPSS) version 22.

Frequency distribution tables was generated from variables, while cross-tabulation and test statistics were done where applicable. Chisquare was used to compare rates, ratios, and proportions, while the fisher exact test was used in cases where cells are less than 5.

Ethical Consideration

Ethical approval for the study was obtained from Babcock University Health Research and

Ethics Committee (BUHREC). Also, permission to carry out the study was sought from authorities at the local Government health office at Ikorodu. The criteria for participating in the study were mentioned to the nursing mothers. It was also stated as glaring that there were no risks involved in the study, just as there were no compensations for participating. An informed consent form was obtained from those who willingly agreed to be part of the study.

Results

Socio-demographic Characteristics of Respondents

The socio-demographic characteristics of respondents are shown in Table 1. The respondent's ages ranged from 17 to 54 years, with a mean of 30 ± 6.4 years. The ages of the majority of the respondents (58.5%) fell within the 25 to 34 years age range. More than half (61.3%) of the respondents were adherents of the Christian faith (See Table 1). The respondents were predominantly Yoruba (70.3%). More than

half (56.6%) of the respondents were married, with more than half (55.5%) in the monogamous family (See Table 1). Less than half (37%) of the respondents had secondary education and thirtyfour percent were semi-skilled (See Table 1).

Of those respondents who were married, less than half (37.0%) of their husbands had tertiary education and also were skilled (43.4.3%). (See Table 1). Less than half (32.5%) of the respondents had been pregnant once, and thirtyseven percent had one child. Over half (57.8%) of the respondents were in 38 weeks of gestation (see Table 2). Less than half (40.8%) of the respondents earned less than 10000 naira, with more than half (53.3%) living in a one-room "face you and face me apartment" (See Figure 1). The mean age of the respondent's child was \bar{x} 10.06 ±9.7. The ages of majority of the respondent's children (69.5%) fell within the 1 to 10months age range. Fifty-four percent of the respondent's children were female (See Table 2).

Socio-demographic variables	Respondents in this study: N400	
for consideration	Frequency(n)	Percentage (%)
Age (in years) x 30±6.64		
15-24	67	16.8
25-34	234	58.5
35-44	89	22.2
44-54	10	2.5
Religion		
Christian	245	61.3
Islam	129	32.3
Traditionalist	25	6.3
Atheist	1	0.1
Ethnicity		
Yoruba	281	70.3
Igbo	60	15.0
Hausa/Fulani	41	10.4
Urhobo	18	4.3
Marital Status		
Single	103	25.8
Married	226	56.4

Table 1. Socio-demographic Characteristics of the Respondents

Divorced	71	17.8
Level of Education		
No formal education	76	19.0
Primary	34	8.5
Secondary	148	37.0
Tertiary	142	35.5
Occupation		
Unemployed	32	8.0
Skilled worker	95	23.8
Semi-skilled	137	34.2
Unskilled Labourer	136	34.0

Table 2. Socio-demographic Characteristics of the Respondents

Socio-demographic variables	Respondents in this study; N400 *N=297		
for consideration	Frequency(n)	Percentage (%)	
*Husband level of education			
No formal education	30	10.2	
Primary	82	27.6	
Secondary	74	24.9	
Tertiary	111	37.3	
*Husband Occupation			
Unemployed	71	23.9	
Skilled worker	129	43.4	
Semi-skilled	45	15.2	
Unskilled	52	17.5	
*Family setting			
Monogamous	159	53.5	
Polygamous	138	46.5	
Number of pregnancies			
None	121	30.3	
One	130	32.5	
Two	118	29.5	
Three	31	7.8	
Number of children			
None	69	17.2	
One	150	37.5	
Two	93	23.3	
Three	78	19.5	
Four and greater	10	2.5	
Months of gestation			
38 and less weeks	231	57.8	
39 weeks	51	12.6	
40 weeks	19	4.8	
41 weeks	99	24.8	
Average Income			



Figure 1. Types of Apartment Respondent's Lived

Variable	Respondents in this study=400	
	Frequency (n)	Percentage (%)
Age of Child (in months) x 10.0	6 ±9.7
1-10	278	69.5
11-20	58	14.5
21-30	40	10.0
31-40	20	5.0
41-50	2	0.5
51-60	2	0.5
Sex of Child		
Male	282	70.5
Female	118	29.5

 Table 3. Respondent's Child Demographic

Respondent Nutritional Knowledge

As shown in Table 4, most (70.5%) of the respondents had received education on good child feeding practice. More than half (58.5%) of the respondent's obtained education on good child feeding practices from the health centre. Of those who received education on child feeding practice, the majority (85.5%) received the

education before the delivery of their child (See Table 4). The majority (79.8%) of the respondents were aware of traditional child feeding practices, and sixty-seven perceived they were taught by their relatives. The majority (87.2%) of the respondents obtained nutritional information on infant feeding practices. More than half (57%) of the respondents obtained on infant feeding practice from their relatives (See

Table 5). The majority (92.5%) of the respondents stated that a balanced diet included all nutrients for growth. More than half (69%) of the respondents stated that beans, fish, and meats are rich in protein (See Table 4). Less than half (48.5%) of the respondents stated that breast milk alone should be giving to the infant in the first six months of life (See Table 6). The majority (91.5%) of the respondents stated that breast. Only (49.5%) of the respondents boil and filter

their drinking water. The respondents reported that poor child nutrition could result to stunted growth (26.2%), poor academic performance (19.5%) and death of the child (22.7%) (See Table 6). Respondents' level of Nutritional knowledge on was assessed with the aid of a 9point knowledge scale. Respondents mean knowledge score was 5.9 ± 1.96 , with less than half (21.3%) of the respondents had poor nutritional knowledge,78.8% had good nutritional knowledge (See Table 7).

Items	Respondents in this study=400, *N=282, **319		
	Frequency(n)	Percentage (%)	
Have you received education on child feeding practice?			
Yes	282	70.5	
No	118	29.5	
*Child feeding infor	mation source		
Health facility	165	58.5	
Relatives	44	15.6	
Friends	26	9.2	
Schools	42	14.9	
Seminar/workshop	2	0.7	
Mass media	3	1.1	
Did you receive the	education before	or after delivery?	
Before	241	85.5	
After	41	14.5	
Were you aware of	traditional feeding	g practice?	
Yes	319	79.8	
No	81	20.2	
**Who gave you the	e traditional feedi	ng information?	
Yes	270	84.6	
No	49	15.4	
Did you receive nut	ritional knowledg	e on appropriate infant feeding practice?	
Yes	349	87.2	
No	51	12.8	
Balanced diets include all needed nutrient for growth			
Yes	370	92.5	
No	30	7.5	
Food that are rich in protein include beans, fish and meat			
Yes	276	69.0	
No	124	31.0	

Sources of Information	N = 349	%
Relatives	199	57.0
Mass media	26	7.5
Friends	11	3.2
School/workshop	3	0.8
Health centre	110	31.5

Table 5. Respondents' Sources of Information on Infant Feeding

Table 6. Respondent's Nutritional Knowledge

Items	Respondents in this study=400		
	Frequency(n)	Percentage (%)	
What food should be given to a child in the fir	st six months of	life	
Breast milk alone	194	48.5	
Breast milk and water	117	29.3	
Breast milk and infant formula	68	17.0	
Breast milk and some adult food	21	5.3	
Breastfeeding gives immunity for the baby			
Yes	366	91.5	
No	34	8.5	
Do you boil and filter your drinking water?			
Yes	198	49.5	
No	202	50.5	
*Poor nutrition causes			
Stunted growth	311	26.2	
Frequent diarrhoea	205	17.3	
Frequent malaria	170	14.3	
Poor academic performance in school	232	19.5	
Death of the child	270	22.7	

*Multiple responses

Table 7. Proportion of Respondent's Nutritional Knowledge

	Respondents in this study; $N=400 \ \bar{x}=5.9\pm1.96$.	
	Frequency	Percentage (%)
Poor	85	21.3
Good	315	78.8

Respondent's Child Feeding Practice

As shown in Table 8, less than half (48.2%) of the respondents reported that they initiated breastfeeding immediately after birth. More than half (54.3%) of the respondents reported that they gave cereal, infant formula, bread, and tea to the baby they had weaned. Half (50.7%) of the respondents breastfed their infants. Also, fifty-

four percent breastfed their infants exclusively. Of those who breastfed their child exclusive only (45.4%) breastfed their infants for six months. Few (28%) of the respondent's breastfed their babies wherever they cry. Less than half (46.8%) feeds their child whenever they cry (See Table 8). Respondents' Job (67.6%) topped the list, followed by finance (14.5%) were the factor that hinders exclusive breastfeeding by the respondents (See Table 8). Respondent's finance (54.3%) hinders their infant weaning feeding (See Figure 2). Bore-hole water was the source of water for twenty-seven percent of the respondents (see Figure 3). Only (23.3%) of the respondents always washed their hands before breastfeeding their infants. Less than half (31%) of the respondent's always washed their hands after changing the diaper of their babies. Few

(36.5%) of the respondents washed their hands after using the toilet. Respondents' child feed practices were assessed with the aid of an 11point practice scale. Respondents mean child feeding practice score was 6.05 ± 1.98 . More than half (59.2%) of the respondents had good child feeding practices, and 40.8% had poor child feeding practices (See Table 9).

Items	Respondents in this study=400, *N=216		
	Frequency(n)	Percentage (%)	
When did you initiate breastfeeding after delivery?			
Within 30 minutes of delivery	193	48.2	
1 hour after delivery	152	38.0	
Within a day	52	13.0	
The following day	3	0.8	
What types of food should be given to	a child that has be	en weaned from breastfeeding?	
Solid	183	45.7	
Cereal, infant formula, bread and tea	217	54.3	
Did you are you breastfeeding your ch	ild?		
Yes	203	50.7	
No	197	49.3	
Did you or are you breastfeeding the c	hild exclusively?		
Yes	216	54.0	
No	184	46.0	
*How long did you breastfeed exclusiv	vely?		
Less than 6 months	122	54.6	
6 months and above	102	45.4	
How many times do you breastfeed da	ily?		
2times	100	25.0	
3times	71	17.8	
4times	117	29.2	
Any times the baby cries	112	28.0	
For children who are no longer breastf	eeding, how long	did you plan to feed?	
2times	25	6.2	
3times	116	29.0	
4times	72	18.0	
Any times the baby cries	187	46.8	
What hinders the practices of exclusive breastfeeding?			
Job	270	67.6	
Lack of knowledge	27	6.8	
Finance	58	14.4	
Illness/ health status	45	11.2	

Table 8. Respondent's Child Feeding Practices



Figure 2. Factors That Hinders Weaning feeding of Respondents Child



Figure 3. Respondents Source of Water

Table 9. Proportion of Respondent's Child Feeding Practices

	Respondents in this study; N=400 \bar{x} =6.05±1.98.	
	Frequency Percentage (%)	
Poor	163	40.8
Good	237	59.2

Nutritional Status of Respondents and Child

As shown in Table 11, the mean weight of the respondents was $\bar{x}=62.2\pm9.48$. Less than half (44.8%) of the respondents were overweight, while only (0.5%) were underweight (See Table 10). The average weight for the respondent's child was $\bar{x}=6.9\pm0.09$ (See Table 10). More than

half (64.8%) of the respondent's children weighted between 3.4 -7.3 kg. More than half (57.1%) of the respondent's male children were moderately underweight, and 51.6% were stunted. Also, less than half (46.8%) of the respondent's female children were moderately underweight, and 61.6% were stunted (See Table 12).

Items	Respondents in this study=400,	
	Frequency(n)	Percentage (%)
Weight (Kg) x=6.	9±0.09	
3.4-7.3	259	64.7
7.4-11.3	128	32.0
11.4-14.3	11	2.8
14.4-17.3	2	0.5
Height (CM)		
49.0-58.9	54	13.5
59.0-68.9	208	52.0
68.9-78.9	73	18.3
79.0-88.9	59	14.8
89.0-98.9	5	1.3
99.0-108.9	1	0.3
BMI		
Under weight	2	0.5
Normal weight	45	11.2
Overweight	179	44.8
Obesity class 1	127	31.8
Obesity class 2	45	11.2
Obesity class 3	2	0.5

Table 10. Respondents Nutritional Status

Table 11: Respondents Child Nutritional Status

Items	Respondents in this study=400,			
	Frequency (n)	Percentage (%)		
Weight (Kg) x=62.2±9.48				
40-49	34	8.4		
50-59	119	29.8		
60-69	138	34.5		
70-79	86	21.5		
80-89	23	5.8		
Height (M)				
1.20-1.44	217	54.3		
1.45-1.64	158	39.4		
1.65-1.84	25	6.3		

 Table 12. Level of Malnutrition among Respondent's Under 5

Malnutrition	Indicator	Frequency	Rate (%)
Males			
Underweight(-1SD)	WAZ	35	19.0
Moderately underweight(<-2SD)	WAZ	105	57.1
Severely underweight(<-3SD)	WAZ	42	22.8
Normal weight (Median)	WAZ	2	1.1
Stunted (<-3SD)	WHZ	95	51.6

Moderately stunted(-<2SD)	WHZ	56	30.4
Severe wasting(<-3SD)	WHZ	20	10.9
Normal weight (median, 1 SD)	WHZ	13	7.1
Females			
Underweight(-1SD)	WAZ	66	30.6
Moderately underweight(<-2SD)	WAZ	101	46.8
Severely underweight(<-3SD)	WAZ	46	21.2
Normal weight (Median)	WAZ	3	1.4
Stunted (<-3SD)	WHZ	133	61.6
Moderately stunted(-<2SD)	WHZ	53	24.5
Severe wasting(<-3SD)	WHZ	16	7.4
Normal weight (median, 1 SD))	WHZ	13	6.0
Overweight (+2 SD)	WHZ	1	0.5

*WAZ: Weight -for-age z-score, WHZ: Weight-for-height-z-score **Male=184, Female=216

Test of Hypotheses

Five hypotheses were tested for this study. In testing these hypotheses, Chi-square, Pearson and Spearman correlation and linear regression was conducted at a 0.05 level of significance. The decision rule applied was that if the p-value computed was less or equal to the cut-off p-value of 0.05, the null hypothesis will be rejected in favour of the alternative hypothesis and viceversa.

Hypothesis 1: there is no significant relationship between the respondent's level of education and knowledge of nutrition. The result of the Spearman correlation analysis showed that there was a significant relationship between respondent's level of education and their knowledge of nutrition knowledge (r=0.53, p value=0.000) (See Table 13). Therefore, based on these values, respondent's level of education and their knowledge of nutrition had a relationship. Hence the null hypothesis was rejected.

Hypothesis 2: there is no significant relationship between respondent's knowledge of nutrition and their child feeding practices. The result of the Pearson correlation analysis showed that there was a significant relationship between respondent's knowledge of nutrition and their child feeding practices (r=-0.13, p value= 0.007) (See Table 14). Therefore, based on these values, respondent's knowledge of nutrition and their

child feeding practices had a relationship. Hence the null hypothesis was rejected.

Hypothesis 3: there is no significant relationship between respondent's marital status and their child feeding practices. The result of the Chi-square analysis showed that there was a significant relationship between respondent's marital status and their child feeding practices $(X^2=21.99, p \text{ value}=0.000)$ (See Table 15). Therefore, based on these values, respondent's marital status and their child feeding practices had a relationship. Hence the null hypothesis was rejected.

Hypothesis 4: there is no significant relationship between respondent's income and their child feeding practices. The result of the Chi-square analysis showed that there was a significant relationship between respondent's income and their child feeding practices $(X^2=91.22, p \text{ value}=0.000)$ (See Table 16). Therefore, based on these values, respondent's income and their child feeding practices had a relationship. Hence the null hypothesis was rejected.

Hypothesis 5: there is no significant relationship between respondent's knowledge of nutrition and the nutritional status of their children. The result of the Chi-square analysis showed that there was a significant relationship respondent's knowledge of nutrition and the nutritional status of their children (for underweight, male, X^2 =14.54, p value=0.002;

female X^2 =26.1, p value=0.000); (for stunting, X^2 =11.50, p value=0.021; female X^2 =16.46, p value=0.002) (See Tables 17 & 18). Therefore, based on these values, respondent's knowledge

of nutrition had a relationship with the nutritional status of their children. Hence the null hypothesis was rejected.

Table 13. Relationship between Respondents' Level of Education and knowledge of Nutrition

Variable	Nutrition Knowledge N=400		
	R	p-value	
Level of education	0.53	0.000	

Table 14. Relationship between Respondents' Child Feeding Practice and Knowledge of Nutrition

Variable	Child 2	Feeding Practices N=400		
	r	p-value		
Level of knowledge	-0.13	0.007		

Table 15. Relationship between Respondents' Marital Status and Child Feeding Practices

Knowledge	Child Fee	eding Practices%	\mathbf{X}^2	p-value
	Low	High		
Single	1.5	24.2	21.99	0.000
Married	6.5	50.1		
Divorced	1.5	16.2		

Table 16. Relationship between Respondents' Income and Child Feeding Practices

Knowledge	Child F	eeding Practices%	\mathbf{X}^2	p-value
	Low	High		
<10,000	3.5	37.2	91.22	0.000
11000-25000	0.5	32.1		
26000-50000	0.0	5.2		
51000-75000	0.3	5.0		
76000-10000	3.5	3.7		
>100,000	1.7	7.3		

Table 17. Relationship Between Respondents' s Nutritional Knowledge and Nutritional Status of their Child

(Underweight)

Sex of cl	nild			Weight for age				Total
				Underweight	Moderately underweight	Severely Underweight	Normal weight	
Male	Know	Low	Count	12	21	4	2	39
			% of Total	6.5%	11.4%	2.2%	1.1%	21.2%
		High	Count	23	84	38	0	145
			% of Total	12.5%	45.7%	20.7%	0.0%	78.8%
	Total		Count	35	105	42	2	184
			% of Total	19.0%	57.1%	22.8%	1.1%	100.0 %
Female	Know	Low	Count	19	24	0	3	46

		% of Total	8.8%	11.1%	0.0%	1.4%	21.3%
	High	Count	47	77	46	0	170
		% of Total	21.8%	35.6%	21.3%	0.0%	78.7%
Total		Count	66	101	46	3	216
		% of Total	30.6%	46.8%	21.3%	1.4%	100.0 %

*Male, X2=14.54, p value=0.002; femaleX2=26.1, p value=0.000

 Table 18. Relationship between Respondent's Nutritional Knowledge and Nutritional Status of their Child (Stunting)

Sex of c	hild			Weight f	or length				Total
				Stunted	Moderately stunted	Severely Stunted	Normal weight	Overweight	
Male	Know	Low	Count	26	10	0	3		39
			% of Total	14.1%	5.4%	0.0%	1.6%		21.2%
		High	Count	69	46	20	10		145
			% of Total	37.5%	25.0%	10.9%	5.5%		78.8%
	Total		Count	95	56	20	13		184
			% of Total	51.6%	30.4%	10.9%	7.1%		100.0%
Female	Know	Low	Count	35	8	0	3	0	46
			% of Total	16.2%	3.7%	0.0%	1.4%	0.0%	21.3%
		High	Count	98	45	16	10	1	170
			% of Total	45.4%	20.8%	7.4%	4.6%	0.5%	78.7%
	Total		Count	133	53	16	13	1	216
			% of Total	61.6%	24.5%	7.4%	6.0%	0.5%	100.0%

*Male X2=11.50, p value=0.021; female X2=16.46, p value=0.002

Discussion

The mean age of the respondents was 30 ± 6.4 years. This is similar to the findings of [11] in Turkey. This similarity is expected as is the reproductive age. The study showed that there were more women married hence upholding the moral values of the family and creation of a conducive environment for the upbringing of children. The socio-economic characteristics of the household revealed that the majority of the

head of the household was skilled, and 40.7% of they earn less than 100,000 naira annually (1U.S dollar equivalents 150 naira). Such a relatively low income will most likely affect the nutritional status of subjects in such homes, considering the cost of housing in Lagos. A recent study carried on assessing the nutritional status of preschool children from low-income families in Lagos State by [12] reported poor nutritional status of majority of the subjects. The income of the household head, therefore, appears to be a major factor in determining the nutritional status of mothers and children in the household.

Nutrition knowledge is the understanding of different types of food and how food nourishes the body and influences health [13]. Nutrition knowledge affects food choices and preparation; knowledge particularly given to women is a powerful weapon against malnutrition since increased knowledge and skills enable women to earn higher incomes and thus enhance household food security and improve the quality of day-today care women gives themselves and all members of their household, especially children. It empowers women to make optimal choices for nutritious and safe food [14]. Maternal nutrition knowledge has frequently been identified as an important target for nutrition promotion interventions [15]. In this study majority of the mothers interviewed had knowledge of nutrition, while a few of them did not have any knowledge at all. The mothers who had knowledge were able to list different sources, health facilities being the most mentioned. This shows that the nutrition knowledge of the mothers was good. This finding is similar to the findings of [16] in Lagos. This could have been informed by their level of education. Education has an important effect on mothers 'nutrition knowledge, attitudes and on dietary intake of children [17]. The study revealed a statistically significant association (p<0.05) between mother's nutrition knowledge and the nutrition status of the children. Even though the majority of the mothers appeared to have high nutrition knowledge, it did not seem to translate into appropriate infant feeding practices since the prevalence of under-weight, stunting, and wasting are of public health concern. This is similar to the findings of [18] and [16]. Also, mother's nutrition knowledge had a relationship with their feeding practices of children the finding is similar to the findings of [12].

Furthermore, even though almost all the mothers breastfed their children, the prevalence of exclusive breastfeeding for 6 months was very low. However, the figures were higher than the

national prevalence of 17% [19]. The lower prevalence of exclusive breastfeeding may be due to career women or women in civil service jobs who have to resume for work after 3 months' maternity leave. This could also explain the high rate of use of the formula by mothers. The common reason given for practicing exclusive breastfeedings was their job; this is at variance to the report of [16] reports that the baby could not get enough from the breast milk and would soon be hungry. Children are expected to be introduced to solid, semisolid, or soft foods at the age of 6 months and above to complement breastfeeding. In this study, more than half of the children were already commenced on semisolid feed had it introduced between age of 6 and 8 months. This was similar to 58.2% observed among infants in Kano [20], Nigeria, higher than 40% in rural central Tanzania [21] and lower than 65.5% among infants in rural Shaanxi province in China [22]. The implication is that the remaining children are likely to be at risk of malnutrition.

In this study, there was a relationship between household income and dietary practices. High household income of the family offers the opportunity to provide good quality food and more health services. Expenditure on food is likely to increase where there is an improvement in household income, thereby increasing the rate of caloric and protein intake among children and members of the household. On the other hand, poor household income can lead to less expenditure on food and low nutrient/dietary intake. [23, 24] pointed out that a synergistic relationship exists between dietary adequacy, dietary intake and per capita expenditure. Also, the findings revealed a significant relationship between marital status and child feeding practices mothers who were married and living with their husbands were more knowledgeable as compared with single and divorced mothers. This finding is similar to the findings of [25]. This may be because husbands can discuss the children feeding with their wives.

In this study, the nutritional status of the children on the basis of weight-for-age Z-score (WAZ, indicator of under-weight), showed that 13% of males and 30.6 females were underweight which results from inadequate intake of food nutrients.57.1% males and 46.8% females were moderately under-weight (-3 to <-2) while 22.8% males and 21.2% females were severely under-weight (<-3). About 11% of males and 7.4% of females were severely wasted (<-3). Wasting represents a more accurate reflection of the current period of sickness and short-term food shortage that led to significant weight loss. It also indicates a deficit in tissue and fat mass compared with amounts expected in a child of the same height or length and may result either from failure to gain weight or from actual weight loss [26]. The nutritional status of then children on the basis of height-for-age (an indicator of stunting) reported in this study showed that 51.6% of males and 61.6% of females were stunted. About 30.4 % of males and 24.5% of females were moderately stunted (-3 to <-2), while 10.9% of male and 7.4% of females were severely stunted (<-3). Stunting is a common problem in Nigeria and may have serious implications. It results from extended periods of inadequate food intake, poor dietary quality, increased morbidity or a combination of these factors. It is worth noting that children deprived of nutrients for healthy growth are also deprived of nutrients for brain development and a healthy immune system [27]. The consequences of stunting may be grave as most children might never regain the lost height. It could also lead to premature death later in life because vital organs might never develop fully during childhood [28]. More than 90% of the world's stunted children live in Africa and Asia, where respectively 36% and27% of children are affected. It could be suggested that the sub-optimal feeding practices of the mothers have influenced the children's nutritional status since poor nutritional status is a result of detrimental feeding practices with consequences that may persist throughout the children's life [29]. These findings are similar to the findings of [16]. The similarities in findings maybe because both studies were conducted in Lagos State.

From the magnitude of the relationship of a mother's knowledge with child HAZ and WHZ in this study, it is evident that mother's knowledge of nutrition and health is very helpful in safeguarding young children from occasions that reduce children's HAZ and WHZ scores. These results are consistent with some studies in developing countries. For example, [30] found a significant association between maternal nutrition knowledge and wasting in Indonesia but not stunting. Likewise, [31] in Ghana found associations between a mother's nutrition knowledge and being underweight, which measures both stunting and wasting. Mother's level education can significantly increase HAZ scores (stunting reduction) in children and WHZ scores (wasting reduction) in children. Studies show that in a setting where the illiteracy rate is higher, low level of parental education, typically below junior secondary, has no significant effect on child under nutrition. [6, 9]. Given the present level of mother's formal education in the studied population, further gains are unlikely to reinforce mother's nutrition knowledge for the purposes of reducing under nutrition.

Conclusion

The mothers' nutritional knowledge was good. It is considered that the training given by health care centres contributed to this situation. The knowledge scores increase in parallel with the educational level, which reveals the importance of education. Education should be given importance in all periods of life. However, necessary caution should be taken in the education of women who become mothers in their adolescence or older age and mother of more than one child, and accordingly, their education should be frequently renewed. There sub-optimal breastfeeding were and complementary feeding practices among the mothers despite the nutritional knowledge score. The nutritional knowledge of the mothers

showed a significant association with the nutritional status of the children.

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Conflict of Interest

The authors declare no conflict of interest this study.

policies and programmes in Nigeria', *WHO* [online]. Available at: http://www.who.int.com (Accessed: 08 January 2015).

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