

Original Research Article

Breastfeeding knowledge and attitudes of Nigerian mothers assessed by the Iowa infant feeding attitudes scale

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ABSTRACT

Background: Exclusive breastfeeding practice in Nigeria is reportedly dwindling, yet the current breastfeeding practices and challenges remain largely unknown. To use the Iowa infant feeding attitude scale (IIFAS) to assess the breastfeeding knowledge and attitude of recently delivered mothers in Lagos Nigeria.

Methods: A community-based survey. Study-related data were obtained from 636 mothers selected through multistage sampling, using IIFAS. The scale was validated for our environment before use in the study. The study data were managed with SPSS version 22.0.

Results: The prevalence of any breastfeeding, exclusive breastfeeding at 6 months and timely initiation of breastfeeding was 99.5%, 22.2% and 47.4% respectively. While the mothers had some knowledge of breastfeeding, their overall knowledge and attitudes about breastfeeding were positive towards infant formula than breastfeeding. More than half of the mothers in our study stated that infant formula was as healthy for infants as breastmilk (62.3%), formula feeding is the better choice if the mother plans to go back to work (80.7%), and that formula feeding was more convenient than breastfeeding (56.9%). Previous exclusive breastfeeding experience (OR 2.7, 95% CI: 1.15, 8.41), being a housewife (OR 1.6, 95% CI: 1.14, 10.9), and having a positive attitude to breastfeeding (OR 1.9, 95% CI: 1.3, 11.6) were found to be associated with exclusive breastfeeding.

Conclusions: Although breastfeeding was almost universal in the study area (99.5%), the knowledge and attitude to exclusive breastfeeding (EBF) were suboptimal. Public health education on breastfeeding should be intensified before, during and after pregnancy to improve mother's EBF knowledge and attitude.

Keywords: Knowledge, Attitude, Practices, Breastfeeding, Exclusive, Weaning

INTRODUCTION

Breastfeeding is as old as humanity, and it is the best and complete food for infant as it contains the essential nutrients and antibodies that the infant needs during the first six months of life.¹ Breastfeeding benefits both the infant and mother and offers an important opportunity for the pair to bond.² Breastfeeding contributes largely to the mother's health and well-being as it helps to space children, reduces the ovarian and breast cancer risks, and increases family and national resources as it is cost-

effective. It is a secure method of feeding, and also safe for the environment.³⁻⁵

Breastfeeding is essential for the health and survival of the majority of children in developing countries.⁶

Exclusive breastfeeding (EBF) of the infant for the first six months and continuing up to one year or longer with complementary foods is recommended because of the numerous advantages of breastfeeding to mother, infant and the community.^{4,5} However, despite this range of

health benefits for mothers, infants and communities, many mothers, including those in Nigeria, have not still met this recommendation.⁷⁻¹⁰

The knowledge and attitudes of mothers towards breastfeeding is an important factor that influences breastfeeding practices. In Nigeria, although breastfeeding is universal, with almost all babies being breastfed, the practice of exclusive breastfeeding is rare, with only less than one-fifth of children less than six months being exclusively breastfed.¹⁰⁻¹² A study in Southern Zambia found that attitudes towards breastfeeding influences a woman's breastfeeding behaviour and choice.¹³ Other challenges of breastfeeding include inadequate knowledge of the health benefits of breastfeeding, maternal and child health attributes, including cultural beliefs.^{9,13}

A valid and reliable measure to evaluate mothers' breastfeeding knowledge and attitudes is IIFAS.¹⁴ No study in our environment to the best of our knowledge has used IIFAS to assess breastfeeding knowledge and attitudes of mothers. This internationally accepted and validated tool is essential for comparing data and obtaining quality information critical for policy formulation and practice.

In addition to the determination of knowledge and attitude of mothers to breastfeeding, identifying the factors that influence knowledge and attitude are essential for education for maternal behaviour. To improve the rates of exclusive breastfeeding in Nigeria, this specific information that influence breastfeeding are needed. The study objective was to assess the infant feeding practices, knowledge and attitudes of recently delivered Nigerian mothers residing in Lagos using the IIFAS. In addition, the factors that influence these outcomes was also determined.

Definition of terms

Recently delivered mother: Women who are currently breastfeeding or within 24 months of delivery.

EBF: Mother gives only breastmilk to the infants. Use of any other liquids or solids is precluded except recommended medications.

Full breastfeeding: Mother gives breastmilk as the primary nourishment for infants and water, water-based drinks, fruits juice, and oral rehydration solution. Excluding the use of formula and solids.

Any breastfeeding: Mother gives breastmilk to their infants and may also provide infant formula to infants with or without solids.

Early initiation of breastfeeding: Initiation of breastfeeding within one hour of birth.

METHODS

This was a cross-sectional community-based study involving mothers who are currently breastfeeding or had the baby in the last 24 months (recently delivered mothers) in 24 communities in the three senatorial zones across Lagos state, Nigeria.

The study was conducted in Lagos, Nigeria, a cosmopolitan state with 12.1 million women of childbearing age from November 2017 to April 2018. and selection criteria of the patients.

The Raosoft sample size calculator was used to determine the sample size of 630 at 99% confidence interval, 5% margin of error and response rate of 50%.¹⁵ The study participants were selected through multistage random sampling. The first unit of selection was all the local government area in each of the state's three senatorial zones. Two urban and two rural local government in each of the three senatorial zones were selected by random sampling method. In each of the 12 selected local government areas, one urban and one rural community were randomly selected, making up 24 communities. Twenty-seven recently delivered mothers purposively selected in each of the 24 communities were interviewed after informed consent. Selected for the study were women currently breastfeeding or within 24 months of delivery. Trained research assistants administered the questionnaire to eligible women who signed the informed consent form. Mothers' knowledge and attitudes towards breastfeeding were assessed using the IIFAS. All 17 items in the IIFAS are related to the health and nutritional benefits, the cost, knowledge and the convenience with a five-point scale that ranged from 1=strongly disagree to 5=strongly agree. Total scores ranged from 17 (lowest-reflecting negative attitude to breastfeeding and presence for formula feeding) to 85 the highest (indicating attitudes that favour breastfeeding). Scores between 49 and 69 reflects neutral attitudes towards infant feeding methods. The English version of IIFAS was used for data collection, and each question was checked to ensure cultural and literal appropriateness during a pilot study.

Data analysis in the study was with the statistical package for social sciences, version 22.0 (SPSS for Windows, SPSS Inc., Chicago, IL, USA). First, descriptive statistics and frequencies were used to summarise the mother's characteristics and each item in the IIFAS. The second step was bivariate and multiple logistic regression to identify factors associated with exclusive breastfeeding. The Cronbach's alpha level was used to determine the internal consistency of this scale. Statistical significance was set at 0.05 level for all tests ($p < 0.05$).

RESULTS

A total of 648 eligible mothers were sampled for the study, of which 639 accepted to participate and completed the study (response rate of 98.6%). For the final analysis,

636 questionnaires were used due to missing data in six returned survey tools.

Sociodemographic characteristics

The sociodemographic characteristics of the mothers in the study are shown in Table 1. The mean age of the mothers was 31.9±5.6 years, with a range of 17-51 years. The majority of the respondents were within the age group 20-39 (86.6%). The median number of children by

the mothers were three, with most having between 2 and 4 children (86.2%). The majority of the mothers were married (84.3%), had at least a secondary education (57.1%), gainfully employed (51.1%), practices Christian faith (75.0%) and has equivalent of less than 50 United States dollars as the amount available for family upkeep per month (59.7%). The majority of the mothers belonged to either Yoruba (47.2%) or Igbo (31.0%) ethnic groups and had a previous vaginal delivery (82.7%).

Table 1: Sociodemographic characteristics of the 633 mothers in the study.

Characteristics	Number of mothers (%)
Age (years)	
Less than 20	23 (3.7)
20-29	229 (36.2)
30-39	320 (50.5)
40-49	60 (9.5)
≥50	1 (0.2)
Mean age	31.9±5.6
Educational status attained	
No formal education	60 (9.5)
Primary	212 (33.5)
Secondary	231 (36.5)
Tertiary	130 (20.5)
Marital status	
Single	22 (3.5)
Married	534 (84.3)
Divorce/separated	62 (9.8)
Widow	15 (2.3)
Number of children	
1	61 (9.6)
2-4	545 (86.1)
≥ 5	27 (4.3)
Median	3
Work status	
Housewife	149 (23.5)
Student	33 (5.2)
Not working	128 (20.2)
Working petty trader	324 (51.2)
Religion	
Islam	128 (20.2)
Christianity	475 (75.0)
African traditional religion	30 (4.8)
Ethnic group	
Yoruba	299 (47.2)
Igbo	196 (31.0)
Hausa/ Fulani	40 (6.3)
Others	98 (15.5)
Amount of money for family upkeep/month (\$)	
<50	379 (59.8)
50-100	220 (34.8)
>100	34 (5.3)
Previous delivery	
Yes	523 (82.7)
No	110 (17.3)

Mothers practice breastfeeding

The prevalence of any breastfeeding, exclusive breastfeeding at 6 months and timely initiation of breastfeeding was 99.5% (633), 22.2% (141) and 47.4% (300), respectively. The proportion of mothers who exclusively breastfed their babies were 25.1% and 24.6% at one month and three months, respectively. The majority of the mothers gave the newborn colostrum (480; 75.8%). The reasons for not initiating breastfeeding within an hour of delivery are shown in Table 2, with insufficient breast milk being the most common reason (145; 43.7%). Of the remaining 153 (24.2%) mothers who did not give colostrum, the majority gave the reason for colostrum being dirty milk for their decision (75.2%; 115). Among the 492 women who did not breastfeed their babies exclusively, insufficient milk (69.3%; 341) and work (30.7%; 151) were the common reasons. Other reasons are shown in Table 3. Plain pap (36.8%; 233) and pap with milk (26.2%; 166) were the common weaning food among the respondents.

Table 2: Reason(s) for not initiating breastfeeding early among 333 mothers who did not initiate within one hour of delivery.

Reasons	No. of mothers (%)
Insufficient breastmilk	152 (45.7)
Maternal illness	77 (23.0)
Child illness	6 (1.9)
Colostrum not good for baby	94 (28.1)
No reason	4 (1.3)

Table 3: Reason (s) for not breastfeeding exclusively among the 492 women in the study.

Reasons	No. of mothers (%)
Insufficient breastmilk	341 (69.3)
Work	151 (30.7)
Baby cry/ hungry	17 (3.5)
Mothers' illness	32 (6.5)
No reason	8 (1.7)

Mother's knowledge and attitude towards breastfeeding

The mother's knowledge and attitude towards breastfeeding using IIFAS are shown in Table 2. Over

two-thirds of the mothers (69.8%; 444) responded that breastmilk is less expensive than infant formula. The majority of the mothers responded that breastfeeding promoted mother-child bonding (81.4%; 518), that breastmilk was the ideal food for infants (83.7%; 532), and that if the mother plans to go back to work formula feeding is the better choice (80.7%; 513). Slightly more than half of the mothers disagreed that breastfed babies are more likely to be overfed than formula-fed babies (56.8%; 361) and that father feels left out if the mother breastfeeds (53.2%; 338). Regarding the reverse questions, 56.9% (362) still agreed that formula feeding was more convenient than breastfeeding. Less than half of the mothers responded that mothers who formula feed miss one of the great joys of motherhood (40.3%; 256) and those breastfed babies are healthier than formula-fed babies (37.3%; 237). While 48.9% (311) of the mothers disagreed that breastfeeding was not acceptable in public places like markets, worship centres, offices, and restaurants, the remaining 51.1% (325) of the mothers agreed or neutral on this question. The average score of the IIFAS (mean \pm standard deviation) was 47.9 \pm 8.3. The alpha level of Cronbach that indicates the reliability of the IIFAS in our study was 0.71.

Factors associated with exclusive breastfeeding

Initial bivariate analysis showed an association between exclusive breastfeeding and occupation ($p=0.032$), ethnic group ($p=0.041$), amount of money available for family upkeep ($p=0.042$), level of education ($p=0.042$), previous experience of exclusively breastfeeding ($p=0.031$) and positive attitude to breastfeeding ($p=0.025$), but not with age ($p=0.11$), marital status ($p=0.27$), parity ($p=0.43$), mode of delivery ($p=0.76$) or religion ($p=0.07$). Further analysis by entering the variables that were found to be associated with exclusive breastfeeding at bivariate analysis into multivariate logistic regression model while controlling for occupation, education level, marital status and age showed that only previous exclusive breastfeeding experience (OR 2.7, 95% CI: 1.15, 8.41), being a housewife (OR 1.6, 95% CI: 1.14, 10.9), and positive attitude to breastfeeding (OR 1.9, 95% CI: 1.3, 11.6) retained their independent association with exclusive breastfeeding. The amount of money available for family upkeep, having less than secondary education, and the ethnic group lost their independent association with exclusive breastfeeding.

Table 4: Mothers' knowledge and attitudes towards breastfeeding using the IIFAS, (n=636).

Items	Agree, (%)	Neutral, (%)	Disagree, (%)
The benefit of breastfeeding last only as long as baby is breastfed	334 (52.5)	141 (22.2)	161 (25.3)
Formula feeding is more convenient than breastfeeding	251 (39.5)	155 (24.4)	230 (36.2)
Breastfeeding increases mother-infant bonding	518 (81.4)	105 (16.5)	13 (2.0)
Breastmilk is lacking in iron	124 (19.5)	300 (47.2)	212 (33.3)
Formula fed babies are more likely to be overfed than breastfed babies	258 (40.6)	225 (35.4)	153 (24.1)
Formula feeding is the better choice if mother plans to go back to work	513 (80.7)	44 (6.9)	79 (12.4)

Continued.

Items	Agree, (%)	Neutral, (%)	Disagree, (%)
Mothers who formula feed miss one of the great joys of motherhood	256 (40.3)	152 (23.9)	228 (35.8)
Women should not breastfeed in public places such as market, worship centres, offices or restaurants	225 (35.4)	100 (15.7)	311 (48.9)
Breast fed babies are healthier than formula fed babies	237 (37.3)	252 (39.6)	147 (23.1)
Breast fed babies are more likely to be overfed than formula fed babies	105 (16.5)	256 (40.3)	361 (56.8)
Father feels left out if mother breast feeds	133 (20.9)	165 (25.9)	338 (53.2)
Breastmilk is the ideal food for infants	532 (83.7)	67 (10.5)	37 (5.8)
Breastmilk is more easily digested than formula	340 (53.5)	201 (31.6)	95 (14.9)
Formula is as healthy for an infant as breastmilk	396 (62.3)	121 (19.1)	118 (18.6)
Breastfeeding is more convenient than formula feeding	130 (20.4)	144 (22.6)	362 (56.9)
Breastfeeding is cheaper than formula feeding	444 (69.8)	95 (14.9)	97 (15.3)
A mother who occasionally drinks alcohol should not breastfeed her baby	329 (51.7)	115 (18.1)	192 (30.2)

The items 1, 2, 4, 6, 8, 10, 11, 14, and 17 were reversed when calculating the score. Disagree includes 'strongly disagree' and 'disagree'. Agree includes 'strongly agree' and 'agree'.

DISCUSSION

The study assessed the knowledge, attitude and practices of breastfeeding and factors associated with exclusive breastfeeding using a community representative sample in Lagos state Nigeria. This study found that 47.4% of the mothers-initiated breastfeeding immediately within one hour of birth. The finding is higher than 26%, and 31% observed in the studies from Kano and Sokoto, respectively.^{11,16} However, the study from western Nepal, India, observed a higher rate of and 72.2% of early breastfeeding initiation.¹⁷ Several studies have emphasised the risk of delayed onset of breastfeeding on neonatal mortality.^{18,19} Neonatal mortality could be significantly reduced by 16% if breastfeeding is initiated in the first 24 hours and up to 22% if started in the first hour.^{16,20} Insufficient milk (45.7%), colostrum not good for the baby (28.1%) and maternal illness (23.0%) were the main reasons for late initiation of breastfeeding. The finding is similar to that of Onayande and others in Ile-Ife.²¹ Which has identical socio-cultural characteristics to our study area. In addition to inadequate nutrition, the benefits of the immunological constituents of colostrum and subsequently delays the proper establishment of lactation.²² Often while waiting for the establishment of sufficient milk or good milk, the mothers are likely to give prelacteals in the form of boiled water, pap, and formula milk. The introduction and use of prelacteal feeds are common in sub-Saharan African, including Nigeria.^{21,23,24} Various factors can cause a low milk supply during breastfeedings, such as long waiting period before starting breastfeeding, not breastfeeding often enough, supplementing breastfeeding, an ineffective latch and use of certain medications. Health education during pregnancy and post-pregnancy should emphasise this factor and how to address them.

Although nearly all mothers in the study breastfed their child (99.5%), with a 22.2% EBF rate at six months and an early breastfeeding initiation rate of 47.4%. This

confirms the reported dwindling breastfeeding practices globally.^{5,6} The finding also supports the estimated prevalence of exclusive breastfeeding of 29% by the Nigerian federal ministry of health.²⁵ Revealing that only a mere percentage of infants aged 0-6 months are exclusively breastfed, leaving a whopping 71% of infants not enjoying the benefits of breast milk in their formative years. A systematic review on breastfeeding in Nigerian by Adewuyi et al found that exclusive breastfeeding practice is low.²⁶ They further reported that at six and fourteen weeks post-delivery, the rate was impressive at 81.4% and 74.7%, respectively. However, by the sixth month, the rate had gone as low as 3.9%. From the information available in three of the studies reviewed, the rate of exclusive breastfeeding decreases as an infant's age increases.²⁶ In contrast to the EBF rate obtained in this study, the exceptionally high EBF rates of 73% at six months obtained by Oche may not be unconnected with the fact that all his study participants were full-time housewives and therefore had enough time to carry on breastfeeding for more extended periods.¹⁶ This study shows that being a housewife retained an independent association with EBF practices (OR 1.6, 95% CI: 1.14, 10.9) support the above. Mothers' education is related to knowledge of good childcare practice, including child nutrition and is a strong determinant of EBF practice.²⁷ However, in this study, the mother's educational status was found to have no association with EBF. Instead, previous exclusive breastfeeding experience (OR 2.7, 95% CI: 1.15, 8.41) and positive attitude to breastfeeding (OR 1.9, 95% CI: 1.3, 11.6) was found to have an association with EBF practice.^{9,12} It is not surprising that having a positive attitude towards breastfeeding and previously successful experience of EBF had an independent association with breastfeeding. This finding implies prenatal education practice and policy. The current policy should be reviewed to ensure continued education before, during and after pregnancy until the child is weaned off breastfeeding. To increase breastfeeding duration, mothers need to understand the

differences between breastmilk and infant formula and the reasons why breastmilk is the most and only recommendable food for infants less than six months. Also, the factor identified to encourage EBF should be utilised during infant feeding education.

Extensive literature review reveal that this study is the first that utilized IIFAS to assess mother's knowledge and attitudes towards breastfeeding in Nigerian population. While the mothers studied had some knowledge of breastfeeding, their overall knowledge and attitudes about breastfeeding were positive towards infant formula than breastfeeding. More than half of the mothers in our study stated that infant formula was as healthy for infants as breastmilk (62.3%), formula feeding is the better choice if the mother plans to go back to work (80.7%) and that formula feeding was more convenient than breastfeeding (56.9%). Less than half of the mothers responded that mothers who formula feed miss one of the great joys of motherhood (40.3%), breastfed babies are healthier than formula-fed babies (37.3%) and disagreed that breastfeeding was not acceptable in public places like market, worship centres, offices and restaurants (48.9%). It is evident from the finding above that despite the effort of the federal ministry of health to sustain breastfeeding; the practice of exclusive breastfeeding is poor among mothers in the study. Action should be focused not only on breastfeeding knowledge but also on breastfeeding attitude, challenges, and difficulties, as many studies have found a direct correlation between a positive attitude to breastfeeding and a good breastfeeding practice.^{9,10,12} Health education of mothers, future mothers, and the general public on breastfeeding should be intensified, as it can improve the public knowledge on breastfeeding, which will invariably improve the attitude.

The common weaning foods among the respondents of this study were plain pap (36.8%) and pap with milk (26.3%). Another study by Eman et al considered Yogurt and juice suitable as the main diet by 64.8% and 63.2% of women, respectively, during weaning.²⁹

CONCLUSION

Even though breastfeeding was found to be almost universally acceptable in the study area, as evidenced by the fact that 99.5% of mothers breastfed their children, the knowledge and attitude of EBF are suboptimal. To achieve the SDG goals related to infant and child mortality, there is the need to introduce strategies aimed at increasing EBF rates in the state and the country. Appropriate education before, during and after pregnancy directed at early initiation of breastfeeding, improved knowledge and attitude about EBF is required to enhance EBF and duration of breastfeeding.

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