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# Attitude Towards Infant Feeding Among Health Workers in Calabar, Nigeria

Ikobah Joanah Moses<sup>1,\*</sup>, Omoronyia Ogban<sup>2,3</sup>, Ikpeme Offiong<sup>1</sup>, Ekpeyong Nnete<sup>2,3</sup>, Utsu Caleb<sup>3</sup>

<sup>1</sup>Department of Paediatrics, University of Calabar/University of Calabar Teaching Hospital, Calabar, Nigeria

<sup>2</sup>Department of Community Medicine, University of Calabar, Calabar, Nigeria

<sup>3</sup>Department of Community Medicine, University of Calabar Teaching Hospital, Calabar, Nigeria

## Email address:

ikobah.joan@gmail.com (Ikobah J. M.), joanahikobah@unical.edu.ng (Ikobah J. M.), omoronyia2016@gmail.com (Omoronyia O.),

oikpeme200124@gmail.com (Ikpeme O.), nnekon2015@gmail.com (Ekpeyong N.), utsu.caleb@gmail.com (Utsu C.)

\*Corresponding author

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**Abstract:** *Background:* Effective practice of recommended infant feeding methods is key to child survival strategy in sub-Saharan Africa. Attitude towards infant feeding has been shown to be a significant determinant of practice. For health workers, attitude may determine the propensity to counsel mothers towards adoption and adherence to recommended infant feeding practices. This study aimed at assessing health workers' attitude towards infant feeding. *Methods:* This was a cross-sectional descriptive study carried out in April 2019. Leslie Kish formula was used to recruit 225 health workers in Calabar to participate in the study. Ethical approval was obtained from the Cross River State Research and Health Ethics Committee. A validated self-administered IOWA infant feeding attitude scale was utilized in this study. Using the scale, attitude was categorized as positive for breastfeeding, neutral, and positive for formula feeding. Data was analysed using SPSS version 21.0, and p-value was set at 0.05. *Result:* Two hundred and twenty-five respondents completed the questionnaire. Female: male ratio was 1:0.24, the commonest age group (43.1%) was 31 to 40 years old, and 60% of respondents were nurses. Most respondents (52.9%) had neutral attitude, while 44.0% had positive attitude for breastfeeding, and 3.1% had positive attitude towards formula feeding. Age group, religion, profession, and ethnicity did not significantly influence attitude towards breastfeeding ( $p > 0.05$ ). *Conclusion:* Neutral attitude towards breastfeeding was common among health workers. This has implications for successful implementation of the recommended breastfeeding initiative towards improvement in child survival especially in resource-poor settings. Regular re-training of health workers is needed, especially through continuing educational effort by the various health professional bodies.

**Keywords:** Infant Feeding, Child Survival, Health Workers Attitude, Nigeria

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## 1. Introduction

Under nutrition accounts for nearly half of all deaths in children under- five years of age globally and its effect may lead to stunted growth with impaired cognitive ability and in later life reduced work performance. [1]

Many factors contribute to under nutrition though the underlying factor is poverty and to some extent ignorance. Appropriate infant feeding, mainly characterized by exclusive breastfeeding for the initial six months, proper weaning with appropriate complementary foods, and

continuation of breastfeeding for up to two years of life, is a proven child survival strategy. [2] However, the rate of adherence to recommended infant feeding practice is poor in diverse global settings, including developing countries which are worse hit by poor child health indices. [3]

Non-adherence to recommended practices among health workers, has been attributable to poor knowledge of the benefits, appropriate techniques, and other aspects of breastfeeding. [4]

Health workers in particular, are in strategic position and responsibility to educate and counsel mothers and the general public towards proper initiation and adherence to

recommended infant feeding practices. [5] They are expected to have at least sufficient knowledge of various aspects of breastfeeding, including its benefits, proper techniques, existing myths, and practical aspects of managing potential challenges.

Reports from previous studies suggest adequate knowledge in some areas, but inadequate knowledge in key areas of breastfeeding among health workers in developing countries. [3] A systematic review of 32 studies of knowledge of infant feeding among community health workers, found 80% prevalence of knowledge of timing and duration of breastfeeding. [6] Less than half knew of frequency of breastfeeding, composition of complementary foods, and management of breastfeeding complications. [6] A survey in India, found satisfactory proportion of community health workers having knowledge of timing of initiation (97.9%), benefits of colostrum (95.9%), duration of exclusive breastfeeding (99%), and duration of complementary feeding (83.7%). [5] Common areas where high proportion had poor knowledge were frequency of breastfeeding (67.5%) and composition of complementary food (94.4%). Similar study among 220 health workers in Tanzania, found 76.4% having inadequate knowledge of breastfeeding. [6]

Better understanding of common areas of poor knowledge of breastfeeding peculiar to different healthcare settings, is key for improvement in training and retraining of workers. There is paucity of similar studies in the multicultural city of Calabar in the Niger-Delta region. This study therefore aimed at assessing the attitude of health workers in Calabar, Nigeria about appropriate infant feeding practices.

## 2. Methods

### 2.1. Study Area

The study was conducted in Calabar, the capital city of Cross River State, in the south-south geo-political zone of Nigeria.

### 2.2. Study Population

The study participants comprised of nurses, medical doctors, and community health workers. Participants were attendees at a Nutrition workshop in Calabar in April 2019 drawn from primary health centres, private hospitals, secondary health facilities and tertiary health facility in Calabar.

### 2.3. Study Design

This was a cross sectional study.

### 2.4. Sample size Estimation

Sample size of 225, was calculated using Leslie Kish formula for single proportion [8]. In the formula,  $n = z^2 pq / d^2$ , where 'z' corresponding to 95% alpha level of significance (1.96), 'd' is margin of error (0.05), and 'p' is proportion of mothers with positive attitude towards exclusive

breastfeeding (0.847) found in previous study [9], and  $q = 1 - p = 0.153$ . With 10% non-response rate assumed, calculated sample size yielded 221.3, which was approximated to 225 (two hundred and twenty five) subjects.

### 2.5. Sampling Technique

Sampling interval (k) was calculated by dividing the number of attendees (a) by sample size (s).

$$K = \text{number of attendees (a)} / \text{sample size (s)}$$

The first participant was recruited by balloting between first participant and the  $k^{\text{th}}$  participant, thereafter every  $k^{\text{th}}$  participant was recruited into the study until sample size was achieved.

Data Collection: A validated self-administered IOWA infant feeding attitude scale was utilized in this study. Using the scale, attitude was categorized as positive for breastfeeding, neutral, and positive for formula feeding. Data was analyzed using SPSS version 21.0, and p-value was set at 0.05.

Ethical Issues: Ethical clearance for the study was obtained from the Cross River State Research and Ethics Committee. The confidentiality of the participants was preserved by use of identification numbers.

Statistical Analysis: Data was entered and analysed using Statistical Package for Social Sciences (SPSS version 21.0, Chicago, Inc). Sum of correct responses was determined for each respondent. Knowledge score of at least 90% was considered satisfactory. Factors associated with level of knowledge were determined using chi-square as inferential statistic. p-value was set at 0.05.

## 3. Results

Data was obtained from two hundred and twenty-five respondents with mean age of  $37.5 \pm 9.4$  years. The commonest profession was nursing (60%) and 28.9% were medical doctors. This is shown in Table 1.

**Table 1.** Sociodemographic characteristics of respondents (N=225).

Variable	Frequency	Percentage
Age group (years)		
≤30	57	25.3
>30	168	74.7
Total	225	100
Religion		
Pentecostalism	91	40.4
Catholic	67	29.8
Orthodox	48	21.3
Islam	16	7.1
Others	3	1.3
Profession		
Nursing	135	60.0
Medical doctor	65	28.9
Community Health Workers	20	8.9
Others	5	2.2
Total	225	100
Tribe		
Efik	72	32

Variable	Frequency	Percentage
Ejagham	40	17.8
Yakurr	34	15.1
Ibo	34	15.1
Others	45	20.0
Total	225	100

Table 2 shows frequency distribution of responses to items assessing attitude towards infant feeding. Commonly disagreed and strongly disagreed items were that breast milk lacked iron (84.5% cumulatively, item 4), women should not

breastfeed in public places (80.8%, item 8), benefits of breast milk only last during breastfeeding (76.9%, item 1), and a mother who occasionally drinks should not breastfeed (72.9%, item 17). Commonly agreed and strongly agreed items were that breast milk is more easily digested than formula (91.6%, item 13), is more convenient than formula feeding (90.6% cumulatively, item 15), is cheaper than formula (90.6%, item 16), and is the ideal food for babies (90.3%, item 12).

**Table 2.** Frequency distribution of attitude towards infant feeding (IOWA Scale) (N=225).

s/n	Item	SD	D	N	A	SA
		n (%)	n (%)	n (%)	n (%)	n (%)
1	The benefits of breastfeeding last only as long as the baby is breastfed	126 (56.0)	47 (20.9)	6 (2.7)	30 (13.3)	16 (7.1)
2	Formula feeding is more convenient than breastfeeding	84 (27.3)	94 (41.8)	9 (4.0)	24 (10.7)	14 (6.2)
3	Breastfeeding increases mother-infant bonding	14 (6.2)	7 (3.1)	2 (0.9)	29 (12.9)	173 (76.9)
4	Breast milk is lacking in iron	105 (46.7)	85 (37.8)	11 (4.9)	15 (6.7)	9 (4.0)
5	Formula fed babies are more likely to be overfed than breast fed babies	31 (13.8)	53 (23.6)	14 (6.2)	75 (33.3)	52 (23.1)
6	Formula feeding is the better choice if a mother plans to go out to work	73 (32.4)	90 (40.0)	18 (8.0)	30 (13.3)	14 (6.2)
7	Mother who formula feed misses one of the great joys of motherhood	18 (8.0)	24 (10.7)	25 (11.1)	88 (39.1)	70 (31.1)
8	Women should not breastfeed in public places such as restaurants	100 (44.4)	82 (36.4)	15 (6.7)	17 (7.6)	11 (4.9)
9	Breastfed babies are healthier than formula fed babies	13 (5.8)	22 (9.8)	15 (6.7)	53 (23.6)	122 (54.2)
10	Breastfed babies are more likely to be overfed than babies formula fed	57 (25.3)	94 (41.8)	22 (9.8)	31 (13.8)	21 (9.3)
11	Fathers feel left out if a mother breastfeeds	44 (19.6)	91 (40.4)	27 (12.0)	44 (19.6)	19 (8.4)
12	Breast milk is the ideal food for babies	14 (6.2)	4 (1.8)	4 (1.8)	42 (18.7)	161 (71.6)
13	Breast milk is more easily digested than formula	8 (3.6)	8 (3.6)	3 (1.3)	49 (21.8)	157 (69.8)
14	Formula is as healthy for an infant as breast milk	63 (28.0)	80 (35.6)	28 (12.4)	35 (15.6)	19 (8.4)
15	Breast milk is more convenient than formula feeding	10 (4.4)	8 (3.6)	3 (1.3)	46 (20.4)	158 (70.2)
16	Breast milk is cheaper than formula	12 (5.3)	6 (2.7)	3 (1.3)	23 (10.2)	181 (80.4)
17	A mother who occasionally drinks should not breastfeed her baby	67 (30.7)	95 (42.2)	27 (12.0)	19 (8.4)	15 (6.7)

SD=Strongly Disagree; D=Disagree; N=Neutral; A=Agree; SA=Strongly Agree

Mean infant feeding attitude score was  $68.2 \pm 7.8$ , ranging from 43 to 85. Most respondents (52.9%) had scores within 40 to 69, corresponding to neutral attitude towards infant feeding (table 3). Active support for breastfeeding was found in 44.0% of respondents.

**Table 3.** Frequency distribution of categories of attitude towards infant feeding (N=225).

Variable	Frequency	Percentage
Infant feeding attitude category		
Positive for breastfeeding (70-85)	99	44.0
Neutral (40-69)	119	52.9
Positive for formula feeding (<40)	7	3.1
Total	225	100
Breastfeeding support		
Supportive of breastfeeding ( $\geq 70$ )	99	44.0
Not actively supportive of breastfeeding (<70)	126	56.0
Total	225	100

Active support for breastfeeding was commoner among respondents that were older than 30 years old, those from Ejagham compared with other tribes, as well as among nurses compared with other professions, though these differences were not statistically significant ( $p > 0.05$ , table 4).

**Table 4.** Factors associated with attitude towards infant feeding (N=225).

Variable	Breastfeeding attitude			Chi-square (p-value)
	Supportive n (%)	Not Supportive n (%)	Total n (100)	
Age groups (in years)				
$\leq 30$	22 (38.6)	35 (61.4)	57 (100)	0.91
$> 30$	77 (45.8)	91 (54.2)	168 (100)	(0.34)
Total	99 (44.0)	126 (56.0)	225 (100)	
Religion				
Pentecostalism	41 (45.1)	50 (54.9)	91 (100)	Fisher's

Variable	Breastfeeding attitude			Chi-square (p-value)
	Supportive	Not Supportive	Total	
	n (%)	n (%)	n (100)	
Catholicism	31 (46.3)	36 (53.7)	67 (100)	Exact (0.53)
Orthodox	21 (43.8)	27 (56.2)	48 (100)	
Islam	4 (25.0)	12 (75.0)	16 (100)	
Others	2 (66.7)	1 (33.3)	3 (100)	
Total	99 (44.0)	126 (56.0)	225 (100)	
Profession				Fisher's Exact (0.67)
Nursing	62 (45.9)	73 (54.1)	135 (100)	
Medical doctor	27 (41.5)	38 (58.5)	65 (100)	
Community health worker	1 (20.0)	4 (80.0)	5 (100)	
Others	9 (45.0)	11 (55.0)	20 (100)	
Total	99 (44.0)	126 (56.0)	225 (100)	
Tribe				3.4 (0.49)
Efik	27 (37.5)	45 (62.5)	72 (100)	
Ejagham	22 (55.0)	18 (45.0)	40 (100)	
Yakurr	15 (44.1)	19 (55.9)	34 (100)	
Ibo	14 (41.2)	20 (58.8)	34 (100)	
Others	21 (46.7)	24 (53.5)	45 (100)	
Total	99 (44.0)	126 (56.0)	225 (100)	

## 4. Discussion

The Nigerian Government policy on infant and young child feeding (IYCF) follows the WHO and UNICEF recommendations which allows for exclusive breastfeeding for up to six months of age, with continued breastfeeding along with appropriate complementary foods up to two years of age or beyond. [10] One of the steps to achieving the WHO feeding recommendation for children, involves the health workers having the right attitude to support mothers with the right knowledge towards promoting, protecting and supporting appropriate infant feeding. [11, 12]

Active support for breastfeeding was commoner among health workers who were 30 years of age and older, though this was not significantly associated with positive attitude towards breastfeeding. This may be due to experience as health workers compared to those less than 30 years of age. Age was also observed not to significantly predict attitude towards breastfeeding among health workers in Tanzania. [6]

Less than 50% of the various professions represented in this study had a supportive attitude towards mothers breastfeeding. This poses a problem to achieving optimum breastfeeding and complementary feeding practices amongst mothers as most of them look up to effective support from health workers. These finding agrees with studies in Hungary and Jos, Nigeria that showed the lack of proper awareness of breastfeeding practices among health professionals as a major obstacle to proper breastfeeding practices. [13-15]

Most health workers (71.6%) knew that breastmilk is the ideal food for babies and is more convenient to feed breast milk than infant formula (70.2%). This agrees with the study in Samoe where health workers, specifically district nurses generally had good knowledge and attitude towards ideal infant practices though this could not be said about the mothers' attitude in the same locality. [1] This was also observed among health workers in Ikom, Nigeria. [16] If this attitude is sustained, this could lead to an increase in the

breastfeeding rate among mothers.

Attitude of health workers on infant formula fed babies more likely to be overfed than breastfed babies was sub-optimal with about 38% of health workers disagreeing to this. This therefore means that most health workers in this study may not be able to counsel and guide would be mothers on the appropriate feeding option that will most likely promote appropriate weight gain in infants on exclusive breastfeeding.

About 23% of health workers this study believed that the benefits of breast milk last only during breastfeeding. A study in Ibadan found out that 29.8% of health workers had adequate knowledge of maternal benefits of breastfeeding. [7] Similar poor knowledge of benefits of breastfeeding among health workers mostly as it has to do with protection against osteoporosis and weight control in mothers was observed in Ebonyi, State, South East Nigeria. [17] This poor knowledge among health workers suggest lack of capacity for effective education and counselling on breastfeeding in developing countries. This underscores the importance of training and retraining among health workers especially those involved in maternal and child health.

The attitude of health workers towards mothers who occasionally drink alcohol on breastfeeding was good as about 72.9% believed that these mothers can breastfeed. However, it is important that health workers are aware of the volume of alcohol intake by breastfeeding mothers that is considered safe. It is best to keep the volume of drink at less than 14 units a week to prevent adverse effects such as the drinking mother sharing a bed with her baby to prevent sudden infant death syndrome (SIDS). [18]

In this study, about 53% of health workers had a neutral attitude towards appropriate infant feeding, 44% had positive attitude for breastfeeding and 3% would support formula feeding. In a similar study among 124 primary health workers in Ibadan, South West Nigeria, found 4.8%, 29.8%, 17.7%, and 3.2%, knew of child benefits, maternal benefits, challenges, and management of challenges of breastfeeding, respectively. [7] This poor attitude towards appropriate infant

feeding may indicate a potential setback towards attainment of child health-related SDGs in sub-Saharan Africa.

## 5. Conclusion

This study found unsatisfactory level of attitude of health workers towards appropriate infant feeding practices. This may contribute significantly to poor knowledge and non-adherence to recommended breastfeeding practice in developing countries. There is urgent need for improvement in in-service training, re-training, and continuing education for healthcare workers, perhaps with more focus on weak areas identified in this study. Also, the regular health education sessions during antenatal care, postnatal care and child immunization visits, affords the opportunities to assess the correctness and quality of counselling information provided by health workers to our mothers. These steps may significantly consolidate efforts at reduction of child morbidity and mortality rates towards attainment of SDGs in developing countries

## Authors Contribution

JI – Conceptualized the study, collected data, and wrote up the manuscript

OO – Contributed to study conceptualization, analysed the data, and contributed to manuscript drafting

NE- Contributed to manuscript drafting

OI and CU - Contributed to final manuscript review

All authors agreed to the final manuscript

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## Conflict of Interest

All authors declare no conflict of interest.

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