

# Level of Knowledge and Teaching of Infant and Young Child Feeding Practices among Health Workers in Delta State, South-South Nigeria

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## ABSTRACT

**Objective:** The aim of this study was to find out how well Delta State health workers are acquainted with infant and young child feeding practices.

**Methods:** This study involved randomly selecting 235 primary health care centers from 445 functioning primary health care centers in Delta State and enlisting the most skilled health workers (198 nurses and 37 community health extension workers, 1 from each facility) to carry out the study. The survey instrument consisted of a structured and validated questionnaire. Data were obtained on information about early initiation, exclusive breastfeeding, complementary feeding, and many more. Statistical analysis was performed using International Business Machines Corporation Statistics for Social Sciences version 22.0. (IBM SPSS Corp.; Armonk, NY, USA), which utilized descriptive statistics and 1-sample tests.

**Results:** There was variation in the respondent's knowledge of breastfeeding immediately after delivery. Poor attachment knowledge was observed among the health workers, accounting for 39.1% in total. Also, 48.1% of the health workers had no idea when a retroviral disease-positive mother needs to stop breastfeeding.

**Conclusion:** The study showed that the respondent's knowledge level and teaching of infant and young child feeding practices were average. The nutritional status of infants and young children can be enhanced through training and supportive supervision of their knowledge and counseling skills pertaining to infant and young child feeding practices.

**Keywords:** Colostrum, community health extension workers (CHEWs), infant and young child feeding (IYCF), nutrition, primary health care centers (PHCs)

## INTRODUCTION

Adequate nutrition is critical to child health and development. Infant and young child feeding (IYCF) practices ensure adequate nutrition for a child within the first 2 years of life (0-24 months).<sup>1-3</sup> These include early initiation of breastfeeding (within the first 30 minutes of child's birth), exclusive breastfeeding and continued breastfeeding till 2 years and beyond, and adequate complementary feeding. The World Health Organization (WHO) and United Nations International Children's Emergency Fund developed the global strategy for IYCF in 2002 to revitalize world attention to the impact that feeding practices have on the nutritional status, growth, development, health, and survival of infants and young children.<sup>4,5</sup> In addition to providing food and fluid security for the first 6 months,

breastfeeding provides active immunity, protection and remains a significant source of energy, nutrients, and protection for as long as 2 years. Mothers and their infants are uniquely able to benefit from breastfeeding as it provides hygienic and nutritious food for the healthy growth and development of babies.<sup>6,7</sup> Breast milk also has anti-infective properties that help keep the infant healthy, and exclusive breastfeeding and child spacing have a relationship to one another.<sup>8-11</sup>

Twenty-two percent of the under-5 children were estimated to be underweight in West and Central Africa in 2012, which is higher than the global estimate of 15%.<sup>12</sup> In Nigeria, the rate of stunting is 32.0%, which is within the WHO's "serious levels." Despite this, the situation in the North West (52.1%) and North East (44.3%) states is

critical. A 2011 report has shown that 41% of these children are mostly from rural areas. Other factors have also been pinpointed.<sup>13</sup>

On average, rural children are twice as likely to be underweight as their urban counterparts (43% vs. 26%).<sup>13</sup> Health workers have been identified as vital links between the rural and urban communities through enhanced knowledge, counseling skill and supportive care to IYCF.<sup>14-19</sup>

This study is aimed at assessing the knowledge among health workers in IYCF. Also, the study will compare findings with related/relevant articles on the subject matter.

## METHODS

### Study Area and Design

The prospective research was a descriptive cross-sectional study carried out in Delta state of South-South Nigeria involving the use of a well-structured questionnaire (containing open and close-ended questions). The sample population was 235 primary health care centers (PHCs), which were randomly selected from 445 functioning PHCs in Delta State. The most experienced health workers (198 nurses and 37 community health extension workers (CHEWs), 11 from each center) were recruited for the study. Validation of the content of the questionnaire was done by some staff of the Delta State Primary Health Care Development Center, Asaba. The participants were pre-informed, and they gave their consent before they participated in the study.

Data obtained were on the following subject matters: knowledge and teaching of early initiation, exclusive breastfeeding, appropriate breastfeeding, complementary feeding, colostrum and its importance, mixed feeding, signs of good attachment, expressed breastfeed

and storage time, breastfeeding in the context of human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome, weight monitoring, etc.

### Statistical Analysis

Statistical Package for the Social Sciences version 22.0. (IBM SPSS Corp.; Armonk, NY, USA) was used. Descriptive statistics (mean, frequency, and percentage) and a 1-sample test were used to determine the level of significance from the response. A statistically significant result connotes that the *P*-value is < .05 and vice versa.

## RESULTS

A study was conducted on a sample of 235 health workers (198 nurses and 37 CHEWs) from Delta State to determine the level of knowledge of IYCF practices among them. The majority of health workers were women (97%), while 3% were men. The average age and experience of the health personnel were 42.7 years and 12 years, respectively.

The subjects' responses to the time they informed mothers to initiate breastfeeding after birth was within 20 minutes of birth (40%), while only 0.4% responded that it should be immediately after birth. There was no statistically significant difference in time to initiate breastfeeding after birth from the respondents (*P* = .051) (Table 1). The majority of the subjects (36.6%) said that early initiation of breastfeeding helps to stop postpartum bleeding, while 25.5% said that it helps to expel the placenta after delivery and 15.3% had no idea of the importance. There was a difference in the knowledge about early breastfeeding from the response (*P* = .028) (Table 1). A total of 49.8% said that colostrum helps in child protection, while 8.5% said that it helps in the release of meconium and 31.5% had no idea or gave wrong answers. No difference in the knowledge about colostrum from the respondents was observed (*P* = .090) (Table 1). The majority of the respondents (70.6%) said that a baby from 0 to 6 months of age needs nothing apart from breast milk, while 15.3% said infant formula and 6.4% said pap. There was no difference in the knowledge of what the baby should eat between 0 and 6 months from the health workers (*P* = .195) (Table 1). A total of 35.7% said that exclusive breastfeeding (EBF) helps in child protection, 16.2% said bonding, 3.0% said improvement in intelligent quotient (IQ), 20.4% had no idea, and 1.3% said that it helps in family planning. Difference was observed in response perceptions (*P* = .025) (Table 1).

The majority of subjects (52.8%) had no idea of any sign of good attachment, 6.8% correctly identified 1 sign, and 1.3% correctly identified 2 signs. There was no difference in knowledge about good attachment among the health workers (*P* = .139) (Table 2).

### Main Points

- The knowledge of health care workers on infant and young child feeding practices was assessed using a structured questionnaire in health care centres across Delta State, Nigeria.
- Knowledge about attachment and when RVD mothers should stop breastfeeding was below average.
- The study showed that the training and experience of the health care workers across the facilities greatly varied, giving rise to a range of responses.
- The questionnaire assessment showed that the overall knowledge of the health care workers was average, indicating that there is need for further training and development across health facility in Delta State, South-South Nigeria.

**Table 1. Responses from the Health Workers on When to Initiate Breastfeeding, Its Importance, the Role of Colostrum, Knowledge of Other Supplements, and Exclusive Breastfeeding**

<b>1. At what time do you tell the mothers to initiate breastfeeding after birth? (n = 235)</b>			
Response	Frequency	Percentage	P
No idea	12	5.1	.051
Immediately	1	0.4	
When the mother has strength	37	15.7	
Within 20 minutes	94	40	
Within 30 minutes	75	31.9	
Within 1 hour	16	6.8	
<b>2. Mention the importance of early initiation of breastfeeding (n = 235)</b>			
No idea	36	15.3	.028
Stop postpartum bleeding	86	36.6	
Placenta expulsion	60	25.5	
All of the above	51	21.7	
No importance	2	0.9	
<b>3. Mention the role of the colostrum (n = 235)</b>			
No idea/wrong answer	74	31.5	.09
Meconium release	20	8.5	
Protection	117	49.8	
Vitamin A rich/nutrition	18	7.7	
Improved IQ	6	2.5	
<b>4. Apart from breast milk, what other foods does a baby need within 0 to 6 months age? (n = 235)</b>			
No idea	14	6	.195
Water	4	1.7	
Nothing	166	70.6	
Corn	15	6.4	
Infant formula	36	15.3	
<b>5. Mention 1 importance of exclusive breastfeeding (n = 235)</b>			
No idea/wrong answer	48	20.4	.025
Complete food	44	18.7	
Protection	84	35.7	
Bonding	38	16.2	
Improved IQ	7	3	
Economic importance	7	3	
Involution of uterus	4	1.7	
Family planning	3	1.3	
IQ, intelligent quotient.			

**Table 2. Responses from the Health Workers on Good Attachment, When to Stop Breastfeeding, RVD Mothers as Regard Breastfeeding, and Knowledge on Complementary Feeding**

<b>6. Mention 2 signs of good attachment (n = 235)</b>			
Response	Frequency	Percentage (%)	P
No idea	124	52.8	.139
1 correct	16	6.8	
2 correct	3	1.3	
Wrong	92	39.1	
<b>7. At what age do you teach a mother to stop breastfeeding her baby? (n = 235)</b>			
No idea	48	20.4	.093
6 months	11	4.7	
9 months	3	1.3	
12 months	26	11.1	
1 year 2 months	3	1.3	
1 year 6 months	15	6.4	
2 years	128	54.4	
As long as she wish	1	0.4	
<b>8. EBF plus ARV drugs (for babies and RVD-positive mothers) is allowed (n = 235)</b>			
Yes	113	48.1	.081
No	33	14.1	
No idea	89	37.8	
<b>9. At what age of the baby is an RVD-positive mother to stop breastfeeding her baby? (n = 235)</b>			
No idea	113	48.1	.073
At birth/no breastfeeding	13	5.5	
6 weeks	2	0.9	
2 months	5	2.1	
3 months	7	3	
4 months	5	2.1	
6 months	45	19.1	
9 months	3	1.3	
12 months	20	8.5	
1 year 6 months	5	2.1	
2 years	3	1.3	
<b>10. At what age should mothers start complementary feeding for their babies? (n = 235)</b>			
No idea	72	30.6	.179
At birth	3	1.3	
From 4 month	8	3.4	
From 6 months	150	63.8	
Any time the mother thinks that breast milk is not enough	2	0.9	

ARV, antiretroviral; EBF, exclusive breastfeeding; RVD, retroviral disease.

More than half of the respondents (54.4%) chose to teach mothers to stop breast feeding their babies after 2 years, while 11.1% said 12 months and 20.4% of the subjects did not give any specific response. No difference was observed about when to stop breastfeeding among the respondents ( $P = .093$ ) (Table 2). Similarly, 48.1% responded that EBF plus antiretroviral (ARV) drugs (for babies and retroviral disease (RVD) mothers) are allowed, while 37.4% had no idea and 14.1% said that it is not allowed. No difference was observed about knowledge on ARV drugs and breastfeeding ( $P = .081$ ) (Table 2). The majority of the respondents (48.1%) had no idea on the time that the RVD-positive mother should stop breastfeeding her baby, 19.1% said by 6 months, 5.5% said breastfeeding is not allowed from day 1, etc. No difference was observed as regards the knowledge of RVD-positive mothers on when they should stop breastfeeding ( $P = .073$ ) (Table 2). In conclusion, the majority of the subjects said that complementary feeding starts from 6 months of the baby's age, 30.6% did not have the idea, and 3.4% said that it starts from 4 months. No difference was observed as regards the knowledge of when mothers should start complementary feeding ( $P = .179$ ) (Table 2).

Almost all the respondents (98.7%) gave nutrition education to pregnant mothers/caregivers during antenatal/infant and young child welfare, and they all agreed that pregnant mothers must check their HIV status at their first visit. A total of 81.3% taught mothers how to express

and store breast milk, while 18.7% could not teach them how to express and store breast milk. Most of the respondents (80%) indicated that they taught mothers to request their baby's weight each time they come to the infant and young child welfare clinic (Table 3).

## DISCUSSION

A study to determine the level of knowledge and teaching of IYCF practices among health workers in Delta State has been carried out. There was mostly no statistically significant difference in response from the health workers ( $P > .05$ ) from the questionnaire, and on general assessment, health workers' knowledge was average. A total of 84.3% were registered nurses and 15.7% of them were CHEWs; however, a study by Nsiah-Asamoah<sup>20</sup> in Ghana showed that community extension workers were more (30.2%) compared to registered nurses, which was 11.4%. A similar study by Utoo et al<sup>21</sup> identified the majority of her participants as CHEWs, accounting for 69.4%. The above comparison indicated that more CHEWs were trained and were in the field to teach mothers on IYCF. The above findings show that access to health care in many African countries is often limited and that most primary health facilities use CHEWs, who are most readily available.<sup>22-25</sup>

The study showed that 98.7% of the health workers taught nutrition education to pregnant mothers and to check their HIV status on their first visit. A study by Mahyavanshi

Table 3. Responses from the Health Workers on Nutrition Education, HIV Status, Expression of Breast Milk, and Request for Baby Weight	
<b>11. Do you give nutrition education to pregnant mothers/caregivers during antenatal/infant and young child welfare? (n = 235)</b>	
Response	Frequency
Yes	232
No	3
<b>12. Is it necessary for pregnant mothers to check for HIV status at their first visit?</b>	
Yes	232
No	3
<b>13. Do you teach the working mothers how to express and store breast milk? (n = 235)</b>	
Yes	191
No	44
<b>14. Do you tell the mothers to request for their babies' weight each time they come to the infant and young child welfare clinic? (n = 235)</b>	
Yes	188
No	47
HIV, human immunodeficiency virus.	

et al<sup>26</sup> indicated a poor understanding of nutritional education (70.77%).

This showed that 40% of registered nurses and CHEWs were comfortable with the mothers initiating breastfeeding 20 minutes after delivery, while 0.4% of them responded that it should be done immediately. Only 5.1% of them had no idea. A total of 95% of the nurses and CHEWs taught mothers to initiate breastfeeding but at different timing. A study by Abebe et al<sup>27</sup> in Ethiopia, who assessed the knowledge of CHEWs, showed that 96% of them taught mothers about breastfeeding initiation, while Chaturvedi et al<sup>28</sup> in a study in India indicated 95%. A similar review by Kohli and Chadha<sup>29</sup> showed that 80% of health workers from 10 studies knew about early initiation of breastfeeding.

Most of the health workers agreed that complementary feeding should be initiated after 6 months (63.8%); this was also similar to what was obtained in a study by Nsiah-Asamoah<sup>20</sup> where health workers also indicated >6 months (86.5%).

Knowledge assessment of health workers on when mothers should stop breastfeeding ( $\geq 2$  years) in a study by Nsiah-Asamoah<sup>20</sup> was 59.4%, and in a similar study by Abebe et al<sup>27</sup> it was 50%, and this was similar to the knowledge by nurses and CHEWs in this study, which was 54.4%. Knowledge on when breastfeeding should stop was similar from both studies.

The importance of early initiation of breastfeeding by the health workers on the issue of stopping postpartum bleeding and placenta expulsion was 62.1%. The knowledge was seen to be above average; however, 15.3% of them had no idea. About 88.1% of the health workers (nurses and CHEWs) knew the name of the first breast milk which comes after birth, indicating that their knowledge in this aspect was good but 31.5% picked wrong answers or had no idea when they were asked of the role of colostrum. A study by Chaturvedi et al<sup>28</sup> in India indicated that 100% of the health workers had good knowledge about colostrum.

The knowledge about good attachment was poor in this study. About 52.8% had no idea about it, and 39.1% chose the wrong answer in the questionnaire. This was different in a study by Chaturvedi et al<sup>28</sup> where knowledge about attachment from health workers was 91%. About 81% of the health workers taught lactating mothers how to express and store breast milk.

This study showed that 20.1% of the respondent had no idea of how long breastfeeding should last but 54.4% of the participating health workers believed that breastfeeding should last up to 2 years (24 months), this was in line with a study by Utoo et al.<sup>21</sup> This study also identified a need to train health personnel to further enhance the knowledge of their patients.

The study identified some challenges, which included an incomplete questionnaire and some health workers declining to participate.

The health workers' knowledge was average in this study. Adequate training and supportive supervision will further enhance their skill in IYCF practice.

### Recommendation

Comparison of this research work with local studies was limited. Further study is needed to be carried out in other states (and even tailored to privately owned hospitals where pregnant mothers go for antenatal) to ascertain the level and credibility of IYCF practices being disseminated by health workers (nurses and CHEWs) to pregnant/lactating mothers. This will help policymakers in designing strategies to ensure adequate nutrition for infants and young children.

**Ethics Committee Approval:** Ethical committee approval was received for this study from the ethical committee of the Delta State Ministry of Health (Date: September 27, 2020; Decision No: HM/592/T/199).

**Informed Consent:** Written informed consent was obtained from all participants who participated in this study.

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