Evaluating the Awareness and Usage of Exclusive Breastfeeding Amid Nursing Mothers in Northern Ghana

ABSTRACT

Background: Exclusive breastfeeding for babies has only been practiced in a few numbers of countries, including Ghana, despite clear indications in the literature that it should be done. Mothers' information and mindset, as well as socio-demographic and cultural issues, effect their awareness of and use of exclusive breastfeeding, according to the research.
The study seeks to determine the level of awareness and practice of exclusive breastfeeding amid nursing mothers in the Ghanaian metropolis of Tamale.
Methods: The study was descriptive and carried out among 200 community nursing women with infants ranging in age from 0–24 months in the St Charles community in the Ghanaian capital of Tamale. The information was gathered through the use of a questionnaire that includes both closed and open-ended questions. Recruiting respondents for the study was accomplished through the use of simple random sampling.
Findings: Despite having a high level of awareness about exclusive breast feeding, the mothers did not exclusively breast feed their newborns due to a lack of understanding. Women mistook some signals of the kid as an indication that the newborns wanted to eat or drink something, believing that breast milk was insufficient to meet their children's nutritional demands, and misread healthcare professionals' suggestion to exclusively breast-feed their children.
Recommendations: Health professionals should provide more counseling time to less educated mothers and caregivers of children in addition to disseminating health messages.

Keywords: Exclusive breastfeeding; infants; nursing mothers; rural; Ghana.

1. INTRODUCTION

The advancement of exclusive breastfeeding for the first half year of a child's life after birth is one of the most successful plans for minimizing newborn infections and death in resource-constrained nations [1]. During the preceding decade, there has been a significant increase in interest in using EBF as the best feeding technique for babies all over the world as the best feeding strategy for newborns (Afaya et al., 2017). It is critical for a newborn's survival, nourishment, and development to breastfeed him or her from birth (World Health Organisation [WHO], 2015). In addition to improving child survival [2], EBF promotes healthy brain development, improves cognitive and sensory function, and has been associated with enhanced intellect and academic achievement in children.

Breastmilk comprises all of the nutrients that a baby wants to grow up strong and healthy in the first year. Neonates who are exclusively breastfed have fewer infections and are less prone to develop major illnesses than their counterparts who are not. Women who practice EBF have an increased chance of experiencing prolonged lactation amenorrhea [3]. The number of women who exclusively breastfeed is 38 percent worldwide. Although the World Health Assembly declared a goal of improving the rate to at least 50 percent by 2025 in 2012, it has not been met yet. Exclusive breastfeeding is practiced exclusively by 52.3% of infants under 24 weeks in Ghana [4].

Because of poor sanitary conditions, a high morbidity rate, and contaminated drinking water in developing nations, it is critical to practice EBF throughout the first six months of a child's life. Providing an infant with only breast milk is the safest, healthiest, and most cost-effective means of feeding them (UNICEF, 2013). According to breastfeeding research findings, good nursing technique saves over 800,000 babies each year in developing nations, primarily in developing countries (UNICEF, 2015; WHO, 2016).

According to the conclusions of the research, it has been demonstrated that EBF is not practiced in equal measure; most mothers support the concept but are unable to exclusively breastfeed their children.

There are a variety of reasons that have been identified as obstacles to effective exclusive breastfeeding. These include cultural, sociological, health-related, and economic problems [5,6]. Studies shows that about ninety-eight percent of Ghanaian babies are breastfed at some time in their lives (Ghana Demographic and Health Survey, 2020). The average duration of EBF is 16 weeks, and between 24 to 36 weeks, 73 percent of breastfed neonates are given complementary meals (Ghana Statistical Service (GSS), Ghana Health Service (GHS), and ICF International., 2015). Despite the health benefits of EBF and worldwide efforts to promote it, EBF in Ghana has reduced by 17 percent between 2008 and 2014 [7]. Breast and ovarian cancer risk is declined in mothers who put into practice EBF guidelines (WHO, 2009). World Health Organization [8], the positive impact of EBF is a lifelong impact on mothers who breastfed their babies but not only limited to the lactation period. EBF practice is highly beneficial to low nutrition, poor sanitation, and high disease rates areas. This is because giving alternative meals to newborns before they are six months old is typically linked to contamination during the preparation and administration procedure.

These mistakes can lead to diarrheal infections such as cholera and dysentery, which can result in childhood mortality (WHO, 2009). World Health Organization [9], with EBF coverage of 90 percent, nearly thirteen percent of demises of infants under sixty months in developing nations may be avoided. This conclusion is in line with previous findings that believe in starting breastfeeding within the first hour of birth can save about 20 percent of neonatal fatalities in third world countries [10]. More so, good EBF practices have the potential to prevent 12% of neonates under 20 weeks from serious morbidity [11]. Comparing children who are exclusive breastfed with non-breastfed children, children who are exclusively breastfed are less sensitive to childhood ailments and are 14 times more likely not to suffer from illness [11]. Third world countries with low EBF prevalence, childhood mortality is high. In Ghana, for example, neonatal death is 53 per 1,000 live births, whereas death among neonates under sixty months is 31 per 1000 live births, and these death rates are largely attributed to mothers' insufficient EBF practices [12].

Studies in Ghana found that if all infants started nursing during the first hour after birth, neonatal fatalities may be avoided (GSS, 2011). Infant and young child feeding (IYCF) program, convention on the rights of the child, and baby friendly hospital initiative are some of the strategic rules implemented in Ghana to support EBF practice (Jones et al., 2003). Upon the implementation of these rules, EBF rate still remains below expected target of 90 percent by the WHO in Ghana.

According to a report from Ghana's multiple indicator cluster surveys, EBF in Ghana reduced from 63.7 percent in 2008 to 46 percent in 2011 (GSS, 2011). In practice, the global rate of EBF is 39 percent with 36 percent being practice in low-income countries (WHO, 2009). Many challenges to good nutrition and baby feeding behaviors have been discovered. These challenges include minds made of infant feeding practices, as well as lack of information and assistance on proper feeding practices, particularly EBF for the first six months of life, are significant among them [12].

However, based on the literature reviewed at the beginning of this study, there appears to be limited evidence on the related factors associated with EBF knowledge and practice in the Tamale metropolis, and no study has covered majority of EBF among lactating mothers in the Tamale metropolis's St Charles community. As a result, the study's goal was to analyze nursing mothers' awareness and usage of EBF in the St Charles community in Ghana's northern region.

2. METHODS

2.1 Study Design

This was descriptive cross-sectional and used to collect data, and quantitative methods were used to collect the data.

2.2 Study Population

In this research, the study's target demographic consisted of mothers who lived in the St Charles community. The total number of women in the community was estimated to be 1125 individuals.

2.3 Setting

The research was carried out at the St Charles settlement, which is located inside the Tamale Metropolis. Tamale is the Capital of Northern Region and one of the country's six metropolitan

areas, as well as the only metropolitan area in the country's Northern Region. Tamale is a cosmopolitan metropolis that is also one of the fastest expanding towns in West Africa, which made it the ideal location for the research to be conducted. In 2014, the Tamale Metropolis had a total population of 371,351 persons (according to the Ghana Statistical Service), and it was home to people from both urban and rural communities. The community consists of locals (Dagombas) as well as individuals from other tribes that live in an urban environment.

2.4 Inclusion Criteria

Women of childbearing stage and presently nursing mothers during the study and/or had ended breastfeeding no more than one year prior to the study's start date were eligible to participate.

2.5 Exclusion Criteria

Mothers who have never nursed or who are temporary guests to the town, mothers of newborns with extreme sickness, such as congenital deformities, mothers suffering from mental illness, and mothers suffering from certain disease conditions that made breastfeeding impossible, such as AIDS and breast cancer, were excluded from the program.

2.6 Sampling

Respondents were chosen using simple random sampling based on the inclusion and exclusion criteria.

2.7 Sample Size Determination

The total population of women in the St Charlese community was estimated at 1125. The sample size for the survey was computed according to the formula for sample size determination by Yamane (1967).

$$n = \frac{N}{1+Ne^2}$$

Where ***n*** is required sample size.

N is the total population size which is 1125.
e is acceptable sampling error (0.05) at 95% Confidence Interval
By substitution:

$$n = \frac{1125}{1+1125(0.05)^2} \quad n = 295$$

Hence, the sample size for the study = **295** respondents.

Using an estimated population of 1125 women, a sample size of 295 respondents was needed for this study. In order to reduce inaccurate results and make up for non-responsiveness, the sample size was rounded off to 324 respondents. Therefore, a total of 324 women were invited into the study.

Data collection instrument: It was decided to use a questionnaire that contained both closed and open-ended questions in order to collect all data on socio-demographic factors (maternal age, infant's age, parity, as well as maternal educational level, as well as marital, occupational, and religious status), knowledge about exclusive breastfeeding (EBF), attitude and practice toward EBF. The open-ended questions were added in order to acquire a better understanding of why mothers chose a particular response. The Food and Agriculture Organization of the United Nations (FAO) standards for assessing nutrition-related knowledge, attitudes, and practices (KAP) document served as a model for the items on the questionnaire's knowledge, attitude, and practice scales of the EBF. A reference guide and practical techniques for conducting high quality evaluations of nutrition and health-related knowledge and behaviors at the community level are contained within this booklet. Among other topics, this manual includes 13 module questionnaires that collect information on important knowledge, attitudes, and practices related to 13 of the most common nutrition issues, such as feeding infants (0–6 months), feeding young children (6–23 months), and diet of school-aged children, among others. The questionnaire referring to feeding infants younger than 6 months of age was customized for this study in accordance with the aims and objectives of the investigation.

Several nations have field tested the FAO questionnaire to ensure that it is valid, understandable, and easy to administer while also being less burdensome on respondents. The questionnaire has been validated in several countries. The knowledge scale of the questionnaire consisted of 13 questions on assessment of mothers' understanding and intellectual capacity to recall the benefits of EBF, duration of EBF, and how to improve breast milk supply. Each correct response was accorded a point and no point for each wrong response. A knowledge score was generated for each mother based on the number of correctly answered

questions. The practice scale consisted of six items that assessed mothers' practice of EBF relating to the following: recall of EBF in the last 24hrs, mode of breastfeeding, who gave and what kind of food was given to the baby in the mothers' absence, introduction of liquids (i.e. plain water, infant formula, tinned milk, powdered or fresh animal milk, juice/juice drinks, clear broth, yogurt, porridge, herbal teas, solid/marshy foods). The mothers' answers to these questions were used to determine the practice of EBF. The form and nature of these items were provided by the United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys and the Demographic and Health Surveys.

Data collection procedure: Following the successful acquisition of permission, the lead investigators traveled to the neighborhood in order to collect information. During the data collection process, the goals and purposes of the study, and protocols that would be followed, were explained to participants, and their informed permission was obtained. All patients who volunteered to partake in the trial were subjected to a screening process to ensure that they were eligible. The completion of consent forms followed the provision of both written and verbal explanations. Following that, questionnaires were distributed to all who participated. The questions were administered by respondents who were able to read and write in English on their own time. Those who were unable to read or write in English were given assistance in answering the questionnaires. The questions were translated by the principal investigators into their respective native dialects. Respondents were advised that participation in the data gathering process was entirely voluntary, and that they were able to withdraw from it at any moment without incurring any consequences. The survey usually lasted 10-15 minutes to complete on a computer.

Data Management: Practice of EBF was showed prior to the knowledge and attitude assessment (Food and Agriculture Organization, 2016). An expert panel of nutritionists assessed each item on the questionnaire to ensure that it was genuine in terms of substance and acceptable for the local environment. As a result, local items that are typically fed to newborns in the study site were included in the diet. To ensure that the questionnaire was understandable and easy to administer, it was pretested on a sample of 10 women with infants ranging in age from 0 to 24 months.

Data Processing and Analysis: The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25 for Windows and one-way analysis of variance which were then presented in both tables and prose for the purposes of reporting. Data analysis entails data coding, sorting, editing, and checking for biases by doing a precise count of the study question items and their frequency of occurrences. Data from both qualitative and quantitative sources was gathered and analyzed in the appropriate way. All of the authors read and re-read the responses to all of the open-ended questions they were asked. Discussions and reflections resulted in the identification of common themes. All quantitative data were analyzed using descriptive statistics, which included mean for continuous variables and frequencies and percentages for categorical variables, for the purposes of determining their significance. For the purpose of determining univariate relationships, cross tabulation and chi-square testing were utilized. A multivariate logistic regression was used to determine the factors that were linked with the practice of EBF in this study. In the univariate analysis, only factors that were shown to be substantially linked with the practice of exclusive breastfeeding were included in the logistic regression model, which was then refined. The odds ratios and respective confidence intervals for the 95 percent confidence intervals were used to present the findings. A p-value of less than 0.05 was considered statistically significant in all analyses conducted.

3. RESULT

The results show that, a high percentage of the mothers involved in this study (72%) were aged between 21 to 30 years and only 1.5% were 30 years old or beyond. The mean age of the women was 27.27 ± 5.87. The majority of respondents 61% no proper education, 15.5% tertiary education, 9% senior high school education, and only 7% and 7.55% had junior high school and primary education respectively. Most of the women were self-employed and a significant proportion had no employment (34%). A large proportion of the women in this study (84.4%) were married; the other proportion is composed of widows, the divorced and single mothers. Most of the respondents (80%) were Muslims. An overwhelming majority (98%) of respondents ever heard about EBF. The main sources of information about EBF were from the hospital and friends.

Table 1. Characteristics of mothers who do and do not practice EBF

	Exclusive breastfeeds		
Variable	**Yes**	**No**	**P-value**
Age of mothers in years			
<30	45 (40.5 %)	27 (34.2 %)	0.230
≥30	66 (59.5 %)	52 (65.8 %)	
Child's age in months			
<3	64 (57.7 %)	6 (7.6 %)	<0.001
>3	47 (42.3 %)	73 (92.4 %)	
Employment status			
Employed	85 (76.6 %)	66 (83.5 %)	0.161
Unemployed	26 (23.4 %)	13 (16.5 %)	
Educational level			
Low educational level	34 (30.6 %)	40 (50.6 %)	0.004
High educational level	77 (69.4 %)	39 (49.4 %)	
Parity			
1	42 (37.8 %)	28 (35.4 %)	0.428
>1	69 (62.2 %)	51 (64.6 %)	
Marital status			
Not married	8 (7.2 %)	5 (6.3 %)	0.528
Married	103 (92.8 %)	74 (93.7 %)	
Religion			
Christian	60 (54.1 %)	44 (55.7 %)	0.221
Muslim	51 (45.9 %)	33 (41.8 %)	
Knowledge of EBF			
High	72 (64.9 %)	15 (19.0 %)	<0.001
Low	39 (35.1 %)	64 (81.0 %)	

Table 2. Multivariate determinants of exclusive breastfeeding (n = 200)

Variable	B	AOR (95%CI)	P-value
Child younger than 3 months	2.49	12.02 (4.44, 32.54)	<0.001
High maternal level of education	1.24	3.47 (1.55, 7.75)	0.002
High level of maternal knowledge of EBF	1.77	5.87 (2.59, 13.26)	<0.001

3.1 Knowledge of Mothers on Exclusive Breastfeeding

About 29% of them could not define EBF; the majority defined it as giving the infant breast milk and water, while the rest had no notion. Breast milk alone, according to 24% of mothers, is deficient to meet the nutritional demands of the newborn. They justified their position by claiming that if a child is solely fed breast milk for six months, the youngster may not be satisfied and may die. Others believed that the youngster was thirsty and that he or she should be given water to drink. The majority of mothers 91.5% were unaware that breastmilk could be uttered, securely kept, and given to the infant while the mothers was not around.

8.9% of mothers thought herbs/drugs may be used to help them overcome nursing issues, while 6.8% said breastfeeding should be stopped.

4. DISCUSSION

4.1 Knowledge of Exclusive Breastfeeding

Aiming to learn more about EBF, as well as how they felt about it and how they utilized it, we conducted this study among community nursing parents with infants ranging in age from 0 to 24 months. Factors associated with the practice of EBF were also investigated in this sample of participants. A greater number of mothers agreed that breastmilk was the best form of food and nutrition for their infants, and they supported the

concept of six months of exclusive breastfeeding, with the majority stating that they learned about it from their health care providers. This is consistent with previous studies [13,1]. Generally speaking, the mothers idea of EBF was better, however there were a few notable gaps.

The use of EBF, on the other hand, has been shown to be less than optimum. The degree of education of the mother, the age of the kid, and having a firm knowledge of EBF were all created to be linked with the practice of EBF in this study. Myths concerning the length of EBF and the inadequacy of breastmilk, which has been shown to be an effective means for mothers to meet their child's nutritional needs, are debunked. In addition, the vast majority of mothers were not aware of the numerous benefits of exclusive nursing for their children. Previous research has identified knowledge gaps and misconceptions of a similar nature [14,15,16].

Emphasizing the maternal benefits of exclusive breast feeding (EBF) may motivate mothers to solely nurse their children. According to the findings of this study, the majority of mothers were more inclined to consult with family and significant others in order to solve breastfeeding difficulties than they were to seek medical attention.
Despite the fact that consulting family and significant others is not always inaccurate, women cannot be certain of the accuracy and quality of the advice and assistance they will receive, leaving them vulnerable to receiving improper counsel and support. Women should be encouraged to seek support when they are experiencing difficulties during their postnatal visits to the health facility by healthcare staff. The utilization of active teaching and learning strategies such as conversations, lectures, slideshows, and presentations could be utilized to bridge the gap between current knowledge and new scenarios in order to close the knowledge gap identified. According to the results of this survey, the vast majority of women are aware that breast milk can be frozen and used later on in the future.

According to the findings of Boateng's (2018) study on exclusive breastfeeding among rural lactating women, which revealed that the majority of mothers were unaware that breastmilk could be saved and used in the future, either for convenience or in the absence of the nursing mother, this result is different from the results of the current study. It was discovered by the researchers in this study that a large number of women were aware that breast milk can be saved for later use. It is possible that the variance in results is related to the difference in study subjects and setting; rural versus urban individuals. If information about breast milk storage is effectively provided to mothers, particularly working mothers, and if the work environment is made friendly enough to allow for breast milk storage, a private space to nurse, or scheduled breaks to feed baby, the rate of exclusive breastfeeding among working mothers may be improved.

4.2 Practice of Exclusive Breastfeeding

EBF was practiced by 62 percent of the mothers in the study. Despite the fact that this is significantly higher than the 46 percent of Ghanaian children aged less than 6 months who were exclusively breastfed in 2011 (Ghana Statistical Service [GSS], 2011), it is significantly lower than the 64 percent reported by Tampah-Naah and Kumi-Kyeremee [13] using data from the 2008 Ghana Demographic and Health Survey (GDHS) [17]. The prevalence of exclusive breastfeeding found in this study is significantly lower than the 90 percent recommended by the World Health Organization (Jones et al., 2003), suggesting a significant disparity between the desired and actual practice of exclusive nursing.
Inadequate understanding of breast milk's ability to meet nutritional needs of the child, misinterpretation of certain signs of the child as indicating that she/he is showing signs of wanting food to eat, and misinterpretation of the advice of healthcare professionals could all contribute to the low prevalence of exclusive breastfeeding. Similar misunderstandings have been recorded in rural Ghana and other West African countries in the past, according to the World Bank [18,15,14]. Otoo and colleagues (2013) noted that exclusive breastfeeding education is typically provided to mothers at pregnancy and postnatal clinic visits by midwives, nurses, or nutritionists, who deliver health talks on the topic. Based on the findings of previous studies [19], Abaasiati et al., 2014); [20], it is recommended that the content of health talks be evaluated, as well as the mothers' understanding of the messages provided to them, because there are significant gaps in knowledge about exclusive breastfeeding.

4.3 Factors Associated with Practice of Exclusive Breastfeeding

Mothers with a higher level of education were more likely than their counterparts to report a higher level of exclusive breastfeeding practice

than their peers. In various research conducted in Ghana (Iddrisu, 2014; [21], the level of education of the mother was revealed to be a significant driver of newborn feeding behaviors (Iddrisu, 2014). It is possible that mothers with greater levels of education will be more able to comprehend and appreciate the benefits of EBF to their infants, as well as more driven to put it into practice [20]. It is suggested that programs for exclusive breastfeeding promotion should be made more appealing to mothers with lower levels of educational attainment. Examples include emphasizing to mothers and their families that exclusive breastfeeding has many benefits, including delaying the return of ovulation, decreasing the risk for developing breast cancer, and providing protection against postpartum bleeding [21], (Aidam et al. 2005).

Another major factor in determining the practice of exclusive breastfeeding was the child's age at the time of conception. Women who had children under 3 months of age were significantly more likely to practice exclusive breastfeeding than women who had children aged 3 months or older, according to the findings. Similar discoveries have been recorded in the past in Ghana and other parts of West Africa, and this is not the first time (Iddrisu, 2013); [22]. As a kid's age increases, mothers are more likely to begin introducing additional foods into the child's diet because they believe that breast milk alone may not be sufficient to meet the nutritional requirements of the child. In light of these findings, healthcare providers should pay particular attention to lactating women as their children develop, encouraging and supporting them as they work to overcome obstacles that may prevent them from exclusively breastfeeding their children. In light of the fact that the majority of mothers will return to work as their children grow older, as well as their lack of confidence in their ability to express and store breast milk, it is possible that mothers will start introducing other foods to their children in order to have more time for work and other activities (Abasiatai, 2014). Identifying and addressing common misconceptions among women about expressing and storing breast milk should be a priority in future EBF promotion campaigns.

In order for mothers to be able to express and retain breast milk so that it may be used to feed their children while they are at work, they should be encouraged and supported to learn the necessary skills and build their confidence. Despite the foregoing, we urge that future research investigate the contributing elements that are responsible for the decrease in the practice of exclusive breastfeeding as a baby grows older in this context, in addition to the foregoing.

Having knowledge of exclusive breastfeeding was discovered to be another element that was connected with the practice of exclusive breastfeeding. Mothers with better knowledge of EBF were more likely than their counterparts with lower knowledge to say that they were putting it into practice. In line with our findings, studies that report high maternal knowledge of EBF also report high prevalence of the practice of exclusive breastfeeding [23,24,25], and the opposite is true for studies that report low maternal knowledge of EBF [23,24][26]. Lack of understanding of the benefits of breastfeeding has been attributed to the low rate of exclusive breastfeeding practice in Sub-Saharan Africa, according to the World Health Organization [27].

According to the findings of Mohammed et al. (2014), the age of the mother had no impact on her awareness of and usage of exclusive breastfeeding. It was found that almost all mothers were familiar with exclusive breastfeeding regardless of their age at birth. This contrasted with the findings of a previous research study conducted by Fosu-Brefo and Arthur [6], which found a significant relationship between maternal age and knowledge of exclusive breastfeeding. The vast majority of women demonstrated a high degree of comprehension about the importance of breastfeeding an infant during the study. For example, its importance in protecting an infant from diseases, its role as a great source of nutrients, its role in family planning strategies, and its health benefits for breastfeeding mothers are all well documented.

They also noted that nursing helps to strengthen the bond that exists between a mother and her kid. Disdain the datum that most of women highlighted how safe, convenient, and cost-effective it is to nurse a baby, not every mother was able to put their words into action [28].
Please mention the ref no. 29-71 in the rext

5. CONCLUSION

The nutritional state of a child is a clear reflection of the general health condition of the child in question. A high-quality diet helps to keep diseases at bay while also promoting growth. Exclusive breastfeeding is a child feeding strategy that has been widely promoted for its benefits to infant health and survival. The findings of this study provided data on the level

of awareness, attitude, and usage of exclusive breastfeeding among mothers. Because of these findings, there is a deeper level of understanding of mothers' grasp of the significance of exclusive breastfeeding. The overall response to nursing was positive, particularly when it came to understanding about breastfeeding, its suggestion, and its benefits. There was a broad positive attitude of lactating mothers' understanding of EBF.

However, their implementation of EBF was less than optimum. Mothers' assumptions and misinterpretations of EBF messages may play a significant influence in determining whether or not EBF is used in their homes. The knowledge of the mother, the degree of education of the mothers, and the stage of the kid may all play a role in supporting the practice of EBF. Nurses and other healthcare providers should go above and beyond the simple presentation of information to encourage and assist women in overcoming the obstacles that prevent them from practicing EBF. Several studies have identified health advocates and health workers as the primary agents of knowledge transmission. This study recognizes the assistance provided by health-care professionals.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

The permission of the leaders of the community was obtained. Respondents were asked to provide both written and verbal consent. Respondents were informed that participation in the study was entirely voluntary and that they might withdraw at any time without incurring any penalty. Each respondent's identity and confidentiality were protected. Responses to the questionnaire were also assured that any signatures on the consent forms would be separated from the questionnaire and kept under lock and key, and that after two years of the study, the data would be discarded and no records of the data, either electronically or in hard copy, would be available.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Mogre V, Dery M, Gaa PK. Knowledge, atti- tudes and determinants of exclusive breastfeeding practice among Ghanaian rural lactating mothers. International Breastfeeding Journal. 2016:1–8.
2. Serajul I, Mohammad JH, Salahuddin J. Exclusive Breastfeeding & Complementary Feeding Practices and Their Nutritional Knowledge Among Mothers at Chowhali Upazila in Sirajganj District, Bangladesh, International and Public Affairs. 2017;1(1):8-13.
   DOI: 10.11648/j.ipa.20170101.12
3. Nukpezah RN, Nuvor SV, Ninnoni J. Knowledge and practice of exclusive breastfeeding among mothers in the tamale metropolis of Ghana. Reproductive Health. 2018;15(1).
   Available: https://doi.org/10.1186/s12978-018-0579-3
4. Boateng MF. Knowledge, Attitude And Practice Of Exclusive Breastfeeding Among Mothers In Techiman , Ghana. (May); 2018.
5. Tampah-Naah MA, Kumi- Kyereme A. Determinants of exclusive breastfeeding among mothers in Ghana: a cross sectional study. International Breastfeeding Journal. 2013;8:13.
6. Fosu-Brefo R and Arthur E., (2015). Effect of Timely initiation of breastfeeding and child health in Ghana.
7. Ghana Statistical Service (GSS), Ghana Health Service (GHS), and ICF International. Ghana Demo- graphic and Health Survey 2014. Rockville, Mary- land, USA: GSS; 2015.
   Available:
   http://www.statsghana.gov.gh/docfiles/publications/ Ghana%20 DHS%202014%20-%20KIR%20- %206%20April% 202015.pdf. Accessed on 25/02/2017

8. World Health Organization 2016. Infant and Young Child Feeding. (Accessed 22.02.2017). Available: http://www.who.int/mediacentre/factsheets/fs342
9. World Health Organization. Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals; 2009. Available: http://www.ncbi.nlm.nih.gov/books/NBK148965/.
10. Neovita Study Group (2016). Timing of initiation, patterns of breastfeeding, and infant survival: prospective analysis of pooled data from three randomized trials. Lancet Glob Health. 4:e266. PubMed. Available: https://doi.org/10.1016/ S2214-109X(16)00040-1.
11. Black RE, Victora CG, Walker SP, et al. Maternal and child undernutrition and overweight in low-income and middle-income countries. Lancet. 2012;382: 427–51. Pub Med. Available: https://doi.org/10.1016/S0140-6736(13)60937-X.
12. Tawiah-Agyemang C, Kirkwood BR, Edmond K, Bazzano A, Hill Z. Early initiation of breast-feeding in Ghana: barriers and facilitators. J Perinatol. 2008;28:S46–52. Available: https://doi.org/10.1038/jp.2008.173
13. Tampah-Naah AM, Kumi-Kyereme A. Determinants of exclusive breastfeeding among mothers in Ghana: a cross-sectional study. International Breastfeeding Journal. 2013;8:13.
14. Apanga PA. A review on facilitators and barriers to exclusive breastfeeding in West Africa. Journal of Biology, Agriculture and Healthcare. 2014;4: 9–15.
15. Issaka AI, Agho KE, Page AN, Burns P, Stevens GJ, Dibley MJ. Determinants of early introduction of solid, semi-solid or soft foods among infants aged 3–5 months in four Anglophone West African countries. Nutrients. 2014;6:2602–18.
16. Boateng KHT, Yakong VN, Yombei NL. Exploring Parents Needs Among Newborn Babies at Tamale Teaching Hospital. *Asian* Journal of Pregnancy and Childbirth. 2021;4(4):68-75. Available:https://www.journalajpcb.com/index.php/AJPCB/article/view/30152
17. GDHS. Ghana demographic and health survey. Preliminary Report. Ghana Health Service: Accra; 2008.
18. Aryeetey R, Goh Y. Duration of exclusive breastfeeding and subsequent child feeding adequacy. Ghana Medical Journal. 2013;47:24–9.
19. Sadoh A, Sadoh W, Oniyelu P. Breast feeding practice among medical women in Nigeria. Nigerian medical journal: Journal of the Nigeria Medical Association. 2011;52:7.
20. Onah S, Osuorah DIC, Ebenebe J, Ezechukwu C, Ekwochi U, Ndukwu I. Infant feeding practices and maternal socio-demographic factors that influence practice of exclusive breastfeeding among mothers in Nnewi South-East Nigeria: a cross-sectional and analytical study. International Breastfeeding Journal. 2014;9:6.
21. Aidam BA, Pérez-Escamilla R, Lartey A. Lactation counseling increases exclusive breastfeeding rates in Ghana. The Journal of Nutrition. 2005;135:1691–5.
22. Otaigbe B, Alikor E, Nkanginieme K. Growth pattern of exclusively breastfed infants in the first six months of life: a study of babies delivered at the University of Port Harcourt Teaching Hospital, Rivers State, Nigeria. Nigerian Journal of Medicine. 2008;17:317–23.
23. Sriram S, Soni P, Thanvi R, Prajapati N, Mehariya K. Knowledge, attitude and practices of mothers regarding infant feeding practices. National Journal of Community Medicine. 2013;3:147–50.
24. Dhammika B, Gunawardena NS. Knowledge, practices and concerns regarding exclusive breastfeeding for six months among mothers of infants in a suburban setting in Sri Lanka. Sri Lanka Journal of Child Health. 2012;41:9–14.
25. Utoo B, Ochejele S, Obulu M, Utoo P. Breastfeeding knowledge and attitudes amongst health workers in a health care facility in South-South Nigeria: The need for middle level health manpower development. Clinics in Mother and Child Health. 2012;9:1.
26. Motee A, Ramasawmy D, Pugo-Gunsam P, Jeewon R. (). An assessment of the breastfeeding practices and infant feeding pattern among mothers in Mauritius. Journal of Nutrition and Metabolism. 2013:243852.
27. Abasiattai AM, Etukumana EA, Nyong E, Eyo UE. Knowledge and practice of exclusive breastfeeding among antenatal

attendees in Uyo, Southern Nigeria. Gaziantep Medical Journal. 2014;20: 130–5.
28. Oche MO, Umar AS, Ahmed H. Knowledge and practice of exclusive breastfeeding in Kware, Negeria. African Health Sciences 2011;11(3):518-523.
29. Ayed A. Knowledge, attitude and practice regarding exclusive breastfeeding among mothers attending primary health care centers in Abha city. International Journal of Medical Science and Public Health. 2014;3(11):1355. Available:https://doi.org/10.5455/ijmsph.2014.140820141
30. Medicine DOF. A Study of Knowledge Attitude And Practices Of Breastfeeding Among Mothers In Sullia In Postgraduate in Pediatrics; 2011.
31. Mogre V, Ansah GA, Marfo DN, Garti HA. Assessing nurses' knowledge levels in the nutritional management of diabetes. International Journal of Africa Nursing Sciences, 2015;3:40–43. Available:https://doi.org/10.1016/j.ijans.2015.07.003
32. United Nations Children's Fund.. Statistics by area/child nutrition: Infant and young child feeding; 2011. Available:http://www.childinfo.org/breastfeed- ing_iycf.php. Accessed on 15/08/2016
33. World Health Organization (2012). Resolution WHA65.6. Comprehensive implementation plan on maternal, infant and young child nutrition. In: Sixty-Fifth World Health Assembly Geneva, 21–26 May 2012. Resolutions and decisions, annexes. Geneva: World Health Organization. S12–13. Available: http://www.who.int/nutrition/topics/WHA65.6_resolu- tion_en.pdf?Ua=1. Accessed on 09/02/2017
34. Ghana Statistical Service. Ghana multiple indicator cluster survey with an enhanced malaria module and biomarker. Accra: Ghana Statistical Service. 2011:1–150.
35. Ghana Health Service. Ghana's National Newborn Health Strategy and Action Plan (2014-2018). (Accessed 07.04.2016). Available:http://www.ghanahealthservice.org/downloads/Ghana_National_Newborn_Strategy_Final_Versi on_March_27.pdf.
36. Ghana Health Service (2015). Newborn Care Programme. (Accessed 28.03.2016). Available:http://www.ghanahealthservice.org/programme-scat.php?ghs&ghsscid=94&ghspid=3
37. Ghana Statistical Service (GSS) 2014. 2010 Population and Housing. (Accessed 12.08.2016). Available:http://www.statsghana.gov.gh/docfiles/2010_District_Report/Brong%20Ahafo/TECHIM AN%20 Municipal.pdf.
38. Ghana Statistical Service, Ghana Health Service 2015. Ghana Demographic and Health Survey2014. (Accessed 18.06.2016). Available:http://www.statsghana.gov.gh/docfiles/publications/Ghana%20DHS%202014%20- %20KIR%20-%206%20April%202015.pdf
39. Fosu- Brefo R, Arthur Eric 2015. Effect of timely intervention of breastfeeding on child health in Ghana. Health Economic Review. 2015; 5:8.
40. American Academy of Pediatrics. Breastfeeding and the use of human milk. Pediatric. 2012;129: 827-841.
41. World Health Organization (). Infant and Young Child Feeding. (Accessed 22.02.2019); 2016. Available:http://www.who.int/mediacentre/factsheets/fs342/en/.
42. Ballard O, Morrow AL. Human Milk Composition: Nutrients and Bioactive Factors. Pediatric Clinic North America. 2013;60 (1):49-74.
43. Anderzén-Carlsson A, Lamy ZC, Eriksson, M. Parental experiences of providing skin-to-skin care to their newborn infant-Part 1: A qualitative systematic review. International Journal of Qualitative Studies on Health and Well-being. 2014;9:10.
44. Dieterich CM, Felice, JP, O'Sullivan E, Rasmussen KM. Breastfeeding and Health Outcomes for the Mother-Infant Dyad. Pediatric clinics of North America. 2013;60(1):31-48.
45. Dun-Dery EJ, Laar AK. Exclusive breastfeeding among city-dwelling professional working mothers in Ghana. International Breastfeeding Journal. 2016;11(1):23.
46. Mead MN. Contaminants in Human Milk: Weighing the Risks against the Benefits of Breastfeeding. Environmental Health Perspectives. 2008;116 (10): A426-A434.
47. Minas, A. G., & Ganga-Limando, M. Social-Cognitive Predictors of Exclusive Breastfeeding among Primiparous Mothers in Addis Ababa, Ethiopia. PLoS ONE 2016;11(10) 0164128.
48. Mogre V, Dery M, Gaa PK. Knowledge, Attitudes and Determinants of exclusive breastfeeding practice among Ghanaian

rural lactating mothers. International Breastfeeding Journal. 2016; 11:12.
49. Mondker J, Fernandez A, Rao S. Breastfeeding. Universities Press India; 2009.
50. Munblit D, Peroni DG, Boix-Amorós A, Hsu PS, Van't Land B, Gay MCL, Warner JO. Human Milk and Allergic Diseases: An Unsolved Puzzle. Nutrients. 2017;9(8).
51. National Health and Medical Research Council. Infant Feeding Guidelines. Canberra: National Health and Medical Research Council; 2012.
52. Nkrumah J. Maternal work and exclusive breastfeeding practice: a community based cross- sectional study in Efutu Municipal Ghana. International Breastfeeding Journal. 2017;12:10.
53. Gale C, Logan KM, Santhakumaran S, Parkinson JRC, Hyde MJ, Modi N. Effects of breastfeeding compared with formula feeding on infant body composition: a systematic review and meta- analysis. American Society for Nutrition. 2012;95:656-669.
54. Ghana Health Service 2015. Newborn Care Programme. (Accessed 28.03.2016). Available:http://www.ghanahealthservice.org/programme-scat.php?ghs&ghsscid=94&ghspid=3
55. Ganle JK, Obeng B, Segbefia AY, Mwinyuri V, Yeboah JY, Baatiema L. How intra-familial decision-making affects women's access to and use of maternal healthcare services in Ghana: a qualitative study. BMC Pregnancy and Childbirth. 2015;15:173.
56. Gebreselassie T, Rutstein SO, Mishra V. Contraceptive Use, Breastfeeding, Amenorrhea and Abstinance During the Postpartum Period: An Analysis of four countries. DHS Analytical Studies. Calvarton, Maryland, USA: Macro International Inc. 2008;(4).
57. Szajewska H. Early nutritional strategies for preventing allergic disease. Israeli Medical Association Journal. 2012;14: 58-62
58. United Nations Children's Fund 2016. Community based infant and young child feeding. (Accessed 09.03.2017). Available:https://www.unicef.org/nutrition/index_58362.html.
59. United Nations Children's Fund, 2016. Seventy years for every child. (Accessed 28.03.2016). Avaialble:https://www.unicef.org/nutrition/index_24824.html
60. Ziegler EE. Growth of breast-fed and formula-fed infants. Nestle Nutrition Workshop Series Pediatric Program 2006; 58: 51-9.
61. WHO. (1981). International code of marketing of breast-milk substitutes. Geneva: World Health Organisation.
62. Black RE, Victora CG, Walker SP, Bhutta Z.A, Christian P, De Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R. Maternal and child undernutrition and overweight in low-income and middle-income countries. The Lancet. 2013;382:427–51.
63. GDHS. Ghana demographic and health survey. Preliminary Report. Ghana Health Service: Accra. 2008.
64. Ghana Statistical Service. Ghana multiple indicator cluster survey with an enhanced malaria module and biomarker. Accra: Ghana Statistical Service. 2011:1–150.
65. Jones G, Steketee, RW, Black, RE, Bhutta, ZA, Morris, S. S., Group BCSS. How many child deaths can we prevent this year? The Lancet. 2003;362:65–71.
66. Otoo GE, Lartey AA. Pérez-Escamilla R. Perceived incentives and barriers to exclusive breastfeeding among periurban Ghanaian women. Journal of Human Lactation. 2009;25:34–41.
67. Iddrisu S. (Exclusive breastfeeding and family influences in rural Ghana: a qualitative study. Malmö, Sweden: Malmö University; Masters thesis; 2013.
68. Mogre V, Dery M, Gaa PK. Knowledge, Attitudes and Determinants of exclusive breastfeeding practice among Ghanaian rural lactating mothers. International Breastfeeding Journal. 2016;11:12.
69. Dermici JR, Sereika SM, Bogen D. Breastfeeding Medicine. 2013;8(3): 282.
70. Flacking R, Dykes F, Ewald U. The influence of father's socio-economic status and paternity leave on breastfeeding duration: a population-based cohort study. Scandinavian Journal of Public Health. 2010;38(4):337-43.
71. Zhang K, Tang L, Wang H, Qiu LQ, Binns CW, Lee AH. Why Do Mothers of Young Infants Choose to Formula Feed in China? Perceptions of Mothers and Hospital Staff. International Journal of Environmental Research and Public Health. 2015;12(5): 4520-4532.