

Breastfeeding in Primary Healthcare Setting: Evaluation of Nurses and Midwives Competencies, Training, Barriers and Satisfaction of Breastfeeding Educational Experiences in Northern Ghana

Clinical Medicine Insights: Pediatrics
Volume 15: 1–9
© The Author(s) 2021
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/11795565211010704


Stephen Dajaan Dubik^{1,2}, Ernestina Yirkyio³
and Kingsley E Ebenezer⁴

¹School of Allied Health Sciences, University for Development Studies, Tamale, Ghana. ²Faculty of Health and Allied Sciences, Catholic University College of Ghana, Fiapre, Ghana. ³Department of Nutrition, Tamale Teaching Hospital, Tamale, Ghana. ⁴Department of Health Information, Hohoe Municipal Hospital, Hohoe, Ghana.

ABSTRACT

BACKGROUND: Breastfeeding education is critical in improving healthcare professionals' competencies in providing breastfeeding care to mothers. We evaluated breastfeeding competencies, training, barriers and satisfaction of breastfeeding educational experiences among nurses and midwives in the Sagnarigu Municipality, Ghana.

METHODS: This cross-sectional study included nurses and midwives providing maternal and child health services at various primary healthcare facilities in Sagnarigu Municipality.

RESULTS: Nurses and midwives had higher pre-service breastfeeding training than in-service training with a mean training score of 10.0 and 5.2, respectively. Nurses and midwives who had both pre-service and in-service training had better satisfaction score ($P = .003$), positive attitudes ($P = .016$) and higher confidence level about breastfeeding ($P = .007$). Approximately, 80% of the nurses and midwives reported that they need further training/updating on breastfeeding while 40% reported clinical/professional practice as the significant contributor to their breastfeeding counselling competencies. Mean satisfaction score correlated positively with confidence levels about breastfeeding counselling ($r = .224$, $P = .022$) and pre-service training ($r = .342$, $P < .001$); confidence levels about breastfeeding counselling also correlated positively with attitudes towards breastfeeding counselling ($r = .348$, $P < .001$). Commonly reported barriers to breastfeeding counselling were mother's poor compliance with breastfeeding recommendations, too much workload, inadequate time and materials for breastfeeding counselling.

CONCLUSION: Nurses and midwives in this study felt confident about breastfeeding counselling, had positive attitudes towards breastfeeding counselling and generally, satisfied with their breastfeeding educational experiences. Despite nurses and midwives agreeing that breastfeeding counselling is integral in their professional practice, their role in providing breastfeeding counselling is hindered by individual and health systems barriers.

KEYWORDS: Breastfeeding counselling, competencies, barriers, nurses and midwives, nutrition education, Ghana

RECEIVED: October 27, 2020. **ACCEPTED:** March 23, 2021.

TYPE: Original Research

FUNDING: The author(s) received no financial support for the research, authorship, and/or publication of this article.

DECLARATION OF CONFLICTING INTERESTS: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

CORRESPONDING AUTHOR: Stephen Dajaan Dubik, School of Allied Health Sciences, University for Development Studies, P. O. Box 1883, Tamale, Ghana.
Email: stephendubik@gmail.com

Introduction

Evidence from several studies indicates that optimal breastfeeding is beneficial to infants,¹⁻⁴ mothers and society.⁴ For instance, available evidence suggests that breastfeeding protects against acute otitis media,³ reduces the risk of diarrhoea and respiratory tract infection,¹ and improves child cognitive development.² Additionally, current evidence in the Lancet series linked the reduction in overweight and diabetes in later life to breastfeeding.⁴ For mothers, breastfeeding improves birth spacing, avert breast cancer and may also reduce mother risk of ovarian cancer and diabetes.⁴ The WHO in 2003 recommends exclusive breastfeeding for the first 6 months, continued breastfeeding for at least 24 months with the introduction of safe and nutritional adequate complementary feeding.⁵ Even though

there is overwhelming evidence to support the need to adhere to these recommendations,¹⁻⁴ many developed and developing countries fall short of these recommendations.⁶ For instance, across the globe, only 41% of infants are exclusively breastfed, with only a few (45%) continue to taste breastmilk at 24 months of age.⁶ Data from the recent Ghana multi indicator survey showed an unacceptably low rate of exclusive breastfeeding;⁷ indicating a declining rate of exclusive breastfeeding in Ghana.^{8,9}

Nursing mothers are faced with multiple complex challenges in their attempt to adhere to breastfeeding recommendations.¹⁰⁻¹² Nurses and midwives have a major role in supporting nursing mothers to overcome their breastfeeding challenges.¹³ But, for nurses and midwives to be able to support mothers to



overcome their breastfeeding challenges, there is the need for them to be well trained.^{14,15} However, breastfeeding-related education is often not well addressed in the training of health-care professionals with disparities in breastfeeding curriculum across health training institutions and universities.^{15,16} Evidence suggests that several women report of lack of competencies of health professionals in addressing their lactation challenges.¹⁷ In some situations, the information provided by health professionals contradict other sources of breastfeeding information.¹⁸ Others even go to the extent of discouraging mothers to breastfeed.¹⁹ In Ghana, nurses and midwives form the majority of the healthcare workforce in primary healthcare facilities, with most of them involved in the provision of maternal and child health services, including breastfeeding care. They play a crucial role in supporting nursing mothers to achieve the WHO recommendations on breastfeeding, especially in this era of the declining early breastfeeding initiation and exclusive breastfeeding in Ghana.⁷⁻⁹ Therefore, breastfeeding competencies of these nurses and midwives are integral to their professional practice. However, these competencies, that is, confidence, attitudes and knowledge, are acquired through training or professional practice. Even though nurses and midwives are at the core of protecting, promoting and offering support to breastfeeding mothers; their breastfeeding competencies, training and satisfaction of breastfeeding educational experiences are little known in Ghana. We sought to evaluate the breastfeeding competencies, training, barriers and satisfaction of breastfeeding educational experiences among nurses and midwives in the Sagnarigu Municipality of Northern Ghana.

Methods

Study design, participants and sampling

The study was a cross-sectional survey which was conducted among nurses and midwives in Sagnarigu Municipality from February to June 2020. The study population included nurses and midwives providing maternal and child health services at antenatal care clinics, child welfare clinics and maternity wards of the various health facilities in the Municipality. We excluded nurses and midwives working in other departments. The Municipality is divided into 6 sub-districts namely; Sagnarigu, Choggu, Malshegu, Kamina, Taha and Garizigu. By convenience sampling, Sagnarigu (4 health facilities), Choggu (5 health facilities), Malshegu (2 health facilities), Kamina (3 health facilities and Garizigu (1 health facility) participated in the study. Primary maternal and child health service providers in the primary healthcare facilities are Midwives and Community health nurses, a total population of 144. Through purposive sampling, participants were approached in these health facilities and invited to participate in the study. Nurses and midwives who were available at the time of our visit and consented to participate in the study were given the questionnaire to answer at their convenience. Three attempts were made to

retrieve all questionnaires (144) from the study participants; this yielded 104 responses giving rise to a sample size of 104.

The data used in this study was collected as part of a thesis project which was ethically approved by the Committee for Human Research, Publication and Ethics of Kwame Nkrumah University of Science and Technology (Ref: CHRPE/AP/044/20). Written informed consent was obtained from all study participants.

Study tool

The study tool was adapted from previous studies^{20,21} and modified to suit breastfeeding. We developed the training section of the questionnaire from the WHO infant and young Feeding (Model chapter textbooks for Medical students and allied health professionals).¹³ The entire questionnaire was evaluated by 2 experts in nutrition and was found to be content valid. The study tool, which was in the English language consisted of the following sections:

Sociodemographic information: These consisted of age, gender, religious affiliation, ethnic group, profession (Nurse or Midwife, other), work location (Rural or urban), type of health facility (whether CHPS compound, Health centre, Clinic, Hospital), Number of years working.

Source of breastfeeding knowledge, and perceived adequacy of breastfeeding education: This related to participants primary source of breastfeeding knowledge, the main contribution to participants current breastfeeding counselling competencies, the primary source of information regarding breastfeeding, whether they think they need further training/updating on breastfeeding (yes/no), adequacy of breastfeeding education during training (yes/no), the relevance of breastfeeding counselling to their professional practice (yes/no).

Breastfeeding training: Breastfeeding training of the nurses and midwives was assessed using 12 statements relating to critical areas of breastfeeding. The nurses and midwives were asked to indicate 'yes' or 'no' or 'not sure' which was later dichotomised as 'yes' or 'no'. The statements related to whether they had 'pre-service training' and at the same time, 'in-service training' on the following areas of breastfeeding: the importance of breastfeeding and recommended breastfeeding practices, the physiological basis of breastfeeding, breastfeeding positions and signs of good and poor attachment, the 10 steps to successful breastfeeding, how to support mothers to initiate breastfeeding, how to help mothers to express breast milk, breastfeeding counselling, how to support breastfeeding mothers to continue to breastfeed, appropriate feeding in exceptionally difficult situations (eg, low birth weight babies, infants of HIV positive mothers, etc.), management of breast conditions and other breastfeeding difficulties (eg, full breast, breast engorgement, blocked duct, inverted nipples, etc.), family planning during breastfeeding and use of drugs during breastfeeding. A score of 1 was assigned for a 'yes' response while a score

of 0 was assigned for a 'no' or 'not sure' response. Composite 'pre-service' and 'in-service' training scores were generated for each study participant.

Nurses and midwives level of satisfaction with their breastfeeding educational experiences: Using 5-statement adapted from previous studies,^{20,21} nurses and midwives were asked to indicate their level of satisfaction of breastfeeding educational experiences during training in school to the following; whether the amount of time dedicated to breastfeeding education was adequate, integration of breastfeeding into their courses was sufficient, whether materials were included to allow for their independent study of breastfeeding, whether infant and young child nutrition education were adequate and whether facilities were available for practical training on breastfeeding. We used a 5-point Likert scale with a score range of 1 = very dissatisfied to 5 = very satisfied. Mean composite satisfaction score was generated for each study participant. This was done by averaging each study participant responses to the individual component variable.

Confidence levels in providing breastfeeding counselling: Nurses and midwives were asked to indicate their confidence levels in counselling mothers about breastfeeding based on 3-items: confidence in breastfeeding counselling, complementary feeding counselling and weaning foods and practices counselling using a 5-point Likert scale (1 = strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree). Composite 'confidence levels' score (ranges from 1 = Strongly disagree to 5 = Strongly agree) was generated for each study participant.

Attitudes towards breastfeeding counselling: Nurses and midwives were asked to what extent they agree with 4 statements about breastfeeding counselling using a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The responses of the nurses and midwives were averaged and used to generate a composite breastfeeding counselling attitude of each participant. A higher score is reflective of a more positive attitude towards breastfeeding counselling. Items for this attitude measure were adapted and modified from a previous study.²¹

Barriers to effective breastfeeding counselling: A 5-point Likert scale was employed to assess the extent to which nurses and midwives agree to a list of 6 barriers to effective breastfeeding counselling in their facility. Responses ranges from 1 = strongly disagree to 5 = strongly agree.

Data analysis

STATA 14.1 was used to analyse the data. Firstly, data were presented using descriptive statistics such as frequencies, percentages, means using tables and bar charts. Chi-square was used to compare categorical variables using cross-tabulation while the association between continuous variables was calculated using Pearson correlation. Differences in satisfaction, attitude and confidence score were determined using student

t-test and analysis of variance (ANOVA). Wilcoxon rank-sum and Kruskal-Wallis rank test was used to determine the differences between pre-service and in-service test score by nurses and midwives' demographic characteristics. Findings were noted as significant at *P*-value less than .05 at a confidence interval of 95%.

Results

Demographic characteristics, source of breastfeeding knowledge/information and perceived adequacy of breastfeeding education of the study participants

The nurses and midwives had a mean (SD) age of 30.3 (7.3) years with more (84.6%) females participating in the study. A majority (67.3%) of the study participants were nurses, and 70.2% worked in the urban communities. Most (39.4%) of the nurses and midwives were providing care in Community-based Health Planning Services (CHPS) with a few (22.1%) providing care in the hospital setting (22.1%) (Table 1).

Most (64.4%) of the Nurses and midwives reported in-service training experience as their primary source of breastfeeding knowledge. In comparison, clinical/professional practice was indicated by most (40.2%) of nurses and midwives as the significant contributor to their current breastfeeding counselling competencies. The nurses and midwives cited posters/leaflets/books (67.6%) as the source of information regarding breastfeeding, followed by academic journals (16.7%) and discussion with colleagues (10.8%). A vast majority (79.8%) of the nurses and midwives thinks they need further updating/training on breastfeeding, approximately 60% perceived their breastfeeding training was adequate during training in school and 98.1% of the study participants reported that breastfeeding is relevant to their professional practice (Table 1).

Nurses and midwives training on breastfeeding

A Cronbach alpha value of .96 was recorded for 12-item training statements, Nurses and midwives had higher pre-service training than in-service training, mean training score (10.0 vs 5.2), that is (83.3% vs 43.3%), respectively. Most of the nurses and midwives indicated that they had pre-service training on how to support mothers to initiate breastfeeding (91.4%), how to support mothers to express breastmilk (89.4%), how to support breastfeeding mother to continue to breastfeed (88.7%), the importance of breastfeeding and recommended breastfeeding practices (88.5). Typical areas of in-service training were training on breastfeeding positions and signs of good and poor breastfeeding attachment (51.9%), the importance of breastfeeding and recommended breastfeeding practices (49%) and on how to support mothers to initiate breastfeeding (49%). Few had in-service training on the use of drugs during breastfeeding (36.5%), the 10 steps to successful breastfeeding (37.5%) and management of breast conditions and other breastfeeding difficulties (39.4%) (Table 2).

Table 1. Demographic characteristics, information and perceived adequacy of breastfeeding education of the study participants.

VARIABLES	FREQUENCY	%
Mean Age, SD		30.3 ± 7.3
Age (in y)		
<35	83	81.4
≥35	19	18.6
Gender		
Male	16	15.4
Female	88	84.6
Religious affiliation		
Christianity	54	51.9
Islam	50	48.1
Marital status		
Married	84	80.8
Single	20	19.2
Type of health professional		
Midwife	34	32.7
Nurse	70	67.3
Work experience		
<4	53	51.5
5-10	35	34.0
11+	15	14.6
Work location		
Urban	73	70.2
Rural	31	29.8
Type of health facility		
CHPS	41	39.4
Health centre	40	38.5
Hospital	23	22.1
Primary source of breastfeeding knowledge		
In-service training experience	67	64.4
Pre-service training experience	26	25.0
Personal experience	11	10.6
Contribution to current breastfeeding counselling competencies		
In-service training experience	27	26.5
Pre-service training experience	7	6.9
Reading and self-directed learning	10	9.8

(Continued)

Table 1. (Continued)

VARIABLES	FREQUENCY	%
Clinical/professional practice	41	40.2
Workshops/conferences	17	16.7
Primary source of information regarding breastfeeding		
Academic journals	17	16.7
The media	2	2.0
Posters/leaflets/books	69	67.6
Internet	3	2.9
Discussion with colleagues	11	10.8
Need for further training/updating on breastfeeding		
Yes	83	79.8
No	21	20.2
Adequacy of breastfeeding education		
Yes	62	59.6
No	42	40.4
Relevance of breastfeeding to professional practice		
Yes	102	98.1
No	2	1.9

Pre-service training correlated positively with nurses and midwives confidence levels about counselling mothers on infant and young child feeding ($r = .359, P < .001$). Similarly, in-service training correlated positively with nurses and midwives confidence levels in counselling mothers about infant and young child feeding ($r = .299, P = .002$) (Table 5). Mean pre-service breastfeeding training score was higher among nurses and midwives older than 35 years of age ($P = .029$), those with work experience of 11 years or more ($P = .043$) and nurses and midwives working at health centres ($P = .011$) (Table 4).

Nurses and midwives level of satisfaction with their breastfeeding educational experiences during training

Most of the study participants indicated that the integration of breastfeeding content into their courses was adequate (66.4%), that infant and young child nutrition was adequate (57.7%) and that the amount of time dedicated to breastfeeding education was adequate (50%). More than 50% were either dissatisfied or neutral about the availability of facilities for practical training on breastfeeding (Table 3). Mean satisfaction score correlated positively with nurses and midwives confidence levels ($r = .224, P = .022$) and pre-service training ($r = .342, P < .001$) (Table 5). Mean satisfaction score did not differ by age, gender, marital status, religious affiliation, practice location, type of health professional, but by type of health facility.

Table 2. Nurses and midwives training on breastfeeding.

STATEMENT	PRE-SERVICE	IN-SERVICE
	YES (%)	YES (%)
Training on the importance of breastfeeding and recommended breastfeeding practices	92 (88.5)	51 (49.0)
Training on the physiological basis of breastfeeding	85 (81.7)	45 (43.3)
Training on breastfeeding positions and signs of good and poor breastfeeding attachment	92 (88.5)	54 (51.9)
Training on the 10 steps to successful breastfeeding	84 (80.8)	39 (37.5)
Training on how to support mothers to initiate breastfeeding	95 (91.4)	51 (49.0)
Training on how to support mothers to express breastmilk	93 (89.4)	44 (42.3)
Training on breastfeeding counselling	91 (87.5)	46 (44.2)
Training on how to support breastfeeding mother to continue to breastfeed	87 (88.7)	49 (47.1)
Training on appropriate feeding in exceptionally difficult situations (eg, <i>low birth weight babies, Infants of HIV positive mothers, severe malnutrition, re-lactation, etc.</i>)	75 (72.1)	42 (40.4)
Training on management of breast conditions and other breastfeeding difficulties (eg, <i>full breast, breast engorgement</i>)	85 (81.7)	41 (39.4)
Training on family planning during breastfeeding	91 (87.5)	43 (41.4)
Training on the use of drugs during breastfeeding	68 (65.4)	38 (36.5)
Mean training score (SD)	10.0 ± 3.4	5.2 ± 5.2

Table 3. Nurses and midwives level of satisfaction with their breastfeeding educational experiences during training.

BREASTFEEDING EDUCATIONAL EXPERIENCE	DISSATISFIED	NEUTRAL	SATISFIED	WEIGHTED AVERAGE
The amount of time dedicated to breastfeeding education was adequate	36 (34.6)	16 (15.4)	52 (50.0)	2.15
The integration of breastfeeding content into our courses was adequate	26 (25.0)	9 (8.7)	69 (66.4)	2.41
Materials were included in some of our courses to allow for our independent study of breastfeeding	37 (35.6)	23 (22.1)	44 (42.3)	2.07
Infant and young child nutrition education was adequate	22 (21.2)	22 (21.2)	60 (57.7)	2.37
Facilities were available for practical training on breastfeeding	40 (38.5)	13 (12.5)	51 (49.0)	2.11
Mean Satisfaction score, SD				2.2 ± 0.7

Responses very dissatisfied and dissatisfied were collapsed to yield dissatisfied. Responses satisfied and very satisfied were collapsed to yield satisfied.

Higher satisfaction score was more likely among nurses and midwives working in hospitals ($P = .001$) and those who had both pre-service and in-service training ($P = .003$) (Table 4).

Nurses and midwives confidence levels and attitudes towards breastfeeding counselling

Nurses and midwives were asked to what extent they agreed with 4 statements concerning breastfeeding with 5-point Likert responses. With mean (SD) attitude score of 4.5 (0.4), the nurses and midwives universally (100%) agreed that breastfeeding is a significant component of the prevention of child-related diseases, and that breastfeeding counselling is effective at

changing mothers' behaviour towards breastfeeding (100%). Nearly 99.1% of the nurses and midwives felt counselling mothers about breastfeeding is one of their job responsibilities. More than half (72.1%) of the study participants felt mothers want more information on breastfeeding than they can provide. Attitudes towards breastfeeding did not differ by age, gender, marital status, work location, work experience and type of health professional. Nurses and midwives affiliated with Christianity exhibited a higher level of positive attitudes towards breastfeeding counselling compared to those affiliated with Islam ($P = .039$). Nurses and midwives working in Hospital settings had higher attitudes towards breastfeeding counselling compared to those working in CHPS and health centre settings

Table 4. Differences in the level of satisfaction, attitudes, confidence and training by nurses and midwives' demographic characteristics.

VARIABLES	SATISFACTION	ATTITUDE	CONFIDENCE	PRE-SERVICE T.	IN-SERVICE T.
	MEAN SCORE (SD)	MEAN SCORE (SD)	MEAN SCORE (SD)	MEDIAN SCORE (IQR)	MEDIAN SCORE (IQR)
Age (in y)					
<35	11.4 ± 3.2	18.2 ± 1.6	13.4 ± 1.9	11.0 (9, 12) ^a	2.0 (0, 11)
≥35	10.4 ± 3.5	17.8 ± 2.1	14.0 ± 1.4	12.0 (11, 12) ^b	6.0 (0, 12)
Gender					
Male	11.6 ± 2.9	18.5 ± 1.8	13.4 ± 1.9	10.5 (8.5, 12)	10.0 (1.5, 11.5)
Female	11.0 ± 3.4	18.0 ± 1.7	13.5 ± 1.9	11.5 (10, 12)	1.5 (0, 11)
Religious affiliation					
Christianity	11.2 ± 3.3	18.4 ± 1.6 ^a	13.9 ± 1.4 ^a	12.0 (10, 12)	8.0 (0, 12) ^a
Islam	11.0 ± 3.3	17.7 ± 1.8 ^b	13.0 ± 2.1 ^b	11.0 (8, 12)	0.0 (0, 10) ^b
Marital status					
Married	11.3 ± 3.2	18.0 ± 1.7	13.6 ± 1.7 ^a	12.0 (10, 12)	6.0 (0, 11)
Single	10.3 ± 3.7	18.3 ± 1.6	12.7 ± 2.3 ^b	10.5 (7, 12)	0.0 (0, 9.5)
Type of health professional					
Midwife	10.6 ± 3.4	18.1 ± 1.9	13.2 ± 2.4	12.0 (11, 12)	0.5 (0, 10)
Nurse	11.4 ± 3.2	18.0 ± 1.6	13.5 ± 1.5	11.0 (9, 12)	7.0 (0, 11)
Work experience					
<4	10.8 ± 3.6	18.1 ± 1.7	13.1 ± 1.8	11.0 (9, 12) ^b	1.0 (0, 10)
5-10	11.8 ± 2.7	18.4 ± 1.5	13.9 ± 2.0	12.0 (11, 12) ^a	7.0 (0, 11)
11+	10.3 ± 3.6	17.1 ± 2.1	13.9 ± 1.4	12.0 (11, 12) ^a	6.0 (0, 12)
Work location					
Urban	11.4 ± 2.9	18.1 ± 1.6	13.5 ± 2.0	11.0 (9, 12)	6.0 (0, 11)
Rural	10.3 ± 4.0	18.0 ± 1.9	13.2 ± 1.4	11.0 (11, 12)	1.0 (0, 11)
Type of health facility					
CHPS	9.8 ± 3.8 ^b	17.8 ± 1.9 ^a	13.2 ± 2.0	11.0 (6, 12) ^a	0.0 (0, 10)
Health centre	11.5 ± 2.8 ^a	17.9 ± 1.6 ^a	13.5 ± 2.0	12.0 (10, 12) ^a	4.5 (0, 12)
Hospital	12.9 ± 2.1 ^a	19.1 ± 1.2 ^b	13.9 ± 1.3	12.0 (11, 12) ^a	7.0 (0, 12)
Had both pre- and in-service training					
Yes	11.4 ± 3.1 ^b	18.2 ± 1.7 ^b	13.6 ± 1.6 ^b	–	–
No	8.0 ± 3.7 ^a	16.8 ± 1.3 ^a	11.9 ± 3.1 ^a	–	–

Means sharing same letter superscript are not significantly different at $P < .05$.

($P = .018$). Those who had both pre-service and in-service training were more likely to have higher attitudes towards breastfeeding counselling ($P = .016$) (Table 4).

With a mean (SD) score of 4.5(0.6), over 95.2% of the nurses and Midwives felt confident in counselling mothers about breastfeeding, 94.2% felt confident in counselling mothers

Table 5. Correlation between satisfaction, attitude, confidence, pre-service and in-service training.

DOMAIN	1	2	3	4	5
Satisfaction	–				
Attitude	.210*	–			
Confidence	.224*	.348***	–		
Pre-service training	.342***	.285***	.359***	–	
In-service training	.084	.164	.299**	.325***	–

* $P < .05$. ** $P < .01$. *** $P < .001$.

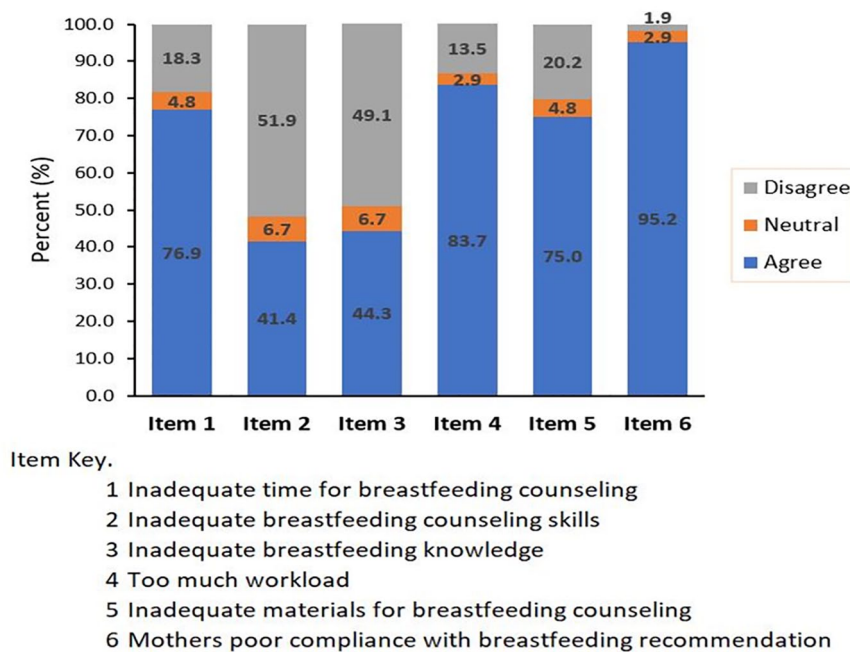


Figure 1. Barriers to effective breastfeeding counselling.

about complementary feeding and 91.3% felt confident in counselling mothers about weaning foods. Confidence levels correlated positively with attitudes towards breastfeeding counselling ($r = .348, P < .001$) (Table 5). Higher confidence levels about breastfeeding counselling were more likely among Christian nurses and midwives ($P = .010$), nurses and midwives who were married ($P = .040$) and those who had both pre-service and in-service ($P = .007$) (Table 4).

Nurses and midwives reported barriers to effective breastfeeding counselling

Commonly reported barriers to breastfeeding counselling in the health facilities were mothers poor compliance with breastfeeding recommendations (95.2%), too much workload (83.7%), inadequate time (76.9%) and materials for breastfeeding counselling (75%) (Figure 1).

Discussion

In this study, we focus on nurses and midwives providing maternal and child health services in the Sagnarigu Municipality of

Ghana. These group of nurses and midwives are crucial in protecting and promoting breastfeeding due to their frequent contact with expectant and nursing mothers. The nurses and midwives reported in-service training experience as their primary source of breastfeeding knowledge. At the same time, clinical/professional practice was cited as a significant contributor to their current breastfeeding counselling competencies. This observation varies from a previous study where practice nurses cited personal experience as the primary source of maternal and infant feeding nutrition knowledge.²² Our finding on the source of breastfeeding knowledge demonstrates the crucial role of in-service breastfeeding training in modulating the breastfeeding knowledge of nurses and midwives. The study participants cited posters/leaflets/books as the primary source of information regarding breastfeeding. In contrast with our study, nurses and family physician cited professional journals as the primary source of information regarding nutrition care during pregnancy.^{21,22} Perhaps, our findings may be an indication of the availability of posters/leaflets/books in the primary healthcare facilities.

There was a vast difference between pre-service (83.3%) and in-service (43.3%) breastfeeding training received by the nurses

and midwives with more of the study participants receiving pre-service breastfeeding training. This difference was expected since pre-service training in this study was defined as training received during school. Breastfeeding training of health workers like nurses and midwives affect their breastfeeding care skills and knowledge. For instance, training of health professionals on breastfeeding is effective at improving workers knowledge, skills and hospital practices.²³ Indeed, nurses and midwives who had both pre-service and in-service breastfeeding training had better satisfaction score, positive attitudes and higher confidence level about breastfeeding counselling. These underscore the importance of receiving both pre-service and in-service training in improving the breastfeeding competencies of these group of health professionals.

Overwhelmingly majority of the nurses and midwives in this study indicated that they need further training/updating on breastfeeding. This revelation is consistent with a previous study in England, where majority of the workers in a primary healthcare setting indicated that their members could benefit from further breastfeeding knowledge and expertise.²⁴ Indeed, health workers in the primary care setting need regular retraining exercises to provide effective infant and young child feeding counselling.²⁵ In this study, a vast majority of the nurses and midwives reported that breastfeeding counselling is integral to their professional practice. Their view is in line with a previous study, where Australian's midwives perceived the provision of nutrition advice to women as an essential part of their professional practice.²⁶ Perhaps, the recognition of their role in breastfeeding counselling could be a motivator for them to protect and promote breastfeeding in their professional practice. Indeed, mothers who are trained by midwives in lactation are more successful in breastfeeding their babies than mothers who are trained by physicians.²⁷

Generally, nurses and midwives in this study were satisfied with their breastfeeding training educational experiences. In line with previous studies,^{20,28} mean satisfaction score correlated positively with nurses and midwives confidence levels about breastfeeding counselling and pre-service training. This outcome is a demonstration of the role of breastfeeding satisfaction in improving nurses and midwives confidence about breastfeeding counselling. In another study, breastfeeding education was found to be effective in increasing the confidence of nurses in providing breastfeeding support to mothers.²⁹

Nurses and midwives in this study felt confident about counselling mothers on infant and young child feeding. A similar study also found majority of practice nurses feeling confident about counselling mothers on infant and young child feeding.²² The high morale of the study participants is crucial in promoting breastfeeding counselling and care in a primary healthcare setting. However, several factors such as language barriers, time constraints and logistics sometimes affect the ability of healthcare professionals to put their confidence into practice.^{30,31}

Generally, the nurses and midwives had positive attitudes towards breastfeeding counselling, where they universally agree that breastfeeding is a significant component of the prevention of child-related diseases. Positive attitudes of health professionals towards breastfeeding have been reported in similar studies.^{32,33} Breastfeeding attitudes of healthcare professionals play a key role in influencing the kind of breastfeeding support they offer to mothers.³⁴ The nurses and midwives provision of breastfeeding counselling to mothers was hampered by mothers poor compliance with breastfeeding recommendations, too much workload, inadequate time and logistics for breastfeeding counselling. Similar to our findings, midwives in Uganda pointed out lack of time, lack of documentation and insufficient space as barriers to providing nutrition care to pregnant women.³⁵ Many of these challenges are not within the control of the nurses and midwives, coordinated efforts are required to resolve these challenges.

Study limitations and strengths

The study's findings are limited to nurses and midwives, providing maternal and child health services in the Sagnarigu Municipality. Hence, the study's findings cannot be generalised beyond this study population. The questionnaire was self-administered and could therefore be prone to bias, and additionally, social desirability cannot be ruled out in the responses. However, the self-critical answers provided by the study participants might minimise the effect of these shortcomings. Despite these shortcomings, this study to the best of our knowledge is the first study in Ghana to evaluate nurses and midwives views of their breastfeeding competencies, training, barriers and satisfaction of their breastfeeding educational experiences during school training.

Conclusion and Recommendation

Nurses and midwives in this study felt confident about breastfeeding counselling, had positive attitudes towards breastfeeding counselling and generally, satisfied with their breastfeeding educational experiences. Despite nurses and midwives agreeing that breastfeeding counselling is integral in their professional practice, their role in providing breastfeeding counselling was hindered by individual and health systems barriers which are not within the control of the nurses and midwives. Breastfeeding programs and policies that seek to improve nurses and midwives competencies about breastfeeding, resolved barriers to breastfeeding counselling, in addition to intensified continuous breastfeeding training are recommended. Implementing these recommendations is crucial in equipping the nurses and midwives with the needed breastfeeding competencies. This will lead to the provision of the needed breastfeeding support to nursing mothers, which is key in mitigating the declining rate of early breastfeeding initiation, exclusive breastfeeding and breastfeeding duration in Ghana.

Author Contributions

SDD conceived and designed the study, EY and SDD conducted the research, KEA analysed the data. EY provided technical guidance. SDD and KEA wrote the manuscript. All authors read and approved the final manuscript.

ORCID iDs

Stephen Dajaan Dubik  <https://orcid.org/0000-0001-9833-2676>

Kingsley E Ebenezer  <https://orcid.org/0000-0002-5251-1166>

REFERENCES

- Horta B, Victora C. *Short-Term Effects of Breastfeeding: A Systematic Review on the Benefits of Breastfeeding on Diarrhoea and Pneumonia Mortality*. World Health Organization; 2013:1-54.
- Kramer MS, Aboud F, Mironova E, et al. Breastfeeding and child cognitive development: new evidence from a large randomized trial. *Arch Gen Psychiatry*. 2008;65:578-584.
- Bowatte G, Tham R, Allen KJ, et al. Breastfeeding and childhood acute otitis media: a systematic review and meta-analysis. *Acta Paediatr*. 2015;104:85-95.
- Victora CG, Bahl R, Barros AJ, et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. *Lancet*. 2016;387:475-490.
- WHO. *Global Strategy for Infant and Young Child Feeding*. Fifty-Fourth World Health Assembly; 2003:5.
- UNICEF & WHO. *Increasing Commitment To Breastfeeding Through Funding and Improved Policies and Programmes*. Global Breastfeeding Collective; 2019:1-4.
- GSS and UNICEF. Ghana multiple indicator cluster surveys snapshots of key findings. 2017. <https://www.unicef.org/ghana/media/576/file/Ghana%20Multiple%20Cluster%20Indicator%20Survey.pdf>
- GSS, GHS and ICF. Ghana demographic and health survey. 2015. <https://www.dhsprogram.com/pubs/pdf/FR307/FR307.pdf>
- GSS, GHS and ICF. Ghana demographic and health survey. 2008. <https://www.dhsprogram.com/pubs/pdf/FR221/FR221%5B13Aug2012%5D.pdf>
- Wood KM, Qureshi K. Facilitators and barriers for successful breastfeeding among migrant Chuukese mothers on Guam. *SAGE Open Nurs*. 2017;3:237796081668890.
- Mgongo M, Hussein TH, Stray-Pedersen B, Vangen S, Msuya SE, Wandel M. Facilitators and barriers to breastfeeding and exclusive breastfeeding in Kilimanjaro region, Tanzania: a qualitative study. *Int J Pediatr*. 2019;2019:8651010.
- Valizadeh S, Hosseinzadeh M, Mohammadi E, Hassankhani H, Fooladi MM, Cummins A. Coping mechanism against high levels of daily stress by working breastfeeding mothers in Iran. *Int J Nurs Sci*. 2017;5:39-44.
- World Health Organization. *Infant and Young Child Feeding: Model Chapter*. Model chapter for textbooks for medical students and allied health professionals. 2009.
- OlaOlorun FM, Lawoyin TO. Health workers' support for breastfeeding in Ibadan, Nigeria. *J Hum Lact*. 2006;22:188-194.
- Britton C, McCormick FM, Renfrew MJ, Wade A, King SE. Support for breastfeeding mothers. *Cochrane Database Syst Rev*. 2007;1:CD001141.
- Dodgson JE, Tarrant M. Outcomes of a breastfeeding educational intervention for baccalaureate nursing students. *Nurse Educ Today*. 2007;27:856-867.
- Moimaz SAS, Serrano MN, Garbin CAS, Vanzo KLT, Saliba O. Community health workers and breastfeeding: challenges related to knowledge and practice. *Rev CEFAC*. 2017;9:198-212.
- Dodgson JE, Duckett L, Garwick A, Graham BL. An ecological perspective of breastfeeding in an indigenous community. *J Nurs Scholarsb*. 2002;34:235-241.
- Johnson AM, Kirk R, Rooks AJ, Muzik M. Enhancing breastfeeding through healthcare support: results from a focus group study of African American mothers. *Matern Child Health J*. 2016;20:92-102.
- Mogre V, Stevens FCJ, Aryee PA, Matorwmasen-Akkermans FL, Abubakari B, Scherpbier AJJA. Nutrition care practices, barriers, competencies and education in nutrition: a survey among Ghanaian medical doctors. *Med Sci Educ*. 2018;28:815-824.
- Wynn K, Trudeau JD, Taunton K, Gowans M, Scott I. Nutrition in primary care: current practices, attitudes, and barriers. *Can Fam Physician*. 2010;56:e109-e116.
- NNSC. Assessment of training needs of Health Care Professionals who provide foetal, maternal and infant nutrition advice. 2010. <https://www.ucd.ie/nnsct4media/Assessment%20of%20training%20needs%20of%20health%20care%20professionals%20who%20provide%20foetal,%20maternal%20and%20infant%20nutrition%20advice.pdf>
- de Jesus PC, de Oliveira MIC, Fonseca SC. Repercussão da capacitação de profissionais de saúde em aleitamento materno sobre seus conhecimentos, habilidades e práticas hospitalares: uma revisão sistemática. *J Pediatr (Rio J)*. 2016;92:436-450.
- McFadden A, Renfrew MJ, Dykes F, Burt S. Assessing learning needs for breastfeeding: setting the scene. *Matern Child Nutr*. 2006;2:196-203.
- Samuel FO, Olaolorun FM, Adeniyi JD. A training intervention on child feeding among primary healthcare workers in Ibadan Municipality. *Afr J Prim Health Care Fam Med*. 2016;8:1-6.
- Arrish J, Yeatman H, Williamson M. Midwives' role in providing nutrition advice during pregnancy: meeting the challenges? A qualitative study. *Nurs Res Pract*. 2017;2017:7698510.
- Yılmaz E, Vural Yılmaz Z, Karşlı MF, Ceyhan M, Öcal D, Küçüközkan T. Who should provide breastfeeding education to improve success: a midwife or a physician? *Gynecol Obstet Reprod Med*. 2017;23:14-19.
- Mihalynuk TV, Scott CS, Coombs JB. Self-reported nutrition proficiency is positively correlated with the perceived quality of nutrition training of family physicians in Washington State. *Am J Clin Nutr*. 2003;77:1330-1336.
- Watkins AL, Dodgson JE. Breastfeeding educational interventions for health professionals: a synthesis of intervention studies. *J Spec Pediatr Nurs*. 2010;15:223.
- Nankumbi J, Ngabirano TD, Nalwadda G. Knowledge, confidence and skills of midwives in maternal nutrition education during antenatal care. *J Glob Health Rep*. 2020;4:e2020039.
- Mihalynuk TV, Coombs JB, Rosenfeld ME, Scott CS, Knopp RH. Survey correlations: proficiency and adequacy of nutrition training of medical students. *J Am Coll Nutr*. 2008;27:59-64.
- Foster T, Winham DM. Nurse knowledge and attitudes towards breastfeeding in Arizona. *FASEB J*. 2012;26:1.
- Quinn P, Tanis SL. Attitudes, perceptions, and knowledge of breastfeeding among professional caregivers in a community hospital. *Nurs Womens Health*. 2020;24:77-83.
- Brodribb W, Fallon A, Jackson C, Hegney D. The relationship between personal breastfeeding experience and the breastfeeding attitudes, knowledge, confidence and effectiveness of Australian GP registrars. *Matern Child Nutr*. 2008;4:264-274.
- Nankumbi J, Ngabirano TD, Nalwadda G. Maternal nutrition education provided by midwives: a qualitative study in an antenatal clinic, Uganda. *J Nutr Metab*. 2018;2018:3987396.