



Research Article

Investigating Knowledge Level, Attitude, Perceptions and other Factors Influencing Exclusive Breastfeeding Practices

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Abstract

Background: Exclusive breastfeeding is worldly, the preferred choice of feeding infants. WHO and UNICEF encourage it for the first 6 months of life and as long as practicable up to two years or more alongside other weaning foods. In a previous study knowledge level of participants (35.7%) on the importance of Exclusive Breast Feeding (EBF) was relatively high, yet, only about half of them (17.9%) practised EBF. This suggest that knowledge alone is not enough to achieve EBF as recommended by WHO and UNICEF.

Purpose of study: The purpose of this research was to investigate factors influencing practices of EBF (incentives/reinforcers) in addition to attitude, perception and knowledge level, employing social cognitive theory. **Methodology:** The design employed was cross sectional study. **Results:** Most of them (84.1%) were self-employed. About (71%) were married. Most participants (80.7%) indicated that exclusive breastfeeding can be practiced by everybody. About (51.2%) were in support that breastfeeding should expand over at least 2 years. **Conclusion:** In addition to giving mothers knowledge on EBF, reinforcers, incentives and practices that enhances EBF should be used to ensure its practice.

Keywords: Exclusive Breast Feeding; Nursing Mothers; Infants; Ghana

Introduction

Even though WHO and UNICEF [1,2] advise that mothers ought to practice exclusive breastfeed for 6 months and beyond, the world is still struggling to adhere to this advice and much is left to be desired. Inano et al. found in their study that this practice has left much to be desired because of myriad of challenges its practice faces [3].

Breast milk has vital nutrients that a new-born needs for adequate and healthy growth. Exclusively breastfed children fall sick less often and their mother's benefit from extended lactation amenorrhea. Despite this known fact, the practice has not received the desired attention and there exist paucity of literature in the context of Ghana. Preceding research on this topic emphasized on knowledge and attitude of mothers toward exclusive breastfeeding without looking at how women practice Exclusive Breast Feeding (EBF) [1]. Another previous study recruited only first-time mothers [4]. What remains open and unanswered among other deficiencies in literature is that the application of theoretical frameworks that gives research scholarly footing is lacking on this subject matter. This study therefore will fill this gap.

Background to the Study

Breastfeeding is worldly considered the best choice of infants feeding. Breastfeeding is defined as giving only breast milk without any meals or drinks for 6 months [5]. Exclusive breastfeeding is adequate and contains the right amounts of various nutrients [6]. Research revealed that even undernourished mothers has good milk for feeding [7]. Though their milk production can be improved with good nutrition [8]. The authors of this research therefore, agrees with WHO and UNICEF that all mothers should practice EBF, since even undernourished mothers can produce enough breast milk for their babies.

Out of the 6.9 million deaths of children less than five years in 2017, about 1 million of them could have been spared of their lives through practices of EBF [9]. Adequate understanding about practices of exclusive breastfeeding in addition to knowledge is said to be the panacea to solving this problem [10]. In order to emphasize this point, Duan et al. [11] in a study on knowledge of the importance of EBF for the first 6 months, pointed that the knowledge level of participants was (35.7%), which was seen to be relatively high meanwhile only about half of the participants (17.9%) practised EBF. This emphasizes the point that knowledge alone is not enough to achieve EBF.

Similar studies [12-14] have been conducted in Ghana concerning knowledge and attitude and not much is known about other predictors of EBF in northern Ghana. Nukpezah et al, (2018)

also conducted similar research without looking at the factors influencing the practices of exclusive breastfeeding [4]. Though there are worldwide and Africa-specific statistics on factors influencing exclusive breastfeeding there is limited published literature particularly on practices in the context of Ghana, specifically in the northern region. Statistics from the Ghana Health Service and USAID shows exclusive breastfeeding at six months stands around 43% while early initiation of breastfeeding hovers around 50%. Though 98% of women are reported to have ever fed their babies, proper infant feeding and EBF are not largely followed [15]. To lend credence to this, there was a drop in EBF from 63% in 2008. These factors causing these therefore, need to be investigated.

Theoretical framework/Theoretical perspective

In considering a theoretical framework for studying exclusive breastfeeding practices among mothers in the Tamale Metropolis, the social cognitive theory is apt. This theory underpins the fact that the role of subjective assumptions and beliefs or expectations held by the subject influences' behavior. Behavior, in this regard, is a function of the value an individual places on the reward that the behavior will bring. In other words, if an individual thinks that a certain reward or benefit is worth a certain kind of behavior then they will go ahead and put up that behavior. This is theorized as value expectancy theory. Therefore, behavior is predicted by reinforcers that influence expectations in a particular context or situation.

Social cognitive theory looks at behavior as a product of the reciprocal interaction of three factors; environment, cognitive and behavioral. This creates the opportunity for people to either put a limit on their development or influence the achievement of their destiny. Hence the idea of human functioning neither expose human to become powerless beings influenced by the environmental factors or makes human beings agents of becoming whatever they choose to become. Rather the environment and human beings are reciprocal predictors of one another [16].

Bandura's theory asserts that expectancies and incentives predict behavior. For the purpose of this study, expectancies will be divided into three:(a) Expectancies about environmental cues, the believe that one thing in the environment leads to another (b) Expectancies about either the positive or negative rewards about one's behavior (outcome expectancy) and (c) expectancies about one's ability to carry out the behavior that will cause the desired outcome (self-efficacy). The second factor that predicts behavior is incentives, that is the value one places on the outcome of a behavior in other words behavior is determined by reinforcements, depending on how the reinforcement are interpreted by the individual. Hence people who esteem the outcomes of certain behaviors (incentives), in this case EBF, will attempt to practice it if they believe that (a) their current breastfeeding mode if not

EBF, pose threats to their children's health, and to their economic burden. (b) adopting behavioral changes (EBF) will reduce threats that other forms of breastfeeding other than EBF can cause; and (c) they are capable or competent in adopting the new behaviors (Efficacy expectations), that is breastfeeding.

Also, social cognitive theory has been used in a wide range of social behavior in human endeavors which include issues in social deviance, competition, and sex roles. According to Rotter (1954), there are four variables embedded in social cognitive theory which should be considered when employing this theory in a study; psychological situations, expectancies, behavior and reinforcement. Following this explanation, behavior is defined as; "in any psychological situation the likelihood for a behavior to take place is the result of the anticipation that the behavior will result in a lead-up to a particular reinforcement in that context and the value placed on that reinforcement by the individual".

The perceived amount of surety/chance that association exist between behavior and reward is expectancy in this definition. The use of social cognitive theory in this study of exclusive breastfeeding, the variables identified by Rotter (1954), in the theory are:

1. Exclusive Breastfeeding is the desired behavior
2. The expectancy of benefits determining a behavior or not predicted by a behavior is the locus of control.
3. Reinforcements are the benefits from exclusive breastfeeding and the value/worth placed on these rewards. And
4. The health center and society serve as the psychological situation which serve to provide the rewards for engaging or practicing exclusive breastfeeding. With these specific variables, the formula for behavior which was formulated by Rotter (1975) would be defined as: For potential exclusive breastfeeding practices/behavior to occur within the society/health centers, it is the result of the anticipation that this activity (breastfeeding) will result in benefits and the value that these women place on these benefits. Further, the product of locus of control and interpersonal trust must be taking into consideration alongside the expectancy of getting benefits from behaviors (Rotter, 1967). The last but not least, the following variables among others; culture, age, work, number of children etc. are factors that may correlate to the extent of compliance to EBF, similar to what exist in other places. Drawing conclusions from these, the following proposition support and underpins the rationale for the design of this study. If breastfeeding mothers believe:

- (a) Practicing exclusive breastfeeding will lead to rewards (locus of control),
- (b) Others can be relied upon to follow through on their promises (interpersonal trust),

(c) The rewards for exclusive breastfeeding are worthwhile (high value placed on reward), and

(d) The rewards are visible and available in the society/health centers they visit; then they will attain high levels of exclusive breastfeeding practices.

Methods

Research Design: Cross sectional study design was employed in this study.

Study Setting: The Tamale Reproductive and Child Health Clinic was the study setting. The facility runs only out-patient services which include Post-natal and Antenatal services. The facility provides only ANC and PNC services and functions on only week days from 8:00am to 5:00pm. It has a staff capacity of 18 health workers (7 community health nurses, 8 midwives and two physician assistants).

Study Population: The study population comprised women in their fertile age and the target group was nursing mothers with infants between 3 months to 9 months of age who receive health care services at RCH in the Tamale metropolis. This target group was selected because most infants less than 12 months are exclusively breastfed [17].

Sampling Size

The Cochran (1977) formula was used: $N = (Z\alpha/2)^2 P(1-P)/d^2$.

Where:

N = the sample size.

$Z\alpha/2$ = desired level of confidence.

P = assumed breastfeeding rate in northern Ghana

Assumption;

1. Assumed breastfeeding rate is 9.7% (Ghana Health Service (GHS), 2018). Similar studies such as [2,3,19] used the sampling with assumed breastfeeding rate of 9.7%?
2. The margin of error $d = 5\%$ is allowed.
3. Confidence interval of 95% is assured ($Z\alpha/2 = 1.96$).

By computation:
$$\frac{(1.96)^2 \times 0.097(1-0.097)}{(0.005)^2} = 133$$

Sampling Techniques

The sampling technique employed was probability sampling techniques because of its advantage of drawing inferences from findings of the sample size to the population of the sample size [18]. The sampling frame was a paired list of mothers and their infants' who were booked with identification numbers for routine

care. Their identification numbers were placed into a bag, shuffled and each was drawn and counted without replacing it. The process continued till the sample size of 133 (100%) was attained.

Data Collection

According to Teddlie & Yu, [19], the use of questionnaire has advantage of privacy and mitigate against response bias which other data collection instruments do not do as much. This informed the decision to use questionnaire instrument. The items on the questionnaire were divided into four parts: Knowledge, attitude, perception of exclusive breastfeeding and factors influencing breastfeeding practices. The data was collected at the child welfare clinic, from 18th to 21st July, 2022. The mothers were given an average time of 30-mins each to answer the questionnaires. The data collection instrument (questionnaire) was in English language. For participants who could not read/understand some of the questions, the question items were read and explained to them.

Reliability and Validity

The questionnaire was developed through literature review and using similar studies to determine the face and content validity. It was given to other peers who are experts in quantitative studies for their input and fine tuning of the tool.

Data Processing and Analysis

Data analysis was done using Statistical Package for the Social Sciences (SPSS) version 20. Results were presented in the form tables and frequencies and reported using, tables and frequencies. The socio-demographic characteristics, attitude, practices and Knowledge of participants about EBF and factors influencing their practices were all displayed using tables and

figures. Further inferences were made by displaying of bar graphs and other inferential statistical analysis done on the Knowledge, perceptions and the practices of EBF with *P* value set at 0.05.

Ethical Consideration

The researchers sort permission from the ethical review board of a Teaching Hospital, which approved the study with approval number, TTH/R&D/SR/122. A consent form was given to the participants to consent after its content was explained to them. Study objectives, benefits and risks were made known to them. Confidentiality and privacy of participants were maintained throughout the study.

Limitations of the study

This study like any other research study has its limitations. The first is the scope is too small and findings might not be able to reflect the general world population because of differences in many factors. Financial constraints were also a limitation that led to the choice of only one facility for the study instead of many or even cover the whole country where the study was done. In addition, quantitative studies usually lack the kind of detail associated with qualitative studies and this study was not left out since it is a quantitative study.

Presentation of Results

The study identified that most breastfeeding mothers are between the ages of 26-35 years (45.5%), Muslims (84.8%) and have at least secondary education (54.5%). There were 81.4% of the respondents who reside in the urban setting and gave birth to their youngest child in Hospitals/Health centers (95.2%). All these are displayed in Table 1.

Variable	Category	Frequency	Percent
	age group		
	Below 16 years	1	0.7
	16-25 years	33	22.8
	26-35	66	45.5
	36-45 years	41	28.3
	Above 45 years	4	2.8
religion	Christian	22	15.2
	Muslim	123	84.8
	Other e.g. stopped at	18	12.4
educational background	Basic	48	33.1
	Secondary	48	33.1
	Tertiary	31	21.4
income Monthly	7 to 35 dollars	90	62.1
	70 -140 dollars	11	7.6
	35 to 70 dollars	9	6.2
	Less than 7 dollars	21	14.5
	others	14	9.7
observe the three, square meals per day	No	12	8.3
	Yes	133	91.7
place of birth of your youngest baby	Home	7	4.8
	Hospital/Health center	138	95.2
Place of residence	Rural setting	27	18.6
	Urban setting	118	81.4
family setting	Extended family	102	70.3
	Nuclear family	43	29.7

Table 1: Demographic Information on various variables is illustrated.

Most of the respondents were married (94.5%) and have at least one child. In terms of parity, those who had children four and above were more (33.1%) than other groups, the next highest group were those with two children (27.6%), followed by those with three children at 20% and those with a child were the least with 19.3% as shown in the bar graph. These are all illustrated in Figure 1.

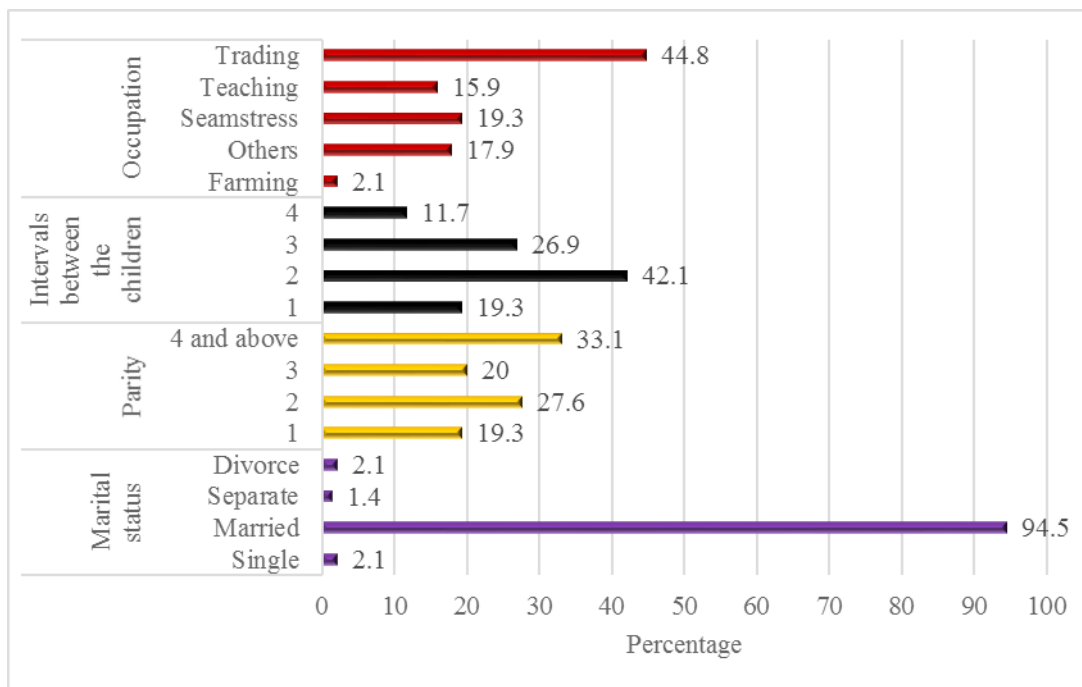


Figure 1: Bar graph illustrating some other Demographic Information of participants.

Variable	Category	Frequency	Percent
Exclusive Breastfeeding	Feeding baby with breastmilk and formula milk.	1	0.7
	Feeding baby with breastmilk and water	5	3.4
	Feeding baby with breastmilk, water and solid foods.	3	2.1
	Feeding baby with only breastmilk	126	86.9
	Don't know	10	6.9
Timing for breastfed exclusively after birth	Less than 1 week	3	2.1
	3 months to less than 4 months	2	1.4
	4 months to less than 5 months	1	0.7
	5 months to less than 6 months	9	6.2
source of information about the length of recommended breastfeeding	6 months	130	89.7
	Community support group	3	2.1
	Doctor, Nurse, Midwives	129	89.0
Exclusive breastfeeding needs to be practiced by	Friends/Colleagues	3	2.1
	Internet/ Social Media e. TV, radio, newspapers	2	1.4
	Partner, Family	6	4.1
	Others, specify	2	1.4
Everybody	Everybody	117	80.7
	Experienced mothers	5	3.4
	Matured mothers	11	7.6

best position of placing the child when feeding	Bring the baby upwards the nipple	71	49.0
	place on the lab	8	5.5
	Supported by the hand	66	45.5
how long breast milk alone without even water is sufficient for baby?	0-6 months	139	95.9
	2-3 months	1	0.7
	4-5 months	1	0.7
	Do not Know	4	2.8
	Between 2-3 months	3	2.1
appropriate age to start giving solid foods to a baby	Between 4-5 months	1	0.7
	Above 6 months	140	96.6
	Do not Know	1	0.7
	No	10	6.9
Baby should be allowed to breastfeed for at least 10-20 minutes for each feeding	Yes	131	90.3
	Don't know	4	2.8
	No	122	84.1
intend to give baby formula milk in the first 6 months of life	Yes	20	13.8
	Don't	3	2.1
	No	62	42.8
Breastmilk can be expressed, stored, and used later when mother is not around	Yes	83	57.2

Variable on attitude	Agree	Disagree	Do not know	Strongly agree
Breastfeeding should be continued up to 2 years even though the baby has received solid food	63 (43.4)	5 (3.4)	2 (1.4)	75 (51.7)
Mothers may mix breastfeeding and formula feeding once baby starts taking solid food	65 (44.8)	8 (5.5)	1 (0.7)	71 (49.0)
Giving water to baby is encouraged after every breastfeeding	17 (11.7)	85 (58.6)	2 (1.4)	41 (28.3)
Breastfeeding reduces the risk of lung infection among babies	64 (44.1)	5 (3.4)	0	76 (52.4)
Baby who receives breast milk is less prone to get diarrhea	61 (42.1)	8 (5.5)	6 (4.1)	70 (48.3)
Breastfeeding causes good development of baby's teeth and gum	65 (44.8)	3 (2.1)	1 (0.7)	76 (52.4)
Breastfeeding is beneficial for the mother	68 (46.9)	12 (8.3)	0	65 (44.8)
Exclusive breastfeeding is beneficial in birth spacing	59 (40.7)	25 (17.2)	0	61 (42.1)

Table 2: Knowledge and attitude towards exclusive breastfeeding.

Table 2, presents the knowledge of respondents on exclusive breastfeeding. It was found that exclusive breastfeeding involves feeding baby with only breastmilk (86.9%). Timing for breastfed exclusively after birth was mentioned as 6 months (89.7%) and their source of information about the length of recommended breastfeeding was from doctors, nurses, and midwives (89.0%). The appropriate age to start giving solid foods to a baby is above six (6) months (96.6%). The mothers do not intend to give baby formula milk in the first 6 months of life (84.1%) and also think that breastmilk can be expressed, stored, and used later when mother is not around (57.2%). The above percentages show that respondent’s knowledge on EBF was very good and in some aspects excellent.

The attitude towards breastfeeding was found to be good as the mothers agreed (43.4%) and strongly agreed (51.7%) respectively that breastfeeding should be continued up to 2 years even though the baby has received solid food. This sums up to a percentage of (95.1%) of mothers who agree to this view. This good

or positive attitude may be as a result of the knowledge acquired during ANC education mothers received regarding the benefits of exclusive breastfeeding to the infant. They knew that mothers may mix breastfeeding and formula feeding once baby starts taking solid food (93.8%), and also knew benefits such as breastfeeding reduces the risk of lung infection among babies (96.5%), babies who receives breast milk is less prone to get diarrhea (90.4%), breastfeeding causes good development of baby’s teeth and gum (97.2%), breastfeeding is beneficial for the mother (91.7%), and exclusive breastfeeding is beneficial in birth spacing (82.8%).

As shown in Figure 2, Mothers were found to be cleaning their nipple as much as possible (95.2%), and as a result mother and/or their baby have no medical complications as a result of infection and also, there was no inhibited breastfeeding initiation (93.1%). It was the decision of mothers to breastfeed their child (84.1%) and therefore initiated breastfeeding immediately after birth (86.9%). These percentages of various variable are clearly shown in figure 2 or the bar graph above.

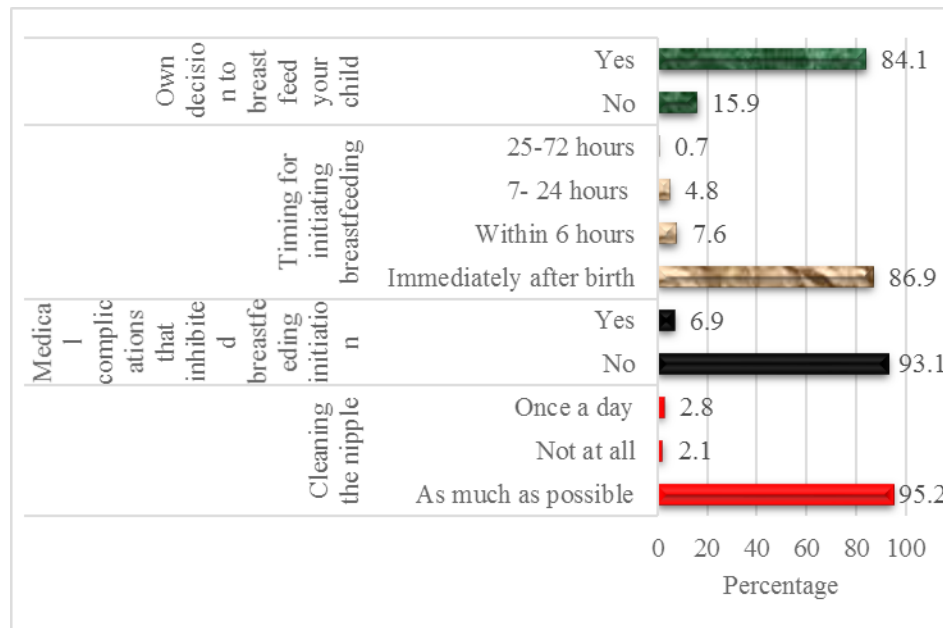


Figure 2: practices of exclusive breastfeeding.

It was identified that a considerable number of parents do not know that breast milk contains water (44.8%). This is an interesting finding and confirms why most mothers in Ghana especially in the north will insist on giving water to their babies as soon as after birth with the erroneous perception that the child will die of thirst if water is not given. These women therefore, needs education to convince them that breastmilk contains water so that the fight achieve exclusive breastfeeding could be achieved. In addition, the study found out that most mothers knew that supplementary foods should be introduced in addition to breastfeeding later after 6 months of age (98.6%). There were 85.5% of the mothers who agree that exclusively breastfed babies have less gastrointestinal and respiratory illness such as infection and asthma than those who are not breastfed. These are all clearly displayed in Table 3.

Variable	Category	Frequency	Percent
Cultural practices have effect on exclusive breastfeeding	Most parents do not know that the breast milk contain water	65	44.8
	Of ignorance	63	43.4
	Of the believe that the milk is not inadequate	17	11.7
When should a mother start adding foods to breastfeeding	Start adding between 4-6 months of age	1	0.7
	Start adding earlier than 4 months of age	1	0.7
	Start adding after 6 months of age	143	98.6
When should supplementary foods be introduced in addition to the breastfeeding	Start adding between 4-6 months of age	5	3.4
	Start adding earlier than 4 months of age	1	0.7
	Start adding later than 6 months of age	139	95.9
Exclusively breastfed babies have less gastrointestinal and respiratory illness such as can infection and asthma than those who are not breastfed	Agree	59	40.7
	Disagree	21	14.5
	Strongly agree	65	44.8

Variable on decision	Not at all important	not very important	somewhat important	very Important
My baby had trouble sucking or latching on	130 (89.7)	3 (2.1)	6 (4.1)	6 (4.1)
My baby became sick and could not breastfeed	127 (87.6)	3 (2.1)	5 (3.4)	10 (6.9)
My baby began to bite	112 (77.2)	5 (3.4)	13(9.0)	15 (10.3)
My baby lost interest in nursing or began to wean him or herself	109 (75.2)	6 (4.1)	16 (11.0)	14 (9.7)
My baby was old enough that the difference between breast milk and formula no longer mattered	88 (60.7)	5 (3.4)	15 (10.3)	37 (25.5)
Breast milk alone did not satisfy my baby	88 (60.7)	3 (2.1)	19 (13.1)	35 (24.1)
I thought that my baby was not gaining enough weight	105 (72.4)	5 (3.4)	18 (12.4)	17 (11.7)
A health professional said my baby was not gaining enough weight	120 (82.8)	6 (4.1)	11 (7.6)	8 (5.5)
I had trouble getting the milk flow to start	124 (85.5)	3 (2.1)	9 (6.2)	9 (6.2)
I didn't have enough milk	123 (84.8)	4 (2.8)	13 (9.0)	5 (3.4)

My nipples were sore, cracked, or bleeding	120 (82.8)	6 (4.1)	13 (9.0)	6 (4.1)
My breasts were overfull or engorged	124 (85.5)	3 (2.1)	12 (8.3)	6 (4.1)
My breasts were infected or abscessed	127 (87.6)	3 (2.1)	9 (6.2)	6 (4.1)
My breasts leaked too much	120 (82.8)	9 (6.2)	14 (9.7)	2 (1.4)
Breastfeeding was too painful	109 (75.2)	7 (4.8)	18 (12.4)	11 (7.6)
Breastfeeding was too tiring	112 (77.2)	8 (5.5)	17 (11.7)	8 (5.5)
I was sick or had to take medicine	121 (83.4)	6 (4.1)	15 (10.3)	3 (2.1)
Breastfeeding was too inconvenient	111 (76.6)	13 (9.0)	14 (9.7)	7 (4.8)
I did not like breastfeeding	119 (82.1)	7 (4.8)	13 (9.0)	6 (4.1)
I wanted to be able to leave my baby for several hours at a time	112 (77.2)	7 (4.8)	15 (10.3)	11 (7.6)
I wanted to go on a weight loss diet	117 (80.7)	12 (8.3)	12 (8.3)	4 (2.8)
I wanted to go back to my usual diet	114 (78.6)	8 (5.5)	1 (0.7)	8 (5.5)
I wanted to smoke again or more than I did while breastfeeding	125 (86.2)	6 (4.1)	14 (9.7)	0 (0.0)
I had too many household duties	114 (78.6)	10 (6.9)	14 (9.7)	7 (4.8)
I could not or did not want to pump or breastfeed at work	122 (84.1)	5 (3.4)	12 (8.3)	6 (4.1)
Pumping milk no longer seemed worth the effort that it required	119 (82.1)	7 (4.8)	12 (8.3)	7 (4.8)
I was not present to feed my baby for reasons other than work	119 (82.1)	9 (6.2)	14 (9.7)	3 (2.1)
I wanted or needed someone else to feed my baby	121 (83.4)	8 (5.5)	12 (8.3)	4 (2.8)
Someone else wanted to feed the baby	124 (85.5)	6 (4.1)	12 (8.3)	3 (2.1)
I did not want to breastfeed in public	124 (85.5)	3 (2.1)	12 (8.3)	6 (4.1)
I wanted my body back to myself	116 (80.0)	7 (4.8)	12 (8.3)	10 (10.9)
I became pregnant or wanted to become pregnant again	119 (82.1)	5 (3.4)	11 (7.6)	10 (10.9)

Table 3: Perception and decision to stop exclusive breastfeeding.

It was found that mothers do not consider stopping to breastfeed their babies due to the following reasons: baby had trouble sucking or latching on, baby became sick and could not breastfeed, baby began to bite, baby lost interest in nursing or began to wean him or herself, breasts were overfull or engorged, breastfeeding was too painful, and mother was sick or had to take medicine. This is an interesting finding and refreshing and mothers should be encouraged to keep this attitude towards breastfeeding.

Discussion of Results

Knowledge on Exclusive Breastfeeding

The question on how long can breast milk without water adequate for the baby showed that, very few of the participants (0.7%) affirmed 2-3 months and 4-5 months respectively. Considering WHO's recommendation of 90% prevalence of the nursing mothers with this knowledge, the current study revealed that (95.9%) representing most of the participants in this study affirmed 0-6 months as ideal time for babies to be breast fed without even water which is way higher than WHO's recommended prevalence figure of 90%. This is also higher than the 46 % of Ghanaian children aged less than 6 months being exclusively breastfed in 2021 [7] as well as higher than the 64% reported by [20] using data from the 2015 Ghana Demographic and Health Survey (GDHS). The increase percentage in prevalence of exclusive breastfeeding could be attributed to free ANC and postnatal services in public hospitals in Ghana today as oppose to the past situation. This scenario of very high prevalence rate of EBF, sits in well with the construct in social cognitive theory that posits that if mothers perceive their efforts towards and practice of exclusive breastfeeding will result in benefits to them (locus of control), then they will adhere to it. Rewards such as free antennal services, education, free medication and more, influenced more than 90% of these women to engage in EBF. Supporting another proposition in social cognitive theory which enhanced EBF was trust they have in the health care workers and the health care systems. The trust was due to the reported cordial and good rapport that always existed between them and the healthcare workers. Also, through education, certain myths regarding inadequacy of breastmilk not being enough in terms of its quantity and quality for the baby was demystified and hence mothers changed their perception and attitude towards EBF.

Regarding investigating the benefits of EBF, this research found that it reduces the risk of diarrhoea (90.4%), beneficial to nursing mothers in birth spacing (82.8%), 87% of the participants in this study oppose giving water to a baby who is less than six months, about (76%) knew babies will increase in weight if well breastfed and exclusive breastfeeding is not for 12 months (82%). Regarding infant formula, (94,6%), understands that the practice needs to take place till the baby is two years along other solid meals. (97%) of participants also said that colostrum contains

antibodies and that it is good for the baby. All these findings support a construct in the adopted framework that says that the mothers will put up a behavior, in this case exclusive breastfeeding if the rewards associated to this behavior are visible, available and beneficial. This construct in the theory adopted for this study is supported by the following statistical figures: (96.5%), said EBF, mitigate predisposition to lung infection among babies, 90.4% said the practice reduces diarrheal diseases in babies who receive EBF, 97.2% affirmed EBF, promotes good growth and development of babies' teeth and gum and exclusive breastfeeding is beneficial in birth spacing (82.8%), all of which are benefits that were available, visible and experienced by these participants in their psychological context.

In this research most participants (96%) asserted that it is only ideal to introduce solid foods when the baby is 6 months onwards. The findings of the current study in which women were knowledgeable on most aspects of early breastfeeding are in agreement with the study of Ogada (2018) in Nyando district Kenya, where mothers were also knowledgeable at their third trimester on early breastfeeding. These findings, however, differ from studies conducted among mothers in rural Punjab in India and in Saudi Arabia, which found that their knowledge on early breastfeeding was inadequate [13].

On the specific aspects of early breastfeeding, this study concurred with Ogada, [10,15], about knowledge on timely initiation. Regarding giving of colostrum, this research collaborates the findings of [4,10], who found out that mothers were knowledgeable about the importance of colostrum and that it should be given to the infant. In this study (86.9%) said they started immediately to breastfeed their babies after delivery. The findings however contrasted with Adugna, [15], who found in their study in southern Ethiopia where participants in their study mistook colostrum to be expired milk and hence ignored it. This negative, wrong perception and ignorance should be rooted out among women of child-bearing through education everywhere in the world.

Practice of Exclusive Breastfeeding

This research discovered that most participants (86.9%) started breastfeeding right after birth. WHO encourages starting of breastfeeding during the first hour after birth and continue breastmilk without other feeds for the next 6months after birth [22]. It has been discovered that EBF for the six month of infant life prevents instant death by thirteen percent [6]. A study was done in BPKIHS, Dharan on a similar subject-matter and it was found that 41.5% of participants in that study started breastfeeding under an hour after delivery. Also similar research was done in a Teaching Hospital in Nigeria (Amino Kanu Teaching Hospital). This was done among multigravida women receiving ANC, services to assess their knowledge, attitude and practice of EBF. Following

this study, it was revealed that showed 47.2% practiced EBF, for six months of infant life. The results of the present research are congruent with the [10], in Saudi Arabia, and Kenya National Bureau of Statistics ICF Macro (2014), studies on the ideal time to start breastfeeding after birth.

The current discovery however, contrast the results of Silveira et al. (2008) in Pelotas-Brazil. They found that exclusive breastfeeding initiation rates in Africa, in the first hour of infant life was less than 50%. The reasons for the higher percentages of early initiation of breastfeeding among the participants of the current study could be attributed to the fact that a lot of them utilized skilled birth personnel and facilities that adopted the EBF practices as against participants in the previous studies who did not patronize such services. This study therefore, accordingly recommend that all health facilities in Ghana where deliveries take place should adopt the recommended practices for exclusive breastfeeding. This finding also affirms the construct in social cognitive theory that says that the health center and society serve as the platform or source for the breastfeeding mothers, which provided the incentives for breastfeeding mothers who practiced exclusive breastfeeding. Rewards (money, praises, piece of cloth, soap and free ANC services etc) available and visible to mothers who actually received the rewards motivated and influenced mothers' adherence to excellent EBP as attested by these participants in this study.

In addition, this results is in congruent with De Roza et al., [5], who found a correlation between higher knowledge and longer duration of EBF practices, among mothers. This is reflected in the percentages shown in the bar graph in terms of the four variables measured under practices which have very high percentage scores and hence correlate with the higher knowledge levels of the participants in this study on all the variables measured on knowledge of EBF in **Table 3**. Breastfeeding mothers should therefore be entreated to inculcate into their EBF, practices such as cleaning of nipples as often as possible, early initiation of EBF, own decision to breastfeed and to try as much as possible to prevent medical complications that can threaten EBF.

Perceptions of Mothers on Exclusive Breastfeeding

This study collaborates with another study on a similar topic in Mizan Aman town, South West Ethiopia which showed, 205 (73%) of the participants in their study perceived and knew that EBF is a preferred choice over artificial feeds, about 281 (89.5%) of the participants actually preferred EBF, and 59.6% (187), also was hesitant to give extra feeds apart from breast milk only, whiles (182; 58.0%) also asserted that children who are breastfed exclusively are healthier than those not [23,24].

These findings agree with Bandura's social cognitive theory employed in this study, which posits in one of its constructs that

exclusive breastfeeding is influenced/predicted by the rewards that follows it and are expected by it and the benefits thereof. The deduction from this study is that benefits or rewards that are expected or will be accrued as a result of exclusive breastfeeding were the driving forces that influenced positive attitude and perceptions in mothers.

According to Samburu et al., [20], there is a correlation between good attitude towards EBF and long duration of EBF [2]. The discovery in this study is that participants had good attitude towards early and EBF as well as believe in breastfeeding up to six months and beyond as evidenced by decision to stop breastfeeding scores in **Table 3**. These attitudes are correlated with the expected benefits associated with EBF as supported by the theoretical framework adopted for this study

Conclusion and Recommendations

Conclusions

Breastfeeding mothers should adopt practices such as cleaning of nipples, early initiation of EBF, own decision to breastfeed and to try as much as possible to prevent medical complications that can threaten EBF. This is because these findings have answered the research question and objective of ascertaining the factors that influence EBF practices apart from knowledge. These practices mentioned here among others influence EBF.

Recommendations

The researchers recommend other methodologies such as qualitative and mixed method research on the same topic to unearth the lived experiences of mothers and health care workers who both are involved in ensuring EBF which quantitative research cannot discover. Also, education on EBF should go hand in hand with other factors/practices that influence EBF, and not only focus on giving knowledge to mothers.

Statement of Authors' contribution

N.Y.D conceived the idea and conceptualized the study, and collected the data with HM, VA, VY and HN

N.Y.D, V.Y, HN and HM analyzed the data and reviewed the manuscript. All the authors' read and approved the manuscript, and are also the funders of the research work collectively.

ARB, HN and VA, coordinated all activities involved in the entire research process.

References

1. Alamirew MW, Bayu NH, Tebeje NB, Kassa SF (2017) Knowledge and Attitude towards Exclusive Breast Feeding among Mothers Attending Antenatal and Immunization Clinic at Dabat Health Center , Northwest Ethiopia : A Cross-Sectional Institution Based Study. *Nurs Res Pract* 2017: 6561028.

2. Ali SA, Dero AA, Ali SA, Ali GB (2016) Factors Affecting the Utilization of Antenatal Care among Pregnant Women in Moba Lga of Ekiti State, Nigeria. *International Journal of Traditional and Complementary Medicine* 2: 41-45.
3. Bukari M, Abubakari MM, Majeed M, Abizari AR, Wemakor A, et al. (2020). Effect of maternal growth monitoring knowledge on stunting, wasting and underweight among children 0-18 months in Tamale metropolis of Ghana. *BMC Research Notes* 13: 1-6.
4. Centre for Disease Control(CDC) (2022) About Breastfeeding | Breastfeeding | CDC.
5. De Roza MJG, Fong MMK, Ang MBL, Sadon MRB, Koh MEYL, et al. (2019) Exclusive breastfeeding, breastfeeding self-efficacy and perception of milk supply among mothers in Singapore: A longitudinal study. *Midwifery* 79: 102532.
6. Duan Y, Yang Z, Lai J, Yu D, Chang S, et al. (2018) Exclusive breastfeeding rate and complementary feeding indicators in China: A national representative survey in 2013. *Nutrients* 10: 249.
7. Dukuzumuremyi JPC, Acheampong K, Abesig J, Luo J (2020) Knowledge, attitude, and practice of exclusive breastfeeding among mothers in East Africa: a systematic review. *International Breastfeeding Journal* 15
8. Elfil M, Negida A (2017) Sampling methods in Clinical Research; an Educational Review. *Emerg* 5: e52.
9. Gibson SK (2004) Social Learning (Cognitive) Theory and Implications for Human Resource Development. *Advances in Developing Human Resources* 6: 193-210.
10. GSS; GHS; ICF International (2015) Ghana demographic health survey. *Demographic and Health Survey* 2014, 530.
11. Gurung R, Silwal M, Gurung A, Sah I, Koirala D, et al. (2018) Knowledge, Attitude and Practice towards Exclusive Breastfeeding among Mothers in Pokhara-Lekhnath. 11: 40-45.
12. Inano H, Kameya M, Sasano K, Matsumura K, Tsuchida A, et al. (2021) Factors influencing exclusive breastfeeding rates until 6 months postpartum: the Japan Environment and Children's Study. *Sci Rep* 11: 6841.
13. Mensah KA, Acheampong E, Anokye FO, Okyere P, Appiah-Brempong E, et al. (2017) Factors influencing the practice of exclusive breastfeeding among nursing mothers in a peri-urban district of Ghana. *BMC Research Notes* 10: 1-7.
14. Mogre V, Dery M, Gaa PK (2016) Knowledge, attitudes and determinants of exclusive breastfeeding practice among Ghanaian rural lactating mothers. *International Breastfeeding Journal* 11: 1-8.
15. Neupane JE, Kiragu R, Kandel S (2014) Knowledge, Attitude And Challenges Of Exclusive Breastfeeding Among Primigravidas : A literature review THESIS Degree Programme in Nursing. March.
16. Nukpezah RN, Nuvor SV, Ninnoni, J. (2018). Knowledge and practice of exclusive breastfeeding among mothers in the tamale metropolis of Ghana. *Reproductive Health* 15.
17. Otoo GE, Lartey AA, Pérez-escamilla R (2018). Perceived Incentives and Barriers to Exclusive Breastfeeding Among Periurban Ghanaian Women. *J Hum Lact* 1: 34-41.
18. Oyelana O, Kamanzi J, Richter S (2021) A critical look at exclusive breastfeeding in Africa : Through the lens of diffusion of innovation theory. *International Journal of Africa Nursing Sciences* 14: 100267.
19. Paul E, Ameade K, Asibiti W, Adikem CK, Sciences H, et al. (2020) Why Expectant Mothers Deliver At Home Rather Than A Hospital - A Cross-Sectional Study In Tamale, Ghana 2: 268-278.
20. Samburu BM, Young SL, Wekesah FM, Wanjohi MN, Kimiywe J, et al. (2020) Effectiveness of the baby-friendly community initiative in promoting exclusive breastfeeding among HIV negative and positive mothers: A randomized controlled trial in Koibatek Sub-County, Baringo, Kenya. *Int Breastfeed J* 15: 62.
21. Still R, Marais D, Hollis JL (2017) Mothers' understanding of the term 'exclusive breastfeeding': a systematic review. *Matern Child Nutr* 13: e12336.
22. Suwaydi MA, Wlodek ME, Lai CT, Prosser SA, Geddes DT (2022) Delayed secretory activation and low milk production in women with gestational diabetes: a case series. *BMC Pregnancy and Childbirth* 22: 350.
23. Teddlie C, Yu F (2007) Mixed Methods Sampling: A Typology with Examples. *J Mixed Methods Research*, 1: 77-100.
24. Tsegaye M, Ajema D, Shiferaw S, Yirgu R (2019) Level of exclusive breastfeeding practice in remote and pastoralist community, Aysaita *Int Breastfeed J* 14: 6-15.
25. USAID (2021) Breastfeeding in Ghana | U.S. Agency for International Development.
26. WHO (2006) Provision of effective antenatal care Integrated Management of Pregnancy and Childbirth (Impac) Standards. *International Journal for Equity in Health* 14: 2.
27. WHO (2019) Healthy eating during pregnancy and breastfeeding: booklet for mothers. World Health Organisation Geneva, Switzerland, 1-26.
28. World Health Organization (2018) Delivering quality health services. In World Health Organization, World Bank Group, OECD.
29. World Health Organization (WHO) (2018) Postnatal care of the mother and new-born 2013. World Health Organization 1-72.