

**PROMOTING EXCLUSIVE BREASTFEEDING AMONG TEENAGE-MOTHERS IN
GHANA: TOWARDS A BEHAVIOURAL CONCEPTUAL MODEL**

by

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DECLARATION

I declare that **PROMOTING EXCLUSIVE BREASTFEEDING AMONG TEENAGE MOTHERS IN GHANA: TOWARDS A BEHAVIOURAL CONCEPTUAL MODEL** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.



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PROMOTING EXCLUSIVE BREASTFEEDING AMONG TEENAGE MOTHERS IN GHANA: TOWARDS A BEHAVIOURAL CONCEPTUAL MODEL

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ABSTRACT

Ghana subscribed to the global target of reaching at least 50% of exclusive breastfeeding in the first six months of birth by the year 2030. Policies and programmes to promote exclusive breastfeeding have been formulated and implemented in the country. In spite of these efforts, existing evidence showed that the rate of exclusive breastfeeding in the first six months post-delivery has been declining over the past decade. It was therefore important to understand behavioural factors that influence exclusive breastfeeding among teenage-mothers and propose a behavioural conceptual model based on the understanding of exclusive breastfeeding from the perspective of the teenage-mothers and their social environments.

The study was conducted in three phases using multistrand mixed methods within the pragmatism philosophical framework. The Theory of Planned Behaviour and the six steps framework for developing models to address public health issues were used as frameworks in the study. In the first phase, the researcher used qualitative exploratory descriptive design to gain an understanding of the behavioural determinants of exclusive breastfeeding from the perspective of teenagers aged between 13 - 19 years attending antenatal care services at public facilities. Data were generated through focus group discussions and analysed using Group-level thematic and content analysis. In the second phase, longitudinal descriptive correlational designs were used to establish the relationships between the exclusive breastfeeding intentions during the prenatal period and actual breastfeeding practices at six months post-delivery. Structured questionnaires were used to collect data during the last visit of antenatal care visits and six months post-delivery. Data generated were analysed through descriptive inferential statistics. In the last phase, the researcher used meta-inferences to identify the key concepts of conceptual model from the integrated qualitative and quantitative results. Theoretical

triangulations were used to define and establish relationships between the concepts and to structure the conceptual model.

The integrated results of the two phases of the study showed that exclusive breastfeeding practices among teenage-mothers within the social context of Ghana are determined by certain personal and social related behavioural factors. The approval of the exclusive breastfeeding practice by the teenagers' mothers and nurses/midwives' capabilities to provide effective breastfeeding education were the strongest determinants of exclusive breastfeeding up to six months among teenage-mothers in Ghana. From these results, the researcher proposed an integrated behavioural conceptual model that provides an understanding of exclusive breastfeeding practice and the process of promoting exclusive breastfeeding among teenage-mothers in the social context of Ghana.

The findings of this study have implications for public health policy-makers, health services managers, health sciences education and further research.

Key words: *attitude toward behaviour, behavioural intention, breastfeeding, exclusive breastfeeding, perceived behavioural control, predictors of exclusive breastfeeding, subjective norm, teenager-mothers*

SUMMARY IN LOCAL LANGUAGE (TWI)

Ghana ka aman a wɔde wɔnsa hyɛɛ apam ase sɛɛ, ɔbɛdi wiase nyinaa gyinapɔ so sɛɛ, ɛbeduru afe 2030 mu no, na abaatan mu fa ma wɔn mma nofosuo nkoaa wɔ abosome nsia a edikan wɔ wɔn mɔfra abrabo mu. Esan saa nti, nyehyɛyɛ bebree na ɔde agu akwan mu, nanso abaatan bebree ndi so. Abenfo bebree na ayɛ nhwehwɛmu de nyehyɛyɛ agu akwan mu sɛ nea ɛbɛyɛ a, abaatan bɛte aseɛ sɛɛ, nofosuo nkoaa a yɛde ma mɔfra wɔ abosome nsia a edikan wɔ wɔn mɔfra abrabo mu na ɛbɛboa mɔfra no apomuden daakye. Nanso nhwehwɛmu yi mu biara nni hɔ a, atumi de nyehyɛyɛ aba a ɛfa mmaayewa a ɔfa mprewa nyinsɛn mu wɔ ɔman Ghana mu. Wɔ ɔman Ghana mu no, mprewa nyinsɛn yɛ adeɛ a ɔmanfoɔ bebree nsosɔso. Saa nti, mmaayewa a ɔko saa tebea no mu no tae de wɔn ho sie sie sɛnea ɛbɛyɛ a, ammanfoɔ nntan wɔn anni bebree. Saa suban no nnhyɛ mmaayewa a ɔfa mprewa nyinsɛn mu no nkroan ma wɔmma wɔ mma nofosuo yie. Saa nti na nhwehwɛmu wei de sii nnani so sɛɛ, ɔde nyehyɛyɛ bɛgu akwan mu sɛ nea ɛbɛyɛ a, abaatan a ɔfa mprewa nyinsɛn mu no betumi amma wɔn mma nofosuo wɔ kwan pa so.

Sɛ nea ɛbɛyɛ a yɛbɛ hunu asiakwan a ɛmma abaatan a ɔfa mprewa nyinsɛn mu no ntumi mma wɔn mma nofosuo yie na yɛde nyehyɛyɛ agu akwan mu a ɛbɛboa wɔn.

Abɛɛfo abodeɛ mu nyansapɛ kwan so na nhwehwɛmu wei faa so de nsusuyɛ a ebetumi de akwankyerɛ aba. Akwanuasa miensa so na yɛ faa yɛ a etumi de saa akwankyerɛ wei baayɛ.

Nhwehwɛmu no awieyɛ no, ɛdaa adi pefee sɛ, abaatan a ɔwo wɔ mprewa nyinsɛn mu paa na ɔntae ma wɔn mma nofosuo nkoaa wɔ abosome nsia a edikan wɔ wɔn mma abrabo mu. Abaatan 307 a ɔfaa Nhwehwɛmu no mu no, emu abupɛn 28.0% pɛ na etumi maa wɔn mma nofosuo nkoaa wɔ abosome nsia a edikan wɔ wɔn mma abrabo mu nanso 74.3% na ɛhyɛɛ aseɛ sɛ ɔmma wɔn mma nofosuo wɔ ammono mu hɔ ara. ɛnna, 44.6% nso na anka onyaayɛ a na ɔbɛma wɔn mma nofosuo nkoaa. Abaatan no maamenom gyinayɛ ne anursefoɔ nkyerɛkyerɛ paa na ɛboaayɛ maa abaatan no tumi mmaa nofosuo yie paa. ɛno nti na nhwehwɛmu no de nyehyɛyɛ aba a ebetumi aboa na asɔ anoo.

Nhwehwɛmu yi betumi aboa apomden asueyɛ ma watumi de nyehyɛyɛ agu akwan mu a ɛbɛboa mmɔfra apomuden.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
BF	Breastfeeding
DHS	Demographic and Health Survey
EBF	Exclusive Breastfeeding
FGD	Focus Group Discussions
HIV	Human Immuno-deficiency Virus
IQ	Intelligence Quotient
PMTCT	Prevention of Mother-to-Child Transmission of HIV/AIDS
TPB	Theory of Planned Behaviour
UNICEF	United Nations International Children Emergency Fund
WHO	World Health Organization

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Chapter 1 outlined the background to the study, problem statement, purpose and objectives of the study, the significance of the study, and the theoretical foundation of the study. The chapter also included a brief description of the philosophical foundation of the study, the definition of key concepts, and the ethical statement. The structure of the study and how it was organised have also been outlined.

1.2 BACKGROUND TO THE STUDY

There is a global recognition of the importance of breastfeeding (BF) by public policy-makers. The World Health Assembly Resolution 65.6 of 2012 called on countries to increase the rate of exclusive breastfeeding (EBF) in the first six months to at least 50.0% by the year 2025 (WHO, 2014). This resolution urged Member States to take specific and cost-effective actions to achieve the above target. According to the World Health Organisation, EBF between the ages of 0-23 months could reduce about eight hundred thousand (800,000) deaths among children under five years of age (WHO, 2014). Breast milk has the advantage of being readily available, free of charge and contains protective agents such as phagocytes, lactoferrin, oligosaccharides and immunoglobulin which help protect against common childhood illnesses such as diarrhoea and respiratory infections (WHO, 2016a). Several studies have shown that EBF reduces the rate of illnesses among children, improves the mental capabilities and immunity, as well as gives children a better chance of survival globally (Ajetunmobi, O.M., Whyte, B., Chalmers, J., Tappin, D.M., Wolfson, L., Fleming, M., MacDonald, A., Wood, R., Stockton, D.L. 2015; Gabida, M., Chemhuru, M., Tshimanga, M., Gombe, N.T., Takundwa, L., Bangure, D. 2015; Haile and Biadgillign, 2015; Lin, H., Sun, L., Lin, J., He, J., Deng, A., Kang, M., Zeng, H., Ma, W., Zhang, Y. 2014; Muniz, L.C., Menezes, A.M.B., Buffarini, R., Wehrmeister, F.C., Assunção, M.C.F. 2015; Oddy, W.H., Kendall, G.E., Li, J., Jacoby, P., Robinson, M., de Klerk, N.H., Silburn, S.R., Zubrick, S.R., Landau, L.I., Stanley, F.J. 2010; Péneau, S., Hercberg, S., Rolland-Cachera, M.-F. 2014; Roberts, T.J., Carnahan, E., Gakidou, E.

2013; Victora, C.G., Bahl, R., Barros, A.J., França, G.V., Horton, S., Krasevec, J., Murch, S., Sankar, M.J., Walker, N., Rollins, N.C., others 2016; Yorifuji, T., Kubo, T., Yamakawa, M., Kato, T., Inoue, S., Tokinobu, A., Doi, H. 2014).

Ghana like the rest of the WHO Member States adopted this resolution as the gold standard of infant nutrition (WHO, 2014). Prior to this resolution, the government of Ghana adopted several measures aimed at promoting EBF in the country. At the policy level, the government of Ghana through the Ministry of Health formulated national BF promotion regulations 2000 (BPR 2000) which came into effect in May 2000 which serves as a legal framework for the promotion of EBF in the country. These regulations established the Ghana National BF Promotion Regulation Committee charged with the responsibility of monitoring the implementation of these regulations. Health personnel working at any facility in the country are compelled by these regulations to support, protect and encourage BF (Ghana National Breast Promotion Regulations 2000). At the operational level, the Ghana Health Services with the support of WHO, UNICEF and other partners, scaled-up the capacity of healthcare workers through pre and in-service training programmes to support the implementation of these regulations (Ghana Government official portal, 2016).

In spite of the efforts to promote EBF, Ghana showed a declining trend in EBF (0-5 months) rates from 63.7% in 2008 to 52.3 % in 2014 with only 4.5% of EBF between 6-8 months (Ghana DHS, 2016). Similar trend was observed with early initiation of BF rate declining from 52% in 2008 to 45.9% in 2011 (UNICEF, 2015).

Globally, only 38% of infants were exclusively breastfed for five months in 2014 (UNICEF, 2015). In the same period, the sub-Saharan African countries registered a rate of EBF at 5 months of 40% with variations between sub-regions. The West and Central African countries recorded the lowest rate of 28% compared with 54% for the East and Southern African countries (UNICEF, 2015).

The Asian countries showed similar trend with the sub-Saharan African countries. The region recorded a rate of EBF at 5 months of 40% with 31% in the East Asia, Pacific, Latin America and the Caribbean countries (UNICEF, 2015). The low uptake of EBF among mothers across the world highlights the need for further research to understand

the behavioural determinants of EBF among mothers and propose new approaches for promoting EBF and this need is even greater for teenage-mothers in Ghana.

Over the past decades, several studies have been conducted to understand the patterns and determinants of EBF as well as strategies for promoting EBF among mothers. Most of these studies used various psychosocial theories of health behaviour such as the health belief model (Becker, 1974), social cognitive theory (Bandura, 1997), the theories of reasoned action (Ajzen & Fishbein, 1980), planned behaviour (Ajzen, 1991) and protection motivation (Rogers, 1983). These studies provide an understanding of how cognitive and social factors influence the motivation and performance of BF among lactating mothers. Certain individual socio-demographic factors, attitudinal beliefs, social norms and beliefs, workplace policy and supportive environment are commonly associated with the intentions and actual EBF practice.

Globally, the WHO and UNICEF identified the lack of knowledge on the benefits of EBF, aggressive promotion of breast milk substitute, lack of adequate skilled support, unsupportive BF health care practices and policies, inadequate maternity and paternity leave legislation as the main inhibitors of EBF during the first six months (WHO/UNICEF, 2015). Similarly, studies across the world (Asfaw et al., 2015; Asiodu, 2015; Babakazo et al., 2015; Clayton et al., 2013; Cox et al., 2015; Dachew and Bifttu, 2014; Fenger-Grøn et al., 2015; Joshi et al., 2014; Kimani-Murage et al., 2015a; Lakew et al., 2015; Odom et al., 2013; Otoo et al., 2009; Palmér et al., 2015; Rahman et al., 2015; Selmi, 2015; Shifraw et al., 2015; Walsh et al., 2015a; Wambach et al., 2015) identified tight work schedules, lack of or minimal support from health workers, maternal stress, mode of deliveries, negative attitude towards BF, lack of BF role models, inadequate spousal/family support, employment restrictions and inadequate information from health professionals as inhibitors of EBF up to six months post-delivery. In largely patriarchal societies like Indonesia, Nigeria and Ghana, paternal grandmothers have been cited as having a lot of influence on a mother's ability to continue BF. Most of these grandmothers have been reported to discourage BF in their societies and due to their powerful influences, those mothers could not breastfeed continually as recommended (Aborigo et al., 2012; Khanal et al., 2013; Tuthill et al., 2014).

Other studies (Adhikari et al., 2014; Adugna, 2014; Agho et al., 2011; Holbrook et al., 2013; Lok et al., 2015) identified previous experiences with BF, higher level of education,

frequent antenatal visits, birth intervals, support from family members, especially spouses of mothers, and supportive spouses as enablers of EBF. Studies (De Jager et al., 2015, 2014a; Hamilton et al., 2011) associate also positive intention to breastfeed during prenatal period to successful EBF.

Finally, the literature describes several strategies used to promote EBF. In a systematic review of randomised controlled trials studies published in Medline, EMBASE and Cochrane Central Register showed that the use of peer support resulted in the improvement of EBF rate and duration in cultures where there were minimal accesses to infant formula (Sudfeld et al., 2012). Other strategies that have been reported to improve EBF rates and duration in parts of African countries such as Zimbabwe, Kenya, Burkina Faso, Uganda and South Africa include: avoidance of hunger in mothers, providing educational materials and counselling (Gabida et al., 2015; Tylleskär et al., 2011; Webb-Girard et al., 2012b).

It is against the above context and background that this study was conducted with the focus on teenage-mothers with the social context of Ghana. Teenage-pregnancy is one the major challenges facing the healthcare professionals in Ghana. Official reports (Ghana Government official portal, 2016; UNICEF, 2014) indicate that 6.4% of girls aged 12 to 17 years are married, and 16.2% become mothers by the age of 18. Motherhood can be stressful, challenging and rough, especially when the mother is a teenage as most of them give birth out of marriage to fathers who are equally unprepared and immature (Doku, 2012; Haugland et al., 2013). In Ghana, teenagers who get pregnant are often stigmatised and rejected due to cultural and religious practices. Family members deem it shameful for an unmarried and a teenage girl to be impregnated (Ghana' Government Official Portal, 2016). Stigmatisation may have a negative effect on the psychological well-being of the teenage-mothers, thereby affecting their quality of life and ability to successfully breastfeed (Ayton & Hansen, 2016; Pape, 2014). Existing universal guidelines on BF expect mothers to give breast milk to their infants within the first hour after delivery and continue to exclusively breastfed for at least six months (WHO, 2014). Studies on BF intentions and early BF practices among adolescents showed that they are less likely to practice EBF successfully than their older counterparts (Sipsma, 2013; Smith et al., 2012). It is therefore important to look at EBF practice among teenage-mothers in Ghana, who's numbers have been increasing in the past decades.

1.3 STATEMENT OF THE RESEARCH PROBLEM

There is a need to understand the behavioural determinants of EBF of the teenage-mothers and how to promote EBF within the social context of Ghana. Ghana subscribed to the global target of reaching at least 50% of EBF in the first six months of birth by the year 2030. Policies and programmes to promote EBF have been formulated and implemented in the country. In spite of these efforts, existing evidence showed that the rate of EBF in the first six months post-delivery has been declining over the past decade as shown in the Ghana Demographic and Health Survey, WHO-UNICEF reports and several studies as described in the background. It is, therefore, important to understand behavioural factors that influence EBF among teenage-mothers in order to formulate teenagers' centred interventions.

As a health behaviour, several psychosocial health models have been used to understand the behavioural determinants of EBF or as framework to guide interventions aimed at promoting EBF among mothers. In addition, most interventions aimed at promoting EBF are based on the global recommendations set forth in the WHO/UNICEF Global strategy on infant and young child feeding. However, these models were not primarily designed for promoting EBF among teenage-mothers within the social context of Ghana. In addition to the bio-psychosocial vulnerability associated with pregnancy, teenage-mothers in Ghana live within the social context of socio-cultural prejudices combined with unsupportive social beliefs and norms about EBF. It is therefore important to propose models that are based on the understanding of the behavioural determinants of EBF from the perspective of the teenage-mothers and their social environments.

1.4 PURPOSE OF THE STUDY

The purpose of this study was to identify and establish the behavioural determinants of EBF among teenage-mothers with the view of proposing a behavioural conceptual model for promoting EBF practices among teenage-mothers' within the social context of Ghana.

1.5 OBJECTIVES OF THE STUDY

The objectives of the study were:

1. To gain an understanding of the behavioural determinants of EBF as perceived by the teenagers within the social context of Ghana.
2. To explore and describe the behavioural determinants of EBF among the teenage-mothers during the pre and postnatal periods.
3. To identify the overall behavioural determinants of EBF practice among the teenage-mothers within the social context of Ghana.
4. To design and describe a behavioural conceptual model for promoting EBF among teenage-mothers' within the social context of Ghana.

1.5 SIGNIFICANCE OF THE STUDY

By establishing the perceived and actual behavioural determinants of EBF, this study will provide insight into the behavioural factors that motivate teenage-mothers to perform or not to perform EBF in Ghana. The results may also be used by health professionals and policy-makers to formulate need-based interventions to improve EBF among teenage-mothers in Ghana.

By proposing a behavioural conceptual model for promoting EBF practice among teenage-mothers within the social context of Ghana, the findings of the study will provide an understanding of the interactions between certain behavioural determinants and the actual EBF practices among teenage-mothers within the social context of Ghana.

The proposed behavioural model can be used as a framework for conducting BF readiness assessment among teenage-mothers in Ghana and formulate need-based interventions to promote EBF among teenage-mothers within the social context of Ghana. Health sciences educators and professionals can use the findings of this study to develop teenage-centred BF education. It can also be used by public health researchers as baseline information to develop theory explaining BF behaviour among teenage-mothers in Ghana.

By establishing the perceived and actual behavioural determinants of EBF practice and proposing a behavioural conceptual model for promoting EBF among teenage-mothers

within the social context of Ghana, this study makes a significant contribution to the body of knowledge on maternal and child health; and to the body of evidence to support the Government of Ghana in its efforts to improve maternal and child health in the country.

1.6 METHODOLOGICAL AND ETHICAL STATEMENT

1.6.1 Methodological statement

The study was conducted in three phases using multistrand mixed methods within the pragmatism philosophical framework. In the first phase, the researcher used qualitative exploratory descriptive design to generate qualitative data. In phase two, longitudinal descriptive correlational designs were used to generate quantitative data. In phase three, the researcher used meta-inferences and theoretical triangulations to merge quantitative and qualitative results. The structural development of the conceptual model was guided by the public health conceptual development framework (Squires, Chilcott, Akehurst, Burr & Kelly, 2016: 590).

1.6.2 Ethical statement

The researcher adhered to the research and ethics policy of the University of South Africa and the universal ethical principles that guide social and health research (autonomy, rights to privacy and confidentiality, justice, and protection from risk and harm). The study received ethical clearance from the Health Studies Research Ethics Committee of the University of South Africa and Ghana Health Service Ethical Review Board. Permission to access the participants was obtained from the hospital management. Written informed consent was obtained from each participant. Assent consent was obtained for the participants who were under 18 years old.

1.7 DEFINITIONS OF KEY CONCEPTS

Attitude towards behaviour refers to the degree to which a person has positive or negative feelings of the behaviour of interest. It entails a consideration of the outcomes of performing the behaviour (Ajzen, 1991).

Behavioural intention represents a person's motivation in the sense of her or his conscious plan or decision to perform certain behaviour (Conner & Armitage, 1998).

Breastfeeding refers to the feeding of an infant or young child with breast milk directly from female human breasts via lactation (breastfeeding) rather than from a baby bottle or other container (Tönz, 2000).

Conceptual model is defined from a public health perspective as a diagram of proposed causal linkages among a set of concepts believed to be related to a particular public health problem. It is a simplification, conceptualisation, or abstraction of reality often presented in form of a diagram to assist people know, understand, or simulate a subject the model represents (Squires, Chilcott, Akehurst, Burr & Kelly, 2016: 590).

Exclusive breastfeeding is the feeding of an infant or young child with breast milk while giving no other food or liquid, not even water, with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines, up to six months post-delivery (WHO, 2002).

Perceived behavioural control refers to the individual's perception of the extent to which performance of the behaviour is easy or difficult (Ajzen, 1991).

Subjective norm relates to a person's perception of the social environment surrounding the behaviour and the belief about whether significant others think the individual will perform the behaviour (Hartwick & Barki, 1994).

1.8 OPERATIONAL DEFINITIONS

Actual EBF was used as the dependent variable for the second stage of phase two of the study. It was used in accordance with the definition of the WHO (WHO, 2002). It was measured with close-ended questions that generated dichotomous answers (Yes or No).

Determinants of intention to practice EBF was used as independent variables for the two dependent variables (intention to EBF and actual EBF at six months). It refers to factors that were viewed as positively or negatively influencing EBF among teenagers. This variable was conceptualised after the qualitative phase using the themes that were derived from the analysis and the constructs of the Theory of Planned Behaviour.

Behavioural predictors of EBF refers to the variables that showed high predictive value for actual EBF after control with other confounding variables such as demographic variables and exposure to health education on EBF.

Teenage-mother referred to any mother between the ages of thirteen (13) and nineteen (19) years who was visiting the selected hospitals for antenatal care and delivery at the period of the study.

Intention to practice EBF was used as the dependent variable for the first stage of phase two of the study. It refers to the participants plan to EBF their babies. It was measured with close-ended question that generated “Yes or No” answers.

1.9 STRUCTURE OF THESIS

The thesis have be organised into six chapters as outlined below:

Chapter 1: Introduction and orientation to study: This chapter provides background to the study, problem statement, significance of the study and methodological/ethics statement.

Chapter 2: Literature review: This constitutes reviewed literature on the subject matter under study.

Chapter 3: Research methods and design: the methodological procedures followed in conducting the study is explained in this chapter.

Chapter 4: Presentation and discussion of findings.

Chapter 5: Description of the conceptual model.

Chapter 6: Conclusion, recommendations, and limitations.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The literature review looked at BF from the behavioural perspective, the rationale for promoting EBF as well as strategies to improve BF. A summary of the literature review is provided at the end of the chapter. The researcher conducted extensive search from different data bases including Science Direct, EBSCO-HOST and PUBMED, Wiley online Library, Google Scholar, Biomed Central, Elsevier and Taylor and Francis online. Some of the sources of literature were books, library, policies/documents/guidelines from recognised organisations such as the WHO and UNICEF. Search phrases that were used include BF intentions, theory of planned behaviour, teenage mothers, teenage pregnancy, EBF practices, BF experiences, BF and significant others, breast milk as well as BF behavioural control. The literature review will assist in contextualisation the problem as stated earlier in the study.

2.2 BEHAVIOURAL PERSPECTIVE ON BREASTFEEDING

This sub-section covered BF from the behavioural perspective. It looked at the relationships between the BF and behavioural intentions, subjective norms, and behavioural control.

2.2.1 Behavioural intentions and breastfeeding

Women' intentions to breastfeed may play a major role in their ability to initiate and continue EBF till the recommended period of six months. Intentions are thoughts that epitomise the clout to perform future or prospective actions (Lange et al., 2011b). Evidence shows that intention to breastfeed has an impact on the BF practice (Agunbiade & Ogunleye, 2012; Bai et al., 2010; Borra et al., 2014b; Cabieses et al., 2014; Cordero et al., 2013; Ebrahim et al., 2011; Howel and Ball, 2013; Hundalani et al., 2012; Insaf et al., 2011; Kavanagh et al., 2012; Lawton et al., 2012a; Mirkovic et al., 2014a; Newby et al., 2014; Odom et al., 2013; Perrine et al., 2012b; Wang et al., 2014).

In many circumstances, however, intentions are sometimes found to be poor predictors of behaviour (Ajzen, 2011b). In the United States of America, different studies pointed out low initiation rates among mothers who intended to breastfeed during pregnancy (Hundalani et al., 2012; Mirkovic et al., 2014a; Odom et al., 2013; Perrine et al., 2012b). Among women who intended to breastfeed, 32.4% (Perrine et al., 2012b), 28.8% (Mirkovic et al., 2014a) and 40% (Hundalani et al., 2012) were able to achieve their intentions towards BF. On the other hand, a study conducted in the United Kingdom found that, intention to breastfeed was a strong predictor that determined a mother's ability to successfully breastfeed (Lawton et al., 2012a). In Northwest England, almost all the participants who intended to breastfeed exclusively for six months failed. Less than 1% of those mothers were still BF exclusively on the sixth month (Howel & Ball, 2013).

Negative psychological disorders such as depression, anxiety and stress have been documented to have negative impact on BF intentions among women in different parts of the United Kingdom and the United States (Borra et al., 2014b; Insaf et al., 2011). In those studies, prenatal stress, anxiety and depression among pregnant women reduced the zeal of the women towards BF as their infant feeding choices and, hence, lower rate of BF intentions were recorded. Young undergraduate female college students in the United States and Kuwait have been reported to have negative intentions towards BF (Ebrahim et al., 2011; Kavanagh et al., 2012). The college women envisage BF as an act that could be an impediment in the career and personal activity of a mother.

There is strong evidence that BF intentions are affected by the availability of a stable partner in the life of a prospective mother (Agunbiade and Ogunleye, 2012; Chertok et al., 2010; Mitchell-Box et al., 2013; Perrine et al., 2012b; Sipsma et al., 2013). Inadequate support from partners of pregnant women is one of the reasons women cited for not getting the desire to breastfeed in a study conducted in Nigeria (Agunbiade & Ogunleye, 2012). In studies involving enquiries about the intentions of couples, women with partners who had positive intentions towards BF were highly motivated to intend to breastfeed (Mitchell-Box et al., 2013; Sipsma et al., 2013). Among adolescent and young mothers between the ages of 14 and 21 in the United States, partner intention towards BF increased the probability of BF intentions for over 20% variance (Sipsma et al., 2013).

Multiparous women are more likely to have positive intentions towards BF than their primiparous counterparts (Gurka et al., 2014; Hackman et al., 2014; Perrine et al., 2012b).

The perceived behavioural control beliefs is one of the constructs in the theory of planned behaviour which is known to influence mothers' confidence to approach the task of BF. That could have mitigated the positive intentions towards EBF among multiparous women.

Maternal obesity has been reported to be a strong predictor of BF intentions among women in the United States and Australia (Cordero et al., 2013; Hamilton et al., 2011; Hauff et al., 2014; Perrine et al., 2012b). The women in those studies who were obese were reluctant to choose BF as their infant feeding choice. A systematic review of studies spanning between 1997 and 2011 reported similar findings. In the review, Turcksin and colleagues found that, the probability of obese women intending to breastfeed was very low and that obesity was one of the reasons mothers shortened BF duration (Turcksin et al., 2014). In Belgium, obese and underweight women had similar intentions towards BF. The two groups of women in the study had negative intentions towards BF initiation and duration (Guelinckx et al., 2012).

Initiation of BF within the first one hour after delivery, coupled with the provision of pacifiers and supplements to infants in the United States and China, have been reported to reduce mothers' abilities to meet BF intentions (Chantry et al., 2014; Perrine et al., 2012b; Wang et al., 2014). Subsequently, in-hospital formula used within the first forty-eight hours after delivery has been strongly predicted to reduce BF initiation and duration (Parry et al., 2013).

Similarly, formal work or employment has been a debilitator in terms of the BF intentions of women and mothers. There seem to be a general consensus among studies that mothers planning to return to work are less enthusiastic about EBF and BF in general (Attanasio et al., 2013; Mirkovic et al., 2014a, 2014b; Sattari et al., 2013a; Tsai, 2013). Physicians who tend to be mothers are expected to have positive intentions towards BF because they are expected to be role models in issues that pertain to health. But among physician mothers in the United States, intentions towards BF were not met due to demands of work (Sattari et al., 2013a). Meanwhile, small sample sizes and inappropriate calculations of power analysis in such studies may warrant caution in terms of generalisation.

The notion that knowledge is power may be considered as a statement of truth to a large extent in terms of the relationship between intentions to breastfeed and the acquisition of BF knowledge. Women who receive adequate information about BF as an infant feeding choice have been documented to be more likely to intend to breastfeed as compared to their counterparts who are ignorant about the subject (Cordero et al., 2013; Ebrahim et al., 2011; Gurka et al., 2014; Newby et al., 2014; Stuebe and Bonuck, 2011; Zhang et al., 2013).

Similarly, among educated college women, inadequate information and misconceptions about BF were the main reasons behind negative intentions about ability to breastfeed in the future (Ebrahim et al., 2011; Newby et al., 2014). In the same vein, women who are exposed to flashy and convincing media advertisement on infant formula may be convinced that the best choice in terms of infant feeding is artificial formula. In a study conducted in China to find out the effect of infant food advertisement on maternal infant feeding choices, most of the mothers who were constantly exposed to such advertisements were convinced that the best infant feeding method was artificial feeding (Zhang et al., 2013).

Apart from the factors discussed above which play different roles in BF intentions of women, the opinion of the general public may be a contributory factor to intentions towards BF. Studies have found that, women who are comfortable BF in public have positive intentions towards BF which may be extrapolated into BF attitudes, initiation, rates and duration (Avery & Magnus, 2011; Ebrahim et al., 2011; Mulready-Ward & Hackett, 2014; Stuebe & Bonuck, 2011). What could be influencing public opinions about BF in public? However, opinions about BF in public may be similar in different cultures with diverse social dimensions and orientations. In the United States of America where nudity is not a taboo, a study reported negative public opinions about BF in public (Avery & Magnus, 2011), while another study also reported divided opinions about BF in public (Mulready-Ward & Hackett, 2014). On the contrary, Kuwait is a predominantly conservative society where nudity is frowned upon. It is, therefore, not astonishing when a study found out that college female students were uncomfortable with the subject of BF in public (Ebrahim et al., 2011).

2.2.2 Subjective norms and breastfeeding

Subjective norms refer to the perceived social pressure to perform or not to perform a task (Ajzen, 1985). Subjective norms are highly influenced by the culture or the way of life of a group of people. The culture of the people forms the basis of normative beliefs which influence subjective norms. For acceptance into the society as a member, people would have to conform to the way of life or what everyone considers normal and appropriate (Ajzen, 1985).

A person's perception of the opinions of significant others concerning a particular action affects subjective norms. Scholarship on BF specifies that, socio cultural and subjective norms about BF influence mothers' BF attitudes (Bai et al., 2012; Charkazi et al., 2013; Choudhry and Wallace, 2012; Diac et al., 2014; Fischer and Olson, 2014; Hamilton et al., 2012; Kafulafula et al., 2013; Kavanagh et al., 2012; Lawton et al., 2012b; Muchacha & Mthetwa, 2015; Mutuli et al., 2012; Poole & Gephart, 2014; Rojjanasrirat & Ferrarello, 2013; Spurles & Babineau, 2011; Walsh et al., 2015b).

Subjective norms about the perception that, formula feeding is better than BF in a community can emanate from flashy advertisements to promote breast milk substitutes (Piwoz & Huffman, 2015). Among undergraduate students at China, more than 58% of the students reported that they would be embarrassed if they or their partners breastfed in public due to the socio-cultural attitude of the community at large towards BF in public (Kavanagh et al., 2012). Among South Asian women who have migrated to the United Kingdom, influences of the culture where formula feeding was rampant affected their infant feeding choices (Choudhry & Wallace, 2012). Significant others may play a role in the normative beliefs of the BF mother. Normative beliefs can turn into subjective norms that may influence the BF practices of mothers. In Isafan, Iran and the United Arab Emirates, the opinions of spouses, mothers and mothers-in-law of the BF mothers had a strong relationship with the EBF practices of those mothers (Charkazi et al., 2013; Radwan & Sapsford, 2016).

One of the policies of the prevention of mother to child transmission of HIV (PMTCT) concerning HIV status disclosure is to encourage HIV positive BF mothers to disclose their statuses to their spouses (WHO, 2003). The aim is to educate such partners on the need to support, promote and protect BF and such a measure is expected to guarantee

optimal uptake PMTCT adherence. A study in which HIV positive mothers disclosed their statuses to their partners, subjective norms and beliefs about BF and HIV status of the spouses led to situations where the mothers terminated BF before the recommended period (Kafulafula et al., 2013).

Significant others whose opinions about BF can affect mothers' BF practices include work colleagues and managers. In two different studies, human resource and hospital managers reported that, establishment of baby-friendly workplace programs had influenced their normative beliefs towards BF. This had influenced the culture of breastfeeding within their various organizations (Bai et al., 2012; Rojjanasrirat & Ferrarello, 2013). Therefore, workplace BF promotion can be improved if employers perceive BF as a norm.

In a systematic review where over one hundred (100) peer reviewed articles which were published between 2008 and 2013 were analysed, young mothers' perception about BF were influenced by the BF culture that existed within their various communities. Young mothers who resided in areas where BF was perceived as a norm had more positive attitudes towards BF than their counterparts who lived in communities where formula feeding was the norm (Poole & Gephart, 2014). In their study, Spurles and Babineau reported that, although Canadian men and women expressed desire for their infants to be breastfed, thirty-one out of forty-seven had negative attitudes towards exposure of the breast in public (Spurles & Babineau, 2011). A study conducted in the United States reported that, some mothers believed that responding to children's cries with BF led to negative infant effect. The participants had a strong belief that, such response 'spoils' children (Mathews et al., 2014).

Subjective and normative beliefs about BF may not always turn into actual practice. Among health care professionals in Kenya and Ghana, although subjective beliefs about BF were positive, most of them felt inadequate to provide the right education on BF to clients. There was a general perception that, training on BF positions, attachments and education should target health professionals (Nyawade et al., 2016; Obeng & Reed, 2015).

2.2.3 Behaviour control beliefs and breastfeeding

Perceived behavioural control beliefs refer to the psychological propensity of approving or disapproving to attempt a task based on a person's beliefs about the consequences of performing that particular task (Ajzen, 1985). The researcher believed that the perceived behavioural control beliefs about successful initiation and completion of EBF may determine EBF practices among teenage mothers. As teenagers face the challenges of motherhood, they may have certain perceptions towards BF. The control beliefs may dictate the actions that would be taken by teenage mothers.

Teenage period is a period between childhood and adulthood. Therefore, teenagers are in transition. This period of transition may have challenges. Therefore, combining the transition period with pregnancy and motherhood may lead to different perceptions about the ability to successfully breastfeed exclusively. The health workers, parents, teachers, friends, extended family members and siblings may form the significant others in the lives of the teenage mothers in this study. Therefore, significant others' opinions which may be shaped by their socio-cultural norms and orientations would be explored through the lived BF experiences as shared by the teenage mothers. These cultures are what determine acceptance into the community. Consequently, the teenage mothers may be influenced by the opinions of such significant others in their lives in terms of the practice of EBF.

The perception about how difficult or easy a task may be, influences initiation and the zeal with which individuals approach that task. The perceived behavioural control beliefs about ability to initiate BF and continue till the stipulated time frame has been found by a lot of studies to influence initiation and duration of BF (Brown et al., 2011; Brown and Arnott, 2014; de Jager et al., 2014b; Furman et al., 2012; Hamilton et al., 2011, 2012; Kavanagh et al., 2012; Nesbitt et al., 2012a; Nguyen et al., 2013; Teich et al., 2013). Women who are yet to breastfeed consider a lot of factors before initiating the task. Therefore, intentions to breastfeed has a strong correlation with the behavioural control beliefs about BF (Bai et al., 2010; Ismail et al., 2013; Newby et al., 2014).

Adolescent mothers have lower BF initiation rates, as well as duration, and are likely to have infants with sub-optimal health (Kingston et al., 2012). Yet young adolescent mothers between the ages of fifteen and twenty-four have the tendency to perceive BF as difficult and, therefore, their approaches towards BF practices are inadequate (Brown

et al., 2011; Nesbitt et al., 2012a). Among a group of Canadian mothers between the ages of fifteen and nineteen, lower duration of BF was associated with negative attitude towards the practice due to the behavioural control beliefs about BF (Nesbitt et al., 2012b). Although findings from that study cannot be generalised due to sample size and sampling techniques, the study findings project the control beliefs teenagers' harbour towards the practice of BF and how it affects BF rates and duration.

2.3 PROMOTION OF EXCLUSIVE BREASTFEEDING

2.3.1 Importance of EBF

EBF for the first six months of life is a measure that has an impact on the health of children and gives them a chance to survive (WHO, 2014). EBF is the foundation for child survival due to the fact that it gives immunity to the child which is inimitable (WHO, 2014). Suboptimal BF ranks higher than water and sanitation as a leading childhood risk factor for infant mortality and morbidity in developing countries (Roberts et al., 2013).

Neonates who are not exclusively breastfed have a short lifespan (Black et al., 2013; Blencowe and Cousens, 2013; Kayode et al., 2014; Khan et al., 2014; Lamberti et al., 2013a). Between 2000 and 2013, the second leading cause of neonatal death in the world was pneumonia (Liu et al., 2015). Meanwhile, in a systematic review of several studies, it was acknowledged fact that, suboptimal BF was the main cause of pneumonia among neonates (Lamberti et al., 2013b). In the Northern Region of Ghana, neonates who are not breastfed exclusively are at risk of neonatal mortality (Kayode et al., 2014). In a systematic review of studies conducted between 1963 and 2011, the authors ascertained that timely BF initiation was one of the simplest interventions to curb the incidence of neonatal mortality (Debes et al., 2013). Infant morbidity increases once EBF for the first six months of life is compromised. Therefore, infants who are not exclusively breastfed at the right time are exposed to infections that can lead to their early demise (Black et al., 2013; Blencowe and Cousens, 2013; Kayode et al., 2014; Khan et al., 2014; Lamberti et al., 2013a). Increasing universal BF rates to the recommended authorised levels could prevent 823, 000 annual deaths in children under five (Victora et al., 2016).

2.3.2 Benefits of EBF

The intelligence of children who are not exclusively breastfed for the recommended period may be suboptimal throughout their lifespan. Evidence suggests that, the duration of BF influences the human cognitive abilities (Belfort et al., 2013; Bernard et al., 2012, 2013; Deoni et al., 2013; Julvez et al., 2014; McCrory and Murray, 2012; Mimouni-Bloch et al., 2013; Oddy et al., 2010; Quigley et al., 2012; Rozé et al., 2012; Tozzi et al., 2012; Victora et al., 2015; Victora et al., 2016; Yorifuji et al., 2014). There is a link between the duration of BF and the ability to perform age specific tasks (Oddy et al., 2010; Yorifuji et al., 2014). EBF for less than six months is an independent predictor on the ability of children to develop appropriate cognitive skills (Oddy et al., 2010).

In a longitudinal study whereby infants who breastfed for the recommended period were followed for up to thirty years, it was a bare fact that, the intelligence of such individuals were above that of ordinary people (Victora et al., 2015). In very preterm neonates with suboptimal weight gain, there was better neuro development once those children were breastfed (Rozé et al., 2012). In Japan, a longitudinal nationwide survey to investigate the relationship between BF and behavioural development revealed that, ability to perform age appropriate tasks were directly linked to BF status. Children with intellectual disability are less likely to have ever been breastfed in their lifespan (Gore et al., 2015). A study found a positive correlation between sub-optimal BF and autism spectrum disorders (Al-Farsi et al., 2012).

Since intelligence may be suboptimal in situations where children are not exclusively breastfed, such individuals may not reach their full economic potentials. There is evidence of a strong positive correlation between intelligence Quotient (IQ) and the economic status of the family (Victora et al., 2015). It is also obvious that adult IQ is accountable for 72% of the outcome of BF on income. Therefore, income in adulthood is indirectly linked to BF due to improvement in intelligence (Victora et al., 2015). In Southern Asia, the single value concomitant with improvements in cognitive capabilities is estimated at \$1.6 billion annually and that loss is more than 0.5% of the gross national income of Thailand (Walters et al., 2016).

There are varied economic losses that are associated with suboptimal BF and not BF at all (Bartick et al., 2013; Ekwueme et al., 2016; Ma et al., 2012; Pokhrel et al., 2014; Rollins

et al., 2016; Rouw et al., 2015; Victora et al., 2015; Walters et al., 2016). Globally, a total of \$302 billion are lost annually to inability to practice BF as recommended which aggregates to form 0.49% of the world's annual gross income (Rollins et al., 2016). It costs the United States of America a total amount of \$859.8 million in direct and indirect terms when mothers are unable to breastfeed as recommended by experts (Bartick et al., 2013). In Louisiana, a total of \$ 216,103,368 could be saved if up to 90% of mothers breastfeed optimally (Ma et al., 2012). Similarly, in the United Kingdom, BF for up to four months can save the nation up to £11 million annually (Pokhrel et al., 2014). A total lifetime savings of \$390.8 million could be set aside if infants are breastfed for up to six months since BF for that duration can prevent 102 new cases of leukemia from occurring (Ekwueme et al., 2016).

It is shown that health insurance companies and the society at large benefit from the financial savings that are brought forth by EBF for six months and continual BF for up to two years as recommended by the WHO (Rouw et al., 2015). That is, in poor settings like Africa, early introduction of infant formula foods may deepen poverty among parents.

Not BF may be a positive predictor in the development of childhood obesity. Empirical studies have reported various positive connections between childhood obesity and the duration of BF (Bider-Canfield et al., 2016; González-Jiménez et al., 2014; Grube et al., 2015; Hansstein, 2015; Horta et al., 2015; Johnson et al., 2014; Lefebvre and John, 2014; McCrory and Layte, 2012; Modrek et al., 2016; Otsuka et al., 2008; Vafa et al., 2012; Yan et al., 2014). The World Health Organization also asserts that, prolonged BF has a causal relationship for the development of childhood obesity (WHO, 2014). Consequently, the burden of global obesity epidemic may subside if a lot of mothers breastfeed their infants for the recommended period of time. In a systematic review of various studies that have been published on the relationship between BF duration and the rate of childhood obesity, Horta and colleagues reported that, the duration of BF reduced the rate at which children became overweight and obese by 13% (Horta et al., 2015). If BF duration is able to reduce the rate at which individuals gained weight, then it may reduce the rate at which chronic diseases like diabetes and hypertension is spread among different populations.

The mother-infant bond may weaken if EBF is not practiced adequately. Studies have reported that, time of BF initiation and duration has a positive effect on the ability of mother and infant to bond effectively (Kair et al., 2015; Papp, 2014). Meanwhile, the positive

psychological effect on bonding during BF cannot be under-estimated since mothers who are known to bond effectively with their infants are able to fight postpartum depression compared to those who are not able to bond (Borra et al., 2014a; Dias & Figueiredo, 2015; Hahn-Holbrook et al., 2013; Zubaran & Foresti, 2013). In a systematic review of forty-five studies that had instigated the role of BF and its association in maternal depression, the authors concluded that, shorter duration of BF was associated with postpartum depression (Dias & Figueiredo, 2015).

Maternal stress and depression which emanate from ineffective and weakened bonding between mother and child can hinder effective EBF practice for the recommended period by the WHO (Doulougeri et al., 2013). Infants who are unable to bond as required may be easily susceptible to a host of mental health problems and disorders such as depression (Liu et al., 2013; Loret de Mola et al., 2016; Winston & Chicot, 2016). Other children may also have low risk of internalization and, therefore, may find it difficult to successfully socialise with people from different parts of the society with different cultural backgrounds (Liu et al., 2013). Suboptimal EBF rates would be an impediment for Ghana to reach its aim of reducing infant mortality. Similarly, reduced EBF rates would retrogress the global nutrition target which has been set by the WHO and UNICEF to reduce stunting, anaemia, low birth weight and childhood obesity (WHO, 2014).

2.4 STATUS AND CORRELATES OF EXCLUSIVE BREASTFEEDING PRACTICES

EBF practices may vary from one location to the other due to different socio-cultural and socio-economic conditions that may exist independently. The rates of EBF in different continents, geographical areas and countries have been outlined earlier in the background to this study. Although majority of mothers acknowledge that breastmilk is the best food for infants, studies from most countries report suboptimal EBF rate patterns. The countries where suboptimal BF practices were recorded include: Nigeria, Ethiopia, Bangladesh, Nepal, United States of America., Indonesia, Lebanon, United Arab Emirates, India, Parkistan, Brazil, Peru, South Africa and Tanzania (Agho et al., 2011, 2011; Agunbiade & Ogunleye, 2012; Egata et al., 2013; Hamade et al., 2013; Inayati et al., 2012; Joshi et al., 2014; Karkee et al., 2014; Lee et al., 2013; Patil et al., 2015; Radwan, 2013; Smith et al., n.d.; Ulak et al., 2012; Vieira et al., 2014).

In a systematic review of BF patterns across the developing world, the prevalence of EBF in one hundred and thirty-seven (137) countries over a twenty-year period were estimated. The authors documented that, although suboptimal BF was the leading childhood risk factor, in 2010, EBF rates ranged from as low as 3.5% in Djibouti to as high as 77.3% in Rwanda (Roberts et al., 2013). Beside the suboptimal patterns of EBF mentioned above, some mothers in Ethiopia and Indonesia express the colostrum and discard them in order to feed their infants with matured milk since colostrum is perceived as 'dirty' in those cultures (Dessalegn Tamiru Adugna, 2014; Inayati et al., 2012).

The trend in EBF rates across the globe may be attributed to a host of factors. The challenging nature of EBF requires support from different angles. There is a general consensus among findings of a host of studies on the fact that support from spouses, extended family members, health workers and friends influences the pattern of EBF (Adugna, 2014; Ayton & Hansen, 2016; Bonia et al., 2013; Egata et al., 2013; Farbu et al., 2014; Hamade et al., 2013; Inoue et al., 2012; Kimani-Murage et al., 2011; Lee et al., 2013; Mannion et al., 2013; McQueen et al., 2015; Oakley et al., 2014a; Phillips et al., 2010; Tan, 2011a; Ulak et al., 2012; Vieira et al., 2014). In several studies, the most influential support in the initiation and duration of EBF practices was the one provided by the spouse (Egata et al., 2013; Farbu et al., 2014; Inoue et al., 2012; Kimani-Murage et al., 2011; Mannion et al., 2013; McQueen et al., 2015; Phillips et al., 2010; Tan, 2011a;

Vieira et al., 2014). Meanwhile, young fathers in Australia who were twenty-four years or younger did not prioritise BF as an infant feeding method (Ayton and Hansen, 2016).

On the other hand, mothers in parts of the United Kingdom interpreted education on BF given to them by health professionals during pregnancy as deceptive. Information provided by the health professionals about the benefits of BF became an impediment in the practice of EBF since mothers blamed them for their inability to practice EBF (Fox et al., 2015). In a rare circumstance, a study conducted in the Northern Region of Ghana found that, paternal grandmothers of the infants in that part of the country had enormous influence on the infant feeding decision of the mother (Aborigo et al., 2012). It must be emphasised that, non-breastfed infants in Ghana are more susceptible to neonatal mortality than any other group of children (Kayode et al., 2014).

Since breast milk is easily digestible, there is a persistent notion among mothers that, breastmilk alone may be insufficient for their infants. Perhaps, one of the most cited reasons for cessation of EBF in studies conducted at Nepal, Japan, United Arab Emirates, Kenya and The Netherlands is a perception of inadequate breastmilk. (De Cock et al., 2015; Inoue et al., 2012; Matsuyama et al., 2013; Radwan, 2013; Ulak et al., 2012). Due to such perceptions, mothers may feel that complementing breast milk with other meals is a necessity, hence, the inability to breastfeed exclusively as recommended. In a systematic review of studies conducted in Japan in the past on EBF duration, mothers mentioned their personal perceptions about insufficiency of breast milk as the reason for not meeting EBF duration of six months (Inoue et al., 2012).

There are a host of studies that have reported the relationship between maternal level of formal education, as well as education on BF and their implications on EBF duration (Adhikari et al., 2014; Adugna, 2014; Egata et al., 2013; Gewa & Chepkemboi, 2016; Kimani-Murage et al., 2011; Matsuyama et al., 2013; Nkala & Msuya, 2011; Ogbo et al., 2015; Smith et al., n.d.; Thu et al., 2012; Ulak et al., 2012; Wu et al., 2015; Yeneabat et al., 2014). Mothers who have acquired higher formal education irrespective of the discipline seem to comply with EBF recommendations as compared to their uneducated counterparts. There are convincing evidences from Nepal, Ethiopia, Vietnam, Nigeria, Taiwan and Kenya stating positive correlations between higher maternal formal education and longer duration of EBF (Adhikari et al., 2014; Adugna, 2014; Kimani-Murage et al., 2011; Ogbo et al., 2015; Thu et al., 2012; Wu et al., 2015).

With regard to professional counselling given to mothers about BF, mothers who receive adequate professional health education on the benefits of EBF tend to conform with the WHO's recommended duration for EBF (Egata et al., 2013; Gewa & Chepkemboi, 2016; Matsuyama et al., 2013; Nkala & Msuya, 2011; Smith et al., n.d.; Ulak et al., 2012; Yeneabat et al., 2014). It must be emphasised that, respondents to the studies which have been mentioned above where there were correlations between education and EBF rates had teenage mothers as participants. On the contrary, a study conducted at Western Australia reported that, 53.4% of the primi parous mothers who received professional counselling on BF had conflicting information which was unhelpful in their quest to breastfeed exclusively. The unhelpful information received from child health nurses played a role in their decision to cease EBF (Hauck et al., 2011).

Mothers who give birth to high risk neonates tend to put in extra efforts in order to increase the chances of their infants' survival. Some studies have reported that, mothers who deliver neonates with high risk tendencies such as pre-term, small for date, large for date and low birth weight, strive to meet the World Health Organization's recommendation on EBF duration (Adhikari et al., 2014; Inoue et al., 2012; Kimani-Murage et al., 2011; Matias et al., 2011; Thu et al., 2012). In a review of twelve articles conducted in Japan, the size of neonates at birth significantly influences the rate at which mothers' initiate EBF, as well as the duration of EBF (Inoue et al., 2012).

In their studies, Adhikari, De Cock, El-Gilany, Karkee, Khanal, Lok, Nkala, Ogbo, Seid, Thu, Yeneabet and colleagues found significant associations between mode of delivery, location of delivery and EBF initiation, as well as duration (Adhikari et al., 2014; De Cock et al., 2015; El-Gilany et al., 2011; Karkee et al., 2014; Khanal et al., 2013; Lok et al., 2015; Nkala & Msuya, 2011; Ogbo et al., 2015; Seid et al., 2013; Thu et al., 2012; Yeneabat et al., 2014). In those studies, mothers who delivered at the health facilities had higher probabilities of initiating EBF. This is, perhaps, due to the support received from health professionals at those sites. On the other hand, studies conducted at parts of The Netherlands and Nepal found that, mothers who delivered at home rather had higher EBF initiation rates as compared to those who delivered at health facilities (De Cock et al., 2015; Khanal et al., 2013).

In the study by De Cock and colleagues in The Netherlands, the rate of EBF was 75% for the women who gave birth at home as against 68.5% for the women who delivered at

midwife-led care hospitals (De Cock et al., 2015). In the Nepalese study, neonates who were delivered at home were more likely to be exclusively breastfed as compared to their counterparts who were delivered at the hospital (Khanal et al., 2013). Cesarean delivery has been found to be a negative predictor of EBF in studies conducted in parts of Saudi Arabia, Vietnam, Nepal, Nigeria, Hong Kong and China (El-Gilany et al., 2011; Karkee et al., 2014; Lok et al., 2015; Ogbo et al., 2015; Thu et al., 2012).

Smoking in the midst of motherhood may be a deterrent in the practice of EBF. Mothers who smoke may not be able to concentrate and execute their roles as mothers adequately. Mothers who continue to smoke after delivery have been reported to find difficulties initiating and continuing EBF and even complementary feeding (Inoue et al., 2012; Lok et al., 2015; McDonald et al., 2012; McQueen et al., 2015; Tan, 2011a).

Stringent work schedules and work policies that do not favour maternal and child health issues may implicate mothers' infant feeding choices. There are strong evidences that, mothers with formal employments without long maternity leaves may have difficulties combining work schedules and EBF for six months (Agunbiade & Ogunleye, 2012; Hamade et al., 2013; Lee et al., 2013; Matias et al., 2011; Sattari et al., 2013b; Setegn et al., 2012; Smith-Gagen et al., 2014; Weber et al., 2011). In a study conducted at an Australian health service workplace to find out about female employees' perceptions of organisational support towards BF, most respondents felt that their employers were unsupportive of the issues of BF. This thwarted their efforts towards the practice of EBF (Weber et al., 2011). Ironically, mothers in Taiwan, Nigeria and Canada with high income and earnings are more likely to exclusively breastfeed as compared to mothers with low income or those from poor backgrounds (Agho et al., 2011; McDonald et al., 2012; Wu et al., 2015). Non-working mothers commonly referred to as housewives in Saudi Arabia, Malaysia and Ethiopia have been documented to have positive attitudes towards EBF (El-Gilany et al., 2011; Seid et al., 2013; Tan, 2011a).

Motivation to initiate and continue BF may emanate from experience. Experience may bring about familiarity which may improve the confidence of mothers to exclusively breastfeed. Evidence have it that, parity has a significant influence on the BF choices and duration of mothers (Hauck et al., 2011; Phillips et al., 2010; Radwan, 2013; Tan, 2011b). In their study, Patil and colleagues investigated the reasons for cessation of EBF. The study involved two thousand and fifty-three (2,053) infants from Bangladesh, India, Nepal,

Pakistan, Brazil, South Africa and Tanzania. They found out that infants born to first time mothers had a high probability of not experiencing EBF (Patil et al., 2015). Antagonistically, a study conducted in Hong Kong and Mainland China found that, mothers who were multiparous were likely to fail in their attempts to exclusively breastfeed (Lok et al., 2015).

Maternal dwelling localities may have a significant impact on EBF. EBF rates among rural mothers have been reported to be higher in some studies (El-Gilany et al., 2011; Karkee et al., 2014; Tan, 2011a; Yeneabat et al., 2014). In Spain, BF initiation was studied between two geographical regions of Catalonia and Valencia. There were significant differences in BF practices in both regions (Río et al., 2012). In another study to investigate BF practices in Nigeria, the authors found out that, mothers who resided in the north-central geopolitical region were significantly more probable to practice EBF as compared to other mothers in different geopolitical regions of Nigeria (Agho et al., 2011).

A few studies established a link between the number of ante-natal visits and EBF (Agho et al., 2011; Ogbo et al., 2015; Singh et al., 2014). In a multilevel analysis to determine the causes of neonatal death in sub-Saharan Africa, more than four antenatal visits in one pregnancy was associated with BF initiation (Singh et al., 2014). Contrary to such findings, mothers from wealthy homes who undertook frequent antenatal visits during pregnancy still had a high risk towards BF cessation (Ogbo et al., 2015).

Breastfeeding difficulties and inconveniences such as frequent night time feeding, nipple pain, breast engorgement, cracked nipple, improper latching, backache and insufficient milk flow may complicate the BF practices of mothers. In Central Nepal (Karkee et al., 2014), United Arab Emirates (Radwan, 2013), Netherlands (De Cock et al., 2015), Brazil (Vieira et al., 2014) and Tanzania (Nkala & Msuya, 2011) studies have found positive correlation between BF difficulties and inconveniences with EBF.

Whether a particular neonate was delivered through a planned or unplanned pregnancy may be linked to BF practices. Perhaps the confidence to breastfeed emanates from the zeal with which a mother expects a new child. EBF rates and duration have been positively concomitant with planned pregnancy in Lebanon (Hamade et al., 2013), Philippines (Ulep & Borja, 2012), and Kenya (Kimani-Murage et al., 2011).

Finally, maternal age and EBF practices seem to have a relationship. Younger mothers who are either teenagers or adolescents are less enthusiastic in the practice of EBF (McDonald et al., 2012; Oakley et al., 2014b; Phillips et al., 2010; Radwan, 2013). Moreover, infants born to teenagers as well as non-breastfed infants have higher neonatal mortality rates compared to their counterparts who are born to older mothers and breastfed (Biks et al., 2015; Kayode et al., 2014).

2.5 STRATEGIES TO IMPROVE BREASTFEEDING RATES AND DURATION

Due to the importance of BF in the lives of the mother, infant, father, siblings and the community as a whole, different strategies are often put in place to serve as interventions to improve BF rates. Such interventions are tailored to suit particular settings and situations. Some BF interventions which have been implemented in randomised control trials include prenatal counselling by health professionals, peer counselling, automated messaging systems, baby-friendly hospital activities and the preservation of human milk in human milk banks.

Watching others with similar characteristics perform a task successfully may influence the zeal and passion with which that same task is approached by others. Strong evidence exist on a link between watching others breastfeed successfully and being motivated to breastfeed (Dai & Dennis, 2003; Entwistle et al., 2010; Gerhardsson et al., 2014; Glassman et al., 2014; Hoddinott et al., 2010; Ip et al., 2012; Leahy-Warren et al., 2012; McCarter-Spaulding & Gore, 2012; McQueen et al., 2011; Street & Lewallen, 2013; Wu et al., 2014). Peer led BF support programs have proven to be reliable and an effective strategy in the quest to improve BF rates in different parts of the world (Brown et al., 2011; Gross et al., 2011; Rempel & Moore, 2012; Sudfeld et al., 2012; Thomson et al., 2015; Tylleskär et al., 2011).

In North-west England, findings of a study reported that, positive attitudes towards BF were forged between peer educators and participants through the formation of vertical and horizontal relationships (Thomson et al., 2015). In a study whereby peer counselling was tested in a cluster-randomized trial to find out its usefulness in the promotion of BF, it became evident that, the strategy can be used to improve EBF rates in Burkina Faso, Uganda and South Africa (Tylleskär et al., 2011). In a study conducted at Maryland in the United States, peer counselling was more successful in increasing the BF rate than

counselling provided by lactation consultants and other health professionals. The increase in BF initiation rate through peer counsellors, lactation consultants and other health professionals were 61.6%, 54.4%, and 47.6%, respectively (Gross et al., 2011). Nonetheless, inadequate sampling technique employed makes generalisability of the study findings impossible. In a retrospective study of one hundred and thirty-eight (138) mothers between the ages of seventeen and twenty four, BF for at least six months was positively associated with participation in a BF support group (Brown et al., 2011). Due to the study's retrospective nature, there can be memory distortions.

The baby-friendly hospital initiative is a holistic approach for BF promotion and improvement in overall infant feeding practices designed by the World Health Organization (WHO) and the United Nations Children's Emergency Fund (UNICEF). The goal is to protect, promote and support BF. The strategy is aimed at training hospital staff with knowledge and skills necessary to transform their health facilities into baby-friendly institutions through enactment of the 'ten steps to successful BF' (WHO/UNICEF, 2009). The initiative has been implemented in twenty-one thousand, three hundred and twenty-eight (21,328) facilities globally since its initial launch in 1991 (Labbok, 2012). As at 2012, five hundred hospitals were designated as Baby-Friendly' in industrialised countries (Hawkins et al., 2015). Rates of implementation vary in different settings and it correlates with increase in BF rates worldwide (Labbok, 2012). Similarly, in the United States, Japan and Hong Kong, implementation of the baby-friendly hospital initiative has seen improvements in BF rates and duration (Otsuka et al., 2013; Parker et al., 2013; Tarrant et al., 2011). On the other hand, a study conducted in Queensland, Australia found out that, there were no differences in EBF rates and duration in mothers who delivered at baby-friendly hospitals as against others who delivered in non-baby-friendly hospitals (Brodribb et al., 2013).

In a systematic review on BF promotion intervention and practices, it was reported that, education and support on infant feeding practices improved EBF rates. This was found after a review of one hundred and ten studies on BF intervention strategies (Haroon et al., 2013). There is evidence of the existence of a relationship between prenatal BF education and sharing of BF educational materials and BF rates (Gabida et al., 2015; Tenfelde et al., 2011).

Several other strategies were associated with improved BF. Telephone calls and automated text message system every week have also proven to be effective in terms of strategies to improve BF rates in Malaysia and Australia (Gallegos et al., 2014; Tahir & Al-Sadat, 2013). The presence of a human milk bank in Italy has improved EBF rates and duration in very low birth weight babies (Arslanoglu et al., 2012). The availability of BF facilities at the workplace have been attributed to an increase in BF practices and duration (Kozhimannil et al., 2016). Female employees have admitted that, encouragement from their bosses to breastfeed led to positive attitude toward BF as well as successful BF (Weber et al., 2011). Food insecurity was also related to EBF practices. Authors reported that, mothers who felt hungry most of the time felt incapable to exclusively breastfeed their infants (Webb-Girard et al., 2012b).

Challenges on issues concerning EBF are varied and many, especially for young teenage and adolescent mothers. A lot of studies have been done on EBF practices among mothers in different settings. However, there appear to be no published study on BF practices of teenage mothers and strategic measures to improve it in Ghana. That has warranted the need for this study to be conducted in the Accra Metropolis of Ghana.

2.6 SUMMARY

Breastfeeding is as old as life itself. Breast milk is the food which is purposefully and naturally produced in the mammary glands for infants. Although BF has been practiced over previous generations, a new twist came up in the nineteenth century. After series of experimental studies were done by scientists across the globe, they revealed that, for the first six months of life, the only nutritional requirement for an infant was breast milk. The news has not been received well in most parts of the world, especially the developed parts. Change is gradual and difficult in the human sense. It takes time for people to accept new interventions. Communities tend to hold unto age-old practices, and EBF is somewhat seen as a giant task that is difficult to surmount.

The reviewed literature suggested that, globally, EBF among different categories of mothers is sub-optimal. Factors that influence EBF positively and negatively include: opinions of significant others in the lives of BF mothers, the norms of the society and intentions towards BF. A lot of studies have been done in the area of EBF. However, after a vast search was conducted on published studies, there appears to be no studies meant

to improve EBF among teenage mothers in Ghana. Therefore, this study would fill part of that gap by developing a behavioural conceptual model that can promote EBF among that group in the Greater Accra Region of Ghana.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The purpose of this study as stated in the first chapter was to identify and establish the behavioural determinants of EBF among teenage-mothers with the view of proposing a behavioural conceptual model for promoting EBF practices among teenage-mothers' within the social context of Ghana. This chapter gives a detailed description of the methodology which was used in the study. It includes: the scientific foundation, designs and research methods, scientific rigour and ethical considerations. The procedures used to ensure validity and reliability have also been outlined in this chapter.

3.2 SCIENTIFIC FOUNDATION OF THE STUDY

3.2.1 Methodological foundation

Methodological foundation in research is a statement of the philosophical assumptions underpinning the way the researcher will approach the phenomenon of interest. These assumptions are based on logic or reasoning without any form of proof to ascertain authenticity (Polit & Beck, 2013).

The study was based on the philosophical assumptions underpinning pragmatism. As a philosophical worldview, pragmatism does not believe on a single system of philosophy and reality (Creswell, 2014:11). It is based on the following set of assumptions or beliefs:

- i. "reality is what is useful, is practical, and works" (Ontological assumptions or the nature of reality),
- ii. "reality is known through using many tools of research that reflect both deductive (objective) evidence and inductive (subjective) evidence" (Epistemological assumptions or how reality is known),

- iii. “values are discussed because of the way that knowledge reflects both the researchers’ and the participants’ views” (Axiological assumptions or role of values), and
- iv. “the research process involves both quantitative and qualitative approaches to data collection and analysis” (Methodological assumptions or approach to research) (Creswell, 2013: 36).

The researcher believed that teenager-mothers in Ghana hold diverse and different views, experiences and practices regarding EBF which constitute their reality. This reality may be objective or subjective in nature and cannot be depicted from a single approach. Therefore, pragmatism worldview provided the researcher the opportunity to adopt a pluralistic approach in attempting to achieve the purposes of the study.

3.3.2 Research approach

The study was conducted in three phases using multistrand mixed methods. Mixed methods research is an approach to research that involves collecting, analysing and mixing both quantitative and qualitative methods in a single study or a series of studies to understand a research problem (Creswell, 2013). Multistrand mixed methods use more than one methodology and involve the mixing of quantitative and qualitative approaches in several stages of a study (Cameron, 2009:145). Multistrand mixed methods are characterised by three dimensions: (i) have single or multiple approaches and use two methods to answer either exploratory or confirmatory research enquiries; (ii) provide different stages of integration or the incorporation of both qualitative and quantitative data sets; and (iii) use either sequential or concurrent procedures for linking the strands (Creswell & Plano Clark, 2011:85).

This study used all three dimensions of the multistrand mixed methods. The researcher used three different designs combined with different stages of integration of the two strands of data and a sequential exploratory procedure. These designs are described in the corresponding phase of the study. The sequential exploratory procedure was used in this study to inform the development of the quantitative data collection tool and to enrich the strength of the proposed behavioural conceptual model by merging data at the interpretive stage of the results. Authors (Creswell & Plano Clark, 2011:85) support that a sequential exploratory procedure in mixed methods allows the researcher to use the

qualitative data as a basis for quantitative data or as a means to enrich the strength of the study by merging the two set of data at the interpretive stage of the results.

The choice of multistrand mixed methods approach was informed by the philosophical assumptions underlying the study and the nature of the phenomenon of interest for this study. Pragmatism is commonly used as a philosophical underpinning mixed methods research in social sciences. According to Creswell (2014:11), the use of pragmatism as a philosophy underpinning mixed methods approach allows the social science researchers to focus their research on social problems using the pluralistic approaches to derive knowledge about the problems.

Furthermore, multistrand mixed methods approach was found more congruent with the complexity of the nature of the problem under the investigation and the purposes to be reached. It was argued that multistrand mixed methods approach will afford the researcher the freedom to choose research methods, techniques, and procedures that will best meet the purposes of the study. It will also enhance the strength of the conceptual model to be proposed.

3.2.3 Theoretical foundation

The researcher used the Theory of Planned Behaviour (TPB) as a theoretical foundation to assist the researcher to identify and establish the behavioural determinants of EBF among teenage-mothers. BF is a behaviour, therefore, the development of a behavioural conceptual model for promoting EBF among teenage-mothers should be based on the understanding of the determinants of such behaviour.

The Theory of Planned Behaviour asserts that individual behaviour is driven by *behaviour intentions*, where behaviour intentions are a function of three determinants: an individual's *attitude toward the behaviour*, *subjective norms*, and *perceived behavioural control* (Ajzen, 1991).

Behavioural intention represents a person's motivation in the sense of her or his conscious plan or decision to perform certain behaviour (Ajzen, 2011b). Although intentions may not always turn into actions in themselves, intentions may determine a person's ability to initiate a behaviour and the strength to continue that particular

behaviour to the end (Ajzen, 1991). Positive intentions toward a behaviour may raise the individual's hope about the success of achieving that particular behaviour and, therefore, propel the individual to engage in that behaviour to the end. On the other hand, negative intentions toward a behaviour may debilitate the individual's hope to undertake the behaviour (Ajzen, 1991).

Behavioural attitude or attitude towards a behaviour refers to the degree to which a person has positive or negative feelings of the behaviour of interest (Ajzen, 1991). It is an individual's overall estimate of and reaction to the outcome of a particular behaviour. An estimated difficult behaviour may attract negative attitude. In contrast, tasks that are estimated to be within an individual's capacity is viewed and envisaged to be achievable (Ajzen, 2011b). After weighing the pros, cons and consequences of a particular behaviour, the attitude of an individual towards that particular behaviour may change (Ajzen, 2011b).

Subjective norms relates to a person's perception of the social environment surrounding the behaviour and the belief about whether significant others think the individual will perform the behaviour (Hartwick & Barki, 1994). It involves normative beliefs about the opinions of significant others in the particular task that need to be achieved (Ajzen, 2011b). Significant others in this context refer to the individuals who have influence on the general wellbeing of an individual.

Individuals weigh the possible views of significant others before embarking on a particular behaviour. These views are mainly based on the prevailing cultural beliefs or values of the community, which determine what is morally right or wrong. Since individuals want to be accepted by majority of the members in the society, cultural norms play significant role in their intentions toward a behaviour (Ajzen, 2011b).

Perceived behavioural control refers to the individual's perception of the extent to which performance of the behaviour is easy or difficult (Ajzen, 1991). Perceived behavioural control determines how people think, feel and motivate themselves in terms of their capabilities to execute a particular behaviour (Ajzen, 2011b). Different individuals may approach a behaviour differently depending on the way the mind perceives that particular behaviour. This perception is translated into the person's intentions towards that behaviour. Therefore, perceived behavioural control is determined by control beliefs

concerning the enactment of a particular action. The facilitators and barriers of that action may discourage an individual to intend to pursue it (Ajzen, 2011b). Figure 1 provides an illustration of the TPB as applied in this study.

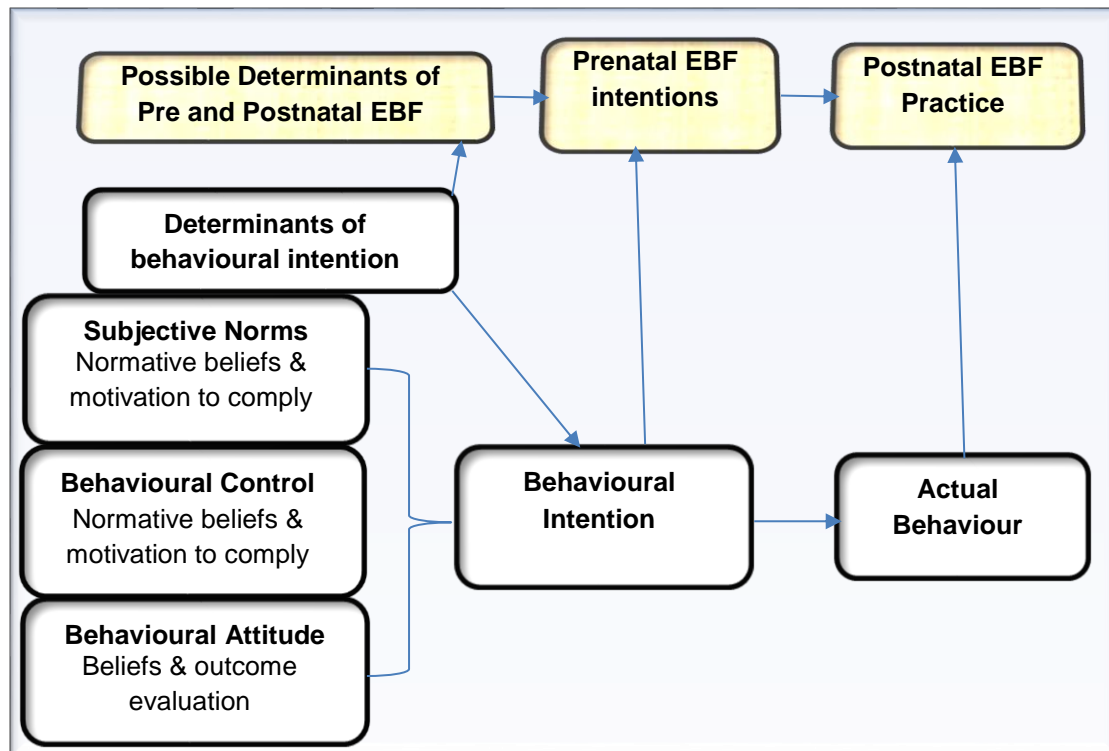


Figure 1: Application of the TPB in the study

3.4 PHASE 1 OF THE STUDY

Phase 1 focused on the first objective of the study. It assisted the researcher to gain an understating of the behavioural determinants of the EBF as perceived by the teenagers within the social context of Ghana.

3.4.1 Design

The researcher used the qualitative exploratory descriptive design. Qualitative exploratory descriptive design allows the researcher to explore and describe the phenomenon of interest from the perspective of the participants (Polit & Beck, 2012). It requires the researcher to focus on participants' perspectives, their meanings, their multiple subjective views within the participants' natural environment or their social, political, historical context (Creswell, 2013:46).

3.4.2 Setting

The study was conducted in the Greater Accra Region of Ghana. Greater Accra is the second most populated region after the Ashanti Region, with a population of 4,010,054, accounting for 15.4 per cent of Ghana's total population. It is the most diverse cultural region of the country with residents from all parts of Ghana (Ghana Government Official Portal, 2016).

The region consists of sixteen administrative districts. Participants were recruited from one of the sixteen districts (The Accra Metropolis District). In addition to the cultural diversity, this district was selected on the basis of the number of the population and the number of public facilities. The latest reports showed that the district was the most populated district in the region with a total population of 1,848,614 (Ghana Government Official Portal, 2016). This population is served by six public hospitals and several polyclinics (Greater Accra Regional Health Directorate, 2016).

3.4.3 Study population

The study population consisted of pregnant teenagers attending antenatal care and delivery services at the public hospitals and polyclinics within the Accra Metropolis of Ghana. The latest report (Ghana Health Service, 2016) showed that a total of 11,471 pregnant females attended antenatal services at the public health facilities in 2016. Out of which 3,476 were pregnant teenagers aged between 13 and 19 years. In that same year, 11,274 live births were recorded for all antenatal registrants in the metropolis while teenage deliveries recorded a total of 3,311 live births.

A study population is a complete set of elements (persons or objects) that possess some common characteristic defined by the sampling criteria established by the researcher. It is from this population that the researchers draw the study sample (Polit & Beck, 2012:59).

3.4.4 Sample and sampling

Non-probability purposive sampling was used to select participants for the qualitative phase of the study. Purposive sampling is based on the researcher's knowledge about the participants that can best represent the population. The researcher makes use of a set of inclusive and exclusion criteria to constitute a group of participants with limited or maximum variation (Polit & Beck, 2012:275, 519). In the study the researcher tried to select a more culturally diverse group of participants who met the inclusion criteria.

The researcher selected pregnant teenagers registered in the ANC registers of the public health facilities, who met the following criteria:

- (i) be on the last trimester of pregnancy
- (ii) have attended at least three antenatal care visits prior to data collection period

The researcher excluded all pregnant teenagers of foreigner nationalities who met the above inclusion criteria.

3.4.5 Data collection tool

An interview guide was used to assist in data collection. The guide had two main sections (A & B). Section A was made up of questions about the socio-demographic characteristics of the participants in the study. It included age, religious affiliation, level of education, occupation, and marital status. Section B was introduced by the definition of EBF. It consisted of two main open questions with related probing questions. The first open question was related to the participants' thoughts about BF. The second open question looked at the participants' thoughts about EBF for at least six months after delivery. The probing questions were based the constructs of the TPB (see Appendix A1).

The guide was translated into the local language (Twi) and both versions (English and Twi) were reviewed by a local support expert, and a lecturer at the University of Ghana. They were all satisfied with the content and the phrasing of the questions. To avoid any form of ambiguities. To ensure the researcher familiarity with the tool, the researcher conducted a FGD with a group of five pregnant teenagers with similar characteristics as

that of those in the study. The participants were satisfied with the questions asked and the way the discussions were facilitated.

3.4.6 Data collection methods and procedures

Data were collected through focus group discussions (FGD). FGDs are planned discussions that take advantage of group dynamics for accessing rich information in an economical manner. Discussions are guided by a written set of questions or topics similar to semi-structured interviews (Polit & Beck, 2012).

FGDs were conducted from October to December 2016, and facilitated by the researcher. Each group consisted of five participants, which was more manageable for the researcher. The researcher ensured that participants of similar socio-economic background were grouped together in order to avoid social prejudice and to stimulate discussion. All FGDs were scheduled on dates and places selected by the participants during the pre-meeting organised by the researcher.

During the above meeting, the researcher reviewed the information sheet with the participants and explained the ground rules for the FGDs. At the end of these meetings, all the participants expressed the need for the discussions to be held at the health facilities and facilitated in the local language. The researcher obtained permission to use the conference rooms of the health facilities for the FGDs. The discussions were conducted in one of the most spoken local language (Twi) as requested by the participants. FGDs were all recorded and each lasted about 1h30 minutes.

FGDs started with ice breaking and the recapitulation of the group rules. Techniques that ensured within group interactions were used to elicit succinct responses from participants. The researcher remained non-judgmental and did not impose any personal moral values on the participants. Consequently, the researcher ensured that she remained indifferent in terms of avoiding gestures, verbal and any other non-verbal cues that could make participants uncomfortable. In addition to this, comprehensive field notes were taken to cater for nonverbal cues which could not be captured with audio recordings.

To elicit participants' perspectives thoroughly, open ended and probing questions were asked. The researcher ensured that, participants' perspectives were intact by avoiding

leading questions that could generate pre-meditated answers. This technique allowed the collection of detailed and thick data. At the end of each FGD, the researcher transcribed data verbatim from the local language to English text within the first 24 hours following the FGD. The researcher did not require an interpreter because of her proficiency in this language. In addition, being a member of ethnic group of this language, the researcher could easily understand the cultural idioms associated with this language.

Data collection was stopped after six focus group discussions. A total of thirty pregnant teenagers participated in these FGDs.

3.4.7 Scientific rigour

Scientific rigour or trustworthiness in a qualitative study refers to the processes and measures that are put in place to ensure that data collection process and the quality of data are trustworthy (Polit & Beck, 2012:754). It is ensured through credibility, dependability, transferability and confirmability (Taylor, 2013). The description below explains how these four techniques were practically ensured to warrant the highest quality of rigour in this study.

Credibility

Credibility is concerned with the confidence in the truth of data generated and their interpretation. It involves the use of steps that will enhance the integrity and quality of the study (Polit & Beck, 2012:585). Credibility was ensured through prolonged interaction with participants, member checking, triangulation of data and purposefully recruiting participants who met the inclusion criteria of the study.

The participants had prolonged interactions with the researcher. This is because the researcher stayed on the field for a period of approximately three months during data collection. In member checking, the researcher validated participants' responses through repetition of sentences to affirm what participants were trying to communicate. Triangulation of data was done by combining data from the audiotapes and the field notes. This ensured that, non-verbal cues that could not be captured by the audiotape were recorded in the field diary. This was done effectively through concurrent data collection and transcription.

Credibility is also ensured when the data collected reflects the real situation on the ground. To ensure this, the right group of participants were recruited into the study. Thus, the inclusion criteria was strictly adhered to in the selection of pregnant teenagers in their third trimester to explore their intentions and behavioural control beliefs towards EBF. Every step of the data collection and transcription was communicated to the supervisors of this study. All transcripts, audio and field notes were scrutinised by experts in the field and thus ensured that the data synchronised with each other and communicated reality.

Credibility was also ensured through multiple review of data and the fact that there was neutrality of the researcher to avoid leading and predetermined answers and narratives.

Transferability

Transferability refers to the extent to which findings can be transferred to or have applicability in other settings or groups (Polit & Beck, 2012:585).

Transferability was ensured by thoroughly describing the setting and methodology of the study. The setting of this study was thickly described to an extent that, other authors would find it easy to replicate similar studies among different populations across the globe.

It was also ensured through description of the methodology that was used to conduct this study. The whole plan for the study from the onset till the end has been laid bare. Through such narration of the methodology of the study with rationales, repetition of the study using similar or same blueprint in other settings and populations would simply be achievable.

Dependability

Dependability refers to stability or instability of data patterns over time and occasions. In quantitative sense, it is referred to as the internal consistency of a study (Polit & Beck, 2012:585).

One of the ways to ensure consistency of data in qualitative study is to allow independent researchers to use the same instrument for data collection to collect and analyse data

which would be given by other respondents with similar characteristics like that of the current study respondents (Polit & Beck, 2012:585). This was done by giving the data that was collected from the pilot study to independent expert researcher to analyse the data. Consistencies in the themes and subthemes that were generated from the pilot study with that of the main study affirmed the fact that, dependability had been ensured in this study.

Dependability is also referred to as auditability in certain contexts. Thus, the researcher's ability to demonstrate audit trail of all activities and routes that have produced the end product of the study (Taylor, 2013). The researcher kept an audit trail of all the activities that culminated in the successful completion of this study to ensure dependability. Dependability was also ensured through external audit by the supervisors of this study. Since they are experts in this field, their inputs ensured dependability to a large extent. Another way through which dependability was ensured was by interviewing all the participants using the same interview guide.

Confirmability

Confirmability refers to the level of congruence between independent people or groups or bodies about the accuracy and meaning of a study. Confirmability is ensured when different researchers are able to come to a consensus on the decision to conduct the study (Polit & Beck, 2013).

Confirmability was achieved in this study by submitting the full research proposal for scientific and ethical reviews to the Department of Health Studies Health Research Ethics Committee of the University of South Africa and the Research and Ethics Review Board of the Ghana Health Service. The two bodies approved of the proposal and gave ethical clearance for the study to be conducted. Approval by these two credible institutions which is made up of expert researchers ensured an aspect of confirmability. Finally, confirmability was ensured once the techniques that ensured credibility, dependability and transferability had been guaranteed.

3.4.8 Data analysis

The researcher used the Group-level thematic and content analyses to process the generated data. In FGDs, a group-level analysis involves a scrutiny of themes, interactions, and sequences within and between groups (Polit & Beck, 2012:574). Thematic analysis involved deductive reasoning using pre-conceived themes (Padgett, 2011:173). With the content analysis, the researcher uses inductive reasoning to arrive to themes(Padgett, 2011:173).

According to Padgett (2011), qualitative content data analysis involves the following steps:

- i. assigning codes to bits of sentences and information. Codes can be specific words or phrases
- ii. grouping codes together based on similarity of ideas to form sub-themes,
- iii. putting sub-themes together to get final major themes

The thematic analysis was guided by the theory of planned behaviour and the rest of the data which did not belong to any of the pre-conceived themes were content analysed using inductive reasoning. The researcher managed data with NVivo software, version 11 before being copied into word.

Data from FGDs were analysed separately and grouped to provide an understanding of the participants' behaviour toward EBF. The researcher submitted all the English transcripts with the local language audio-records to the local support expert and the lecturer at the University of Ghana for validation. Both validated the verbatim transcribed English text as the true reflection of the audio-records.

After the validation, the researcher started the analysis by reviewing the transcripts to familiarise herself with the content and make meaning out of the content. This process was followed by coding of word or a phrase using both deductive and inductive reasoning. At the end of this exercise, the researcher grouped the codes that belonged to pre-existing themes under those themes. The codes that did not fit to the pre-existing themes were grouped together to form sub-themes and subthemes were also grouped together to form major themes.

Finally, the researcher proceeded with group-level analysis which was done by comparing the emerged subthemes and themes from the six groups in order to develop the major themes. This process was managed by NVivo software, version 11.

3.5 PHASE 2 OF THE STUDY

Phase 2 focused on the second and third objective of the study. It assisted the researcher to explore and describe the behavioural determinants of the EBF among teenage-mothers in pre and postnatal periods and to identify the overall behavioural determinants of the EBF practice among teenage-mothers within the social context of Ghana.

3.5.1 Designs

The researcher used quantitative longitudinal, descriptive correlational designs to address the second objective and meta-inferences to address the third objective of the study.

The researcher used quantitative longitudinal, descriptive correlational designs allowed the researcher to explore the relationship between the behavioural variables and the EBF during the prenatal and postnatal periods. The longitudinal design allows researchers to measure the variables of interest at more than one point in time (Bryman, 2012:712). This design allowed the researcher to collect data at two points in time (during the prenatal and postnatal periods). Descriptive correlational designs assist the researcher to determine the current status of the variables of interest and to explore the relationships that exist between the variables in order to assess the strength and direction of the relationship between the variables concerned (Bryman, 2012: 710).

Meta-inferences allowed the researcher to identify the key concepts of the conceptual model by integrating and interpreting the results of qualitative and quantitative phases. Meta-inferences are high order levels of analyses that occurs with the integration of qualitative and quantitative findings of qualitative and quantitative strands at the interpretation level (Polit and Beck, 2012:625, 733). It allows the researcher to drawn conclusion by integrating inferences obtained from the qualitative and quantitative results (Polit & Beck, 2012: 603, 733).

3.4.2 Setting and study population

The setting and study population were the same with the first phase of the study. Data was obtained from the same participants during the antenatal and postpartum period

3.5.3 Sample and sampling

Non-probability consecutive sampling was used to select the participants for the quantitative longitudinal stage of the study. The consecutive sampling is best suited for a prospective or retrospective study and far better than convenience sampling because it caters for change that may occur over time. It involves the selection of the participants from an accessible population based on well-defined eligibility criteria over a specific time interval or for a specified sample size (Polit & Beck, 2012:278).

The sampling was done in two time intervals. The potential participants were identified from the ANC attendance register based on the eligibility criteria set for the prenatal (initial) and postnatal (follow-up). The eligible participants were identified from the ANC register and approached by the researcher at the day of their next ANC visit.

At the initial stage, the researcher used the following inclusion criteria to select pregnant teenagers registered in the ANC registers of the public health facilities who:

- i. were on their first pregnancy (primiparous)
- ii. were on the last trimester of pregnancy
- iii. attended at least three antenatal care visits prior to data collection period
- iv. were willing to be followed up at six months post-delivery.

The researcher excluded all pregnant teenagers of foreigner nationalities who met the above inclusion criteria. In addition, all pregnant teenagers who met the above criteria but had participated in the FGDs were excluded from participation in this stage.

The sample size was determined using 10% of the study population. The ten percent was calculated using the total population of 3,476 pregnant teenagers who attended the ANC at public health facilities in 2016 (Ghana Health Service, 2016). Ten percent of that number gave a sample size of 348. However, in view of the envisaged statistical analysis

and to cater for attrition (Polit & Beck, 2012: 286), the researcher recruited 388 pregnant teenagers.

The same group was followed six months after delivery using the following exclusion criteria:

- (i) none-hospital delivery
- (ii) delivery of still born baby
- (iii) develop complications during delivery or in the first six months thereafter
- (iv) untraceable or unwillingness to continue with the study

3.5.4 Data collection tools

The researcher used a structured questionnaire with a mix of close-ended questions and Likert Scale. Closed-ended questions offer response options from which respondents must choose the one that most closely matches the appropriate answer (Polit & Beck, 2012: 98). Likert Scale allows the researcher to formulate a set of statements that the participants rate for their degree of agreement or disagreement. It is more appropriate in measuring attitudes and beliefs (Polit & Beck, 2012:732). The questionnaire was divided in three sections and introduced by general instructions for the fieldworkers.

Section 1 dealt with socio-demographic information. It included age, religious affiliation, level of education, occupation, marital status, and household size. This section was completed during the first stage of data collection.

Section 2 consisted of three main questions looking at the prenatal BF behavioural. The first question was a statement related to EBF plan with three point scale (agree, disagree, and undecided). The second and third questions consisted of statements related to attitude towards BF (10 statements) and subjective norms regarding EBF (7 statements) with 5 points Likert Scale ranging from strongly agree to strongly disagree. Questions were introduced with an explanation regarding the construct explored (see Appendix A2).

The seventeen statements derived from the results of the first phase of the study. These statements were carefully designed to represent all the concepts that emerged as

perceived enablers of EBF. The researcher decided to consider only the perceived enablers of EBF. The perceived inhibitors of EBF were not included in the questionnaire.

Section 3 consisted of screening information and one main question regarding the actual BF. The screening questions allowed the fieldworkers to decide if they could continue with the follow-up interviews. The actual EBF was described in term of the initiation time and the duration of BF. A sub-question related to the reasons for discontinuation of EBF was added to the question (see Appendix A2).

3.5.5 Data collection methods and procedures

Data were collected by means of structured questionnaires. Structured questionnaires allow the researcher to reach a larger group of participants in a limited period of time, standardisation of answers, easy analysis and reduced interviewer biases, and increase the accuracy of data recorded (Bryman, 2012:231). The use of structured questionnaires in longitudinal study has the risk of low response rate as some of the participants may not be traceable after the first point of data collection (Bradbury, 2015). This potential risk was addressed by the way the questionnaires were administered in this study.

The questionnaires were administered through face-to-face and telephone interviews. Face-to-face interviews took place during the initial stage at the last ANC visit (between December 2016 and January 2017), while the telephone interviews were conducted at six months post-delivery (between June and July 2017). Interviews in quantitative studies involve the administration of a well-structured questionnaire by an interviewer and have the advantage of providing the respondents with exactly the same context of questioning (Bryman, 2012:209).

The face-to-face and telephone interviews were conducted by fieldworkers (one for each hospital). They were trained by the researcher on the data collection process, the use of the instrument and the ethical principles pertaining to the study. They were monitored daily by the researcher with the view of addressing any problem that may was accounted during the data collection process. They encountered no problems during the entire periods of data collection that warranted the intervention of the researcher.

In order to facilitate the traceability of the participant during the second point of data collection, each questionnaire included two codes (one for the fieldworker and one for the participant). The fieldworker' code consisted of the first letter of his/her full name (for example the code for the field worker by the name of Angela Kwartemaa Acheampong will be AKA). The participant code started with the code of the fieldworker followed by the numerical number assigned in order of the interview (for example, the code of the first participant to be interviewed by Angela Kwartemaa Acheampong will be AKA01). Each fieldworker compiled a list containing the code of the participants interviewed at the first point with their contact details. The list and the completed questionnaires were checked every day after data collection. It assisted the fieldworker to easily trace the participants at the second point of data collection and to avoid entering the information at the follow-up point of data collection to a wrong questionnaire.

In addition, the fieldworkers were instructed to use the demographic information if they are not certain of interviewing the same person. The researcher ensured that the fieldworkers made the follow-up of the same participants that they interviewed at the prenatal periods.

3.5.6 Validity and reliability

Validity refers to the ability of an instrument to measure what it purports to measure and reliability refers to the consistency in responses produced by a data collection tool (Punch & Oancea, 2014:285-307). A valid and reliable instrument ensures that, the research questions are answered at the end of the study and that it reproduces the same results when used in similar conditions (Polit & Beck, 2012).

The researcher took a number of steps to ensure validity and reliability. Validity of the questionnaire was ensured by using existing theory and empirical evidence in its design and submitting it to experts review. Copies of the tool were given to the principal supervisor, local supporter expert, and a professor at York University, Canada, and a lecturer at the University of Ghana for their inputs.

Their feedback was incorporated into the design of the questionnaire. Since the reviewers are experts in the field of research methodology, their inputs improved the final outcome of the tool.

After the experts' review, the instrument was piloted with ten (10) pregnant teenagers with similar characteristics as the actual participants of the study. They were interviewed to find out if the questions were clear and if they meant the same to each one of them. Some gave useful feedbacks that were used to re-word some of the questions and improve clarity. After the above process, the improved questionnaire was tested and retested with the same group of the ten participants two weeks apart. The results showed a relatively high reliability with a reliability co-efficient of 0.75.

3.5.7 Data management and analysis

The analysis started at the end of the second point of data collection (six months post-delivery). The researcher started by scrutinising the completed questionnaires for completeness, accuracy, and consistency before proceeding with coding. This process allowed the researcher to discard the questionnaires of the participants who did not participate in both stages of data collection. The duly completed questionnaires were cleaned, coded, and captured for analysis.

Data were quantitatively analysed using summary descriptive and inferential statistics. The researcher used the Statistical Packages for Social Sciences (SPSS) software version 20. The researcher sought the advice of a statistician on the use of the SPSS software.

Descriptive statistics were used to describe the respondents' socio-demographic characteristics, their pre-natal intentions to exclusively breastfeed and the actual BF practices. Descriptive statistics allow the researcher to describe a phenomenon by summarizing information in a way that highlights the important numerical features of the data by providing the general distribution of data, measures of central tendency, measures of dispersion, measures of position and measures of association (Antonius 2013).

Inferential statistics were used to identify the predictors of actual EBF among the teenage-mothers. Inferential statistics are used for two purposes: tests for difference of means and test for statistical significances (Polit & Beck, 2012:724).

Binary logistic regressions were used to establish the predictive relationships between the dependents (EBF plan and actual EBF up to six months post-delivery) and independent variables (behavioural attitudes and subjective norms). For the purpose of analysis, the measurement statements of the independent variables were turned into positive statements and the 5 points Likert Scale was coded as yes, no, and neither/nor. These statements were coded and analysed as multiple responses variables.

3.6 PHASE THREE OF THE STUDY

Phase 3 of the study focused on the fourth objective of the study. It assisted the researcher to design and describe a behavioural conceptual model for promoting EBF among teenage-mothers within the social context of Ghana. This section described the processes followed to design the behavioural conceptual model.

3.6.1 Design framework for the behavioural conceptual model

The researcher used the six steps framework proposed by Earp and Ennett in 1991 and reviewed in 2016 by Squires, Chilcott, Akehurst, Burr and Kelly (2016) as the design framework for the behavioural conceptual model. It includes the following six steps:

1. Clear description of the goal/goals for developing the model.
2. Identification of the scope of the problem under investigation, which allows to identify clear boundaries of the main focus.
3. Identification of key components of the model that will help to construct the model.
4. Identification of the relationships between components of the model. It may either come from the literature or the knowledge and experience of the modeller.
5. Documentation of sources of evidence that have been used to formulate the model, key questions, assumptions or limitations.
6. Review and refinement of the model.

EBF is a public health issue, therefore, the researcher believed that a conceptual model for promoting EBF should follow the process for developing a conceptual models aimed at addressing public health issues.

The above steps were implemented at various stages of the research process. Figure 2 illustrates how the six steps were applied in this study.

3.6.2 Identification of the key concepts of the conceptual model

The researcher used meta-inferences to identify the key concepts of the conceptual model taking into account the three assumptions described in the previous section. Meta-inferences in Mixed Methods assists the researcher to draw conclusions by integrating inferences obtained from the qualitative and quantitative results (Polit and Beck, 2012: 603, 733).

3.6.3 Definition of the relationships between concepts

Theoretical triangulation was used to assist in defining the relationships between the identified key concepts and refining the conceptual model. In mixed methods research, theoretical triangulation is often used to assist the researcher in defining the concepts and in confirming or validating the overall purpose of the study, which was to propose a behavioural model (Polit and Beck, 2012:631; Creswell, 2014:220).

3.6.4 Review and refinement of the conceptual model

In addition to the Theoretical triangulations, the researcher used the TPB to structure and refine the proposed behavioural conceptual model. Authors (Squires et al., 2016) agreed that a researcher can make use of an existing theory as a guide to structure a conceptual model or to refine a conceptual model.

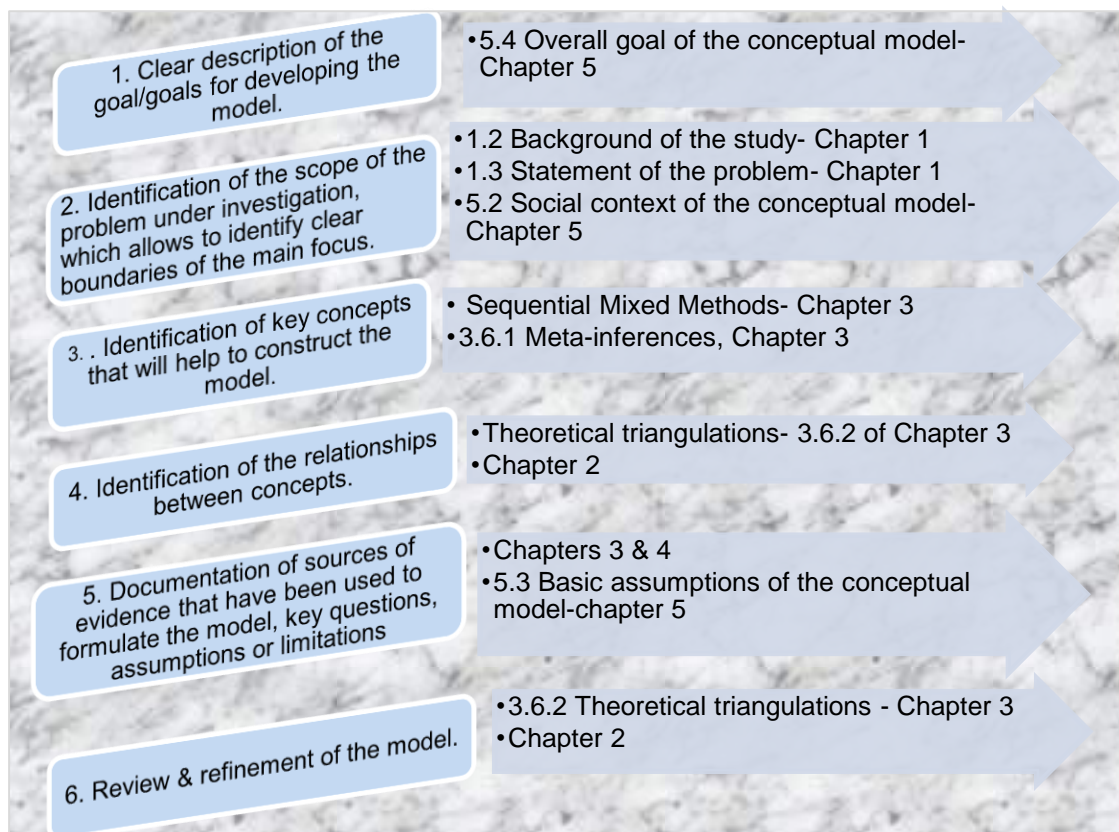


Figure 2: Six steps framework for developing public health conceptual models as applied in this study

3.7 ETHICAL CONSIDERATIONS

The study adhered to the universal ethical principles that guide social and health research (autonomy, rights to privacy and confidentiality, justice, and protection from risk and harm), the research and ethics policy of the University of South Africa, and the research and ethics policy of Ghana Health Service Ethics Review Committee. The proposal of this study was approved for its scientific merit by the Higher Degree Committee of the Department of Health Studies. Ethical approval was obtained from the Health Studies Health Research Ethics Committee (see Appendix C1) and Ghana Health Service Ethical Review Board (see Appendix C2). A letter requesting permission to conduct the study was addressed to the managers of the health facilities (see Appendix B4). The process of data collection started after the ethical clearance and the institutional permission.

The researcher adhered to the steps outlined in the approved proposal. The researcher maintained permanent contact with the supervisor and the final report was based on the collected data. The researcher sought informed consent from each participant at each

phase of the study, and ensured that participation in the study was based on their informed decisions. Participants were given consent forms (see Appendix B1) and information sheets (see Appendix B3) 48 hours before the day of data collection. This gave them ample time to read, understand and decide whether they would like to be part of the study. The participants' who were below the adult age limit of eighteen (18) years in Ghana had their parents, next of kin or guardians contacted for their consents before they were recruited into the study. The next of kin or guardians were given assent forms (see Appendix B2) to sign before their wards were recruited into the study. The researcher availed herself for ambiguous questions to be asked by the participants and potential participants throughout the process of the study.

Participants of FGDs signed the confidential agreement with the facilitators (see Appendix A3). The researcher asked for permission from participants before interviews were audiotaped. Only the researcher, trained research fieldworkers and the participants were present during the interviews. The researcher verbally liaised with the trained community and adolescent health counsellors who were already in the hospital so that if participants had become emotional and psychologically disturbed, they would have been contacted for professional counselling sessions.

Fieldworkers signed a confidentiality binding agreement with the researcher (see Appendix A3). They were trained on the terms and conditions surrounding the use of human subjects in research.

Identifiable data (consent forms and assent forms), tapes and transcripts were only made available to the researcher and her supervisors as well as any authorised persons deemed necessary. Consent forms and the main data were kept in such a way that the names of participants cannot be traced to specific information/data. Participants were also coded to protect personal identity in ensuring confidentiality and anonymity. All electronic data were kept secured on a computer with a secured password. The password was known to only the researcher. Hard copies of the interview guide, raw data, field notes and signed consent forms were kept in a secured cabinet under lock.

3.8 SCIENTIFIC INTEGRITY OF THE STUDY

The researcher followed the accepted norms and standards involved in conducting empirical mixed method research. The researcher was also honest in the collection, analysis and reporting of data findings. The report is strictly based on the collected data without fabrications or personal prejudices. The researcher conducted the study to the highest level of ethical and professional standard so that the findings will benefit all study participants, institutions, the general population as well as the research community. The researcher also acknowledged all previous works and references this study cited.

3.9 SUMMARY

This chapter provided detailed descriptions of the process followed to generate evidence required to formulate the conceptual model for promoting EBF practices among teenage-mothers in Ghana. It included the scientific foundation, the research methodology in terms of the research approach, design, setting, population, sampling, data collection, and analysis, tools for data collection, scientific rigour and the ethical considerations. The entire research process is illustrated in Figure 3.

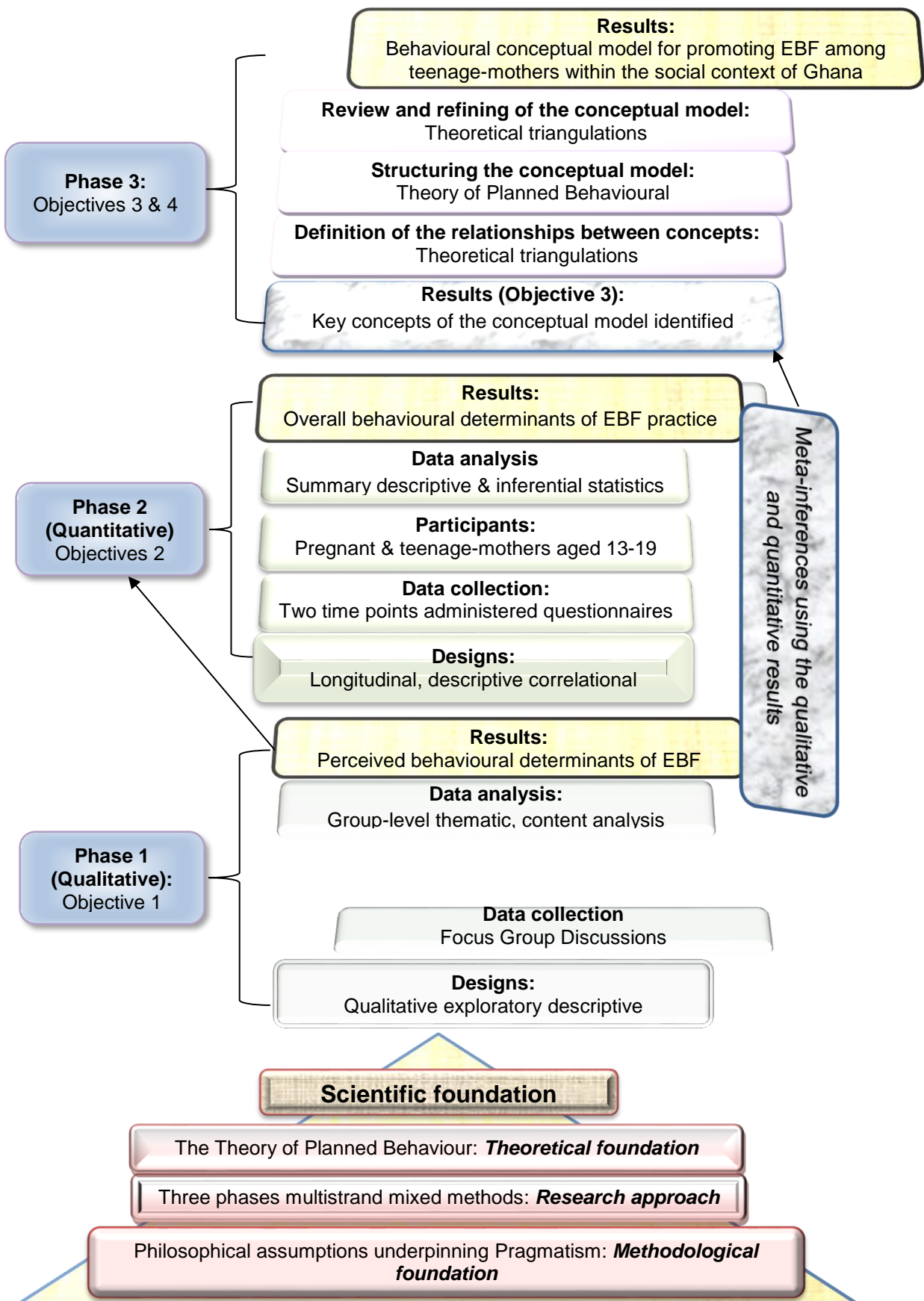


Figure 3: Summary of the research process

CHAPTER 4

PRESENTATION AND DISCUSSION OF THE FINDINGS

4.1 INTRODUCTION

The purpose of this study as stated in Chapter 1 was to identify and establish the behavioural determinants of EBF among teenage-mothers with the view of proposing a behavioural conceptual model for promoting EBF practices among teenage-mothers' within the social context of Ghana. This purpose was achieved through three phases. This chapter presents and discusses the results of the first two phases of the study.

As summarised in Figure 3, the researcher used a qualitative exploratory descriptive design in phase 1 to explore and describe the behavioural determinants of the EBF as perceived by teenagers. A total of 6 FGDs were conducted with 5 participants each, giving a total of 30 participants. The results are presented under point 4.2.

In phase 2, the researcher used a quantitative longitudinal, descriptive, correlational designs to establish the actual behavioural determinants of the EBF practice among teenage-mothers. Data were collected in two stages (prenatal and postnatal periods) from the same group of the participants. A total of 388 (100%) participants completed the questionnaires at the first stage but this number moved to 307(79.1%) at the second stage. Thirty eight were untraceable, thirty three were excluded for having still birth, and ten refused to continue with the study. The results of the final analyses are presented under point 4.3.

Point 4.4 presents the results of the overall behavioural determinants of EBF among teenage-mothers within the social context of Ghana. Point 4.5 present the discussions the results of both qualitative and quantitative phases. A conclusion is provided under point 4.6.

4.2 RESULTS OF PHASE 1 OF THE STUDY

4.2.1 General descriptions

Of the 30 participants, none was married or living together with her partner but 8 maintained contact with the authors of their pregnancy and 12 did not have any contact with the authors of their pregnancy as they denied being responsible of the pregnancy. The ages of the participants ranged between 13 and 19 years. Twenty had formal education (ranging from primary school to senior high levels) and ten had no form of formal education. Twenty one participants were unemployed and nine were self-employed.

Two main themes derived from the Group-level thematic and content analyses of the focus group discussions. The concepts that emerged from the descriptions were related either to personal or social factors. The two identified themes were labelled as: *perceived enablers of EBF and perceived inhibitors of EBF*. Figure 4 provides a summary of the two themes with the related sub-themes and concepts.

4.2.2 Theme 1: Perceived enablers of EBF

Perceived enablers of EBF as a theme refers to things or circumstances that motivate the participants' to consider exclusive breastfeed. They were grouped into two main sub-themes according to their characteristics as *personal related enablers and social related enablers*.

4.2.2.1 Sub-theme 1: Personal related enablers of EBF

Personal enablers of EBF refer to the participants' recognition of *the positive health benefits with breast milk and the outcome values of EBF practice*.

According to the Theory of Planned Behaviour, a person's favourable consideration of the benefits and the outcome values associated with the behaviour produces positive intention, which may result to the performance of the behaviour of interest (Ajzen, 1991).

4.2.2.1.1 *Positive beliefs about the health benefits of breast milk*

The participants believed that breast milk has many benefits for their babies. It will among others enable their babies to grow with strength, love and be intelligent among others. The level of the participants' conviction about the benefits of breast milk was also related to the strength of their decisions to exclusively breastfeed their babies.

Participants who were fully convinced about the benefits of breast milk were also certain about their decisions to exclusively breastfeed their babies.

FG1C: "I agree with all of them because EBF makes the children strong and intelligent. It also helps them grow well. That's why I have decided to feed my baby with breast milk alone for six months as advised by nurses"

FG1C: "I will definitely feed my baby with breast milk alone for at least six months because it makes babies exhibit love towards their mothers."

Participants who were partially convinced about the benefits of breast milk adopted an attitude of 'try and see' as illustrated below:

FG5A: "I would try and practice EBF after delivery to see if all the benefits they claim the baby would get would be extended to my baby as well."

FG1A: "Anyway, if they claim that feeding a baby with only breast without any additional food nor water for six months has more benefits, I would do it and see how it goes."

4.2.2.1.2 *Positive beliefs about the outcome values of EBF*

Some participants believed that EBF as a practice is the right thing to do. This belief was reinforced by their evaluation of the outcome of EBF in the family.

FG6A: “When my sister delivered, she was practicing EBF and was therefore not giving any other food or water to her baby and her baby was fine. So for me, I will do the same because it is the right thing to do.”

FG5A: “I would definitely feed my baby with only breast milk without any additional water or food for six months because my mother did the same without any problem. She said that it was very beneficial for the baby.”

4.2.2.2 *Sub-theme 2: Social related enablers of EBF*

Social related enablers of EBF refer to factors in the immediate environment of the participants that were viewed as the basis of their decisions to exclusively breastfeed their babies. These factors were related to the *availability of support, the perceived effectiveness of bf education, and positive influence of significant others.*

It is argued that a person’s positive perception of the social environment surrounding the behaviour leads to positive intention resulting to the performance of the behaviour (Hartwick & Barki, 1994).

4.2.2.2.1 *Availability of support*

Participants’ perceived the availability of support through wet nursing as a motivator to EBF. Wet nursing refers to a situation whereby a mother breastfeeds another person’s child. It was viewed as a motivator of EBF in circumstances where mothers are unable to produce enough breast milk or abandoned their babies or in the case of maternal death.

FG5C: “Some mothers are not able to produce enough breast milk for their babies so if there is someone at home who has also given birth, then that mother can assist in breastfeeding the infant. That would help me to give only breastmilk to my baby for six months.”

FG4C: “Now that the nurses are advocating for EBF, they should also encouraged wet nursing to ensure that babies are exclusively breastfed even if a mother dies after delivery or abandoned her baby after delivery.”

4.2.2.2.2 *Effectiveness of breastfeeding education*

The effectiveness of the BF education as enabler of BF referred to the content and the delivery strategy. According to the participants, a BF education geared towards their specific needs as teenagers will positively influence their decisions to exclusively breastfeed their babies.

Some argued that the current education on BF pays little attention to the specific needs of the teenagers. They believed that addressing their specific needs such as the demonstration on how to breastfeed, the type of diet among others will enhance their motivation to exclusively breastfeed their babies.

FG2B: “As for me, I am young and have never given birth before but they (nurses and midwives) spend a lot of time telling us about the benefits of breastfeeding. They don’t consider the fact that we never breastfed before. They must demonstrate to us how to actually breastfeed our babies and take time to repeat it once we delivered. This will definitely motivate us to exclusively breastfeed our babies for six months without problems.”

FG3B: “As for us, it is just that we got pregnant but we don’t even know how to go about breastfeeding. So, they (nurses and midwives) need to demonstrate how we should go about breastfeeding and tell us what types of food to eat to ensure that we have enough breast milk. If this is done, we will exclusively breastfeed our babies without fail.”

For others, the provision of home-based breastfeeding education will create a supportive environment for EBF as nurses will address the resistance of the family members and significant others to EBF.

FG1A: “If the nurses would come home and speak to my family members about EBF like the way they have been speaking to us here during antenatal care, I think that would allow us to have support from family members at home to be able to

practice EBF for six months. If the nurses emphasise on the fact that we should not add any food or water to the breast milk, that would help. The nurse would know exactly what to say to them in order to convince them to support EBF.”

FG1C: “Left to me alone, I would have loved to adhere to what the nurses say about EBF for the first six months of the baby’s life but others at home may not agree to it. If the nurses could come home and educate them about EBF or if they could talk to them when they come around during my discharge after delivery, I think they could convince them about exclusive.”

In addition to gaining the support of family members, they also believed that home-based education will allow them to express their concerns in a less threatening environment as opposed to the clinics.

FG6C: If a nurse is able to come to my home I would be able to express myself freely and ask all the questions on my mind about EBF. At the hospital, you feel shy to ask many questions because of other people around you. In addition, the queues are too long that by the time you get to see them (nurses and midwives) you just want to finish and go home.”

4.2.2.2.3 *Positive influence of significant others*

Significant others are individuals that the participants singled out as having great influence on their decision to exclusively breastfeed their babies. The participants’ *partners’, closed family members, and the antenatal care staff* were perceived as very influential in the participants’ decision to exclusively breastfeed their babies.

The Theory of Planned Behaviour recognised the role of significant others in influencing a person’s performance of a behaviour. According to this theory, an individual’s weighs the possible views of significant others before embarking on a particular task. Positive views of significant others toward the particular behaviour creates an environment conducive to the performance of the behaviour (Ajzen, 2011c).

Influence of partners

The partners' support of EBF and their abilities to financially support the family of the pregnant teenagers were perceived as enablers of EBF.

FG1C: "I know that my partner would like me to feed my baby with the breast milk only for the first six months as per what nurses are saying. I will have to follow his decision."

FG3B: "As for my partner, what he can do to make it easy for me to breastfeed is to give enough financial support to my mother so that my mother can prepare proper meals for me to eat. This would help me to be able to produce enough breastmilk for my baby."

Influence of closed family members

Closed family members refer to the participants' mothers, sisters, and grand-mothers. This influence emerged from positive opinion of and experience with EBF.

The participants' mothers and grand-mothers have strong and powerful influence on the participants' decision to exclusively breastfeed their babies. This influence was summed up with the extract below:

FG1C: "My own decision about EBF does not matter. I have to follow what my family members will tell me to do. I have no choice but to follow."

The opinions of the participants' mothers were the most influential than those of the grand-mothers as illustrated below:

FG3B: "My mother's words have the most influence on me. My mother knows everything about delivery and babies. She is an adult and has given birth to a lot of children so I would take her advice. So if my mother says that I should not practice EBF, I am not going to practice it."

It emerged that participants would consider EBF if they had witnessed their own mothers and sisters breastfed their babies. They considered them as their role models and vowed to follow their examples.

FG2B: “As for my mother, it was breast milk alone which she gave to her child when she gave birth. So I would do the same. My mother has had three children and when she says something about EBF and that is what I am going to listen to.”

Influence of the antenatal care staff

The opinions of the antenatal care staff (nurses and midwives) as health experts were viewed as very influential in the decision to EBF. The participants believed that the expert advices of nurses were worthy of following. They also believed that nurses and midwives can use their expertise to convince their closed family members about the importance of EBF.

FG5A: “If the nurses are saying that I should feed my baby with only breast milk without adding water or food for six months, they must be right because of their knowledge and expertise as health professionals. I have never had a child before and don’t have any health training...So, I will do it because I trust them.”

FG3E: “Since it is the nurses and midwives who are advising us to exclusively breastfeed our babies for six months, it means that my baby will benefit from it. They know what they are talking about... So I will exclusively breastfeed my baby because of that.”

4.2.3 Theme 2: Perceived inhibitors of EBF

Perceived inhibitors of EBF as a theme refer to things or circumstances that are viewed by the participants as motivation for not exclusively breastfeed their babies. They were grouped into two main sub-themes according to their characteristics as *personal related inhibitors and social related enablers*.

According to the Theory of Planned Behaviour, a person decision not to perform a behaviour may be motivated by their negative beliefs associated with that specific behaviour, their perceived lack of support for the behaviour in the surrounding environment, and how the behaviour is viewed in the community (Ajzen, 2011).

4.2.3.1 Sub-theme 3: Personal related inhibitors of EBF

Personal related inhibitors of EBF derived from the participants' *negative emotional feelings, irrational thinking, perceived health risks for the baby, and perceived self-inefficacy*.

It is argued that a person's negative psycho-emotional responses toward a behaviour may inhibit his/her desire to perform that behaviour (Ajzen, 1985).

4.2.3.1.1 Negative emotional feelings toward EBF

Participants' responded to the idea of exclusively breastfeeding their babies with *disbelief, anxiety, guilt, and defiance*. All these psycho-emotional responses were mainly based on the belief that breast milk does not contain water and enough nutrients for the survival of the babies.

Disbelief derived from the view that a baby is like any other human being. If an adult cannot survive without drinking water, how would you expect a baby to survive without water for six months?

FG4B: "What is strange to me about EBF is that, how can a human being who is alive be prevented from taking water? Me for instance I cannot stay from morning till evening without drinking water."

FG3C: "... I cannot look at my child in the face and say that he should not drink water. Because even as an adult, when you are thirsty, imagine how you feel. How much more a small infant who does not know how to talk or do anything?"

Others could not imagine depriving their babies of water for six months after enduring so much during pregnancies.

FG4B: "We are human beings too and the way I have suffered with this pregnancy, it would be very difficult to watch my child make "ta, ta, ta" sound in response to thirst and for her to be restless, I would have to give the water to the baby. Moreover, nine months journey of pregnancy is not easy and even as an adult, I know how it feels to be thirsty. Even as I speak with you now, my pregnancy is thirty eight weeks and it is

not easy at all. I know how it feels like to be thirsty so I cannot watch my little baby to be lying there just like that without drinking water.”

Anxiety was linked to what would happen to their babies if they decide to exclusively breastfeed them for six months. They did not believe that breast milk contains all the require nutrients to maintain a baby for six months.

FG2E: “As for that EBF, it is no, no, no, I cannot give my child only breast milk for six months. I don’t know what would happen to my child when I choose to practice EBF”.

FG4A: “It worries me when the nurses ask me to practice EBF. Just the idea of not giving my child water or any other food than breast milk for six months pains my heart every time I hear of it.”

Guilty feeling was mainly related to the participants’ beliefs about their responsibilities as mothers. They argued that as mothers, they have the responsibility to take care of their children. One of this caring responsibilities is to ensure that the baby is comfortable and provided with the correct food. EBF was viewed as a failure to fulfil these responsibilities.

This feeling was best described in the context of a baby who is crying a lot with no apparent reasons. For this group of participants, a bay who cries continuously while not sick, means that she/he needs additional water and food.

FG1D: “If a baby is crying and that baby is not sick then surely, that baby is hungry or thirsty. As a mother, I would feel guilty if I do not give any food or water to the baby knowing that the baby is thirsty or hungry.”

Defiance was expressed by the categorical refusal to exclusively breastfeed. For this group of participants, nothing would make them change their decision not to exclusively breastfeed their children.

FG5B: “As for me, even if my head is hit on the floor or even if I am sent to the shrine, I would give my baby water to drink right from birth. Just that I would have to keep the water clean.”

FG3C: “Look, as for me I would give water in addition to breastmilk right from the beginning. Some of the elderly people in our society say that, when it comes to the female breasts, one contains food and the other contains water but for me, because I have never delivered before, I cannot tell whether truly one of the breast contains water and the other contains food. As for me, I would give water to my baby in addition to breastmilk.”

FG4C: “... when the nurses talk to me about EBF, I would not say a word because the nurse is not in my head and would also not follow me home. If I deliver my baby and notices that the reaction suggest thirst, then I would give water to him/her even if the baby is one day old.”

4.2.3.1.2 *Irrational thinking towards EBF*

This irrational thinking was related to both the benefits and the outcome values of EBF.

Participants were aware of the benefits of EBF but remained skeptical about the expected outcomes. They questioned the benefits of EBF as illustrated with the extracts below:

FG6A: “Which child would say that he or she would not love you? Every child would love the mother whether the child is breastfed exclusively or not. Even if the child is not given any food by the mother, that child would love the mother. As for that one, the nurses say it just for saying sake.”

Some described BF education as ‘nonsense’. They listened to those ‘nonsenses’ only when they are at the hospital.

FG4E: “As for me, when I deliver my baby, when I come here to the hospital, I would tell the nurses and midwives that I would practice EBF but my baby would not even be up to two weeks old and I would start giving her water (LAUGHING).”

FG4B: “I have been telling myself that -you nurses can continue speaking about EBF because it is your work. They are looking after my health, so I cannot disagree with them overtly or tell them to stop the nonsenses they are saying about feeding the baby breast milk alone for six months. When I get home with my baby, I know exactly the kind of wholesome water and food I will give to my baby from day one.”

Others hilariously said that they always felt like physically slapping nurses when they talk about EBF.

FG4E: “What the nurses say about EBF is like the wind and it would pass. If they say it, they would finish saying it and they would leave. The nurses are not in my head and I would not be going home with them after delivery so as for the water, I would give it to my baby.”

FG4A: “When the nurses are talking about EBF, I sometimes wish I could slap their mouths for saying that. If I had the chance to slap her lips, I would have really done it. The bottom line is that, I would not agree to practice EBF (LAUGHING).”

Intellectualisation was another irrational thinking used by the participants to justify the refusal to exclusively breastfeed. Participants argued that EBF should only be practiced by mothers with poor hygiene and those who lack of knowledge on how to prepare and maintain the baby’ feeding bottle.

FG3C: “The reason why they tell us to exclusively breastfeed our babies is because of mothers who do not know how to keep the feeding bottles of the babies neat. But if a mother knows how to prepare a baby’ feeding bottle and to keep it clean, she should not consider EBF.”

FG4D: “The most important thing in this issue is to give the child wholesome water and to keep the baby’s feeding bottle clean and free from dirt. I think that, once that is done, then the mother can give water to the baby right from birth.”

Few would not understand why they are expected to feed their babies only with breast milk for the first six months while they cannot even afford nutritious foods that can stimulate the production of breast milk.

FG3B: “The whole thing can be attributed to poverty. When there is no money the mother would find difficulties finding foods to eat that can boost breast milk. As I said earlier, some of the men can run away and abandon the women once they find out that the women in their lives are pregnant like the way mine has denied me. If the woman does not get financial support for food, how can she eat well for her body to be able to produce breastmilk for the baby to be able to suck? In that case, the mother would have no alternative but to find additional food for the baby.”

FG3C: “As my sister said, the whole thing is about affordability. After delivery, if the man runs away and abandons the mother and baby, it would be difficult for the mother to afford the right food which would help in the production of breastmilk for the baby. Hmmm, it is a problem oh....”

FG4D: “Food is too expensive here. To prepare small soup, I spend a lot. Meanwhile, I am a student and the father of the child whom I am carrying has abandoned me. So how can I afford the food that can enhance the production of breastmilk to allow me to breastfeed?”

4.2.3.1.3 *Perceived health risks for the baby*

Participants believed that EBF *is life threatening, increases the risk for diseases, and slow the development and growth* of the baby.

Life threatening derived from the belief that breast milk does not contain water and enough nutrient, therefore depriving the baby with additional water and food in the first six months increases the chance of that baby to die.

FG1D: “I tell myself that breastmilk is good but I also sometimes think to myself that if a baby is not given any water for six months, then that baby can die.”

FG2C: “A baby cannot live on only breastmilk for six months. If the baby does not take in foods other than breastmilk, the baby cannot live and would die. So although a mother would give breastmilk, she must add food and water as well.”

Some believed that EBF increases the risk of a baby to contract diseases such as HIV and cancers.

FG2B: “Sometimes, if you give only breastmilk to the baby, it can make the baby fall sick”

FG3D: “Sometimes some of the mothers have certain diseases like cancer in their breasts and HIV AIDS. So if such a mother is asked to breastfeed exclusively for six months, she can transmit such diseases to the baby.”

Others believed that EBF exposes the baby to skin' problems. They believed that EBF deprives the baby with the quantity of water required to ensure the normal development of the skin.

FG4D: "My mother tells me that when you give birth and you don't give water to that child to drink for six months, her skin would not be formed well. It is the water that would make the baby's skin grow well and fresh."

They also believed that EBF exposes a child to the risk of developing eating disturbances. They believed that if you don't introduce additional food early enough, the child will grow-up hating food or developing eating problems.

FG6B: "EBF will make my child hate food or develop eating problems when he grows-up. So, I would like my child to learn how to eat from birth so that I can prevent her from developing problems with eating when he grows-up. That is why it would be difficult for me to practice EBF."

Slow development and growth was based on the belief that EBF will slow down the psychomotor development of their children. These children will take a long time to start walking.

FG2C: "My mother has been telling me that, if I give breastmilk alone to the baby, the baby cannot start walking early. Some of the foods help the child to start walking early. For me, I will add extra food to the child's diet so that he child can walk on time."

4.2.3.1.4 *Perceived self-inefficacy*

Perceived self-inefficacy as an inhibitor of EBF refer to things or circumstances that are viewed as negatively affecting the personal capabilities of the participants to exclusively breastfeed their babies. They attributed their incapability's to EBF to the *negative effect on self-body image, vulnerability to diseases, and reduce personal income and development.*

From the behavioural perspective, perceived self-efficacy as a determinant of the behaviour reflects how people think, feel and motivate themselves in terms of their capabilities to execute a particular behaviour or task (Ajzen, 2011b).

Negative effect of EBF on self-body image

Participants believed that EBF or BF in general makes mothers unattractive because of changes in the shape of their breast and weight. Some believed that their breast would 'sag' if they breastfeed their babies.

FG6C: "If a woman allows a baby to suck too much breast milk, the breast would sag too much and you will start looking as a boy. That is the reason why some of us will not give breast milk to our babies."

FG6A: "The breast would sag and when the breast sags, you lose your beauty and no man would be attracted to you."

Others believed that a mother who practices EBF would lose too much weight, which has negative impact on their self-body image.

FG2E: "Please as for me, the little I know which I can say is that, breastfeeding would also make you lose too much weight to the extent that your body shape will completely change. ...Boys will no longer be interested in you. Some may think that you have AIDS."

Vulnerability to diseases

Participants believed that BF makes mothers vulnerable to certain diseases such as *high blood pressure and breast cancer*.

Some participants attributed the risk for developing breast cancer to the sleep disturbance associated with BF.

FG1D: "You know that mothers who feed their babies with breast milk only for six months are at high risk of developing high blood pressure. Because of the

disturbance in their sleep patterns as they have to wake up even at night to breastfeed their babies.”

Others believed that EBF can expose mothers’ breast to spiritual ‘bad eyes’ that can afflict them with all types of diseases in the breast.

FG6D: “Some people have “bad eyes” when you expose your breast, they can put some diseases into the breast. Sometimes, when the breast is exposed, someone can look at it and make the breast swell. In that case, that person has given you a disease in the breast. That makes practicing EBF difficult.”

Reduce personal income and development

Participants believed that the duration required to exclusively breastfeed their babies would negative affect their income and compromise their personal development plans.

FG1B: “The six months EBF is too much. It would not allow the mother to work to earn money in order to take care of the child and herself.”

Personal development plans was quoted by participants who were looking forward to returning to school after delivery.

FG2A: “For some of us who want to go back to school, EBF would inconvenience us. I would have to stay at home for at least six months, which means a year of not schooling. You may no longer have interest and motivation to go back to school after staying home for a year. So, what type of future would I have without education?”

4.2.3.2 Subtheme 4: Social related inhibitors

Social related inhibitors of EBF emerged from the participants’ views regarding the influence of the *provider-client interaction, disapproval of EBF by closed relatives, and unfriendly workplace policies* on their decision not to consider exclusive breastfeed.

A person's perception of the social environment as unsupportive to the behaviour and the belief of the disapproval of the behaviour by significant others may prevent them from engaging in that behaviour (Hartwick & Barki, 1994).

4.2.3.2.1 *Provider-client interaction*

The nature of the interaction between the provider (nurses and midwives working at antenatal care) and the client was perceived as an inhibitor of EBF. This interaction was described by the participants as unfriendly and hostile. This behaviour prevented them from seeking information that would have allowed them to take informed decision regarding EBF. This negative behaviour of the nurses and midwives toward the participants can be attributed to the social prejudice attached to the teenage pregnancy in the country.

FG6C: "Eii, as for me, I cannot tell a nurse what is truly on my *heart oh*. I am even afraid to ask any questions to a nurse. They would shout at you before you even finish talking. They call you all these names for being pregnant. It makes it so difficult for one to decide if to EBF or not."

FG6B: "How would you expect me to even consider feeding my baby with breast milk when I am so scared to ask my midwife questions about it? She is too harsh *oh*. If you miss an appointment, you would be in trouble the next time you show up. She would ask you to sit and wait till the last person leaves before she would take care of you. But she does not treat other women the same way."

4.2.3.2.2 *Disapproval of EBF by closed relatives*

Participants would not consider EBF if their family members do not support the idea of exclusively breastfeed a child irrespective of the nurses advice.

FG2B: "You know what, my mother does not support feeding a baby for breast milk only for six months. So ...that was I am going to do. I will add water and give some food as she did with us."

FG1D: “All my sisters do not support this idea of EBF. I support what my nuclear family say about EBF. Some food and water should be added to the baby’s meal right from the beginning.”

The influence of the mothers was so strong that the choice of the participants did not matter.

FG4D: “Me for instance when I give birth, no matter what I do whether I like it or not, my mother would give water to the baby. Because she would say that water for babies is good. She has already started telling me that when I deliver, water would be the first thing which she would give to the baby. She says that, water gives the babies strength so water must be given to the baby immediately after delivery.”

4.2.3.2.3 *Unfriendly institutional policies*

For working and schooling participants, existing policies were not promoting EBF. The duration or lack of maternity leave and inflexible workplace policies were viewed by working participants as negatively influencing their intentions to exclusively breastfeed their babies.

FG1D: “A working mother cannot exclusively breastfeed her baby. The work policies do not allow a mother to stay at home for a long time after delivery and there are no provision to allow mothers to take time off to breastfeed their babies during working hours. So, there is no way we can consider EBF during the first six months.”

Others attributed negative EBF to the schedule and types of jobs they were doing.

FG1A: “I report to work at 6am. If my boss would agree that I report to work at 8 am instead of 6 am, I would be able to practice EBF. If he would also allow me to bring my baby along to the workplace, it would also make it easy for me to practice EBF. If he could also reduce the workload for me and increase my salary, it would be easier for me to practice EBF.”

FG3B: “Personally, I am a hairdresser and I am asked to breastfeed exclusively for six months. When I’m at work and a customer approaches me that she wants

to style her hair, do you think that I should tell the customer to wait for me to go give my baby breastmilk? This means that the customer will go to another saloon and before I know it, my boss would dismiss me.”

School policies were raised specifically by the participants who planned to go back to school after delivery. As with the workplace policies, the school policies do not make provision for the learners to take time off to go breastfeed their babies during schooling.

FG2A: I have to go back to school after delivery and there is no way I can exclusively breastfeed my baby for even a day. I cannot take my baby at school because there is no place where I can leave her when attending classes. In addition, the school will not even allow me to go breastfeed my baby during classes.”

4.2.3.2.4 *Social myths*

Social myths about EBF as perceived inhibitors of EBF refer to social values or beliefs attached to EBF that were viewed by the participants’ as negatively influencing their desire to exclusively breastfeed their babies. These beliefs and myths were based on the *social value attributed to EBF and social misconceptions about EBF*.

From the behavioural perspective, an individual’s perception of the social values or beliefs surrounding a behaviour may positive or negatively influence their intentions to perform that particular behaviour (Hartwick & Barki, 1994).

Social value attributed to EBF

EBF was equated to low social standing in the community. Mothers who exclusively breastfeed their infants for six months were viewed as poor and regarded as of low social class.

FG6B: “The people in the community would say that I am a poor if I decide to practice EBF. They would assume that I am extremely poor and that I cannot afford the baby food from the shop. So to avoid their criticisms, I would have to add food and water to the breastmilk when my baby is born.”

FG6C: “In the village for instance, they would be saying that I am practicing EBF because I am poor and cannot afford the baby food. To avoid that, I will not practice any form of EBF.”

Social misconception about EBF

This inhibitor refers to the perceptions of the community members, specifically, older women. They believed that EBF makes a new born baby to cry at night or to continuously cry during the day.

FG4B: “Most people do not expect a baby to cry at night or cry a lot during the day. If this happens, they would talk negatively about you and the older women would often ask you: ‘aren’t you giving your baby water? You must give him water and food’ and they will really talk. So I won’t practice EBF.”

FG1C: “My neighbours often say, if you follow what the nurses say, you will kill your child. An infant cannot survive with breast milk alone for six months. So, I would ignore what the nurses say about EBF for six months and give water to the baby.”

4.2.4 Summary of the findings

The findings on the perceived behavioural determinants of EBF among pregnant teenagers within the social context of Ghana suggest that behavioural attitude and subjective norms play important role in understanding EBF practice of teenage-mothers in Ghana. It emerged from the findings of this study that EBF practice among teenage-mothers in Ghana depends on their positive beliefs about the benefits and outcome values of EBF combined with a social environment that support EBF and positive opinions of significant others toward EBF. Therefore, effort to propose a behavioural conceptual model aimed at promoting EBF among teenage-mothers should take into account these constructs. Figure 4 provides a summary of the identified themes with the corresponding sub-themes and the emerged concepts.

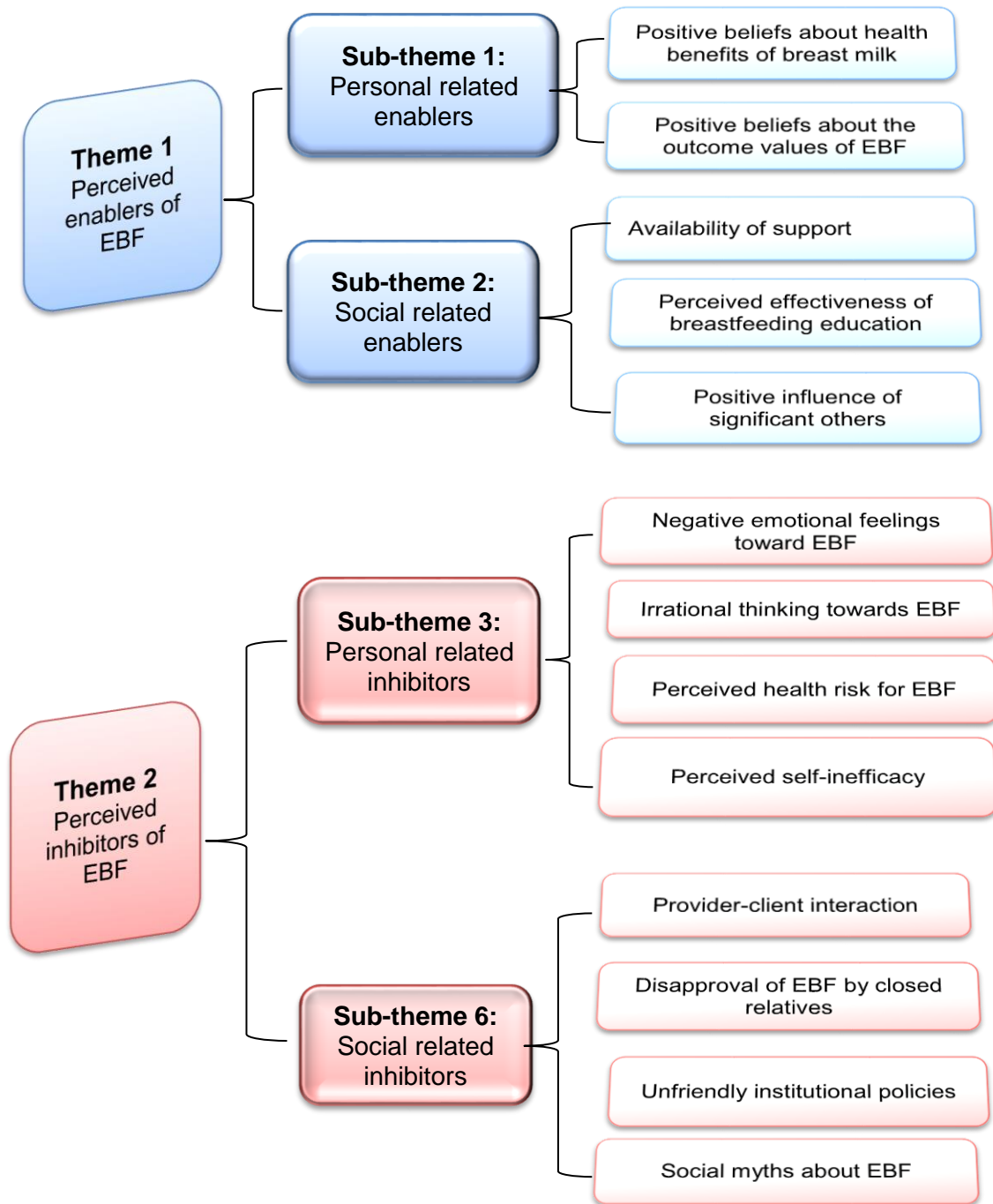


Figure 4: Perceived behavioural determinants of EBF among teenage-mothers in Ghana

4.3 RESULTS OF PHASE 2 OF THE STUDY

4.3.1 General description

The researcher performed the final analyses with data from the 307 participants who successfully completed the two stages of data collection. Summary descriptive and Binary Logistic Regression analyses were performed to determine the frequency distribution and to explore the relationships between variables. The results of the behavioural determinants of EBF at prenatal and actual BF up to six months post-delivery are presented under point 4.3.2 and point 4.3.3 respectively. The results of the behavioural determinants of actual EBF are presented under point 4.3.3.

Table 1 presents the frequency distribution of the socio-demographic characteristics of the 307 participants. In general, 274 (89.3%) were Christians, 268 (87.3%) were single, 170 (55.4%) went up to junior high school, 135 (44.0%) were unemployed, and 177 (57.7%) were living in a household of 5 to 10 members. The average age of participant was 16.27 years with a standard deviation of 1.363.

In addition to the frequency distribution, the researcher looked at possible relationship between socio-demographic characteristics and EBF plans using Binary Logistic Regression analysis. The results are summarised in Table 2.

None of the variables in the equation showed a statistically significant predictive relationship with EBF intentions. Despite the fact that these variables could not predict EBF intentions in the model, some were positively associated with the EBF intentions as shown in the exponential Beta values (B Value). In general, the results suggested that the participants were more likely to exclusively breastfeed their babies if they were respectively married or co-habiting with their partners, Christians, more educated, and unemployed compared to those who were not. Although not included in Table 2, the exponential Beta value suggested that the participants living in larger households were more likely to exclusively breastfeed their babies compared to those in smaller householders.

Table 1: Socio-demographic characteristics of the participants (N=307)

Variables	Description	Frequency	Percentage (%)
1. Religious affiliation	Christian	274	89.3
	Muslim	33	10.7
2. Marital status	Single	268	87.3
	Married	17	5.5
	Cohabiting	22	7.2
3. Highest level of education	No education	22	7.2
	Primary level	91	29.6
	Junior high	170	55.4
	Senior high	24	7.8
4. Occupation	Still schooling	110	35.8
	Employed	62	20.2
	Unemployed	135	44.0
5. Size of the household	<5	44	14.3
	5-10	177	57.7
	11-20	77	25.1
	>20	9	2.9

Table 2: Socio-demographic determinants of EBF intentions

Variables		B value	S.E	Sig	Exp (B)
1. Marital status	Married/cohabiting	.414	.400	.301	1.513
	Unmarried				1.000
2. Religious affiliation	Christians				1.000
	Muslims	-1.392	.516	.007	.248
3. Level of education	No education			.798	1.000
	Primary	.187	.547	.733	1.205
	Junior High	.367	.534	.491	1.444
	Senior High	.568	.691	.411	1.765
4. Employment status	Still schooling			.101	1.000
	Employed	-.454	.389	.244	.635
	Unemployed	.271	.296	.359	1.311
<i>Constant</i>		<i>-.779</i>	<i>.643</i>	<i>.226</i>	<i>.459</i>

Nagelkerke (R²): 0.081

4.3.2 Results of the behavioural determinants of EBF at prenatal period

The behavioural determinants of EBF at prenatal period derived from the Binary Logistic Regression analysis of the dependent variable (EBF intention) and the independent variables (behavioural attitude towards EBF and subjective behavioural norms toward EBF).

EBF intention as a dependent variable was measured with one question. The participants were asked if they are planning to feed their baby only with breast milk without any additional supplements, food or water for at least six months after delivery. They were requested to answer with either “Agree, Disagree, or Undecided”. The results are presented under point 4.3.2.1.

The behavioural attitude as an independent variable was described with ten statements reflecting the beliefs about the benefits of breast milk (statements 1-6) and the outcome values of EBF (statements 7-10). The results of the relationships between behavioural attitude and EBF intention are presented under point 4.3.2.2.

The subjective behavioural norms as independent variable was described with seven statements reflecting the social myths (statements 1-2) and opinions of significant others (statements 3-7) regarding EBF. The results of the relationships between the subjective behavioural norms and EBF intention are presented under point 4.3.2.3.

4.3.2.1 EBF plan

The results of the summary descriptive statistics showed that out of the 307 participants, 167 (54.0%) did not intend to exclusively breastfeed, 137 (45.0%) planned to exclusively breastfeed, and 3 (1.0%) were undecided.

Figure 5 provides an illustration of the frequency distribution of the participants' EBF plan.

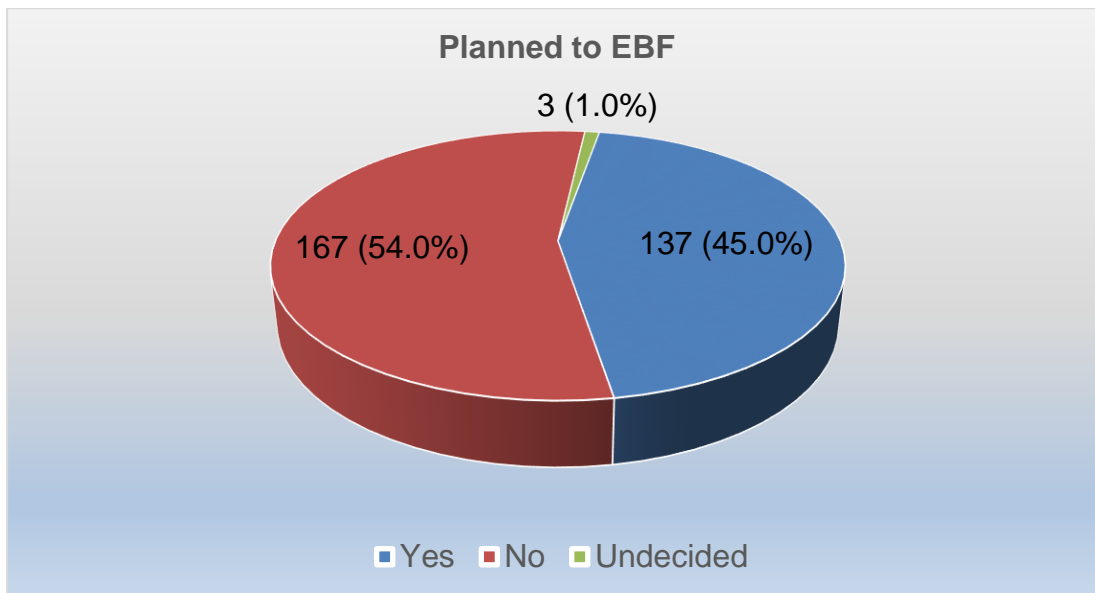


Figure 5: Frequency distribution of EBF Plan in prenatal period (N=307)

4.3.2.2 Behavioural attitude and prenatal EBF plan

Table 3 provides a summary of the results of the Binary Logistic Regression analysis of the behavioural attitude and the plan to EBF.

In general, none of the ten variables was statistically significant in predicting exclusive breastfeeding plan in the model. But when looking at the exponential Beta values (B Value), seven of these ten statements were positively associated with the EBF intentions, one was negative associated with EBF intention, and two did not show any relationships.

With regard to positive association, the participants were more likely to exclusively breastfeed their babies if they believe that EBF will make their babies strong (statement 1) and healthy (statement 2), will strengthen the bond between mother and baby (Statement 3), will make mothers healthy (statement 4), will reduce the risk of excessive bleeding for the mother after delivery (statement 5), will not make them feel guilty (statement 8), and will not make their breast sag (statement 9) compared to those who hold the opposite beliefs about EBF.

Table 3: Binary Logistic Regression results of the behavioural attitude and EBF intentions in prenatal period

Variables		B value	S.E	Sig	Exp (B)
1. Feeding a baby with ONLY breast milk during the first six months <i>will make her strong</i>	Yes	.316	.836	.705	1.372
	No				1.000
2. Feeding my baby with ONLY breast milk during the first six months <i>will make my baby healthy</i>	Yes	.292	1.367	.831	1.339
	No				1.000
3. Feeding my baby with ONLY breast milk during the first six months <i>will strengthen the bond between us</i>	Yes				1.000
	No	-.868	.826	.293	.420
4. Feeding my baby with ONLY breast milk during the first six months <i>is healthy for the mother</i>	Yes	.233	.890	.793	1.263
	No				1.000
5. Feeding a baby with ONLY breast milk during the first six months <i>reduces the risk of excessive bleeding for the mother after the delivery period</i>	Yes				1.000
	No	-1.627	1.056	.123	.196
6. Feeding my baby ONLY breast milk during the first six months <i>will save me money.</i>	Yes	.095	.773	.902	1.100
	No				1.000
7. Feeding a baby with ONLY breast milk for six months is a <i>bad practice</i> because a baby needs water from birth	Yes	-.052	1.064	.961	.950
	No				1.000
8. Feeding a baby with ONLY breast milk for six months <i>will make me feel guilty</i>	Yes				1.000
	No	2.048	.603	.001	7.752
9. Feeding a baby with ONLY breast milk for six months <i>will make my breast sag</i>	Yes				1.000
	No	.979	.708	.166	2.662
10. Overall, it is <i>harmful to feed</i> a baby with ONLY breast milk for six months	Yes	.471	1.009	.640	.624
	No				1.000
Constant		-.167	1.123	.882	.847

Nagelkerke (R²): .775; -2 Log likelihood: 69.492a

In term of negative association, the participants were less likely to exclusively breastfeed their babies if they believe that EBF was harmful for their babies (statement 10) compare to their counterparts with the opposite belief.

Finally, there was no difference in the likelihood of EBF between the participants who believed that EBF: will save them money (statement 6), and is a bad practice as a baby needs water from birth (statement 7) compared to those who do not hold the same beliefs.

4.3.2.3 Subjective behavioural norms and prenatal EBF plan

Table 4 provides a summary of the results of the Binary Logistic Regression analysis of the subjective behavioural norms and the plan to EBF.

Overall, two measurement variables showed strong statistical significance with EBF intentions during the prenatal period in the model. The approval of the participants' mothers (statement 4) and effectiveness of BF education by nurses and midwives (statement 7) were statistically significant in predicting their EBF intentions with sig values of $p=.000$.

When looking at the exponential Beta values (B Value), four statements showed positive relationship with EBF intention and one showed a negative relationship with EBF intention.

In relation to positive association, the participants were more likely to exclusively breastfeed their babies if EBF is seen as an acceptable practice by other mothers in the community (statement 2), and supported by their partners' (statement 3), relatives (statement 5) and neighbours (statement 6) compared to those who held different views.

With regard to negative association, the participants were less likely to exclusively breastfeed their babies if EBF was seen as a sign of poverty in their communities (statement 1) compare to those who held different views.

Table 4: Binary Logistic Regression results of subjective behavioural norms and EBF intention in prenatal period

Variables		B value	S.E	Sig	Exp (B)
1. Feeding new-born baby with ONLY breast milk for six month is seen as <i>a sign of poverty in my community</i>	Yes	-1.337	1.951	.493	.263
	No				1.000
2. Feeding new-born baby with ONLY breast milk for six month <i>is not acceptable by most mothers in my community</i>	Yes				1.000
	No	.621	.496	.211	
3. The decision to feed my baby with ONLY breast milk for six months <i>will depend on my partner's approval</i>	Yes				1.000
	No	-.830	.546	.129	
4. The decision to feed my baby with ONLY breast milk for six months <i>will depend on my mother's approval</i>	Yes				1.000
	No	-1.917	.397	.000	.147
5. The decision to feed my baby with ONLY breast milk for six months <i>will depend on my relatives' approval</i>	Yes				1.000
	No	-.025	.338	.940	.975
6. The decision to feed my baby with ONLY breast milk for six months will depend on my neighbours' opinions	Yes				1.000
	No	.035	.600	.953	1.036
7. The decision to feed my baby with ONLY breast milk for six months will depend on <i>what the nurses /midwives say about breastfeeding</i>	Yes				1.000
	No	-2.964	.373	.000	.052
Constant		3.269	.505	.000	26.291

Nagelkerke (R²): .526; -2 Log likelihood: 238.889a

4.3.3 Results of actual breastfeeding practices up to six months post-delivery

Actual BF practices up to six months post-delivery was described in terms of the time of BF initiation, the method and duration of BF. The reasons for not initiating BF and discontinuing EBF after initiation were also explore in order to provide the context for interpreting the results.

4.3.3.1 Time of breastfeeding initiation

The participants were requested to indicate if they initiated BF within the first hour post-delivery.

Of the 307 participants, 228 (74.3%) initiated BF in the first hour post-delivery, and 79 (25.7%) did not initiate BF in the first hour post-delivery. Figure 6 illustrates the frequency distribution of this “Yes or No” question.

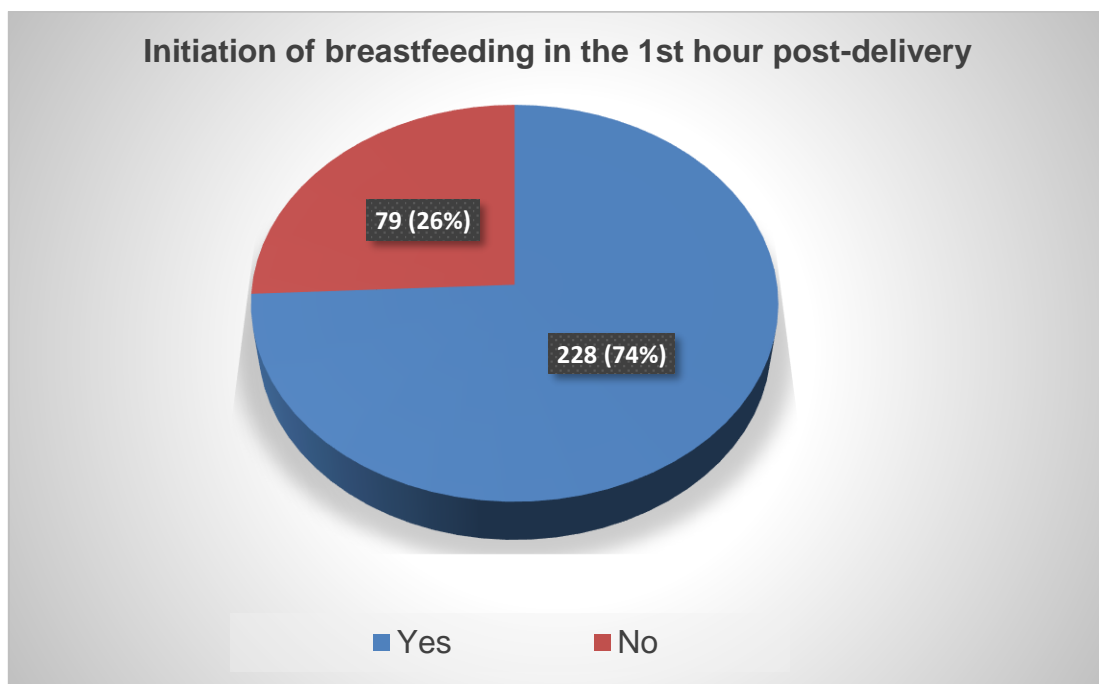


Figure 6: Frequency distribution of early initiation of breastfeeding (N=307)

4.3.3.2 *Method and duration of breastfeeding*

The participants who initiated BF in the first hour post-delivery were requested to indicate if they continued to feed their babies with ONLY breast milk with no other food or liquid, not even water, with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines, up to six months post-delivery (EBF).

Out of the 228 (100%) participants who initiated BF in the first hour, 86 (38.0%) continued with EBF practice up to six months post-delivery. Figure 7 illustrates the frequency distribution of their responses.

It is important to note that the final Binary Logistic Regression analyses of the behavioural determinants of actual EBF practice in postnatal period were conducted with the 86 participants who EBF up to six months.

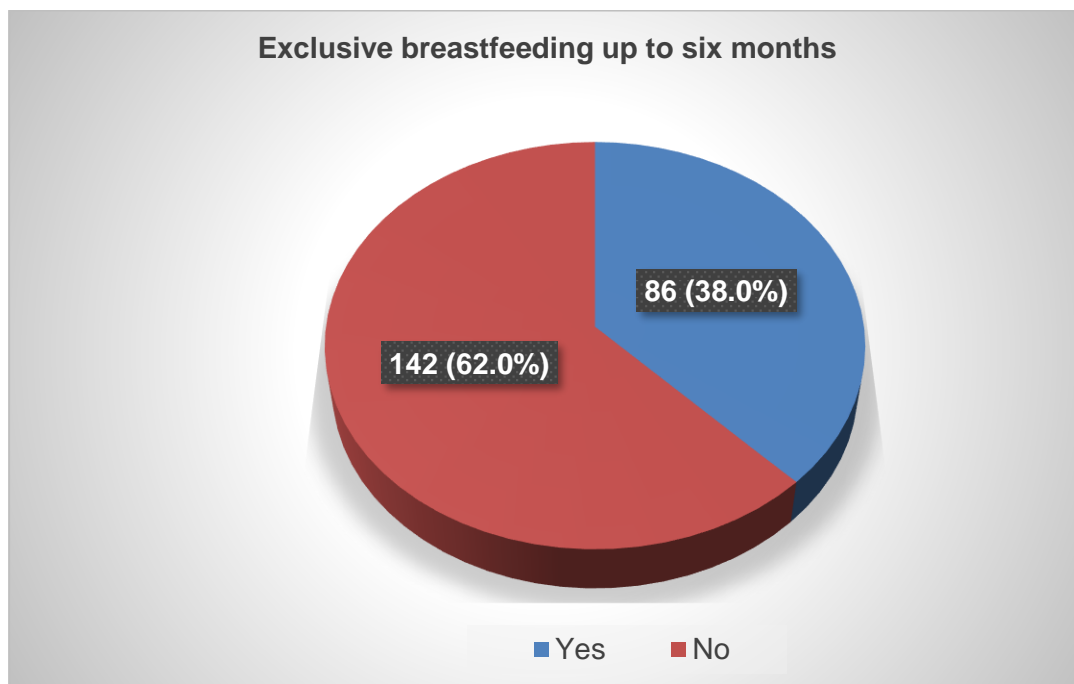


Figure 7: Frequency distribution of EBF up to six months (N=228)

4.3.3.3 Reasons for not initiating BF and discontinuing EBF

Ten main reasons were given by the participants for not initiating BF and discontinuing EBF after starting. Those reasons are represented in Table 6 with the number of times they were mentioned by the participants.

As indicated in Table 5, the disapproval of EBF by the participants' mothers, the participants' beliefs that the child is not satisfied with breast milk and that BF was painful, and low supply of breast milk were the most frequent reasons cited for not initiating and/or discontinuing EBF.

Table 5: Reasons for not initiating and discontinuing EBF

#	Reasons	Number of times mentioned
1.	Healthcare professionals' recommendation	4
2.	Low breast milk supply	70
3.	Mother felt that the child is not satisfied with breast milk	96
4.	Mother felt that breastfeeding was time consuming	61
5.	Mother felt that breastfeeding was painful	81
6.	Mother resumed Schooling	18
7.	Mother resumes work	14
8.	Disapproval of EBF by the participant' mother's	168
9.	Disapproval of EBF by the mother in-Law	1
10.	Pressure from relatives	1

4.3.4 Results of behavioural determinants of actual EBF practice up to six months post-delivery

The behavioural determinants of actual EBF practice up to six months post-delivery derived from the Binary Logistic Regression analysis of the dependent variable (actual EBF practice up to six) and the independent variables (behavioural attitude towards EBF and subjective behavioural norms toward EBF). The researcher excluded all the measurement statements of the independent variables that did not show any positive association with the intention to breastfeed from the equation.

As stated earlier, the final Binary Logistic Regression analyses of the behavioural determinants of actual EBF practice in postnatal period were conducted with the 86 participants who successfully practiced EBF up to six months.

4.3.4.1 Behavioural attitude determinants of actual EBF practice up to six months postnatal

The results of the Binary Logistic Regression analysis of the positive beliefs determinants (independent variables) and the actual BF practice up to six months postnatal (dependent variable) are summarised in Table 6. Behavioural attitude towards EBF as an independent variable was described with seven statements related to beliefs about the benefits (four statements) and outcomes values (three statements) of EBF.

The results of the analyses showed that none of the statements was statistically significant to predict the actual EBF practice up to six months postnatal. But when looking at the exponential Beta values, all seven statements were positively associated with actual EBF practice up to six months postnatal.

The participants were more likely to exclusively breastfeed their babies up to six months postnatal, if they believe that EBF: will make their babies strong (statement 1) and healthy (statement 2), will strengthen the bond between mother and baby (Statement 3), will make mothers healthy (statement 4), reduces the risk of excessive bleeding for the mother after delivery (statement 5), will not make them feel guilty (statement 6), and will not make their breast sag (statement 7) compared to their counterparts who believe otherwise.

Table 6: Binary Logistic Regression results of positive beliefs and actual EBF practice up to six months

Variables		B value	S.E	Sig	Exp (B)
1. Feeding a baby with ONLY breast milk during the first six months <i>will make her strong</i>	Yes	.813	.576	.158	2.254
	No				1.000
2. Feeding my baby with ONLY breast milk during the first six months <i>will make my baby healthy</i>	Yes	2.026	.826	.014	7.586
	No				1.000
3. Feeding my baby with ONLY breast milk during the first six months <i>will strengthen the bond between us</i>	Yes	.108	.537	.840	1.114
	No				1.000
4. Feeding my baby with ONLY breast milk during the first six months <i>is healthy for the mother</i>	Yes	.233	.890	.793	1.263
	No				1.000
5. Feeding a baby with ONLY breast milk during the first six months <i>reduces the risk of excessive bleeding for the mother after the delivery period</i>	Yes	.269	.714	.707	1.308
	No				1.000
6. Feeding a baby with ONLY breast milk for six months <i>will make me feel guilty</i>	Yes				1.000
	No	2.026	.603	.001	7.750
7. Feeding a baby with ONLY breast milk for six months <i>will make my breast sag</i>	Yes				1.000
	No	.979	.708	.166	2.662
<i>Constant</i>		-1.145	1.727	.507	.318

Nagelkerke (R²): .355; -2 Log likelihood: 171.445a

4.3.4.2 Subjective behavioural norms determinants of actual EBF practice up to six months postnatal

Subjective behavioural norms as an independent variable was described with six statements. Four of these statements were related to the influence of significant others and two to subjective social norms. The results of the Binary Logistic Regression analysis of the subjective behavioural norms (independent variables) and the actual BF practice up to six months postnatal (dependent variable) are summarised in Table 7.

The results of the analysis showed that the approval of the participants' mothers (statement 2) and the effectiveness of BF education by nurses and midwives (statement 3) remained statistically significant in predicting the participants' actual EBF practice up to six months postnatal with sig values of $p=.000$.

When looking at the exponential Beta values (B Value), the participants were more likely to exclusively breastfeed their babies up to six months postnatal, if EBF is acceptable in their community (statement 1), and it is approved by their partners' (statement 4), relatives (statement 5) and neighbours (statement 6) compared to those who hold different views.

Table 7: Binary Logistic Regression results of subjective behavioural norms and actual EBF practice up to six months

Variables		B value	S.E	Sig	Exp (B)
1. Feeding new-born baby with ONLY breast milk for six month is acceptable in my community	Yes				1.000
	No	-.401	.519	.440	.670
2. The decision to feed my baby with ONLY breast milk for six month depend on my mothers' approval	Yes				1.000
	No	-1.948	.561	.000	.143
3. The decision to feeding my baby with ONLY breast milk for six month will depend on what nurses/midwives say about breastfeeding	Yes				1.000
	No	1.479	.393	.000	.228
4. The decision to feed my baby with ONLY breast milk for six months will depend on my partner's approval	Yes	.169	.459	.713	1.184
	No				1.000
5. The decision to feed my baby with ONLY breast milk for six months will depend on my relatives' approval	Yes				1.000
	No	-1.09	.528	.836	.896
6. The decision to feed my baby with ONLY breast milk for six months will depend on my neighbours' opinions	Yes				1.000
	No	-.238	.519	.647	.788
Constant		3.978	.837	.000	53.404

Nagelkerke (R²):.227; -2 Log likelihood: 263.183a

4.4 RESULTS OF THE OVERALL BEHAVIOURAL DETERMINANTS OF EBF AMONG TEENAGE-MOTHERS

4.4.1 Overall BF behaviour

Overall BF behaviour was a concept introduced by the researcher to put together the teenage-mothers' behaviour toward BF from their intentions to breastfeed to six months postnatal. Figure 8 provides an illustration of these results.

As shown in Figure 8, of the 307 (100%) participants who successfully completed the questionnaires in pre and postnatal periods, 137 (44.6%) expressed the intentions to EBF during the prenatal period, 228 (74.3%) initiated BF in the first hour after delivery, and 86 (28.0%) exclusively breastfed up to six months after delivery. Of the 228 (100%) teenage-mothers who initiated BF in the first hour post-delivery, 142 (62.3%) discontinued before six months. Similarly, the number of participants who performed EBF up to six months (n=86) is almost 2.6 times less than those who initiated BF (n=228) and 1.6 times less than those who expressed the intentions to EBF (n= 137).

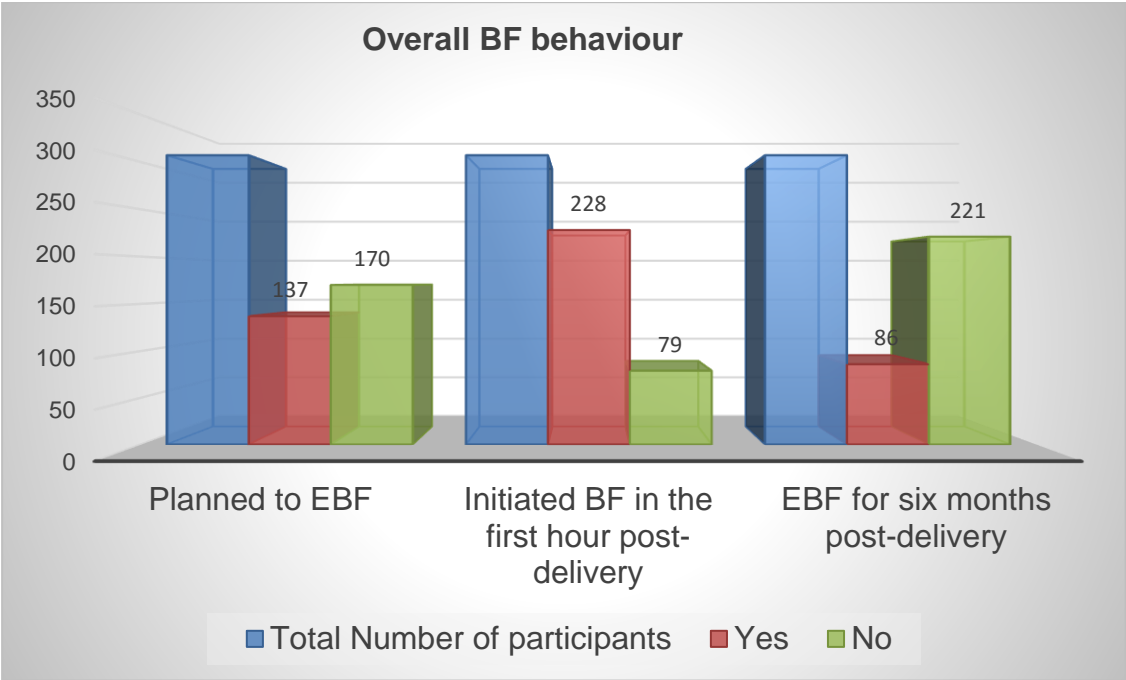


Figure 8: Pattern of breastfeeding behaviour among participants (N=307)

4.4.2 Actual behavioural determinants of EBF practice up to 6 months post-delivery

In order to summarise the results of the behavioural determinants of EBF intentions and actual practices up to six months postnatal, the researcher introduced the construct overall behavioural determinant of EBF to capture all the measurement statements of the independent variables that showed positive relationships with EBF in pre and postnatal periods.

The construct was divided into two categories: (i) upper behavioural determinants of positive EBF, and (ii) lower behavioural determinants of positive EBF.

The “Upper behavioural determinants of positive EBF” included the measurement statements that showed positive and statistically significant predictive relationships with EBF in prenatal and postnatal periods. The “Lower behavioural determinants of positive EBF” included the measurement statements that were positively associated with EBF in both periods but did not have any statistically significant predictive relationships.

Thirteen out of the seventeen measurement statements used to describe the independent variables showed positive relationships with EBF in both periods. Only 2 of these 13 measurement statements showed positive and statistically significant predictive relationship with EBF intentions and actual practices up to six months postnatal (approval of the participant’ mother and the effectiveness of BF education by nurses/midwives) and were classified as “Upper behavioural determinants of positive EBF”. The remaining 11 measurement statements showed positive relationships with EBF intention and actual practices up to six months postnatal but without any statistically significant predictive value. They were classified as “Lower behavioural determinants of positive EBF”.

Figure 9 provides an illustration of the overall behavioural determinant of EBF with the corresponding characteristics and statements.

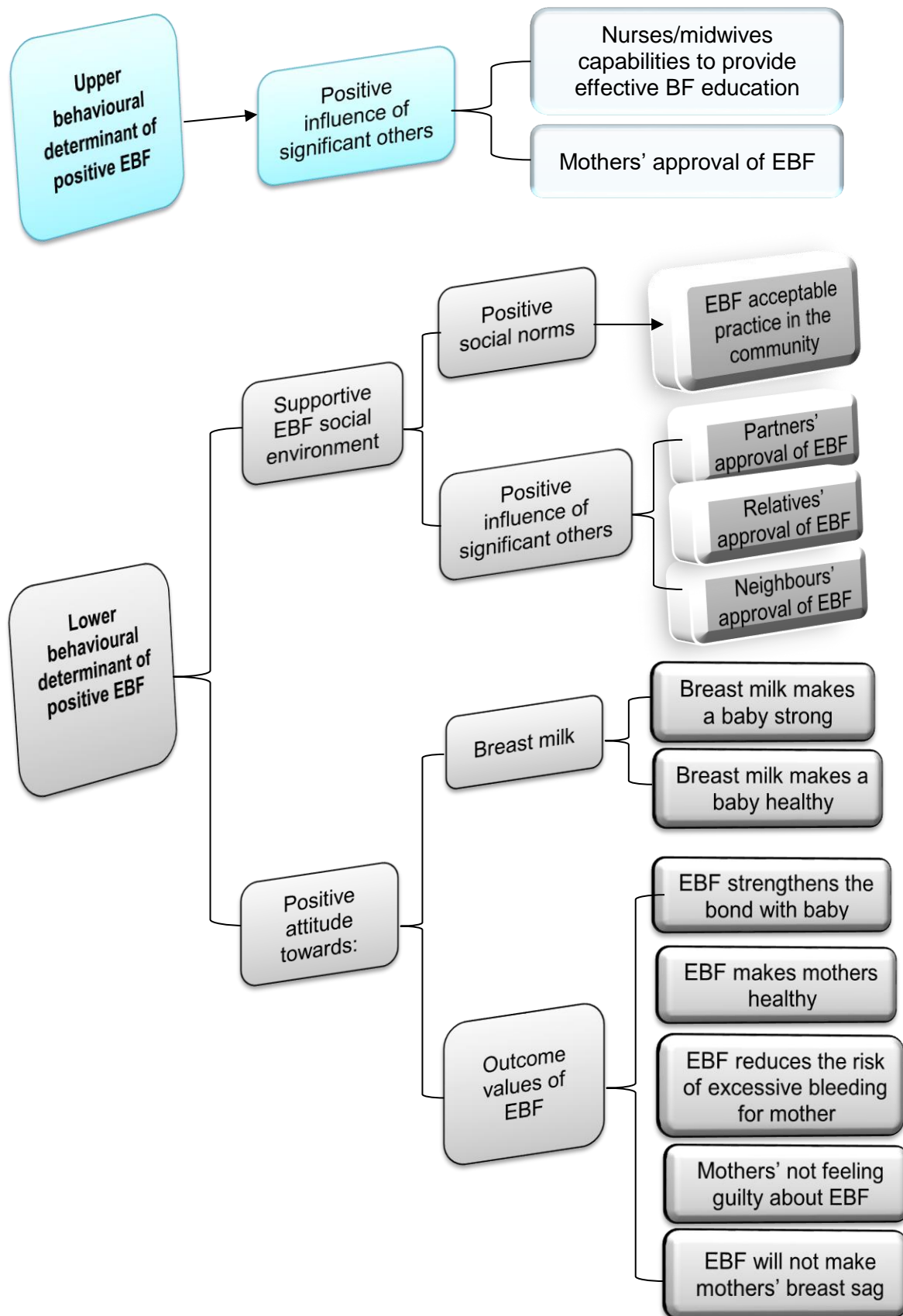


Figure 9: Overall behavioural determinants of actual EBF practice among teenage-mothers in Ghana

4.5 DISCUSSIONS

The results of the first two phases of this study allowed the researcher to gain an understanding of the teenage-mothers' behaviour toward EBF and to establish the determinants of their behaviours toward EBF up to six months post-delivery. In general, the results suggest that EBF among teenage-mothers within the social context of Ghana is function of positive beliefs about breast milk and outcome values of EBF, supportive EBF environment with a strong influence of significant others. These constructs are parts of the behavioural attitude and subjective norms determinants that motivate an individual to engage in a behaviour within the Theory of Planned Behaviour (Ajzen, 1991; Conner & Armitage, 1998).

The results of the first two phases of this study are supported by previous studies conducted on BF intentions and early BF practices among adolescents that showed that adolescents were less likely to practice EBF successfully than their older counterparts (Sipsma, 2013; Smith et al., 2012). Adolescents who participated in these studies were of the same age bracket with our teenage-mothers (13 – 19 years). As illustrated in Figure 8 of this study (Participants' behavioural trend toward BF), only 28.0% (n=86) of the total number of the teenage-mothers (n=307) exclusively breastfed up to six months compare to 44.6% (n=137) who planned to exclusively breastfeed and 74.3% (n=228) who initiated EBF in the first hour after delivery. This proportion is less than the global and national rates of respectively 38.0% (UNICEF, 2015) and 52.3% (DHS, 2016) among older women.

The results of the perceived behavioural determinants of EBF (see Figure 4), the pattern of BF behaviour (see Figure 8), and the overall behavioural determinant of actual EBF practice among teenage-mothers in Ghana (see Figure 9) highlight the role of positive behavioural attitude and supportive social norms as determinants of EBF up to six months among teenage-mothers in Ghana. But social norms, specifically the role of significant others is a strong motivator in the decision of the teenage-mothers to exclusively breastfeed up to six months.

Although 44.6% (n=137) of the participants intended to EBF, this proportion raised at 74.3% (n=228) at the health facilities (within the first hour post-delivery) and to 28.0 % (n=86) at six months post-delivery. The disparity between the proportion of teenage-

mothers who intended to exclusively breastfeed and the early initiation of BF and actual EBF practice can be attributed to the results of the higher influence of nurses/midwives and the participants' mothers in the decisions of the teenage-mothers to exclusively breastfeed. The two groups were perceived as enablers of EBF and their influences on EBF were statistically significant in predicting EBF practice of the teenage-mothers up to six months post-delivery.

The high rate of the early initiation of BF compared to the rate of the intention to EBF can be explained by the influence of nurses/midwives being at the bed side of the teenage-mothers in the maternity units as evident in the literature (Gewa & Chepkemboi, 2016). On the other side, the decrease of the rate of early initiation of BF from 74.3% to 28.0% at six months post-delivery can be attributed to the influence of the mothers of the teenage-mothers. As shown in this study, the disapproval of EBF by the participants' mothers was mentioned 168 times as reason for discontinuing or not exclusively breastfeed their babies (Table 5).

From the perspective of the Theory of Planned Behaviour, positive behavioural attitude and supportive subjective norms may propel an individual to perform a behaviour (Ajzen, 1991). Despite the lack of studies on EBF behaviour among teenage-mothers, a study conducted in Ethiopia among primiparous identified positive attitude towards EBF and the support of significant others as enablers of the actual postnatal EBF practice (Minas & Ganga-Limando, 2015). A systematic review of over a hundred (100) peer reviewed articles looking at the young mothers' perception about BF identified positive attitude towards EBF and the support of significant others as enablers of positive intentions of EBF. In that same study, young mothers who resided in areas where BF was perceived as a norm had positive attitudes towards EBF than their counterparts who lived in communities where formula feeding was the norm (Poole & Gephart, 2014).

As stated in the research problem, the socio-cultural prejudices against teenage-mothers in Ghana (Ghana' Government Official Portal, 2016) combined with the bio-psychological vulnerability that characterises the teenage period may impede teenagers' willingness to initiate and continue BF their children (Khanal et al., 2013; UNICEF, 2014).

Support from closed family members and antenatal care staff is important in promoting EBF among teenage-mothers within the social context of Ghana. Most women report that,

supportive spouses and relatives who encourage them to continue BF help them to brave all the odds associated with BF (Coates et al., 2014; Egata et al., 2013; Inoue et al., 2012; Mannion et al., 2013; McInnes et al., 2013).

However, it is important to note this study also showed that the closed family members, specially, mothers were cited as people who advised the participants to discontinue BF their babies. Previous studies (Bai et al., 2012; Charkazi et al., 2013) support that mothers' who do not support EBF influence their daughters' decisions not to EBF.

The role of the effectiveness of BF education by nurses and midwives as showed in this study reinforces the importance of prenatal BF education and approach to BF education. Previous studies (Gabida et al., 2015; Tenfelde et al., 2011) associated the increase of the EBF with the prenatal BF education and sharing of BF educational materials. The implementation of a holistic approach to BF education through the baby-friendly initiative in the United States, Japan and Hong Kong led to improvements in BF rates and duration among mothers (Otsuka et al., 2013; Parker et al., 2013; Tarrant et al., 2011).

The positive association between the participants' positive beliefs about EBF benefits and outcome values and actual BF practice are supported by previous studies (Brown et al., 2011; Brown & Arnott, 2014; De Jager et al., 2014b; Furman et al., 2012; Hamilton et al., 2011, 2012; Kavanagh et al., 2012; Nesbitt et al., 2012a; Nguyen et al., 2013; Teich et al., 2013). Due to the influence mothers of participants have on their BF decisions, their beliefs may perhaps be shaped by that of their mothers'.

Participants perceived that, home visit by friendly nurses/midwives who would educate them and their relatives about the importance of EBF practice was crucial in improving the EBF practices of teenage mothers. This suggested strategy forms part of the steps suggested by WHO to initiate and maintain baby-friendly hospitals across nations. The baby-friendly hospital initiative has been reported to improve the EBF practices of some mothers in different geographical areas of the globe (Otsuka et al., 2013; Parker et al., 2013; Tarrant et al., 2011). Conversely to that finding, a study conducted at Queensland, Australia found no differences in EBF practices among mothers who delivered at baby-friendly hospitals as against others who delivered in non-baby-friendly hospitals (Brodrigg et al., 2013).

The availability of family support through wet nursing mentioned by the participants as an enabler of EBF may not be commendable in this era whereby human milk has been noted to be a source of infection transfer from one person to the other. In place of wet nursing, human milk banks may be considered in Ghana to support teenage mothers who may have to return to school immediately after delivery or would have difficulties producing adequate breastmilk since the presence of a human milk bank in Italy has improved EBF rates and duration in very low birth weight babies (Arslanoglu et al., 2012).

The perceived role of the negative beliefs, unsupportive environment, social myths and self-inefficacy as inhibitor of EBF can be explained within the Theory of Planned Behaviour (Ajzen, 1991). Self-inefficacy is related to the construct of behavioural control. According to the Theory of Planned Behaviour, negative behavioural attitude, unsupportive behaviour subjective norms, and negative behavioural control beliefs can inhibit an individual intention to perform a behaviour (Ajzen, 1991). The inhibiting role of these factors on behaviour performance is also supported by previous studies.

In a study conducted among undergraduate students in China, social myths and negative attitude were attributed to negative intentions to EBF (Kavanagh et al., 2012). A study conducted amongst South Asian women living in the United Kingdom suggested that their desires to exclusively breastfeed their babies changed rapidly with their exposure to the culture of formula feeding in the UK (Choudhry & Wallace, 2012). The use of BF as a response to children's cries on influencing negative intentions to EBF is supported by a study conducted among African American mothers in the United States (Mathews et al., 2014).

The role of institutional policies in influencing the decision of mothers to exclusively breastfeed their children is documented in previous studies. The existence of workplace policies perceived as baby-friendly by mothers was attributed to positive intentions to EBF by mothers (Bai et al., 2012; Rojjanasrirat & Ferrarello, 2013). Mothers who have been found to work at places with friendly work policies for BF mothers have been able to breastfeed efficiently and successfully for longer duration (Kozhimannil et al., 2016).

In similar study, female employees admitted that, encouragement from their bosses to breastfeed would increase their enthusiasm towards successful BF (Weber et al., 2011). This may be due to the fact that EBF is time consuming and demanding. Therefore,

policies about work should be such that, BF mothers are given shorter working hours, longer breaks and maternity leaves and this would go a long way to protect, promote and support EBF. The attribution of self-inefficacy to breastfeed to negative intentions to EBF is supported by studies conducted elsewhere (Kimani-Murage et al., 2015b; Kuswara et al., 2016; Srikanth et al., 2017; Wanjohi et al., 2017).

4.6 CONCLUSION

The results as presented and discussed showed strong similarity between the perceived behavioural determinants that derived from the quality phase of the study and the overall behavioural determinants of actual EBF among teenage-mothers. This implies that teenage-mothers shared the same perspective on EBF and that the conceptual model to derive from the above results could be used for promoting EBF among teenage-mothers in the country. .

CHAPTER 5

DESCRIPTION OF THE CONCEPTUAL MODEL FOR PROMOTING EBF PRACTICE

5.1 INTRODUCTION

This chapter focused on the results of the third objective of the study, which was to describe a behavioural conceptual model for promoting EBF among teenage-mothers in Ghana. The processes followed in achieving the objective are described in Chapter Three and illustrated in Figure 3 (Summary of the research process).

As illustrated in Figure 3, the researcher made use of meta-inferences to identify the key concepts of the behavioural conceptual model and of the theoretical triangulations to define the identified concepts and their relationships as well as the structure the conceptual model.

5.2 SOCIAL CONTEXT OF THE CONCEPTUAL MODEL

The proposed behavioural conceptual model should be understood with the context of increasing numbers of teenage-mothers in the country (UNICEF, 2014), the bio-psychosocial vulnerability associated with teenage-pregnancy (Doku, 2012; Haugland et al., 2013; Pape, 2014), the socio-cultural prejudices against teenage-mothers (Ghana' Government Official Portal, 2016), and perceived unsupportive beliefs and social environment for EBF as emerged from the study. All these factors occurred against the background of the commitment of the government of Ghana to improve EBF uptake in line with the World Health Assembly Resolution WHA65.6 (Ghana' Government Official Portal, 2016).

5.3 BASIC ASSUMPTIONS OF THE CONCEPTUAL MODEL

The development of the behavioural conceptual model was based on a set of three assumptions.

Firstly, the researcher assumed that a behavioural conceptual model for promoting EBF among teenage-mothers in the social context of Ghana should illustrate how the different concepts interact to explain and promote EBF among teenage-mothers within the social context of Ghana.

The above assumption was based on the understanding of a conceptual model from a public health perspective. As described in the first chapter of this study, a conceptual model is viewed from the public health perspective as a diagram of proposed causal linkages among a set of concepts believed to be related to a particular public health problem. It is a simplification, conceptualisation, or abstraction of reality often presented in the form of a diagram to assist people to know, understand, or simulate a subject the model represents (Squires, Chilcott, Akehurst, Burr & Kelly, 2016: 590).

Secondly, the researcher assumed that a behavioural conceptual model for promoting EBF among teenage-mothers in the social context of Ghana should have the potential to explain the actual EBF practice among the teenage-mothers within the social context of Ghana.

The second assumption was based on the understanding of EBF as a planned behaviour. According to the Theory of Planned Behaviour as described in the third chapter of this study, positive intention towards a behaviour may raise the individual's hope about the success of achieving that particular behaviour and, therefore, propel the individual to engage in that behaviour to the end. While negative intention towards a behaviour may debilitate the individual's hope to undertake the behaviour (Ajzen, 1991). This behaviour intention is a function of three determinants: an individual's attitude toward the behaviour, subjective norms, and perceived behavioural control (Ajzen, 1991).

Lastly, the researcher assumed that a behavioural conceptual model for promoting EBF among teenage-mothers in the social context of Ghana should have the potential to empower the teenage-mothers to take decisions to exclusively breastfeed and to increase support for EBF in their social surrounding environment.

This last assumption was based on the understanding of the use of the conceptual model as a framework for health promotion. As described in the first chapter of this study, health

promotion is a process of enabling people to increase control over, and to improve, their health (WHA51.12-Health Promotion).

5.4 OVERALL GOALS OF THE PROPOSED CONCEPTUAL MODEL

The proposed behavioural conceptual model is primarily designed to explain BF behaviour of the teenage-mothers' and the process of promoting EBF practice among teenage-mothers within the social context of Ghana.

In addition, the proposed behavioural conceptual model could serve as a framework to guide (i) the development of an assessment tool to evaluate EBF readiness of teenage-mothers, and (ii) studies aimed at establishing the behavioural predictors of EBF practice within the social context of Ghana.

5.5 IDENTIFICATION AND DEFINITIONS OF THE KEY CONCEPTS OF THE CONCEPTUAL MODEL

Meta-inferences allowed the researcher to identify the following three key concepts for the behavioural conceptual model for promoting EBF among teenage-mothers within the social context of Ghana:

- (i) the cognitive enablers of EBF practice
- (ii) the psychosocial social enablers of EBF
- (iii) the enabling means for promoting EBF practice

Table 8 provides a summary description of the key concepts of the conceptual model.

The *concept cognitive enablers of EBF* refers to positive mental dispositions that motivate the teenage-mothers to exclusively breastfeed up to six months post-delivery. Cognition from the perspective of human behaviour is determined by the behaviour as psychologically perceived or experienced by the person. It entails beliefs, expectations, perceptions, values, motives, and attitudes that provide the person with ways of filtering, interpreting, understanding, and predicting behaviours (Ellis, 2008).

The *concept social enablers of EBF* refers to positive influences of the psychological and social factors in the social environment of the teenage-mothers that motive them to exclusively breastfeed up to six months post-delivery. The term “psychosocial” in health implies a holistic view of health that emphasises the need to view health behaviour within the interpersonal context of wider family and community network in which they live. Psychosocial determinants of health are seen as mediated effect of social structural factors on individual health outcomes (Martikainen, Bartley and Lahelma, 2002).

The *concept enabling for EBF promotion* refers to actions required to activate the cognitive and psychosocial enablers of EBF in order to improve and promote EBF practice within the social context of Ghana. In health promotion, enabling means taking action in partnership with individuals or groups to empower them to promote and protect health. It emphasises the important role of health professionals and other health activists acting as catalyst for health promotion action (WHO, 1998).

Table 8: Summary description of the key concepts of the conceptual model

Key concepts	Definitions
Cognitive enablers of EBF	It refers to positive mental dispositions that motivate the teenage-mothers to EBF up to six months post-delivery.
Social enablers of EBF	It refers to positive influences of the psychological and social factors in the social environment of the teenage-mothers that motive them to exclusively breastfeed up to six months post-delivery.
Enabling for EBF promotion	It refers to actions required to activate the cognitive and psychosocial enablers of EBF in order to improve and promote EBF practice within the social context of Ghana.

5.6 RELATIONSHIPS BETWEEN THE CONCEPTS

The proposed behavioural conceptual model is an integrated model that provides an understanding of EBF practice and the process of promoting EBF among teenage-mothers in the social context of Ghana. It explains the likelihood of EBF practice and the process of promoting EBF practice among the teenage-mothers within the social context of Ghana. The conceptual model is function of three main concepts interacting to explain

the likelihood of EBF and the actions to be taken to improve EBF practice. These relationships are illustrated with Figure 10.

Understanding teenage-mothers' EBF practice

The proposed integrated behavioural conceptual model asserts that EBF practice among teenage-mothers within the social context of Ghana is a function of the interaction between positive attitude and supportive social environment for EBF resulting respectively from the cognitive and social enablers of EBF. Positive attitude and supportive social environment for EBF increase the likelihood of EBF through the motivation derived from the enablers of EBF. However, the enablers are determined by certain behavioural factors.

As illustrated in Figure 10, cognitive enablers are determined by the teenage-mother's positive beliefs about the benefits of breast milk combined with positive beliefs about the outcome values of EBF and confidence to perform EBF. While the social enablers are determined by supportive EBF social norms combined with the support of significant others and the teenage-mother's conformity to social norms and influence.

Thus, the likelihood of EBF practice among teenage-mothers within the social context of Ghana increases with the strength of their beliefs about the benefits of breast milk, their beliefs about the outcome values of EBF, their confidence to perform EBF combined with the approval of EBF by significant others, supportive EBF social norms and the teenage-mothers' conformity to the influence of significant others and social norms.

The role of the above behavioural determinants in increasing the likelihood of an individual to engage in a behaviour is well documented in the literature. From the behavioural perspective, an individual's positive beliefs about the benefits and values of performing a behaviour leads to positive attitude toward the behaviour, which in turn will propel the individual to perform the behaviour (Ajzen, 1991). From the perspective of social psychology, it is argued that individuals do not behave randomly but they strive to conform to the expectations of significant others and the social norms set as standards or rules that provide the accepted standards of behaviour in a particular social group or culture (McLeod, 2008). Similarly, the likelihood of an individual to perform a behaviour is influenced by his/her perception of the social environment surrounding the behaviour and

the belief about whether significant others think the individual will perform the behaviour (Hartwick & Barki, 1994).

Promoting EBF among teenage-mothers

The proposed integrated behavioural conceptual model as illustrated in figure 10 asserts that the promotion of EBF among the teenage-mothers within the social context of Ghana will be achieved by empowering the teenage-mothers and their surrounding social environments through EBF literacy education and the creation of supportive EBF environment.

The World Health Organisation recognises the role of the social environment on an individual's health behaviour and views the establishment of a supportive environment as one of the strategies for health promotion. It argues that the motivation to engage in positive health behaviour alone is not enough to achieve a behavioural change. It must be supported by actions that will increase the person's control and confidence to perform the behaviour (WHO, 2009).

EBF literacy education refers to the means of improving the knowledge and social skills required to increase the motivation and confidence of the teenager-mothers to take control of their decisions to exclusively breastfeed their babies. The creation of a supportive EBF environment refers to actions aimed at addressing the inhibitors of EBF within the social environment and increasing support for EBF practice by empowering both the individuals and the community members. In health promotion, health literacy is more than the ability to read the health information and to keep appointments. It entails the acquisition of the cognitive and social skills that determine the motivation and ability of individuals to gain access to, understand and use information in manners that promote and maintain good health (WHO, 2009). While supportive environments for health refer to the means of providing people with protection against health threats and enabling them to expand their capabilities and develop self-resilience in health within their social environment including places of work (WHO, 1991).

5.7 DIAGRAMMATIC REPRESENTATION OF THE CONCEPTUAL MODEL

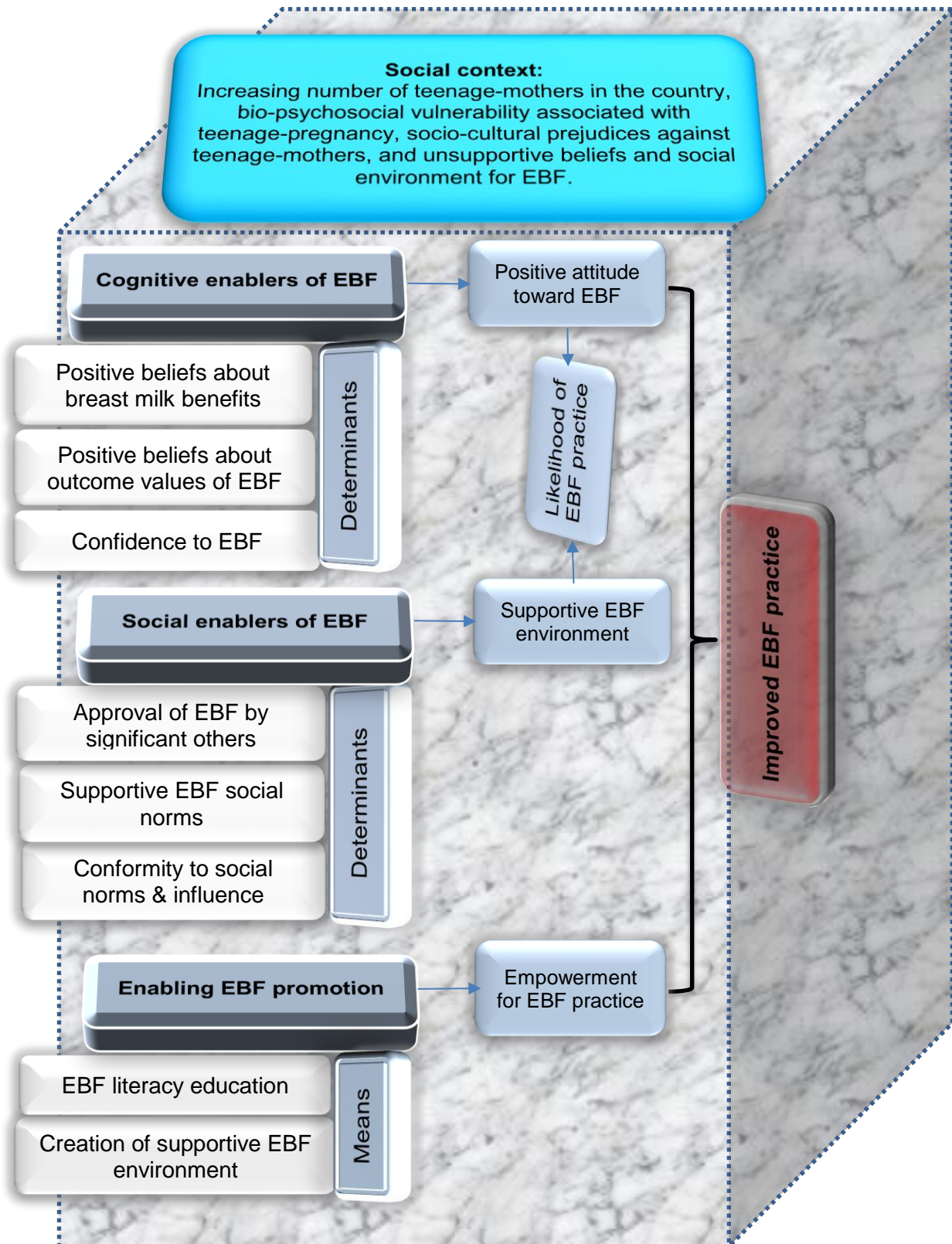


Figure 10: Integrated behavioural conceptual model for promoting EBF among teenage-mothers within the social context of Ghana

5.8 CONCLUSION

In this chapter, the researcher described the behavioural conceptual model for promoting EBF among teenage-mothers within the social context of Ghana following the framework for developing a conceptual model to address a public health issue. The behavioural conceptual model was described in relation to the social context, the overall application of the conceptual model, the assumptions, the key concepts with their definitions and relationships.

CHAPTER 6

CONCLUSION, RECOMMENDATIONS, AND LIMITATIONS

6.1 CONCLUSION

The purpose of this study was to identify and establish the behavioural determinants of EBF among teenage-mothers with the view of proposing a behavioural conceptual model for promoting EBF practices among teenage-mothers' within the social context of Ghana.

The researcher used a multi-strand sequential mixed methods to achieve the purpose of the study. The qualitative strand of the study allowed the researcher to identify the perceived behavioural enablers and inhibitors of EBF from the perspective of the teenage-mothers during the prenatal period. Using quantitative longitudinal, descriptive correlational designs, the researcher established the upper and lower behavioural determinants of actual BF practice up to six months post-delivery. Using the six steps of developing conceptual models for addressing a public health issue as a framework, the researcher proposed an evidence-based integrated social-cognitive behaviour conceptual model for promoting EBF that takes into account the social context of the teenage-mothers in Ghana. As described in Chapter 3, the proposed conceptual model derived from the use meta-inferences and theoretical triangulations. Meta-inferences allowed the researcher to identify the key concepts of the conceptual model from integrated results of the two strands (qualitative and quantitative). While theoretical triangulations assisted the researcher to establish the relationships between concepts and refine the described behavioural model.

Integrated social cognitive models of health behaviour do exist in the literature. Although these models can be used to understand and to promote EBF among teenage-mothers in Ghana, they are not based on evidence of the behavioural determinants of EBF among teenage-mothers within the social context of Ghana, neither primarily designed to promote EBF among teenage-mothers within the social context of Ghana. But the proposed conceptual model is primarily designed to promote EBF among teenage-mothers based on evidence of what are perceived by and identified from teenage-mothers as the behavioural determinants of EBF practice within the social context of Ghana. It

highlights the importance of partnership between individual, community and health professionals in achieving the expected behavioural change.

6.2 RECOMMENDATIONS

The findings of this study as presented and discussed in Chapters 4 and 5 have implications for public health policy-makers, health services managers, health sciences education and further research.

6.2.1 Public health policy-makers

Public health policy-makers should support the promotion of EBF among teenage-mothers by:

1. Setting up a national technical committee to develop teenagers' centred BF education package. Such package should aim at empowering teenage-mothers to perform EBF and the community to support EBF.
2. Leading the review the current antenatal care guidelines to facilitate the provision of teenagers' centred BF education. Such guidelines should also include the implementation of EBF literacy and the creation of supportive EBF environment by addressing the social inhibitors of EBF at the community level.
3. Providing additional resources to facilitate the implementation of the teenagers' centred BF education and the revised antenatal care guidelines.
4. Sponsoring research on the development of EBF readiness assessment tools. Such tools will guide early implementation of EBF empowerment interventions. It will also strengthen the provision of BF centred education.

6.2.2 Health services managers

Health services managers should facilitate the promotion of EBF practice among teenage-mothers by:

1. Supporting skills-based short training on psychosocial issues associated with teenage-pregnancies and behavioural determinants of BF for healthcare professionals. The acquisition of such skills will improve the quality of antenatal care provided to teenage-mothers and their influential role in promoting EBF practice.
2. Organising frequent social and interpersonal skills trainings for healthcare professionals working at antenatal and maternity care units. Such training will assist them to overcome the socio-cultural prejudices associated with teenage-pregnancies and change their attitude toward teenage-mothers.
3. Advocating and mobilising additional resources (human and financial) to support the provision of teenagers' centred BF education and EBF literacy education to the community. Such resources will also allow the healthcare professional to dedicate adequate time for empowering the teenage-mothers and their social surroundings. The community empowerment, specifically, the empowerment of mothers and closed relatives and neighbours' will reinforce their positive influential role as shown in this study.
4. Advocating the active involvement of the teenage-partners' in the provision of BF education and other relevant antenatal care activities. This involvement will empower them to support the teenage-mothers' decisions to exclusively breastfeed their babies.
5. Reinforcing the application of social and interpersonal skills in the provision of antenatal care.

6.2.3 Health sciences education

Health sciences educators and institutions should facilitate the promotion of EBF practice among teenage-mothers by:

1. Including psychosocial issues related to teenage-pregnancies and behavioural determinants of BF into the relevant training modules.
2. Including teenagers' centred approach and EBF readiness assessment into the training of healthcare professionals.
3. Reinforcing the importance of teenagers' BF centred education.
4. Reinforcing the importance of social and interpersonal skills in maternal and child health education.

6.2.4 Further research

Further research is needed to:

1. Develop EBF readiness assessment tool to support the promotion of EBF among teenage-mothers within the social context of Ghana.
2. Explore the effectiveness of the proposed behavioural conceptual model to predict EBF among vulnerable groups of mothers in Ghana.
3. Develop a framework for the implementation of the proposed behavioural conceptual model within the social context of Ghana.
4. Explore strategies for including the components of the proposed behavioural model into the antenatal care package.
5. Conduct a big scale study to explore the social cognitive behavioural determinants of EBF practices among teenage-mothers in Ghana.

6.3 LIMITATIONS

The proposed behavioural conceptual model is based on data generated from pregnant teenagers who attended prenatal and delivered in the hospitals, the results may not be applied to all teenage-mothers in Ghana. The use of a longitudinal approach in stabilizing the determinants of actual EBF makes it difficult to control loss cases. EBF practice was defined using the minimum period of six months and not the maximum of two years as per WHO recommendations, the results might not be the same if EBF was defined according to the maximum period.

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APPENDICES

APPENDIX A1: DATA COLLECTION TOOL FOR PHASE ONE OF THE STUDY

SECTION A: SOCIO-DEMOGRAPHIC DATA.

Note:

- ❖ Please, this section must be completed by each participants before the interview

#	Questions	Answers
1.	How old are you? (Age in years):	
2.	What is your religion affiliation? (Catholic; Protestant; Jehovah Witness, Muslim,)	
3.	What is your level of formal education? (No formal education; Primary level; Junior High, etc)	
4.	What is your current occupation? (Sill schooling; employed, self-employment, unemployed)	
5.	What is your marital status? (Single, Married, living together)	

SECTION B: INTERVIEW GUIDE

Date of the FGD: _____
Duration: _____
Number of participants: _____
Name of facilitator: _____
Language used for facilitation: _____

Note:

EBF in our discussions refers to the feeding of a baby ONLY with the breast milk without any additional supplements, food or water for at least six months after delivery.

1. What do you think about breastfeeding as teenage-mothers?

Probing questions:

- What do you believe are the advantages of feeding a baby only with breast milk?
- What do you believe are the disadvantages of feeding a baby with breast milk?
- What do you think would motivate you to feed your baby with breast milk?

2. What do you think about feeding your baby ONLY with breastfeed milk for at least six months after delivery?

Probing questions:

- What do you think would motivate you to feed your baby ONLY with breast milk for at least six months after delivery?
- What factors or circumstances will make it easy for you to feed your baby ONLY with breast milk for at least six months after delivery?
- What factors or circumstances will make it difficult or impossible for you to feed your baby ONLY with breast milk for at least six months after delivery?
- What else do you think would motivate you to feed or not to feed your baby ONLY with breast milk for at least six months after delivery?
- What other issues come to your mind when you think about teenage- mothers feeding their babies ONLY with breast milk for at least six months after delivery?

THANK YOU

APPENDIX A2: QUESTIONNAIRE FOR PHASE TWO OF THE STUDY

Notes:

- EBF in this study refers to the feeding of a baby ONLY with breast milk without any additional supplements, food or water for at least six months after delivery.
- The questionnaire consists of THREE MAIN SECTIONS. Complete Section 1 and 2 ONLY during the first stage of data collection. Complete Section 3 during the second stage of data collection. Please, familiarise yourself with the instructions under each section.
- Read the information in the consent form to the participant and request her signature before the interview
- **Compile a list of the participants' preferred contact details using the ID number that you have given.** This list is important for follow-up data collection.
- Read each question clearly and use the language familiar to the participant
- Double check the answer with the participant before writing it down in the space provided.

IMPORTANT INFORMATION

- Complete this section at the end of each stage of data collection.
- Interviewer ID is the code given to you by the researcher
- Participant' ID is a code that you will give. It will consist of a letter (use the first letter of your name) followed by a case number (referring to the order that participants are interviewed). For example, if your name is Makombo and you are interviewing the first participant, the "Participant ID" in this case will be **M01**

Interviewer's ID:
Participant's ID:

	First stage of data collection	Second stage of data collection	Office Use
Date of time of collection			
Duration of the interview			
Means of data collection:			
➤ Face to face interview (Yes/No)			
➤ Telephonic interview (Yes/No)			
Language used during the interviews			

DO NOT DETACH THIS PAGE FROM THE REST OF THE QUESTIONNAIRE

SECTION 1: SOCIO-DEMOGRAPHIC INFORMATION

Note:

❖ This section must be completed during the first stage of data collection

#	Questions	Answers
1.	How old are you? (Age in years):	
2.	What is your religion affiliation? (Catholic; Protestant; Jehovah Witness, Muslim,)	
3.	What is your level of education? (No formal education; Primary level; Junior High, etc)	
4.	What is your current occupation? (Sill schooling; employed, self-employment, unemployed)	
5.	What is your marital status? (Single, Married, living together)	
6.	How many people are living with you? (Number)	

SECTION 2: PRENATAL BREATFEEDING BEHAVIOUR

Note:

This section must only be completed during the first stage of data collection at the prenatal period.

Q1. EBF plan

Statement	Answers (Please answer by placing a tick(x))			Office Use
	Agree	Disagree	Undecided	
I plan to feed my baby ONLY with the breast milk without any additional supplements, food or water for at least six months after delivery.				

Q2. Attitude towards EBF

A woman's decision to breastfeed may be influenced by several factors including their beliefs about breast milk and the results of breastfeeding. The statements below represent some of those beliefs.

Please, indicate the extent to which you share those beliefs. Use the following keys to indicate your level of agreement: **1: Strongly agree; 2: Agree; 3: Undecided; 4: Disagree; 5: Strongly disagree**

Statements	Answers					Office use
	1	2	3	4	5	
1. Feeding a baby with ONLY breast milk during the first six months will make her strong						
2. Feeding my baby with ONLY breast milk during the first six months will make my baby healthy						
3. Feeding my baby with ONLY breast milk during the first six months will strengthen the bond between us						
4. Feeding my baby with ONLY breast milk during the first six months is healthy for the mother						
5. Feeding a baby with ONLY breast milk during the first six months reduces the risk of excessive bleeding for the mother after the delivery period						
6. Feeding my baby ONLY breast milk during the first six months will save me money.						
7. Feeding a baby with ONLY breast milk for six months is a bad practice because a baby needs water from birth						
8. Feeding a baby with ONLY breast milk for six months will make me feel guilty						
9. Feeding a baby with ONLY breast milk for six months will make my breast sag						
10. Overall, it is harmful to feed a baby with ONLY breast milk for six months						

Q3. Subjective norms regarding EBF

Women' decision to breastfeed may be influenced by certain social norms and the opinions of significant others in their social environment. The statements below represent some of those factors.

Please, indicate the extent to which you share the views expressed by each of these statements. Use the following keys to indicate your level of agreement: **1: Strongly agree; 2: Agree; 3: Undecided; 4: Disagree; 5: Strongly disagree**

Statements	Answers					Office use only
	1.	2	3	4	5	
1. Feeding new-born baby with ONLY breast milk for six month is seen as a sign of poverty in my community						
2. Feeding new-born baby with ONLY breast milk for six month is not acceptable by most mothers in my community						
3. The decision to feed my baby with ONLY breast milk for six months will depend on my partner's approval						
4. The decision to feed my baby with ONLY breast milk for six months will depend on my mother's approval						
5. The decision to feed my baby with ONLY breast milk for six months will depend on my relatives' approval						
6. The decision to feed my baby with ONLY breast milk for six months will depend on my neighbours' opinions						
7. The decision to feed my baby with ONLY breast milk for six months will depend on what the nurses /midwives say about breastfeeding						

SECTION 3: POSTNATAL EBF PRACTICE

Note: *This section must only be completed 6 months after delivery.*

Screening information

#	Questions	Answers		Office Use
		Yes	No	
1.	Is the participant still willing to be interviewed?			
2.	Did the participant deliver by caesarean section?			
3.	Was it a stillbirth?			
4.	Were there any complications during or immediately after delivery?			
❖ <i>If the participant answer any of the above questions (1-4) with Yes, please discontinue the interview</i>				
❖ <i>If the participant answer all the above questions (1-4) with No, please continue with the interview</i>				
❖ <i>If you discontinue the interview for any other reasons than the ones listed in questions 1 to 4, please indicate those reasons here:</i>				

Actual EBF Practice

#	Questions	Answers		Office Use
		Yes	No	
1.	Did you give your baby the breast milk in the first hour after giving birth?			
2.	If yes , did you continue to feed your baby ONLY with breast milk with no other food or liquid, not even water, with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines, up to six months post-delivery?			
<i>If no to questions 1 and 2</i> , did you stop because of the following reasons?				
1.	Low milk supply			
2.	The child not being satisfied			
3.	Mother resume working			
4.	Breastfeeding was painful			
5.	Breastfeeding was time consuming			
6.	Physicians recommendation			
7.	I simply didn't see the relevance of EBF			
Other reasons (specify):				

END

APPENDIX A3: CONFIDENTIALITY BINDING FOR FGD

This confidentiality binding agreement is between **Angela Kwartemaa Acheampong** (Facilitator/Principal Investigator) and the participants of the Focus Group Interviews: We, participants of the FGI facilitated by **Angela Kwartemaa Acheampong** agree to strictly adhere to the following:

- 1. To freely express our opinions and views during the group discussions
- 2. To show respect for each other views
- 3. Not to share the views and opinions of individual members to other people outside of the group.

The facilitator (**Angela Kwartemaa Acheampong**) has agreed to the following:

- 1. To respect the views and opinions of the members
- 2. Translated and transcribed data would be verbatim without the researcher’s biases concerning the issue under discussion.
- 3. Data in the form of transcripts and audiotapes would be kept under lock and key.
- 4. Electronic (Soft) copies of data would be kept on her personal computer and that of her research supervisor with passwords.
- 5. Data would be kept for at least five years before they would be discarded.
- 6. During publication of data, members’ real names would not be reported to protect their identity.

.....
Signature of investigator

Date

.....
Signature of participant

Date

APPENDIX B1: CONSENT FORM

Declaration by the participant

I voluntarily consent to participate in the above mentioned research project. The background, purpose, risks and benefits of the study have been explained to me. I also understand that I may withdraw from the study at any time without consequences. I understand that my participation in the study will be acknowledged, although my identity and the identity of health facility will be withheld. I agree to be audiotaped during my participation in this study. I understand that my participation in the study is voluntary.

.....
Participants' signature Date

.....
Witness Date

Declaration by investigator

I, **Angela Kwartemaa Acheampong** declare that:

- I explained the information in this document.
- I encouraged her to ask questions and took adequate time to answer them.
- I am satisfied that she adequately understands all aspects of the research, as discussed above.
- I did/did not use an interpreter. *(If an interpreter is used then the interpreter must sign the declaration below.*

Signature of investigator **Date**

Declaration by the interpreter

I certify that, the nature and purpose, potential benefits and possible risks associated with participating in this research have been explained to the participant. All questions were answered and the participant has agreed to participate in the research study.

Signature of interpreter **Date**

APPENDIX B2: ASSENT FORM

Your under 18 years pregnant ward is invited to participate in a study by sharing her personal opinions and views regarding the feeding of infants with breast milk only in the first six months after delivery. The interviews (groups or individuals) will not take more than one hour and would be audiotaped. The tapes would be kept for at least five years.

If you agree for her participation in this study, she would be invited for either a face to face interview with the researcher or a group discussion at her own convenience. She is assured that the information she will provide will be available to only the researchers and supervisor. There will be no way the responses will be linked to the participants in any way. The information she will provide will help the researcher to develop a conceptual model which would improve EBF practices among teenage mothers. Thank you.

Possible Risks and Discomforts

There are no known physical risks associated with participation in this study. She has the right to refuse to answer any question that makes you uncomfortable.

Possible benefits

Your ward may not benefit directly by participating in this study but her responses would assist the researcher to make recommendation for improvement of feeding infants with breast milk only in the first six months in Ghana. It will also contribute to the learning process of the researcher.

Confidentiality

I will ensure that your child's identity is strictly protected. Therefore, information such as her name and address would be available to only the researcher and her supervisor.

APPENDIX B3: PARTICIPANT INFORMATION SHEET

Title of Study: Promoting EBF among Teenage mothers in Ghana: Towards a behavioural conceptual model

What is the research about?

This is a research being conducted by **Angela Kwartemaa ACHEAMPONG**, a Doctoral student at the University of South Africa. You are invited to participate in this research because you are attending the antenatal care services at one of the general public hospitals in the Greater Accra Region. The study intends to identify factors that facilitate the feeding of infants with breast milk only for the first six months post-delivery among teenagers and explore measures that could be used to promote this behaviour among teenagers in Ghana. This study is for academic purposes.

What will I be asked to do if I agree to participate?

You will be invited to participate either in a group discussion with other pregnant teenagers or in a face-to-face individual interviews (at the last visit and six months after delivery) with the researcher at your own convenience. During these interviews, you will be given the opportunity to share your personal opinions and views regarding the feeding of infants with breast milk only in the first six months post-delivery. The interviews (Focus groups or individuals) will not take more than one hour. The group interviews will be conducted by the researcher while the individual interviews will be conducted by a fieldworker. The group interview will be audio-recorded and notes will also be taken in order to allow the researcher to analyze and write the final report for the study. The recorded data would be kept for a maximum of five years.

Would my participation in this study be kept confidential?

The information you will share with the researcher or fieldworker will be kept confidential as much as possible. Your name or address is not required. The tape will be locked away by the researcher for a period of three years. No individual names or identity will be used in the report. Should an article be written about this research project, **your identity will not be disclosed.**

What are the risks of this research?

There are no known risks associated with your participation in this research. However, you have the right to refuse to answer any question that makes you feel uncomfortable.

In case you prefer the interview to be held outside of your house, the researcher will cover your transport cost and will supply you with refreshment.

What are the benefits of this research?

This research will not have any monetary benefit to you as a participant. However, your experiences will assist the researcher to make recommendation for improvement of feeding infants with breast milk only in the first six months in Ghana. Your participation will contribute to the learning process of the researcher.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part in the research. You may choose to withdraw your participation at any time should you decide to participate in the research and you will not be penalized or lose any benefits which you otherwise qualify for.

What if I have questions?

If you have any questions about the study itself, please contact me (**Angela Kwartemaa Acheampong**) on Telephone: 00233-265220141 or 00233-5534868289 or on Email: angela_acheampong@yahoo.com or angela.acheampong@wiuc-ghana.edu.gh This research has been approved by the Scientific Research Committees of the University of South Africa and Ghana Health Service Ethical Review Committee. Should you wish to report any problems you have experienced in relation to the study, please contact Prof Makombo Ganga-Limando, the Research Supervisor on Tel number: +27-(12)-4294131 or E-mail: gangam@unisa.ac.za or Dr. Lydia Aziato, the local supervisor on 020-855-2719. You can also contact the administrator of the Ghana Health Service Ethics Review Committee on 0507041223. You can also contact **Hannah Frimpong**, Administrator, Ghana Health Service Ethics Review Committee on Contact number 0507041223

Would I be compensated for my time? : You would be provided with water and snacks to compensate you for your time.

APPENDIX B4: LETTER OF PERMISSION

Angela Kwartemaa Acheampong

P.O Box TB 105, Taifa Burkina, Accra, Ghana

Telephone: 00233-265220141 or 00233-553468289

Email: angela_cheampong@yahoo.com or

angela.acheampong@wiuc-ghana.edu.gh

To: Director of
Greater Accra Region
Accra, Ghana

Dear Sir/Madam

PERMISSION TO ACCESS ANC REGISTER

I am a Doctoral student at the Department of Health Studies, University of South Africa (UNISA). I am conducting a research entitled: ***Promoting EBF among Teenager-mothers in Ghana: Towards a behavioural conceptual model.*** This study is part of the requirement for my degree. The purpose of this study is to determine the behavioural predictors of EBF among teenager-mothers' in Ghana and propose a conceptual model that could be used to promote EBF among teenager-mothers' in Ghana. The study will involve the participation of pregnant teenagers who have attended at least three antenatal care visits at this hospital. The initial interviews will take place before delivery with follow-ups interviews six months post-delivery.

I kindly request your permission to allow me to access the antenatal attendance register in order to identify the potential participants. I will arrange the interview with the participants at the time and place more convenient to them. I would like to ensure you that this process will not disrupt the routine activities of the unit and that all information will be treated with confidentiality. This study received ethical clearance from the ethics committees of the University of South Africa and Ghana Health Research Board.

Please find attached the following substantiating documents for your consideration:

1. Summary of the accepted proposal
2. Copies of ethical approval from University of South Africa and Ghana Health Research Board
3. Interview schedule.

Yours faithfully

APPENDIX C1: ETHICAL CLEARANCE UNISA



**RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES
REC-012714-039 (NHERC)**

2 November 2016

Dear Miss AK Acheampong

Decision: Ethics Approval

HSHDC/548/2016

Miss AK Acheampong

Student: 5854-847-5

Supervisor: Prof M Ganga-Limando

Qualification: PhD

Joint Supervisor: -

Name: Miss AK Acheampong

Proposal: Promoting exclusive breastfeeding among teenager-mothers in Ghana: Towards a behavioural conceptual model.

Qualification: DPCHS04

Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted for the duration of the research period as indicated in your application.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on 2 November 2016.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*
- 2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Research Ethics Review Committee, Department of Health Studies. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*



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APPENDIX C2: ETHICAL CLEARANCE, GHANA HEALTH SERVICE

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

In case of a reply, the ref. and date of this letter should be quoted



Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Tel.: +233-0302-681109
MyRef:GHS/RDD/ERC/Admin/App/16/192

Fax: + 233-0302-685424

Your Ref No.

Email: ghserc@gmail.com

Angela Kwartemaa Acheampong

P. O. Box TB 105

Taifa-Burkina Accra

Ghana

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS.ERC Number	GHS-ERC: 07-11-2016
Project Title	Promoting EBF among teenage Mothers in Ghana: Towards a Behavioural Conceptual Model
Approval Date;	15 th December, 2016
Expiry Date	14 th December, 2017
GHS-ERC Decision	Approved

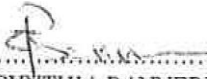
This approval requires the following from the Principal Investigator

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing!
- Submission of a final report after completion of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings,

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED..... 
.....
CYNTHIA BANNERMAN
DR. CYNTHIA BANNERMAN (GHS-ERC
CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra