SCHOOL OF NURSING AND MIDWIFERY

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

ADHERENCE TO ESSENTIAL NEWBORN CARE PRACTICES
AMONG NURSES AND MIDWIVES IN THE TAMALE METROPOLIS OF GHANA

BY

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(10702891)

THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF PHILOSOPHY IN NURSING DEGREE

SEPTEMBER 2020
DECLARATION

I, Nestor Babakyirenaah, hereby declared that this thesis is my true handwork in putting this research together besides references and research books which were acknowledged and included in the reference list. This thesis is under the able supervision of Dr. Florence Naab in the school of Nursing and Midwifery, University of Ghana-Legon and Dr. T. A. Ndanu of the Department of Community and Preventive Dentistry, University of Ghana Dental School/College of Health Sciences. This work has not been submitted either in part or full to other institutions for the award of any degree.

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Date 14/06/21
Abstract

Newborn mortality is a canker in society robbing couples off their happiness and dreaded situations which affects mothers globally for carrying a pregnancy to term only to lose your baby due to preventable conditions. This devastating situation has left many mothers worried about childbirth most especially in LMICs. To avert and decrease the newborn morbidity and mortality numbers, WHO has recommended essential newborn care practices (ENCP). However, adherence to protocols in Ghana is generally low. Nurses and midwives adherence to ENCP is essential in the delivery of care to mothers and their newborns. Hence, the study to investigate Nurses and Midwives' adherence to ENCP in the Tamale Metropolis using the decomposed theory of planned behaviour (DTPB) as an organising framework.

A quantitative study using a descriptive cross-sectional design was employed, and a multistage method of sampling techniques was used to gather a sample size of 330 nurses and midwives. Simple random sampling techniques were employed in the recruitment of respondents. Descriptive and inferential statistics thus, correlation, regression and mediation analysis in the statistical package for social science (SPSS) version 21.0 software were used to analyse data. The study findings revealed that nurses and midwives had positive attitudes, good subjective norm, positive PBC, positive behavioural intention and good behaviour (adherence) towards ENCP. The results indicated a positive relationship between attitude, subjective norm, PBC, behavioural intention and their behaviour. Also, their PBC and behavioural intention predicted their behaviour (adherence). Therefore, to ensure high life expectancy of newborns and their mothers there should be conclusive response to ENCP thereby ensure adherence to these protocols at each stage of the care setting.
DEDICATION

I dedicate this thesis to my late father, Mr. Babakyirenaah Gyan Robert of blessed memory, and my dear mother Mrs. Babakyirenaah Georgina, who was very instrumental in my education. This study is also dedicated to my Late Prophet, T. B. Joshua, and my principal Mr. Valentine Ayangba for prayer and financial support. Finally, this is a study dedicated to my siblings, colleagues, and friends for their prayers, unflinching support, and encouragement to a successful end of my studies.
ACKNOWLEDGEMENT

His mercies endure forever and his grace is sufficient for us, I am highly favour as I give thanks and glory to the almighty God and our Lord and saviour Jesus Christ for giving me the strength, courage, wisdom, knowledge, understanding, and above all good health to pursue this programme. All glory and honour be to his holy name. I am most grateful to the University of Ghana, School of Nursing and Midwifery, particularly, the Maternal and Child Health Department for the unwavering and unthinkable guidance during my study.

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LIST OF ABBREVIATIONS

CS  
Caesarean Section

DTPB  
Decomposed Theory Planned Behaviour

ENAP  
Every Newborn Action Plan

ENCP  
Essential Newborn Care Practices

GHS  
Ghana Health Service

GDHS  
Ghana Demographic and Health Survey

GMHS  
Ghana Maternal and Health Survey
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<td>SN</td>
<td>Subjective Norm</td>
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<td>UN-IGME</td>
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CHAPTER ONE

INTRODUCTION

This chapter consists of the background of the study, the problem statement, the purpose of the study, objectives of the study, the study significance, and the operational definitions of terms used in the study.

1.1 Background of the study

The first 28 days of life for a newborn is a highly critical and risky phase in the newborn transition period (WHO, 2019). It appears there is a higher incidence of morbidity and mortality among neonates around this period of growth and development. Globally, about 2.5 million newborn deaths occur within the first 28 days of births (UNICEF, 2018). It is approximated in 2018, that about 2 million newborn deaths occur within the first seven days of life, however, 0.9 million deaths occur within the first 24 hours of life (WHO, 2018a, 2019). Newborn mortality refers to the death of a newborn occurring between 0-28 days of life. Newborns who die within this period of birth suffer from conditions and ailments linked with poor quality of care at birth. Essentially, preterm birth, birth asphyxia, infections, and birth defects are the main reasons for neonatal deaths (Gennaro, O'Connor, & Marx, 2017; Halim et al., 2016; WHO, 2019).

Currently, the global estimates for neonatal and infant mortality rates, based on sustainable development goals (SDGs) estimates stood at 12 deaths per 1000 live births and 18 deaths per 1000 live births respectively (UNICEF, 2018; WHO, 2019). According to World Population Data Sheet (WPDS, 2018), the infant mortality rate (IMR) in High-Income
Countries (HICs) stands at 5 deaths per 1000 live births, with some countries doing extremely well. For instance, Finland has 2 deaths per 1000 live births whereas Cyprus and Israel record 3 per 1000 live births. On the other hand, the values in 2017 for Low-middle income countries (LMICs) stand at 35 and 52 per 1000 live births for less and least developed countries respectively. In 2018, these figures, for less and least developed countries, dwindled to 34 and 49 per 1000 live births respectively (WPDS, 2017, 2018).

Furthermore, on the African continent, the estimates for newborn mortality for 2017 and 2018 showed a slight decline from 51 and 50 per 1000 live births concerning the said period. The apparent trend of decline of the figures for 2017 and 2018 is further attested for Sub-Saharan Africa, West Africa, and Ghana with the following corresponding figures per 100 live births: 56 and 54, 64 and 62, and 41 and 37 (WPDS, 2017, 2018). Consequently, Sub-Saharan African’s statistics indicate that 1 out of every 12 children born dies before attaining five years of life (WPDS, 2018), while in Ghana a newborn dies every 15 minutes. (Tabutin, Masquelier, Grieve, & Reeve, 2017)

Following the unsettling impact of newborn deaths, the emphasis was placed on tackling child health globally, and this is reflected by the Millennium Development Goals 4 (MDG’s 4). Following the implementation of MDG 4, the under-five mortality rate reduced drastically from 91 per 1000 live births in 1990 to 43 per 1000 live births in 2015 (Liu et al., 2015; Tabutin et al., 2017; You et al., 2015). Considering the success of MDG’s 17 new goals were adopted by the United Nations are known as Sustainable Development Goals (SDGs), in 2016, to help sustain the gains of the MDGs (Gupta & Vegelin, 2016). And SDG 3.2 is aimed at reducing neonatal mortality to below 12 per 1000 live births by 2030 (WHO, 2018b).
Despite the tremendous achievement of the MDGs, Sub-Saharan Africa is still battling with extremely high neonatal mortality rates and its adverse issues (de Bernis et al., 2016; Tabutin et al., 2017). It appears that the efforts being made by LMICs are showing little strides. To achieve the SDG 3.2 some countries in Sub-Saharan Africa and Southern Asia need to double the effort that is already being injected towards slashing neonatal mortality rates range between 27-29 deaths per 1000 live births (de Bernis et al., 2016; UN-IGME, 2018; You et al., 2015).

According to Ghana Maternal and Health Survey (GMHS, 2018), in Ghana, there is a marginal reduction in neonatal mortality from 29 deaths per 1000 live births in 2007 to 25 deaths per 1000 live births in 2017, although, within these ten years, Ghana recorded a significant decline in infant and under-five mortality from 50 to 37 and 82 to 52 deaths per 1000 live births respectively. Following these trends, Ghana is among the countries that could not meet the MDG’s 4 targets of a two-thirds reduction of under-five mortality by the year 2015 (Liu et al., 2015; Victora et al., 2016).

Monitoring and evaluation are key in health care systems in an attempt to meet SDG’s 3.2 which focuses on preventing deaths of newborns (Agyapong, 2017; GHS, 2019). Along these lines, WHO developed essential newborn care guidelines for countries to practice evidence-based interventions to help reduce newborn morbidity and mortality (WHO, 2019). These care practices are a set of simplified and detailed recommendations designed to improve and provide standardized newborn care from preconception to intra-conception, immediately after birth then, during the postnatal period (GHS, 2019; Leslie & Buntin, 2018; Renfrew et al., 2014). Some key elements such as thermoregulation, clean safe delivery and cord care, initiation of breastfeeding within the first (30) minutes to one hour, immunization,
care for the eyes, identifying danger signs and managing them, care for preterm/low births
underweight infants and effective management of newborn illness (Agarwal, Koul, &
Sharma, 2018; GHS, 2019; Joshi et al., 2018; Sacks, Bailey, Robles, & Low, 2013). Also,
GHS encourages mothers and families to seek early medical care with the following early
signs; failure to suck, reduced activity, difficulty in breathing, high body temperature,
convulsions, and coldness (GHS, 2019; Joshi et al., 2018).

Clinical guidelines are aimed at providing reliable, competent, and high-quality nursing
and midwifery care grounded on evidence-based practices (GHS, 2019; Ronsley, Islam,
Ronsley, Metzger, & Panagiotopoulos, 2018). Even though developing and distributing clear
guidelines is a step in the right direction to reduced newborn morbidity and mortality using
evidence-based interventions, global adherence to these guidelines remains a massive
challenge in the health care continuum (Miller et al., 2016).

According to Miller et al. (2016), improvement in guidelines implementation
requires a commitment to using multifaceted strategies such as empowering nurses and
midwives through training, providing clinical assessment devices and simulation, the
opportunity for career progression, monitoring, evaluation, and rewards. It is projected that
nurses and midwives who adhere to local, national, and international guidelines right from
the onset of pregnancy to post-delivery care are likely to reduce neonatal deaths by 16% and
reduce low birth weight by 24% (WHO, 2019).

Additionally, the practices whereby a midwife or group of midwives care for a
woman from the detection of pregnancy until delivery prevents 24% of pre-term births
(WHO, 2016a, 2019). Thus, nurses and midwives must provide early identification and
management of at-risk pregnancies and ensure the provision of essential newborn care services to prevent newborn morbidity and mortality (Anderson, Johnson, & de Vries, 2017; Rurangirwa, Mogren, Ntaganira, Govender, & Krantz, 2018). It appears that the concept of adherence is necessary as far as essential newborn care practices (ENCP) are concerned. Nurses and Midwives’ ability to adhere to ENCP as recommended by WHO will contribute greatly to decrease newborn morbidity and mortality (WHO, 2016a; WHO & Mathers, 2017).

Furthermore, following these benefits, ENCP is very important in the discharge of nursing and midwifery care and practices (Berhea, Belachew, & Abreha, 2018; Hockenberry & Wilson, 2018). Adherence to ENCP is crucial during the transition of the newborn from uterine life to the adaptation of life outside the uterus. Moreover, it contributes significantly to the well-being, growth, and survival of the newborn (Richards, 2016). Yet it seems these processes are not well known and/or meticulously practiced by nurses and midwives before and during the delivery process as well as post-delivery when they are required to assist mothers in the care of their babies. Furthermore, adherence to ENCP will assist neonates to go through the transition processes successfully without complications and thus ensure newborn survival (Allen, Opondo, & Campbell, 2017). Skillful care employed during labour and delivery as well as early identification and management of complications alone can reduce newborn deaths to about 50% (Lasi, Middleton, Bhutta, & Crowther, 2019). Additionally, there is a reduction of about 45% of intrapartum deaths with effective and efficient antenatal care. While efficient postnatal care can prevent up to 75% of neonatal mortality resulting from infections and asphyxia (GHS, 2019; WHO, 2019).
A study on adherence to cervical cancer screening guidelines in 2012 indicates that most health care providers particularly nurses and midwives fail to adhere to guidelines and protocols due to the complexity in the use of the guidelines (Teoh et al., 2015). Similarly, study findings by Molenaar et al. (2018), suggest that, contrary to records showing a high awareness of guidelines, midwives’ adherence to an antidepressant during pregnancy was very low due to the difficult nature of the procedures. Also, another study finding reveals that adherence to Pediatric ketoacidosis protocols was poor among nurses and midwives as a result of inadequate knowledge (Ronsley et al., 2018). Generally, according to Mostafa Mehrara (2016), nurses and midwives have a deplorable adherence culture in every aspect of service in health care facilities. Moreover, commitment to adhering to guidelines and protocols throughout healthcare delivery systems alone can lead to better, reliable, proficient, and high-quality patient outcomes as indicated in the findings of a study on good practices towards the management of Benign Prostate Cancer (Rahman, Putra, Mochtar, & Rasyid, 2019). It appears that to succeed in the fight against newborn morbidity and mortality concerted efforts must be made by both the institutions of care and individual nurses and midwives to adhere to essential newborn care practices. This study was aimed at investigating Nurses' and Midwives' adherence to ENCP post-delivery in Tamale Metropolis.

On this note, this study assessed the relationship between adherence to essential newborn care practices, by nurses and/or midwives, and neonatal mortality rates. Moreover, the study hypothesizes that adherence to these practices is crucial to addressing neonatal mortality.
The decomposed theory of planned behavior, a theoretical framework by Taylor and Todd (1995), was used to understand Nurses’ and Midwives' adherence to essential newborn care guidelines.

1.2 Problem statement

The global community agreed on 17 new and revised sets of goals, thus, sustainable development goals (SDG’s) to replace the millennium development goals (MDG’s) (WHO, 2016b). The new set of goals particularly SDG 3.2 aims at reducing child mortality and avoiding preventable deaths among newborns by 2030; All nations target the reduction of neonatal mortality to 12 or less by 2030 (de Bernis et al., 2016; Liu et al., 2016; Victora et al., 2016; You et al., 2015). This marvelous idea cannot be realized without proper implementation of the ENCP in the Tamale Metropolis. Despite the drastic reduction in child mortality over the years, neonatal mortality is a battle yet to be won as the stage of growth and development of newborns is marked with survival challenges. Currently, the global neonatal mortality is 18 deaths per 1000 live births (UNICEF, 2018). But, if the current mortality records are anything to go by, achieving the SDG 3.2 could become an impossible mission if not a mirage to many sister nations (UN-IGME, 2018; UNICEF, 2018).

Also, it is projected that from 2018 - 2030, 56 million children under five are expected to die and 50% of them would be neonates (UN-IGME, 2018). Furthermore, an estimate of 80% rate for neonatal mortality will occur in the sub-Sahara Africa and Southern Asia regions (UN-IGME, 2018; Victora et al., 2016). However, to ensure the safety and survival of the newborn, there is a need for quality and effective care at that stage of growth and development.
According to GMHS (2018), the neonatal mortality rate in Ghana stands at 24 deaths per 1000 live births. Furthermore, Tamale Metropolitan Health Directorate (TMHD, 2018) annual reports indicate that Northern Region recorded about 63 per 1000 live births for neonatal mortality, and out of this, Tamale Metropolis’ neonatal mortality rate was 40 per 1000 live births representing 63.7%. Against this background, there is an increase in neonatal mortality as compared to the previous year (2017) where Northern Region recorded 48 deaths per 1000 live births, while the Tamale metropolis alone recorded 27 deaths per 1000 live births. There is an increased neonatal death of up to about 130 deaths (32.6%) and most of these deaths occur within the first seven days of life, which is quite high and thus unacceptable. Additionally, it appears that the critical moment of child survival is within 48 hours of delivery which requires an unquestionable deployment of ENCP by nurses and midwives but this study was inclined to suggest that it was most often missed.

Also, studies report that home deliveries in the absence of skilled birth attendants (SBA’s), no spousal preparedness, Nurses and Midwives’ delay in initiating the right action, delay seeking care early enough during illness or labour, indigenous cultural practices, poverty, and delay in identifying complication before labour accounts for high neonatal death rates (GHS, 2019; Jennings et al., 2017; Liu et al., 2015). Additionally, other studies report illiteracy, poor attitude of parents, insufficient antenatal services, delivery, and postnatal care as the reasons for the larger numbers of neonatal mortality in low-middle income countries (Tabutin et al., 2017; Yadufashije, Sangano, & Samuel, 2017). This study insists that the lack of adherence of nurses and midwives to ENCP has a great negative influence on neonatal mortality. Basic practices and timely intervention in addition to evidenced-based practices will lower infection and births complications. Nurses and
Midwives’ adherences to basic techniques such as identification and categorization of pregnant women (vaginal delivery and Caesarean Section (CS)), effective handwashing before and after touching newborns, use of sterile instruments, and proper assessment of newborn to identify and treat infection early and births complication will greatly mitigate newborn deaths (Halim et al., 2016; Roos & von Xylander, 2016; Zaka et al., 2018).

However, MOH, GHS, development partners, and NGO’s developed the National Newborn Health Strategy and Action Plan for 2014-2018 with a target of reducing neonatal mortality to 21 or less per 1000 live births and institutional neonatal mortality to 35% the end of the year 2018 (MOH, 2018). This plan is universal and comprehensive with similar characteristics to the Global every newborn action plan (ENAP). It aims at collaborating with experts and stakeholders in maternal and child health tasks with reducing neonatal mortality (UN-IGME, 2018). Tamale Metropolis was one of the implementation zones with multi-stakeholders support, where it was possible to track progress and shortfalls to avert an increase in neonatal mortality (MOH, 2018). The Tamale Metropolis is an urban area with many literates who patronize Hospital delivery with few home deliveries by TBA’s. All TBA have some amount of knowledge on essential newborn care practices. Despite the implementation of the Ghana National Newborn Health Strategy and Action Plan from 2014-2018, Tamale Metropolis recorded 40 deaths per 1000 live birth of neonatal mortality in 2018 which indicates a sharp increase from the 2017 neonatal mortality of 27 deaths per 1000 live birth (TMHD, 2018). Despite all these strategies, it appears that some parts of the world, most especially Ghana, do not adhere to essential newborn care by Nurses and Midwives. It is, therefore, imperative to investigate Nurses and Midwives' adherence to
ENCP in the Tamale Metropolis using DTPB by Ajzen (1985b); Taylor and Todd (1995), as an organising framework.

1.3 Purpose of the study

The purpose of the study was to investigate nurses' and midwives’ adherence to ENCP in the Tamale Metropolis.

1.4 Specific objectives

The specific objectives were generated from the constructs of the DTPB. These specific objectives were to;

1. Ascertain the attitude of nurses and midwives towards adhering to essential newborn care practices.

2. Determine the influence of beliefs and perception (subjective norms) of nurses and midwives on their adherence to essential newborn care practices.

3. Determine the behavioral factors (perceived behavioral control) that affect nurses' and midwives’ adherence to essential newborn care practices.

4. Describe nurse's and midwives’ intention to adhere to essential newborn care practices.

5. Establish the relationships between attitudes, subjective norms, and perceived behavioral control on the intention of nurses and midwives to adhere to essential newborn care practices.
1.5 Research Questions

1. What is the attitude of nurses and midwives towards adhering to essential newborn care practices?

2. What influences the beliefs and perception (subjective norms) of nurses and midwives in their adherence to essential newborn care practices?

3. What behavioral factors (perceived behavioral control) affect nurses' and midwives' adherence to essential newborn care practices?

4. What is the nature of the intention of nurses and midwives to adhere to essential newborn care practices?

5. What are the relationships between attitudes, subjective norms, and perceived behavioral control on the intention of nurses and midwives to adhere to essential newborn care practices?

1.6 Hypothesis

1. There is a positive relationship between attitude, SN, PBC, the intention of nurses, and midwives on practices ENCP.

2. There is a positive mediating effect of intention mediates SN, and behaviour on practices of ENCP

1.7 The significance of the study

The study sought to investigate nurses' and midwives’ adherence to ENCP in the Tamale Metropolis. By outlining the reasons influencing nurses' and midwives’ adherence
to ENCP, the study would suggest steps to be taken to improve newborn health and survival. Also, investigating nurses' and midwives' adherence to ENCP would contribute to the pool of prevailing knowledge of essential newborn care. This would widen the base of knowledge of nurses and midwives in the nursing fraternity and other health care providers on the reasons influencing the adherence or non-adherences of ENCP. Furthermore, the research outlined strategies and programs for increasing the level of adherence, and knowledge of nurses and midwives to ENCP in the Municipality (local), the national, and internationally. This study would serve as rich literature for future researchers since few studies exist in the region.

1.8 Operational of terms

**Essential newborn care:** this is care provided to newborns in the health care facility within the first 28 days of life. They are thermal care, cord care, and breastfeeding.

**Newborns:** babies within an age spanning 0-28 days of life.

**Practice:** refers to care provided to a newborn with the first 0-28 days of birth. They include early initiation of breastfeeding, thermal care, and hygienic cord care.
CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

This chapter deals with a complete description of the theoretical foundations of the research and review of pertinent literature. It deals with the theoretical framework that was used to study possible adherence to essential newborn care practices.

2.1 Selection of Theoretical Framework

Selecting a theoretical framework to investigate the research questions is a very key aspect of the literature review (Creswell & Creswell, 2017). In the quest for a theory or model, two behavioural theories were identified and not deem fit for the study. The first is the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1981), which is limited to behaviour not inherent in the individual and does not predict access to conditions influencing a particular behaviour. Therefore, investigating Nurses and Midwives’ adherence to ENCP using this theory will result in inadequate information.

Secondly, the Health Belief Model (HBM) developed by Rosenstock (1950), was meant to study and understand the proclivity for individuals to adopt disease prevention measures. Despite the model’s popular application in several health-related studies, it does not consider factors such as beliefs, and attitudes influencing human behaviour. HBM is more of a description than explanatory which is not helpful to this study. There existed limited studies on cues to action in predicting health behaviours. The TRA & HBM theories or models are not considered suitable enough for this study.
2.2 Decomposed Theory of Planned Behaviour (DTPB)

Taylor and Todd (1995), developed the Decomposed Theory of Planned Behaviour (DTPB) from the merger of constructs of two theories namely; the theory of planned behaviour (TPB) and technology acceptance model (TAM). TAM places emphasis on factors that influence an intention (social influence, attitude, resources, and technological facilitating condition) and the and user acceptance of information (Davis, 1993). TAM hypothesizes that acceptance and usage of behaviour largely depend on perceived ease of use and usefulness (Davis, 1993). Ajzen (1985a), developed the TPB to understand individual intention and behaviour. The TPB was an expansion of TRA developed by Fishbein (1967), to include perceived behavioural control as a precursor of behaviour to behavioural intentions (Ajzen, 1985a). It was used in social, behavioural science and health to predict and understand individual intentions and behaviour. The constructs of the theory are used to examine the elements of professional behaviour (Godin, Bélanger-Gravel, Eccles, & Grimshaw, 2008). The theory has three broad categorical constructs predicting behavioural intention; attitude, subjective norms (SN), and perceived behavioural control (PBC).

Attitude is the extent to which an individual feels satisfied or unsatisfied with the outcome of a particular behaviour. The attitude is divided into the three sub-constructs; they are compatibility perceived usefulness, and ease of use to give a better meaning and understanding to accommodate their specific influences on behavioural intention (Sahli & Legohérel, 2014; Taylor & Todd, 1995). The perceived usefulness deals with the level of users' belief in using a specific practice to yield desired results. The perceived ease of use has to do with the level of convenience and how simple practice is to the user. Compatibility
refers to the degree to which a behaviour fits the existing values. These factors perceived ease of use, perceived usefulness, and compatibility influence attitude towards the behaviour (Taylor & Todd, 1995).

Subjective norms deal with factors that influence and motivate an individual to perform or not perform a particular behaviour of interest. Subjective norms are about people’s beliefs and intrinsic motivations about what is important (peers, and superior) (Shang, Chen, & Shen, 2005).

Perceived behavioural control has to do with the perceived simple or complex obstacles that accompany the performance of a particular behaviour. These perceptions coupled with previous experiences, resources, and technological facilitating conditions are determinants that encourage an individual to act or refuse to do so (Ajzen, 1988). Self-efficacy is a construct of perceived behavioural control which is a state where an individual is convinced beyond any reasonable doubt that behaviour is either simple or difficult. Self-efficacy is an individual’s own inner beliefs, and confidence in acting. Self-efficacy is a very effective tool for building employees’ morale, belief, and confidence towards achieving desired objectives (Utami, 2017).

However, usage barriers of DTPB may impede intention formation and use. Thus, the existence of intention may not inherently inspire use. Notwithstanding this limitation, DTPB was preferred because it examined the determinants of usage and information adoption. Besides, the constructs of the theory used in previous studies have revealed accurate predictions of professionals' behaviours about intention (Sahli & Legohérel, 2014; Shih & Fang, 2004).
2.2.1 The theoretical framework

The Decomposed Theory of Planned Behaviour

According to the decomposed theory of planned behaviour (DTPB), the ability of Nurses and Midwives to perform ENCP depends largely on three main constructs; attitude, subjective norms, and perceived behavioural control. The individual’s good attitude together with their subjective norms, in terms of behaviour and perceived behavioural control, are the driving forces for the behavioural intention to carry out the behaviour under investigation, which is the lack of adherence to newborn care practices (Ajzen, 2011; Taylor & Todd, 1995). Attitude towards a behaviour is regarded largely on how favourable or unfavourable, how useful, and easy to use the behaviour is. A favourable attitude towards behaviour
impacts positively on behavioural intentions (Chikuse, Chirwa, Maluwa, & Odland, 2012). Attitude has three constructs namely, perceived ease of use, compatibility, and perceived usefulness. They are the beliefs and outcome antecedent to behaviour and can be positive or negative (Ajzen, 2011; Chikuse et al., 2012). The attitude towards ENCP depends largely on Nurses’ and Midwives’ beliefs and the positive or negative outcome after practicing essential newborn care.

Subjective Norms deal with peer and superior motivation. Peers and superiors are apprehensive of the probability that significant referent persons or groups of individuals agree or disagree with performing the behavior and motivation of the individual to comply with the behaviour (Ajzen, 1991; Taylor & Todd, 1995). A person will perform the behaviour when they are motivated by referent individuals and groups and other significant people or peers (Ajzen, 1991; Taylor & Todd, 1995). In this case, nurses and midwives will be motivated by their peers and superiors to support and practice essential newborn care to achieve sustainable development goals SDGs targets by 2030.

Perceived behavioural control has to do with the availability or absence of requisite logistics and opportunities together with previous experience (Ajzen, 1991; Taylor & Todd, 1995). Individuals might not develop a robust intention to carry out a behaviour if there are no resources or prospects for the action despite a positive attitude to behaviour. Perceived behavioural control has the tendencies of direct and indirect influences on behaviour linked with behavioural intention.

As postulated by Ajzen (2011), an individual’s intention to perform any act is influenced by the beliefs and evaluation of the action. Going by this analogy, the application
of DTPB in this study will offer some insights to investigate nurses’ and midwives’ intentions to adhere to ENCP within the first 28 days of life by using the constructs in the model. This study will establish the relationships between attitudes, subjective norms, and PBC on the intention of nurses and midwives to adhere to essential newborn care practice guidelines. At this point, pertinent literature relating to ENCP among nurses and midwives will be reviewed comprehensively.

2.3 Review of related literature

The literature on ENCP was reviewed widely using the constructs of decomposed the theory of planned behaviour as an organizing framework to understand nurses’ and midwives' adherence to ENCP (Taylor & Todd, 1995). The sources of relevant literature include databases such as Lancet, Wiley online library, Tailor and Francis online data, Google Scholar, Scopus, Science Direct, PubMed, and MEDLINE. The following keywords were used in the literature search: adherence, essential newborn care, early newborn care, nurses and midwives, health professionals, post-natal care, neonates, and kangaroo mother care.

A subsequent search was centered on these keywords: intention, attitude, subjective norms, perceived behavioural control, neonatal mortality, neonatal morbidity, baby examination, exclusive breastfeeding, neonatal sepsis and asphyxia, cord care, thermal care, and delay in bathing newborn.

The scope of the literature review was based on published literature from 2008-2020.
2.3.1 Essential Newborn Care Practices among Nurses and Midwives

Essential newborn care practices (ENCP) are a set of interventions carried out immediately a baby is born to ensure its survival. Some of these interventions include early initiation and exclusive breastfeeding, thermal care, and hygiene practices. Essential newborn care guidelines are targeted at fixing the poor practices employed by nurses and midwives post-delivery and up to seven days of neonatal life. Abadi, Tinsae, and Gebreeziabher (2017) in their study reported 115 (72.8%) of respondents generally putting up their best in ENCP.

2.3.1.1 Patterns of early initiation and exclusive breastfeeding

As part of WHO recommendation on essential newborn care practices, every newborn should be fed with their mother's breast milk which is rich in colostrum and other protective nutrients 30 minutes to 1 hour immediately after delivery (WHO, 2015). Exclusive breastfeeding is feeding the baby with only breast milk on demand for a period of one to six months. A study on the sensitization of mothers to practice breastfeeding argued that nurses' and midwives’ encouragement, skills, techniques, and counseling services make them develop a positive attitude towards early initiation of breastfeeding (Shahnaz Kohan, 2016).

Another study revealed that mothers’ intention to breast newborns is influenced by nurses' and midwives’ ANC counseling and past experiences (Yang, Gao, Ip, & Chan, 2016). Moreover, a study finding revealed that women feel public breastfeeding of newborns is humiliating and disgraceful, despite the numerous benefits of breastfeeding (Rollins et al., 2016). In this vein, it is assumed that the exclusivity of the practice may be undermined by such complexes despite the numerous benefits it offers to newborns as well as mothers. For
example, breastfeeding could ensure effective mother to child bonding, fostering good emotional and better relationships between mother and child. Additionally, breastfeeding boosts infants' general well-being (Reeves & Woods-Giscombé, 2015).

Also, Hall, McLelland, Gilmour, and Cant (2014), reported that mothers with difficulty in breastfeeding were assisted by nurses and midwives’ encouragement and provision of adequate information. Similarly, a systematic review on interventions meant to improve exclusive breastfeeding reveals equipping of the caregiver with long term pre- and postnatal care development planned throughout training, blending protocols with local content and encouraging collaboration among hospitals and health professionals (Kim, Park, Oh, Kim, & Ahn, 2018). According to Woldemichael (2016), a cross-sectional study reported that the rate of influence by nurses and midwives, with ANC service education, towards ensuring that mothers practice early initiation and comply with exclusive breastfeeding was 67.3%. A similar study by Tewabe (2016), reported 320 (78.8%) babies were fed with breast milk within one hour and exclusively breastfed whereas, 21.1% failed to comply citing cesarean birth, sick mother or child, and delay in the excretion of breast milk. A cross-sectional study among 634 breastfeeding women in Dale Woreda, Ethiopia on the prevalence of early initiation of breastfeeding practices using a multistage sampling technique reported 94.3% and 83.7% for early initiation of breastfeeding.

Contrarily, a study in Nepal on determinants of timely initiation of breastfeeding among 735 mothers indicate that only 310 (42.2%) mothers in the low economic class initiated breastfeeding one hour or less, whereas, in the high economic class breastfeeding was initiated after one hour which can result in neonatal mortality. The researcher further argues that skills training for health needs to include breastfeeding practices (Khanal, Scott,
Lee, Karkee, & Binns, 2015). Furthermore, a study in Turkey indicates 60.1% practice timely breastfeeding and 38.9% exclusively breastfed while 61.1% resorted to bottle feeding (Yilmaz et al., 2017). It appears mothers embrace the idea of exclusive breastfeeding but early initiations of breastfeeding are still a battle yet to be won. It is important to emphasize that, both practices must be applied as their complementary value for the health and survival of newborns are unquestionable.

A study in Ghana, on health care provider adherence to guidelines, indicates 33.8% of staff working in health centres, 47.8% Hospitals, and 51.9% Polyclinics comply with their used (Amoakoh-Coleman et al., 2016). The group of researchers argued that lack of some basic resources such as active laboratory services, protocols, and drugs accounts for poor adherence culture (Amoakoh-Coleman et al., 2016).

Also, based on evidence from the literature, it was easy to measure the centrality of nurses and midwives in the adherence to early initiation and breastfeeding among mothers. That being the case, their knowledge and attitude towards these practices are crucial to the survival of newborns. Though there are a lot of studies on breastfeeding practices among mothers. There seems to paucity of information on Nurses and Midwives' involvement in breastfeeding practices.

2.3.1.2 Patterns of Thermal Care

Thermal care consists of the prompt drying and covering of a baby at birth, skin-to-skin contact (SSC), delaying the washing of baby until after 24hours, and maintenance of warm chain. Abadi et al. (2017) study findings revealed that 180 (84.5%) respondents were able to place newborns to mothers bodies to ensure skin to skin contact while 184 (86.4%)
started early breastfeeding within the first one hour. According to WHO (2015), prompt drying of the newborn per their recommendations has neonatal survival benefits. The prompt drying of the amniotic fluids on the body of the newborn prevents heat loss through evaporations. Low body temperature in warm continents predisposes neonates to morbidity and mortality (Kumar, Shearer, Kumar, & Darmstadt, 2009).

Available evidence suggests that low body temperature is among the top causes of neonatal mortality (Karsten Lunze, 2013; Sodemann et al., 2008). On the contrary, Bee, Shiroor, and Hill (2018) argue that delayed drying and wrapping of neonates is connected to birth attendants’ focus on caring for the mother. The researchers were of the view that bathing newborns post-delivery was essential to clean the dirt and blood which are believed to be responsible for body odor in later life. However, promptly drying and covering newborns after birth is essential. Covering is appropriate in situations where the mother is not able to provide skin-to-skin contact (Lunze & Hamer, 2012; Sitrin et al., 2017). Findings suggest that kangaroo mother care (KMC), a form of SSC, drastically reduces neonatal morbidity and mortality. Contact between mother and baby is formal within the first one hour (Lawn et al., 2013; Lawn, Mwansa-Kambafwile, Horta, Barros, & Cousens, 2010). A systematic review on newborn care practices in sub-Saharan Africa reveals that maintaining newborns warm was very critical to ensure and promoting thermal care practices.; and delayed breastfeeding because of a perception of a lack of milk or because the baby needs to sleep after delivery or does not show signs of hunger.

Though it was essential to maintain the warm chain of a newborn, sometimes indigenous beliefs and practices or home delivery might interrupt thermal care (Hill, Tawiah-Agyemang, Manu, Okyere, & Kirkwood, 2010). Many cultures believe that body odor in
later life can be attributed to delay bathing at birth (Bee et al., 2018). Therefore, to avert this, it is a common belief and practice to bath newborns immediately after delivery. This study argues that such beliefs can overpower the professional ethic of some nurses and midwives.

2.3.1.3 Hygienic cord care practices

This refers to the process involved in maintaining a low likelihood of infection right from the separation of the cord from the maternal placenta. This implies the use of sterile instruments in cutting the cord and aseptic techniques in caring for the cord, which is the standard requirement in newborn care practices (Moran et al., 2013; Sitrin et al., 2017). Aseptic techniques employed in caring for the cord are a singular way of reducing the occurrence of infection which is the top leading cause of newborn morbidity and mortality (Moran et al., 2013). The stump is the portal of entry of microorganisms into the body of newborns. Due to their mal-developed organs, preterm babies are at a high risk of acquiring infection with the least exposure which may compromise their system and make them prone to all manner of ailments (Moran et al., 2013).

Despite the existence of studies reporting the use of aseptic techniques in cord-cutting (Usha Dhingra, 2014; Waiswa et al., 2015) there are still indigenous practices that promote the use of unsterile and unclean instruments in cord-cutting. Instruments such as knives, sickles, and blades are used in the cord-cutting (Sharma, van Teijlingen, Hundley, Angell, & Simkhada, 2016; Waiswa et al., 2015). It is popular, globally, that various unsafe chemicals are used to dress the stump to promote healing, and these practices contribute to frequent morbidity and high rates of mortality among newborns (Coffey & Brown, 2017; WHO, 2017).
Also, in the quest for rapid healing, reduction of pain levels, controlling bleeding, quick drop off of the cord, and keep the neonates away from evil spirits several substances are applied to the stump. These substances include the following warm compress, charcoal, local oil, herbs, cow dung, breast milk, ginger, garlic, and so on are applied to neonates by indigenous birth attendants (Bee et al., 2018; Coffey & Brown, 2017). Some of these practices may be preferred and possibly recommended by nurses and midwives. It is against this background that the study seeks to investigate the level of adherence of nurses and midwives to ENCP in the Tamale metropolis.

2.3.2 The attitude of Nurses and Midwives towards essential newborn care practices

Attitude refers to a person’s beliefs, likes, dislikes, and opinions about essential newborn care practices. Attitude can be express either positive or negative (Ojong, Uga, & Chiotu, 2015). A longitudinal randomized study on nurses' and midwives’ professional's attitudes towards parental support in breastfeeding reveals that good attitudes in health professionals promote satisfaction among intervention-group mothers (Ekstrom & Thorstensson, 2015). Similarly, a study finding on nurse’s attitudes on Mother-Baby friendly initiative implementation indicates that professional nurses have a good attitude and support exclusive breastfeeding as the best meal for infant feeding. However, auxiliary nurses have a bad attitude towards exclusive breastfeeding as the best feeding practice for infants (Mgolozeli, Shilubane, & Khoza, 2019).

Contrarily, a study among Neonatal Nurses in Southeast Iran indicated junior nurses had good attitudes toward all sorts of behaviours at the workplace as a way of preventing delivery of neonatal palliative care (Azzizadeh Forouzi, Banazadeh, Ahmadi, & Razban,
2017). According to Sami et al. (2017) and Delaney et al. (2017), midwives report good attitudes toward the use of partograph in monitoring the progress of labour, childbirth, and exclusive breastfeeding (Delaney et al., 2017; Goff Jr et al., 1999; Sami et al., 2017; Laura A Zinsser, Kathrin Stoll, & Mechthild M Gross, 2016). On the contrary, in a systematic review on reproductive health in Sub-Saharan Africa (SSA), it was suggested that health workers’ bad attitudes towards expectant mothers lead to low patronage of reproductive health services (Jonas, Crutzen, van den Borne, & Reddy, 2017; Mannava, Durrant, Fisher, Chersich, & Luchters, 2015). Brown et al (2009), revealed that good health workers attitude influences the achievement of clients’ needs in the health care environment. Also, pregnant women’s negative attitudes, which includes delayed care-seeking and lack of compliance with physicians’ advice results in poor pregnancy outcome them and their own (Mannava et al., 2015). Furthermore, Mgolozeli et al. (2019) study finding argues that Enrolled nurses had a negative attitude towards breastfeeding practices. This trend signifies how nurses and midwives increasingly becoming more aware of ENCP and the benefit to the mother and newborn.

### 2.3.3 Nurses and Midwives Intention about ENCP

Another review on health workers’ intention to used research findings in clinical practice reveals that nurses used guidelines when it is effective in their work environment whereas doctors place significance on the usefulness of the guidelines (Appleby, Roskell, & Daly, 2016). The greater the perceived ease of use and usefulness, the high the acceptance of the action (Mao, Chang, Yao, Chen, & Huang, 2015; Veeramah, 2016). Fontein-Kuipers,
Bude, Ausems, de Vries, and Nieuwenhuijze (2014) reported positive behavioural intention among midwives towards discharge of duty to mother and newborn. Thus, a study among midwives in Australia on tool evaluation revealed positive behavioural intentions are useful for midwifery practice as they aid in the effective delivery of care to their clients (Bayes, Fenwick, & Jennings, 2016). Additionally, research studies on the use of normal birth guidelines among midwives in various health facilities in Australia and Uganda suggest accessibility as being helpful, and useful in their practice environment (Braddick et al., 2016; Toohill, Sidebotham, Gamble, Fenwick, & Creedy, 2017).

Similarly, a study on the safe delivery appliance among nurses and midwives in the United Kingdom reveals that the usefulness of the appliance contributes to reducing their fears and increases their good perception of the work. The appliance guides practices targeted at averting complications and ensuring safe delivery (Thomsen et al., 2019). Also, a study on adherence to handwashing techniques reveals that health professionals adopted the behaviour because it was useful and very simple (de Oliveira Melo et al., 2016). Equally, research on the ease-of-use of ELLIPTA inhalation devices, minimal inhalation errors couple with their easy-to-use nature made them preferable (Komase, Asako, Kobayashi, & Sharma, 2014). Likewise, research evidence suggests that guidelines drafted on a wall chart are easy to use for equipping reference points in the course of duty (Graham et al., 2015). Furthermore, a research study on health care provider attitude at a Sub-district Hospital in Bangladesh on the care of newborn sepsis revealed that the latter had a positive attitude towards caring for afflicted newborns (Zaman, 2017).

A study finding on midwives’ perceptions and attitudes among reproductive age in Mozambique reveals that a good attitude towards mothers promotes essential newborn care.
Despite, inadequate resources supply to aid midwives in the care delivery process they ensure basic ENCP are maintained (Adolphson, Axemo, & Högberg, 2016). A study according to Aberese-Ako (2016), on Ghanaian health workers’ care delivery to new mothers and neonates reveals that a warm attitude during counseling motivates them to adopt essential newborn care. It seems the attitude of nurses and midwives on intention towards ENCP is varied. Ihudiebube-Splendor et al. (2019) reported 62.7% of primiparous mothers had good intentions towards practicing essential newborn despite the enormous benefit of mother and newborn. It appears that the location and type of practice control the nature of attitude. Literature reveals that there is a good and bad attitude of nurses and midwives towards essential newborn care practices. Against this background, the alarming rates of newborn mortality may be a result of the deplorable state of adherence to essential newborn care practices. It, therefore, necessary to investigate nurses' and midwives' adherence culture to ENCP.

2.3.4 Beliefs and perceptions about newborn care practices by nurses and midwives

Beliefs refer to trust and confidence in something being true or exist without proof of perceived higher expectations. Perception is the way an individual sees, understands, and interprets things (Slade, Patel, Underwood, & Keating, 2014). According to Morelius and Anderson (2015), nurses believe skin-to-skin contact will make them loose care focused on mothers as they are entrapped to their newborns. The writer further argues that care providers do not have full access to the newborns. Similarly, studies in Kenya and Ghana reveal that health workers believe lack of infrastructure, poor road network, bad emergency services delivery, poor health care practices, socio-cultural issues, and inadequate resources are
critical barriers to essential newborn care (Essendi et al., 2015; Kyei-Nimakoh, Carolan-Olah, & McCann, 2016). Another researcher included poor blood transfusion services, irregular water supply, frequent shortage of life-saving resources and consumables, poor record-keeping, and poor clinical monitoring as major contributors to mortality rates (Otolorin, Gomez, Currie, Thapa, & Dao, 2015). The following researchers cited discriminations of various forms, cultural influences, hardships, and professional misconducts account for poor care provision (Otolorin et al., 2015).

Moreover, a study in Australia among health workers in a neonatal intensive care unit on baby-friendly Hospital initiatives perceived effective communication between NICU and maternity care providers, standardized guidelines, and motivation for staff as key to ensuring effective implementation of newborn care practices. Hauck et al. (2015), argue that some midwives perceived that the bad attitude towards clients with mental challenges affects the care of the mother and newborn. A qualitative descriptive study on midwives’ perception suggests that midwives who lack confidence fail to practice water birth while confident ones endorse water birth as the most appropriate practice (Eblovi et al., 2017; Nicholls, Hauck, Bayes, & Butt, 2016; Zaka et al., 2018)

According to Zeitlin et al. (2016), nurses perceived family presence during care without clearly defined roles as interference. Other studies on nurses' and midwives’ perceptions point out that quality and focused antenatal care are high indicators for neonatal survival (Baffour-Awuah, Mwini-Nyaledzigbor, & Richter, 2015; Raiskila et al., 2016). Health care providers believe that a minimum of four antenatal care (ANC) visits, provision of logistics, periodic training on newborn care guidelines or protocols, mentoring and supervision of staff during deliveries, and evaluating adherence to guidelines will reduce
newborn mortality rates. Midwives with weak performance were taken through another training session to uplift the skills to enable them to save the lives of neonates (Magge et al., 2017). A study on Kenyan health care providers’ perceptions about Traditional Birth Attendant (TBA) suggests collaborative practices among skilled birth attendants (SBA) and TBA leads to better pregnancy outcomes. (Byrne et al., 2016). A study in Brazil on the delivery process among nurses and midwives suggests that collaborative practices among nurses and midwives will result in good pregnancy outcomes (da Gama et al., 2016). Arguably, health worker’s attitudes are influenced mostly by perceived societal norms, ethics, and gender issues as found in a systematic review on induced abortion in the African and Asia Regions (Rehnstrom Loi, Gemzell-Danielsson, Faxelid, & Klingberg-Allvin, 2015; Sakeah et al., 2015).

It appears in the literature review that nurses and midwives hold diverse beliefs and perceptions towards essential newborn care practices. These beliefs and perceptions have a negative and positive impact on ENCP in general. Nurses' and Midwives' beliefs and perceptions influence their attitude to practices essential newborn care. Nurses' and midwives' beliefs and perceptions about certain practices will make them adopt the care or refuse. This might have a negative or positive impact on newborn survival. Nurses' and Midwives' beliefs and perceptions can ensure newborn survival or endanger newborns' life. It is, therefore, imperative to assess nurses' and midwives’ beliefs and perceptions on ENCP to inform policies, decision making, the improvement of newborns guidelines, and assess their knowledge bases for better newborns survival.
2.3.5 Perceived Behaviour Control (Self-Efficacy/Skills) Affecting Nurses and Midwives Adherence to Essential Newborn Care Practices

Self-efficacy refers to the inner motives and conviction of an individual to perform a task to yield the desired results with confidence or an individual’s ability to perform the skills satisfactorily (Kuo, Walker, Schroder, & Belland, 2014). These are the indwelling motives that abide and influence nurses and midwives in the discharge of their duties leading to better pregnancy outcomes for mother and newborn. According to Kuo et al. (2014) study in South Africa on nurses and midwives provision of maternal and child care services to adolescent mothers indicate that their self-efficacy was low. It is to be noted that the higher the self-efficacy levels of nurses and midwives the better the outcome on maternal and neonatal mortality records (Jonas et al., 2016). A study on the bottlenecks of multi-country health care analysis reveals that the implementation of policies and guidelines is the surest way to maintaining standards and skills while caring for neonates (Christabel Enweronu-Laryea, 2016). Trainers blending local content approach with guidelines in training, coaching, and supervising are efficient strategic skills towards achieving national programme results (Reisman et al., 2016; Reisman et al., 2015). Crofts et al. (2015), was of the view that training is the major driver but teamwork and good work habits with devotions will maintain the improved mortality figures or be lower further. Research on essential newborn care among community health volunteers in Nepal on Kangaroo’s mother care reported a 60% increase in the practice (Otolorin et al., 2015). The researchers further argue that LMIC Regions should prioritize maternal and newborn health by training more Nurses and Midwives to acquire the right skills to promote their care delivery services (Deller et al., 2015; Otolorin et al., 2015). Furthermore, a study on newborn resuscitation skill use and
retention in Ghana indicated refresher training for practicing midwives on annual bases will account for effective utilization of skills which would aid in the depreciation of newborn mortality figures in LMIC’s. The writers further argue that continuous fresher training in a form of workshops, clinical practice sessions, and refresher courses at very regular intervals will improve skills retention and knowledge upgrade resulting in positive infants outcome in LMICs (Ameh et al., 2016; Ameh et al., 2018; Eblovi et al., 2017; Reisman et al., 2016). These findings were incongruent with a study in Uganda on neonatal resuscitation training where annual refresher training is organized to boost their skills and knowledge.

The researcher is of the view that more clinical learning sessions should be organised quarterly to maintain skills for quality care (Mildenberger, Ellis, & Lee, 2017). Contrarily, findings in a study on frontline care providers suggest that training programmes to enrich the skills of workers in maternal and child health most often do not target care providers, like junior staff, who are often inexperienced. Meanwhile, these junior staff provide direct services to clients and, therefore, need periodic skills, expertise, and competency training to enhance the services they render clients for better pregnancy outcomes (Willcox et al., 2017). Ganle et al. (2015), argue that for Ghana to succeed in the fight against neonatal mortality all deliveries must be attended by skillful personnel who take into consideration social norms, self-esteem, discretion, and prompt attention and action. Health workers must maintain dignity and integrity in their care delivery services to women.

Additionally, Brazil’s success in the fight against neonatal mortality is partly influenced by the multiple skills exercised by health care professionals who collaborate as physicians, nurses, and midwives to drastically increase per vaginal delivery as well as boost clients’ confidence towards labour and post-delivery care (Gama et al., 2016). On the
contrarily, a study in South Africa among some districts reveals that poor staffing distribution accounts for higher mortality figures. Remote districts especially lack the requisite staff resulting in poor management of labour complications even with adequate resources. (Pattinson, Makin, Pillay, Van der Broek, & Moodley, 2015).

A study in the Enugu state of Nigeria on inadequate Skilled Birth Attendant (SBA) indicates there is no competency-based curriculum in midwifery training to tackle the acute shortage of midwives, and secondly, the failure to provide free maternal care have combined to accelerate high neonatal mortality (PO, 2016). Agrawal et al. (2016), argue that virtual class training is a more effective strategy in mastering skills than the traditional classroom-based method of teaching and learning. Convincingly, this model of training ensures standardized and quality skills retention leading to good practice outcomes. Moreover, Kobra Mirzakhani1 (2016), affirm that fulfilling clinical skills demands self-efficacy as midwives have low confidence when it comes to the management of emergency cases and good moral to manage routine cases. The study, therefore, advances for the incorporation of confidence-boosting courses in the curriculum of midwifery programmes to cater for the lapses in the professional output of Nurses and midwives. It is necessary, therefore, that nurses and midwives need to have both skills and self-efficacy to play an instrumental role in reducing mortality rates among newborns. It must be emphasized that neither can be compromised, as it is only with a combination of both that the desired output from a health professional is best elicited.
2.3.6 Predictors of nurses and midwives adherence to ENCP

Essential newborn care practices are mostly low among nurses and midwives in low-middle resource countries. It is, therefore, vital to identify the predictors that influence nurses and midwives adhere to essential newborn care practices during labour and after delivery. The literature review on ENCP has identified some key variables that predict nurses' and midwives' preparedness. Some studies revealed that poor supply of basic resources and amenities, maternal factors and perceived beliefs and practices, perceived ease of use, usefulness, and self-efficacy as key components that motivate essential newborn care practices. It appears to improve and provide better ENCP to mothers and their newborns, nurses and midwives must adhere to care protocols. A study finding on essential newborn care practices among mothers was also low, poor communication and care delivery during antenatal and postnatal visit account for this low adherence (Chichiabellu, Mekonnen, Astawesegn, Demissie, & Anjulo, 2018; Desalew et al., 2020; Mersha et al., 2018). Nurses and midwives Jonas et al. (2016) reported a strong positive relationship between self-efficacy and behavioural intentions on maternal and newborn care practices, meanwhile, there was a moderate relationship on attitude and subjective norms. The studies indicated that the intention to adhere to ENCP among nurses and midwives self-efficacy was positively correlated (Jonas et al., 2016; Yang et al., 2016). Desalew et al. (2020) and Negussie, Hailu, and Megenta (2017) in Ethiopia argued that poor newborn assessment skills and practices in identifying dangers are predictors of non-adherence of ENCP resulting increase in newborn morbidity and mortality. Hunter, Fenwick, Sidebotham, and Henley (2019) study finding revealed that emotional distress and higher rate burnout among midwives to be the predictor of poor ENCP in the United Kingdom. It seems those who are in the facility with little stress
and low burnout can adhere to ENCP meanwhile, than those who work stressful working conditions. Availability of guidelines, protocols, resources, and equipment to be a predictor of nurses' and midwives' adherence to ENCP. The study further established that units responsible for maternal and newborn care practices should be equipped with resources and periodic in-service training to update and improved practices towards achieving lower neonatal mortality numbers (Abadi et al., 2017; Champeny et al., 2019). This, therefore, suggest that the availability of resources and equipment couple regular training programmes to updates and improve skills predictors of nurses and midwives to adhere to ENCP. Li et al. (2014) cited in their study findings that attitude, antenatal, and postnatal teaching and support are predictors of nurses' and midwives' adherence to ENCP.

Furthermore, Iliyasu et al. (2019) unearthed nurses and midwives attitude is positively correlated to adherence to ENCP. It further emphasized the continuous educations of nurses and midwives can be associated with adherence to ENCP. Similarly, a study on midwives' intention to practice home delivery reported midwives and experience are key predictors of midwives’ adherence to home-based delivery services (Muhammed, Khuan, Shariff-Ghazali, Said, & Hassan, 2019). Moreover, offering delivery services will motivate and promote a good attitude of nurses, midwives, and mothers to adhere to newborn care practices targeted at reduces neonatal deaths (Okoli, Mohammed, & Ejeckam, 2016; Vedam, Stoll, White, Aaker, & Schummers, 2009). It appears that midwives will likely adhere to home-based delivery services possible because of their attitude and good experience they encounter in the previous situation while others with unfortunate experience might likely not adhere to home-based delivery services.
McLachlan et al. (2016), the study revealed that beliefs on the benefits of home delivery care influence respondents' adherence to the care model. However, this finding contradicts a study that suggests that beliefs do not influence on midwifery practice in various home care (Muhammed et al., 2019). These findings, therefore, suggest that nurses and midwives with positive attitudes and beliefs on ENCP were likely to encouraged mothers to practices. This will possibly increase their skills and adherence practice targeted at lower newborn morbidity and mortality (Dayyabu et al., 2018).

Also, Linde et al. (2018) cited the use of monitors at delivery units and effective ventilation are predictors of adherence ENCP and boost newborn survival. It was not enough to have adequate monitors and ventilators but how to use it to drive the maximum benefit from newborn survival was necessary for lowering newborn mortality. According to Kazanga, Munthali, McVeigh, Mannan, and MacLachlan (2019) a study in Lilongwe District, Malawi indicates that mothers with higher education and financial resources were associated with adherence to ENCP, meanwhile, women with low education and income were also associated with non-adherence. Education and financial resources are key facts with factors with regards to maternal and newborn health in low-to-middle income countries. Mothers who lived in low-income countries find it difficult to attend antenatal and postnatal care services making it difficult for nurses and midwives to adhere to ENCP due to poor compliance on the part of mothers.

Based on the reviewed literature, the majority of the studies conducted above were largely qualitative. Although qualitative research explores factors influencing respondents’ behaviour, it does not establish statistical significance among study data(s) used. Hence, these studies did not establish statistical significance among the studied sample. Ghana,
compare too many low-income countries, has a high newborn morbidity and mortality rate. The literature demonstrates that adherence to ENCP is a key strategy that can potentially influence high newborn morbidity and mortality. In numerous low-income countries, the high attendance of antenatal care services could be the bases of nurses and midwives adhering to ENCP to ensure compliance by mothers. A more rigorous commitment towards adherence to ENCP by nurses and midwives is therefore a needed desired strategy that will help improve and reduce newborn death. The exceptionality of this research is a result of the use of the DTPB to establish factors predicting nurses' and midwives' adherence to ENCP in the Tamale metropolis in northern Ghana. The theory predicts behaviour on grounds of some underlying factors which include beliefs and practices, perceived ease of use and usefulness, self-efficacy, availability of resources, peer and superior influences couple of others. Generally, related studies global, most especially in Nigeria, Ethiopia, and Ghana, find studies predicting the relationship between attitude, practices, and nurses' and midwives' adherence to newborn care. Some studies explored experience and available resources, and some others predicting adherence to newborn care. It is important to note that studies on attitudes, subjective norms, perceived behavioural control, and behavioural intention in predicting ENCP are very scarce. Also, many studies available used a qualitative approach that does not establish statistical significance and therefore makes difficult generalizability of the findings. Moreover, many pieces of research did not use theories to understudy the predicting factors influencing adherence to ENCP among nurses and midwives. Hence, there exists a gap in the literature, which this current study aim. This study, therefore, intends to study nurses' and midwives' adherence to ENCP from the quantitative perspective and
exploring the possible behavioural factors that established adherence using the constructs of the decomposed theory of planned behaviour (DTPB).

2.4 Summary of Literature Review

Several relevant publications provided very critical evidence about essential newborn care practices, though they hold varied views on the practices globally. Evidence from available LMICs suggests an improvement in the care delivery process but much more effort is needed to overcome neonatal mortality which has been stagnant over the years. Quantitative studies have identified institutional factors and maternal factors associated with ENCP among nurses and midwives. Nurse and Midwives have a great influence on ENCP but poor adherence culture accounts for the high newborn deaths. Some studies reveal that nurses' and midwives' positive and negative attitudes have an impact on newborn survival. A good attitude will encourage the practice of essential newborn care whereas a bad attitude discourages mothers from the practice. Some studies reveal that poor supply of basic resources and amenities are key components hindering essential newborn care practices.

Furthermore, evaluations of health care providers, maternal factors, and perceived beliefs and practices have a great influence on essential newborn care practices. Studies have equally cited factors such as perceived ease of use, usefulness, and self-efficacy as key components that motivate essential newborn care practices. Nurses and Midwives’ attitude is influenced by the beliefs and perception of the practice of essential newborn care. Notwithstanding the numerous studies on newborn care practices, there is still limited research on ENCP among nurses and midwives, especially in Ghana. Moreover, there are
still gaps in essential newborn care to be investigated further to inform policy decisions for a better chance of newborn survival.
CHAPTER THREE

THE STUDY METHODOLOGY

This chapter described the methodology that would guide the answering of the research questions. It included the study design, study setting, study population, inclusion and exclusion criteria, sampling technique and sample size determination, data collection procedure, study questionnaire, data management and analysis, validity and reliability, ethical considerations, and limitations of the study.

3.1 Research design

This study used a quantitative approach, precisely a cross-sectional design employed to collect data from nurses and midwives on essential newborn care practices. A cross-sectional design was a non-experimental study design that seeks to establish the relationship between independent and dependent variables (Polit & Beck, 2017; Polit & Beck, 2009). Also, a cross-sectional survey design was appropriate for describing phenomena or their relationships at any given point. Through a cross-sectional design that had inferring causality as a major limitation, it is still useful for this study. However, a cross-sectional design enables the researcher to investigate adherence to ENCP and to establish the relationship between the dependent and independent variables within a given time (Greenwood & Levin, 2006; Korn & Graubard, 2011).

3.2 The study setting

This study was conducted in the Tamale Metropolitan, the capital of the Northern Region. The Tamale Metropolitan assembly forms part of the 15 Metropolitan, Municipal
and District Assemblies in the region. The Tamale Metropolis had an estimated land size of 646.90180 sqkm. According to the 2010 Population and housing census, the population of the metropolis was 223,252. Comprising of 111,109 (49.7%) male and 112,143 (50.3%) females. About 80.8% were urban dwellers while 19.2% live in rural settlements. The common ethnic groups in the Metropolis were Dagomba, Gonja, Mamprusi, Konkomba, Asante, Ewe, and Hausa. The fertility rate, (which is referred to as the number of children a woman can give birth to before menopause) in the Tamale Metropolis is 2.8 live birth per woman. This signifies that women in the Tamale Metropolitan will be able to give birth to an average of 2.8 number of children before reaching the end of their fertility (GSS, 2014).

The proportion of male literates in the Metropolis was 69.2% which was slightly higher than the females' figure of 51.1%. Health care needs in the Metropolis were provided through Hospitals, Polyclinics, Health Centres, and private Hospitals. The Metropolis was divided into four sub-districts. The following health care facilities existed in the Metropolis: One teaching hospital, two metropolitan hospitals, two religious hospitals, five Health Centres, nine Private Hospitals, and three nursing training institutions. The Doctor to patient population ratio was 1: 13,419, the Nurse to patient population ratio is 1: 522, and the midwife to client population ratio 1: 1,123 in the Northern Region of Ghana (GSS, 2014). Tamale, because of cosmopolitan nature serves as a dragnet bring into focus on the various cultures in Ghana and beyond. This could account for high newborn mortality rates cutting across the cultures that come to the various health care facilities. The high newborn mortality rates in the Tamale metropolis mostly occur either on the admission or some few hours after they are discharged home. Also, working and having interaction with nurses and midwives
who have firsthand information on this field makes it necessary to interrogate the reasons for these high mortality rates considering the perspective of nurses and midwives.

3.3 The Target Population

The study population refers to the group that was under investigation. This population consists of nurses and midwives who provided services (Antenatal, Postnatal, Labour, NICU, Maternity, and theatre) to mothers and their newborns in the Tamale Metropolis in the Northern Region.

3.4 Inclusion Criteria

All Nurses and Midwives who were practicing in maternal and neonatal units for a period not less than two years in these units.

3.5 Exclusion Criteria

Nurses and Midwives who were not practicing in the ward and those who have worked for less than two years will be excluded from the study.

3.6 Sampling Technique

Sampling deals with the processes used in selecting a portion of the targeted population of persons who qualify to be included in this study to represent the idea of the entire population (Polit & Beck, 2014). Preferably, all researchers will usually want to study the entire targeted population but practically it was impossible. The sampling technique used in this study was multistage, and it was used to select respondents in three stages.

Stage one, three sub-districts in the Tamale Metropolis was selected at random for the study. At the sub-district level, one Hospital was selected randomly as well for the study.
The Hospitals were given proportional quotas to the number of units providing neonatal care services.

In the second stage, each unit providing neonatal care services in the selected hospitals was grouped into clusters. The list of nurses and midwives in each of the various clusters in the Hospital were compiled and then randomly selected into the study. All nurses and midwives working in these units had equal chance of being selected into the study.

In stage three, the researcher employed systematic random sampling techniques that were used and recruited the respondents into the study. Each Hospital and its clusters were identified with serial numbers and a sample frame calculated by dividing the total number of nurses and midwives into each of the clusters against the sample size. The initial respondent was selected randomly by ballot and thereafter selecting the next respondent was done by adding the interval to the already selected respondent. For any respondent who declined to partake in the study the next in the row was selected. This procedure continued until the total number of respondents were reached in each cluster.

3.7 Sample size calculation

The sample size was determined by using Yamens (1973) formulae or procedure. With an alpha level of 0.05, the sample size was reached using Yamane’s 1973 formulae. The sample was taken from the selected hospitals within the Tamale metropolis. The estimated number of nurses and midwives within the study area were
\[ n = \frac{N}{1 + N (e^2)} \]

\( n = \text{required sample size}, N = \text{accessible population}, \text{and } e = \text{alpha level} \)

Thus
\[ n = \frac{N}{1 + N (0.05)^2} \]
\[ = \frac{1132}{1 + 1132(0.05)^2} \]
\[ = \frac{1132}{1 + 2.83} \]
\[ = 1132/3.83 \]
\[ = 295.6 \]

To cater for non-respondents to the questionnaires, 10% of the sample size was gotten from the formula above which was added to the sample size. Hence,

\[ 10/100 \times 295.6 = 29.6. \text{ Then } 295.6 + 29.6 = 325.2. \text{ The data gathering process lasted for two months.} \]

3.8 Tool for data collection

The questionnaire (Theory of Acceptance and Use of Technology questionnaire (UTAUT) developed by Ma, Kuo, and Alexander (2016) was adapted and used for this study. The adapted tool made up of 33 items was structured into five sections.

Section A was about institutions and socio-demographic data which will require information like name of hospital, unit of practice, age, sex, years of series, grade, level of education, and religion. In section B, the attitude was measured using the attitude scale and sub-construct subscales on the range of 1-7 which means 1=strongly disagree, 2=moderately disagree, 3=disagree, 4=neither, 5=agree, 6=moderately agreed and 7=strongly agreed. A Twelve-item scale comprising of attitude (ATT), perceived usefulness (PU), perceived ease of use (PEOU), and compatibility (COM) was used.
Section B: six items subjective norm scale was used to measure subjective norm by assessing peer influence (PI) and superior influence (SI) on nurses and midwives towards practices of essential newborn care using 7 Likert scale range of strongly disagree to strongly agreed (1=strongly disagree, 2= moderately disagree, 3= disagree, 4= neither, 5= agree, 6= moderately agreed and 7= strongly agreed).

Section C: nine items scale of perceived behavioural control was measure by using the perceived behavioural control scale. Another subscale of the constructs was focused on self-efficacy (SE) and facilitating conditions (FC) among nurses and midwives in their provision of essential newborn care. The 7 Likert scale questionnaire with scoring rates ranging from strongly disagree= 1, moderately disagree=2, disagree=3, neither=4, agree=5, moderately agree=6, and strongly agree=7.

Section D: the behavioural intention was measured by using three items scale of the behavioural intention (BI). The questionnaire was a 7 Likert scale with scoring rates ranging from strongly disagree= 1, moderately disagree=2, disagree=3, neither=4, agree=5, moderately agree=6, and strongly agree=7.

Section E: behaviour (adherence) was measured using two items scale of behaviour (BE). The questionnaire was a 7 Likert scale with scoring rate ranging from strongly disagree= 1, moderately disagree=2 disagree=3, neither=4, agree=5, moderately agree=6, and strongly agree=7. The reliability of the questionnaire was above Cronbach's alpha of 0.70.
3.9 Validity and Reliability of the questionnaire

3.9.1 The validity of the questionnaire

Validity refers to the extent to which a questionnaire measures accurately the actual variables it intends to measure (Adcock & Collier, 2001). The questionnaire adapted for the study was developed and used in the field of health as a way of ensuring content validity. In the process to ensure the validity of the research tool, the researcher adapted existing scales that had been developed and tested in many studies. Moreover, a critical and rigorous review of current pertinent literature was done taking into consideration content validity. To ensure fairness and avoid bias in the study, probability sampling techniques was used to ensure the sample is representative enough of the populations.

3.9.2 Reliability of the questionnaire

Reliability refers to the process of measuring the consistency of the questionnaire. Reliability was attained using the correlation coefficient. The greater the value the reliable the questionnaire. The reliability coefficient ranges from 0-1, and a questionnaire was considered reliable if the correlation coefficient known as Cronbach’s alpha is 0.6 or more (Bonett & Wright, 2015).

The Cronbach alpha for all the items in the scale was above 0.7. The Cronbach alpha for the subscales were as follows: attitude 0.96, subjective norms 0.82, perceived behavioural control 0.96, behavioural intention 0.96, and behaviour 0.81. The Cronbach alpha for this current study was as follows: overall Cronbach alpha was 0.96, attitude 0.96, subjective norm 0.90, perceived behavioural control 0.86, behavioural intention 0.89, and behaviour 0.54.
3.10 Piloting of Tool

The questionnaires were piloted with 10 nurses and midwives to pre-test the questionnaire in the Savulugu Municipal Hospital in Northern Ghana to ensure content and face validity. The Savelugu Municipal Hospital provides maternal and neonatal services to clients. It was the largest Hospital in the Savelugu Municipality which provides a wide range of services in general and specialised units. Respondents were allowed to comment on the clarity or otherwise of the items in the questionnaire during the pilot phase. The pilot was aimed at testing the ability of the questionnaire to elicit information to answer the research questions, and the number of minutes on the average each session would last to help plan the time well.

3.11 Data Collection Procedure

An introductory letter from the maternal and child health department of the School of Nursing, University of Ghana, Legon, was sent to the various Hospitals in the Tamale Metropolis. The Hospital management after they granted the permission, and referred the researcher to the appropriate department, thus, the Director of Nursing Services (DNS) and Deputy Director of Nursing Services (DDNS) with a copy of the introductory letter. DNS and DDNS also introduced the researcher and the team to the various unit heads.

Likewise, permission was sought from the respondents in the labour, ANC, maternity, NICU, labour theatre, and child welfare units of the selected hospitals. They were approached individually and the purpose of the study, including components like confidentiality and right of withdrawal, was explained to them. After their consent was sought, they were given the research questionnaire which they completed and returned to the
researcher and research assistant. Respondents were, then, given a snack and pen each as appreciation for their time and energy spent in furthering this research.

3.12 Data Management and Analytic Approach

Data management preceded data analysis. It was a rigorous scientific process that involved transforming data from a raw state into meaningful, accessible, and reliable information to the end-user (Gale, Heath, Cameron, Rashid, & Redwood, 2013). The process of identification, diagnosis, and correction of errors in given information was termed as data cleaning. The researcher removed all improperly filled questionnaires. The data was coded in a form that was compatible with the computer and statistical software. To ensure that there was no missing data, frequencies were checked on all items in the questionnaire using the Statistical Package for Social Science (SPSS) software version 21.0. The perusal of each questionnaire was done to check for missing data. Items not answered in the questionnaire were given values “999” and “111” for nonresponse. Descriptive statistics; frequencies, standard deviations (SD), and mean were performed to describe and give meaning to the data.

Correlation data analysis (Pearson product-moment correlation (Pearson r) was performed to examine the relationship between the predictors (attitudes, subjective norms, PBC, behavioural intentions) and nurses’ and midwives' adherence to ENCP. This analysis was considered appropriate because the data met all the assumptions of Pearson (r): dependent variable (adherence) being computed into a continuous variable, normal distribution of data and the variables being linearly related. Also, this study examined
demographic data and that of attitude, SN, PBC, behavioural intention, and behaviour (adherence). However, none was statistically significant.

Lastly, regression analysis was performed which determined the predictors of adherence to ENCP as well as mediation analysis to establish the mediating effect of behavioural intention on subjective norm and behaviour (adherence) which resulted in partial mediation.

3.13 Ethical consideration in quantitative research

Ethical approval was obtained from the Noguchi Memorial Institute for Medical Research (NMIMR) at the University of Ghana, and the Ethical Review Committee of various Hospitals in the Tamale Metropolis before the study began. A permission letter and ethical clearance certificates from the Institutional Review Board of the Noguchi Memorial Institute of Medical Research, University of Ghana, Legon, was sent to the various Hospitals in Tamale Metropolis before the commencement of the study.

Ethical considerations in this study included issues of informed consent, confidentiality, and anonymity. In ensuring informed consent, the researcher and trained research assistant obtained valid consent from respondents and gained their permission before they were enrolled in the study. This was to ensure that all respondents completely understood the purpose and methods used in the study, the risks involved, and the demands placed upon them as participants (Jones & Kottler, 2006). The respondents also understood that they had the right to withdraw from the study as and when they want to do so.

Based on this principle, a consent form was filled by the respondents which indicated they were engaged in the study based on their free will without any coercion before they
answered the questionnaire. The study was explained to the respondents in detail before they signed their consent forms.

Privacy denotes the ability of a person to avoid disclosure of certain personal and/or sensitive information to another individual or entity (Rothstein, 2007). Privacy was ensured during data collection by making all the necessary arrangements which ensured that the respondents attended to the questionnaire in an office in the hospital or at their homes if they found that preferable. During this process, no additional person was present apart from the respondent, researcher, and research assistant.

Confidentiality dealt with keeping individual personal information without disclosing it to a third party without the person’s consent (Rothstein, 2007). The respondents were assured of the foregoing. The respondents’ names did not appear on the questionnaire but rather codes understandable to only the researcher, research assistant, and supervisors were used.

The respondents were assured that the information obtained was only used for this research work. The entire study’s information would be kept under key and lock in a cupboard at the School of Nursing and Midwifery of the University of Ghana and shall be destroyed five years after the study. Moreover, any publication from this study would not contain any cues to respondents’ identity to the information. A thorough application of the components that had been outlined in the methodology enhanced the research output.
CHAPTER FOUR (4)

FINDINGS OF THE STUDY

This chapter presents the study findings. These findings are presented following the constructs of the theoretical framework and the study objectives. The socio-demographic characteristics of the respondents were initial presented then the other findings.

4.1 Socio-Demographic Characteristics of Respondents

A total of 330 respondents were used in the study with a 100% response rate. The mean age of the respondents was (30.73 ± 6.12). The least age of the respondent was 22 years and the maximum age was 60 years. The majority of the respondents were females 88.8% (n=293) whiles 10.9% (n=36) were males and one respondent failed to indicate the gender. Most of them were diploma holders (75.2%, n=248). The mean years of practice were (1.32 ± 0.66). The majority of the respondent have practices experience below 5 years (77.9%, n=257)

The mean rank of the respondents was (3.38 ± 2.43). The majority of the respondents were staff midwives (29.1%, n=96). Details of the sociodemographic data are presented in table 4.1

Table 4.1 Socio-demographic characteristics of respondents
<table>
<thead>
<tr>
<th>Variables</th>
<th>frequency (n)</th>
<th>percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age groups of respondents</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30</td>
<td>206</td>
<td><strong>62.4%</strong></td>
</tr>
<tr>
<td>31-40</td>
<td>102</td>
<td><strong>30.9%</strong></td>
</tr>
<tr>
<td>41 and above</td>
<td>22</td>
<td><strong>6.7%</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>330</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Mean age = \(30.73 \pm 6.12\) yrs.

<table>
<thead>
<tr>
<th>Gender of respondent</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>36</td>
<td><strong>10.9%</strong></td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td><strong>293</strong></td>
<td><strong>88.8%</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>330</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational qualification of respondent</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate in nursing/midwifery</td>
<td>5</td>
<td><strong>1.5%</strong></td>
</tr>
<tr>
<td><strong>Diploma in nursing/midwifery</strong></td>
<td><strong>248</strong></td>
<td><strong>75.2%</strong></td>
</tr>
<tr>
<td>Advanced diploma in nursing/midwifery</td>
<td>18</td>
<td><strong>5.5%</strong></td>
</tr>
<tr>
<td>Undergraduate in nursing/midwifery</td>
<td>52</td>
<td><strong>15.8%</strong></td>
</tr>
<tr>
<td>Missing value</td>
<td>1</td>
<td><strong>0.3%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rank</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staff midwives</strong></td>
<td><strong>96</strong></td>
<td><strong>29.1%</strong></td>
</tr>
<tr>
<td>Staff nurses</td>
<td>50</td>
<td><strong>15.2%</strong></td>
</tr>
<tr>
<td>Senior staff midwives</td>
<td>69</td>
<td><strong>20.9%</strong></td>
</tr>
<tr>
<td>Senior staff nurses</td>
<td>23</td>
<td><strong>7.0%</strong></td>
</tr>
<tr>
<td>Midwifery officer</td>
<td>23</td>
<td><strong>7.0%</strong></td>
</tr>
<tr>
<td>Nursing officer</td>
<td>29</td>
<td><strong>8.8%</strong></td>
</tr>
<tr>
<td>Senior midwifery officer</td>
<td>12</td>
<td><strong>3.6%</strong></td>
</tr>
<tr>
<td>Senior nursing officer</td>
<td>11</td>
<td><strong>3.3%</strong></td>
</tr>
<tr>
<td>Principal midwifery officer</td>
<td>9</td>
<td><strong>2.7%</strong></td>
</tr>
<tr>
<td>Principal nursing officer</td>
<td>8</td>
<td><strong>2.4%</strong></td>
</tr>
</tbody>
</table>

**Source: Field data, 2020**
4.2 Attitude towards adherence to ENCP

In this research, the attitude of nurses and midwives’ adherence consists of three domains namely perceived usefulness, perceived ease of use, and compatibility. Thirteen items were used to assess respondents’ attitude towards ENCP. Thus, the attitude of Nurses and Midwives on ENCP was measure by taking the average score of perceived usefulness, perceived ease of use, and compatibility. The mean score for attitude was (5.22 ± 1.4) signifying a strong positive attitude towards adherence to ENCP. Therefore, about 87.9% (n=290) of the respondents demonstrated a positive attitude towards adherence and 12.1% (n=40) reported a negative attitude towards adherence.

The different aspects of attitude measured were perceived usefulness, perceived ease of use, and compatibility of the practices to existing behaviour. Three items were used to assess respondents on the perceived usefulness of ENCP among nurses and midwives. The mean score of perceived usefulness was (0.87 ± 0.33) indicating a good attitude toward adherence to ENCP.

Nearly, 87.3% (n=288) of the respondents perceived that ENCP were useful and will adhere to them. Contrary, 12.7% (n=42) of respondents perceived ENCP to be non-useful and might not adhere to them. Also, three items of perceived ease of use were used to measure adherence to ENCP among nurses and midwives. The mean score for perceived ease of use was (0.88 ±0.33) which indicates strong adherence to ENCP. Approximately, 87.9% (n=290) of respondents perceived ENCP to be ease of use and 12.1% (n=40) perceived it not to be easy to use and likely not to adhere. Finally, seven items measured the degree of fitness of ENCP to existing behaviours among these nurses and midwives. The mean score of compatibility was (0.86 ± 0.35) indicating great compatibility of ENCP to
existing behaviours of nurses and midwives. About 86.1% (n=284) of respondents agreed that ENCP was compatible with their existing workplace values while 13.9% (n=46) were of the view that ENCP was not compatible with their existing protocols. The details about the attitude of these nurses and midwives are shown in table 4.2 below;

**Table 4.2: Attitude of nurses and midwives towards adherence to ENCP**

<table>
<thead>
<tr>
<th>The attitude of Nurses and Midwives</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive attitude</td>
<td>290</td>
<td>87.9%</td>
</tr>
<tr>
<td>Negative attitude</td>
<td>40</td>
<td>12.1%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
</tbody>
</table>

The average mean score of attitude (5.22 ± 1.4)

Perceived usefulness

<table>
<thead>
<tr>
<th>Usefulness</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useful</td>
<td>288</td>
<td>87.3%</td>
</tr>
<tr>
<td>No useful</td>
<td>42</td>
<td>12.7%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
</tbody>
</table>

Perceived ease of use

<table>
<thead>
<tr>
<th>Ease of use</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of use</td>
<td>290</td>
<td>87.9%</td>
</tr>
<tr>
<td>Non ease of use</td>
<td>40</td>
<td>12.1%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
</tbody>
</table>

Compatibility

<table>
<thead>
<tr>
<th>Compatibility</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatible</td>
<td>284</td>
<td>86.1%</td>
</tr>
<tr>
<td>No compatible</td>
<td>46</td>
<td>13.9%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Source:** Field data, 2020
4.3 The influence of beliefs and perception (subjective norms) of nurses and midwives on adherence to ENCP

In this research, the beliefs and perceptions (subjective norm) of nurses and midwives adherence consist of two areas namely peer and superior influences. All six items were used to assess respondents’ beliefs and perceptions (subjective norm) towards ENCP. The mean score for subjective norms was (4.70 ±1.52) representing strong positive beliefs (subjective norms) towards adherence to ENCP.

Also, about 81.5% (n=269) of the respondents demonstrated positive beliefs and perceptions (subjective norm) and will adhere to ENCP and 18.5% (n=61) reported negative beliefs and perception (subjective norms) and might not adhere to them. Belief and perceptions of Nurse and Midwives on ENCP were measured by taking the average score of peer and superior influences.

Four items were used to measure the peer influence of ENCP among nurses and midwives. About 78.5% (n=259) respondents were motivated and influenced by their peers to used ENCP. Contrary, 21.5% (n=71) of respondents believed that their peers do not influence their adherence to ENCP.

Also, two items were used to measure superior influence on respondents’ adherence to ENCP. Approximately, 83.0% (n=274) of respondents agreed that their superiors insist on their adherence to ENCP and 17.0% (n=56) do not agree on superior influence on their adherence to ENCP. The details of these beliefs and perceptions (subjective norms) are presented in Table 4.3 below.
Table 4.3: The influence of beliefs and perceptions (subjective norms) of nurses and midwives on adherence to ENCP

<table>
<thead>
<tr>
<th>Beliefs and perception of Nurses and Midwives</th>
<th>frequency (n)</th>
<th>percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive SN</td>
<td>269</td>
<td>81.5%</td>
</tr>
<tr>
<td>Negative SN</td>
<td>40</td>
<td>18.5%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
</tbody>
</table>

Average mean score (4.70 ±1.52)

Peer influence

<table>
<thead>
<tr>
<th>Influence</th>
<th>frequency (n)</th>
<th>percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influence</td>
<td>288</td>
<td>87.3%</td>
</tr>
<tr>
<td>No influence</td>
<td>42</td>
<td>12.7%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
</tbody>
</table>

Superior influence

<table>
<thead>
<tr>
<th>Superior influence</th>
<th>frequency (n)</th>
<th>percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superior influence</td>
<td>274</td>
<td>83.0%</td>
</tr>
<tr>
<td>Non-superior influence</td>
<td>56</td>
<td>17%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field data, 2020
4.4 Behavioural factors (PBC) that affect nurses’ and midwives’ adherence to ENCP

In this study, behavioural factors (PBC) of nurses and midwives’ adherence consist of two domains namely self-efficacy and facilitating condition. All nine items were used to measure respondents’ behavioural factor (perceived behavioural control) towards ENCP. Behavioural factors (PBC) of Nurses and Midwives on ENCP was quantified by taking the average score of self-efficacy and facilitating conditions. The mean score for behavioural factors (PBC) was (4.76 ±1.19) signifying strong positive behavioural factors (PBC) towards adherence to ENCP. About 86.4% (n=285) of the respondents demonstrated positive behavioural factors (PBC) towards adherence and 13.6% (n=45) reported negative behavioural factors (PBC) towards adherence. Six items were used to assess respondents on the self-efficacy of ENCP among nurses and midwives. About, 87.9% (n=290) of respondents agreed that they were confident about adhering to ENCP. On the other hand, 12.1% (n=40) of respondents perceived that they were not confident enough to adhere to these ENCP.

Also, three items were used to measure the facilitating conditions needed for respondents to adherence to ENCP. Nearly, 67.6% (n=223) of respondents perceived that they needed facilitating conditions to help them adhere to ENCP and 32.4% (n=107) agreed that there was no need for facilitating conditions to adhere. Table 4.4 presents the details of these behavioural factors.
Table 4.4: The behavioural factors (PBC) that affect nurses' and midwives’ adherence to ENCP

<table>
<thead>
<tr>
<th>Behavioural factors of Nurses and Midwives</th>
<th>frequency (n)</th>
<th>percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive PBC</td>
<td>285</td>
<td>86.4%</td>
</tr>
<tr>
<td>Negative PBC</td>
<td>40</td>
<td>13.6%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
<tr>
<td>Average mean score</td>
<td>(4.76 ±1.19)</td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficacy</td>
<td>290</td>
<td>87.9%</td>
</tr>
<tr>
<td>Non-efficacy</td>
<td>40</td>
<td>12.1%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
<tr>
<td>Facilitating conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitating</td>
<td>223</td>
<td>67.6%</td>
</tr>
<tr>
<td>Non facilitating</td>
<td>107</td>
<td>32.4%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field data, 2020
4.5 Nurse’s and midwives’ intention to adhere to ENCP

In this study, nurses' and midwives' intention to adhere to ENCP is based on the beliefs and critical evaluation of newborn survival rates. All three items were used to assess respondents’ intentions towards ENCP. The mean score for the intention was (5.20 ±1.50) which indicates strong positive intention towards adherence to ENCP.

Moreover, nearly 87.6% (n=289) of the respondents had good intentions and would adhere to ENCP and 12.4% (n=41) reported bad intentions, suggesting that they may not adhere to ENCP. The details of these intentions are presented in table 4.5 below.

Table 4.5: Nurse’s and midwives’ intention to adhere to ENCP

<table>
<thead>
<tr>
<th>The behavioural intention of Nurses and Midwives</th>
<th>frequency (n)</th>
<th>percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good intention</td>
<td>289</td>
<td>87.6%</td>
</tr>
<tr>
<td>No good intention</td>
<td>41</td>
<td>12.4%</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100%</td>
</tr>
</tbody>
</table>

Average mean score (5.20 ± 1.50)

Source: Field data, 2020
4.6 Relationships between attitudes, subjective norms, perceived behavioural control, intention, and adherence to ENCP

Bivariate correlation was performed to determine the relationship between the predictors (attitudes, subjective norms, PBC, behavioural intentions) and nurses’ and midwives' adherence to ENCP.

The results revealed that there was a strong significant positive relationship between attitudes and nurses' and midwives' adherence to ENCP ($r = 0.59$, $p < .001$). This denotes that an increase in attitudes of nurses and midwives leads to an increase in adherence to ENCP. In other words, nurses with a positive attitude adhere to ENCP.

Likewise, there was a strong significant positive correlation between subjective norms and nurses' and midwives’ adherence to essential newborn care practice ($r = 0.51$, $p < .001$), signifying that an increase in subjective norms leads to an increase in nurses and midwives adherence to essential newborn care practice. Also, PBC was significantly and positively associated with nurses' and midwives' adherence to ENCP ($r = 0.61$, $p < .001$). This designates that an increase in PBC influences an increase in the performance of nurses and midwives towards adherence to ENCP.

Furthermore, Behavioural intentions demonstrated a significant positive and stronger correlation with nurses' and midwives' adherence to ENCP ($r = 0.69$, $p < .001$). This shows that an increase in behavioural intentions leads to a further increase in nurses’ and midwives' adherence to ENCP. Details are presented in Table 4.6
Table 4.6: Bivariate correlation between predictors and adherence to ENCP

<table>
<thead>
<tr>
<th>Variables</th>
<th>Attitude</th>
<th>Subjective norms</th>
<th>PBC</th>
<th>Behavioural intention</th>
<th>Adherence to ENCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective norms</td>
<td>0.59***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td>0.71***</td>
<td>0.66***</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioural intention</td>
<td>0.77***</td>
<td>0.64***</td>
<td>0.73**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Adherence to ENCP</td>
<td>0.59**</td>
<td>0.51**</td>
<td>0.61**</td>
<td>0.69**</td>
<td>1</td>
</tr>
</tbody>
</table>

**p < 0.01.

Source: Field data, 2020

4.7 The correlation between attitude, subjective norm, PBC, and intention towards adherence ENCP

Bivariate correlation was performed to determine the relationship between attitudes, subjective norms, PBC, and nurses' and midwives' intentions to adhere to ENCP. The findings suggested that there was a significant positive relationship between attitudes and nurses' and midwives' adherence to ENCP ($r = 0.77, p < .001$). This denotes that an increase in attitudes of nurses and midwives leads to an increase in nurses' and midwives' behavioural intention towards adhering to ENCP. Furthermore, nurses and midwives with a positive attitude had the good behavioural intention to adhere to ENCP.

Also, the study reveals that there was a significant positive correlation between subjective norms, nurses and midwives' intention towards adhering to ENCP ($r = 0.64, p < $.01$).
suggesting an increase in subjective norms of the nurses and midwives will cause an increase in nurse and midwives intention to adhere to essential newborn care practice. Also, PBC significantly and positively associated with nurses' and midwives' intention to adhere to essential newborn care practice ($r = 0.61, p < .001$). This suggests that an increase in PBC influences an increase in the intention of nurses and midwives to adhere to ENCP.

4.7 The correlation between attitude, subjective norm, PBC, and intention towards adherence ENCP

<table>
<thead>
<tr>
<th>Variables</th>
<th>Attitude</th>
<th>Subjective norms</th>
<th>PBC</th>
<th>Behavioural intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective norms</td>
<td>0.59**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td>0.71**</td>
<td>0.66**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Behavioural intent</td>
<td>0.77**</td>
<td>0.64**</td>
<td>0.73**</td>
<td>1</td>
</tr>
</tbody>
</table>

**$p < 0.01$.**

Source: Field data, 2020
4.8 Predictors of nurses and midwives’ adherence to ENCP

As indicated in table 4.6, a multiple regression analysis was run to determine whether attitude, subjective norms, perceived control, and behavioural intention would predict nurses and midwives' adherence to ENCP.

The socio-demographic variables were used but none of them contributed significantly to the model and were therefore excluded in the subsequent analysis. In the first model, attitude significantly predicted 34% of the variance in nurses and midwives to adhere to ENCP \([R^2 = .34, x^2 (1,328) = 171.81, p < .001]\).

In model two when the subjective norm was included, the subjective norm independently accounted for 4% of the variation of nurses and midwives' adherence to ENCP. The attitudes and subjective norms together resulted 38% of nurses and midwives’ adherence to essential newborn care practice \([R^2 = .38, x^2 (2, 327) = 102.01, p < .001]\).

In model three, PBC was added. The attitude, subjective norms and PBC together accounted for 43% of the variance in nurses and midwives’ adherence to ENCP \([R^2 = .43, x^2 (3, 326) = 82.00, p < .001]\). In the final model behavioural intention was added and the findings showed that PBC and behavioural intentions were the major predictors of nurses' and midwives' adherence to ENCP. These predictors significantly accounted for 51% of the variance in nurses' and midwives' adherence to ENCP. \([R^2 = .51, x^2 (4, 325) = 82.79, p < .001]\). However, attitude and subjective norms were not significant predictors of nurses' and midwives' adherence to ENCP as presented in table 4.8
Table 4.8: Predictors of nurses and midwives’ adherence to ENCP

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.35</td>
<td>.27</td>
<td>5.01</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Attitude</td>
<td>.65</td>
<td>.05</td>
<td>.59</td>
<td>13.11&lt;.001</td>
</tr>
<tr>
<td>Model summary:</td>
<td>R² = .34, x² (1, 328) = 171.81, p &lt; .001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.02</td>
<td>.27</td>
<td>3.76</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Attitude</td>
<td>.19</td>
<td>.06</td>
<td>.44</td>
<td>8.17 &lt;.001</td>
</tr>
<tr>
<td>Subjective norms</td>
<td>.25</td>
<td>.06</td>
<td>.25</td>
<td>4.64 &lt;.001</td>
</tr>
<tr>
<td>Model summary:</td>
<td>[R² = .38, x² (2, 327) = 102.01, p &lt; .001]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.51</td>
<td>.28</td>
<td>1.84</td>
<td>.07</td>
</tr>
<tr>
<td>Attitude</td>
<td>.30</td>
<td>.07</td>
<td>.27</td>
<td>4.46 &lt;.001</td>
</tr>
<tr>
<td>Subjective norms</td>
<td>.13</td>
<td>.06</td>
<td>.12</td>
<td>2.16 .03</td>
</tr>
<tr>
<td>PBC</td>
<td>.44</td>
<td>.09</td>
<td>.34</td>
<td>5.12 &lt;.001</td>
</tr>
<tr>
<td>Model summary:</td>
<td>[R² = .43, x² (3, 326) = 82.00, p &lt; .001]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.47</td>
<td>.26</td>
<td>1.80</td>
<td>.07</td>
</tr>
<tr>
<td>Attitude</td>
<td>.05</td>
<td>.07</td>
<td>.04</td>
<td>.66  .51</td>
</tr>
<tr>
<td>Subjective norms</td>
<td>.04</td>
<td>.06</td>
<td>.04</td>
<td>.72  .47</td>
</tr>
<tr>
<td>PBC</td>
<td>.27</td>
<td>.08</td>
<td>.21</td>
<td>3.24 &lt;.01</td>
</tr>
<tr>
<td>Behavioural intention</td>
<td>.50</td>
<td>.07</td>
<td>.48</td>
<td>.70  &lt;.001</td>
</tr>
<tr>
<td>Model summary:</td>
<td>[R² = .51, x² (4, 325) = 82.79, p &lt; .001]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dependent variable: Adherence to newborn care practice**
4.9 The mediating effect of behaviour intention on SN and behaviour (adherence)

A mediation analysis was carryout to establish the mediating effect of behavioural intention on the relationship between subjective norm and behaviour (adherence) on ENCP. Using the Baron and Kenney method (1986), the first step involves checking the c-path, which is establishing the relationship subjective norm on behaviour (adherence) and in it was statistically significant with p=.000. The second step involves checking the a-path, which is establishing the relationship between subjective norm and behavioural intention and it was significant at p=.000. The third step involves the checking of the b-path which was to establish the relationship behavioural intention and behaviour (adherence) which was significant p=.000. Establishing the relationship between subjective norm and behaviour while controlling for the effect of behavioural intention the finding was \[r=.70, \text{F (2, 327)} =153.53, p<0.05\]. The results of the mediation analysis show that behavioural intention partially mediates the relationship between subjective norm and behaviour (adherence), standardized beta coefficient = .508-.117=.391. This implies that behavioural intention significantly mediates in the relationship between subjective norm and behaviour (adherence). The details are presented in the table below 4.9.
Table 4.9 Model Summary of the Mediating Effect of Behavioural Intention

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Model 1 (Constant)</td>
<td>2.34</td>
<td>.24</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>.52</td>
<td>.05</td>
</tr>
</tbody>
</table>

Model summary 1: [R² = .51, F (1, 328) = 114.29, p < .001]

Dependent Variable: Behaviour (Adherence)

<table>
<thead>
<tr>
<th>Model 2 (Constant)</th>
<th>Subjective norms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.26</td>
</tr>
</tbody>
</table>

Model summary 2: [R² = .64, F (1, 328) = 222.84, p < .001].

Dependent Variable: Behaviour Intention

<table>
<thead>
<tr>
<th>Model 3 (Constant)</th>
<th>Behavioural intention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.06</td>
</tr>
</tbody>
</table>

Model summary 3: [R² = .69, F (1, 328) = 298.17, p < .001]

Dependent Variable: Behaviour (Adherence)

<table>
<thead>
<tr>
<th>Model 4 (Constant)</th>
<th>Subjective norms</th>
<th>Behavioural intention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.90</td>
<td>.23</td>
</tr>
</tbody>
</table>

Model summary 4: [R² = .70, F (2, 327) = 153.53, p < .001]

4.9 The mediating effect of behaviour intention
4.10 Summary of findings

The research finding suggests that the mean age of respondents was 31 years and the modal age 30 years. Approximately, 88.8% of respondents were females, 10.9% males and
0.3% did not indicate their gender. The majority of respondents 75.2% were diploma holders and other certificates holders 24.8%. Also, 77.9% of respondents were 5 years and below experience whilst above 5 years’ experience was 22.1%. The majority of the respondents 29.1% were staff midwives.

The study reveals that 83.3% of the nurses and midwives in this study knew about essential newborn care practice and the majority of the nurses and midwives were aware of the positive impact of essential newborn care practice. Among the study respondents, the majority of 87.9% of them had positive attitudes to essential newborn care practice. The nurses' and midwives' total attitudes mean value stood at (5.22 ±1.4).

The respondents in this research, high total subjective norms mean score of (4.70±.52), suggesting nurses and midwives had positive subjective norms towards essential newborn care practice. Of the total number of respondents, 81.5% had positive subjective norms concerning nurses and midwives’ adherence essential newborn care practice.

Furthermore, the study indicated a positive PBC mean score of (4.76 ± 1.19), suggesting that the majority of the nurses and midwives had control over the influence of essential newborn care practice. Likewise, it was agreed that 86.4% of the men had positive PBC on nurses and midwives’ adherence to essential newborn care practice.

The study established that many of the respondents had a positive behavioural intention towards nurses and midwives' adherence to essential newborn care practice. The total mean score of (5.20 ± 1.50). The findings established that 87.6% had good behavioural intentions. Moreover, attitude and PBC have significant relationships with behavioural intentions, whereas, PBC and behavioural intentions were significantly associated with
nurses' and midwives' adherence to ENCP. However, the subjective norm was not statistically significant to behavioural intention. Also, attitude and subjective norm were not statistically significant to adherence to ENCP.

In conclusion, the study revealed PBC and behavioural intentions significantly predicted nurses' and midwives' adherence to ENCP. They collectively established 51% of nurses and midwives' adherence to ENCP. However, the attitude and subjective norms variable was not found to predict nurses' and midwives' adherence to ENCP.
CHAPTER FIVE (5)

DISCUSSION OF THE FINDINGS

This chapter discusses the study findings as presented based on the study objectives and constructs of the theory used. The socio-demographic characteristics of the respondents were initially discussed then, other findings

5.1 Socio-demographic characteristics of respondents

Socio-demographic characteristics of respondents such as age, gender, qualification and rank were explored in this study. In all, a total of 330 respondents were used in the study with a 100% response rate. The finding revealed that the average age of the respondents was (30.73 ± 6.121) suggesting that the nurses and midwives in this study were young men and women in their reproductive age who has a special interest in good pregnancy outcomes. This current study finding was similar to others reported by Abadi et al. (2017), and Azmoude, Farkhondeh, Ahour, and Kabirian (2017), who reported an average age of 29.30 and 30 years of respondents in their studies. This implied that most respondents were in their early ages of working life and have the potential to provide essential newborn care now and in the future. Skills acquired in the early stages of practice tend to last longer and overtime developed the experience and expertise in essential newborn care practices. This current study suggested that majority of the respondents were females (88.8%, n=293). This conforms to a study in Ethiopia that reported about 70% of female nurses and midwives to practice immediate newborn care (Abadi et al., 2017). This claim was also backed by Gagnon et al., (2015) which also reported 84.7% female nurses in a study in Canada on the intention
to follow the recommendation concerning preventive clinical practice. Furthermore, most of them were diploma holders (75.2%, n=248). On the contrary, Azmoude et al. (2017), reported 93.4% of respondents of midwives in a study in Iran were degree holders. One could argue that nurses and midwives who are diploma holders tend to attend to clients’ needs more often and hence involve themselves in essential newborn care practices. Conversely, it also suggested overtime this trend might change as many nurses and midwives are going for further studies and specializing in maternal and child health programmes to embraced essential newborn care practices.

The mean years of practice were (1.32 ± 0.661). The majority of the respondents have practice experience around 5 years (77.9%, n=257). This is not different from a 5-year working experience reported in studies (Abadi et al., 2017; Azmoude et al., 2017). It appears that nurses and midwives of three or more years of working experience gain mastery of their job description and always willing to take on more challenging tasks. The younger age of nurses and midwives creates an opportunity for them to adhere to essential newborn care practices.

5.2 Attitude towards adherence to ENCP

In this study, it was found that nurses and midwives’ attitude towards essential newborn care practices was high (5.22 ± 1.4), signifying that nurses and midwives have strong positive attitudes towards ENCP and might seem to be involved in mother’s education on ENCP. Attitudes towards nurses' and midwives' adherence to ENCP signify the degree at which health care providers embrace a positive or negative appraisal of a confident behaviour (Ajzen, 2011; Chikuse et al., 2012). It enlightens nurses and midwives to portray
either a positive or negative attitude towards the anticipated behaviour. This study finding of positive attitude of nurses and midwives could, therefore, be attributed to the fact that the majority of respondents were women, who are familiar with pregnancy stress and would do everything possible to ensure the safety of the mother and newborn. Also, ENCP is an integral part of SDGs which exposes nurses and midwives to several training workshops to enhance their care provision targeted at safe motherhood and newborn (Liu et al., 2016; Liu et al., 2015; You et al., 2015). In Ethiopia, Yaekob, Shimelis, Henok, and Lamaro (2015) and in Tanzania, Sukums et al. (2014), reported that a good number of the respondents revealed essential newborn care practices to be vital in newborn survival. Similarly, these current findings could be credited to the fact that the majority of the respondents in the study were women and are familiar with childbearing and its attending issues (Azmoude et al., 2017).

On the contrary, negative attitudes of nurses and midwives are often attributed to bad working conditions, thus, heavy workloads, and long working hours resulting in poor care to mother and newborn. This could be linked to staffing deficit in the various health care facilities, most especially maternal and newborn care. This is confirmed by Mannava et al., (2015) who reported that the majority of nurses and midwives in the study had a negative attitude toward mothers and their newborns.

Furthermore, this study revealed that most of the nurses and midwives (87.9%, n=290) demonstrated a positive attitude towards adherence. In Germany, Zinsser at el., (2016), reported 97.3%, (n=183) respondents had a positive attitude in conformity to this current study finding, suggesting that it was good to practice essential newborn care. This is most likely because of the proper monitoring and handing over systems employed by ward
superior and nursing managers at various maternal and child welfare centres to ensure strict adherence to essential newborn care practices.

5.3 The influence of beliefs and perception (subjective norms) of nurses and midwives on adherence ENCP

The current study unearthed high subjective norms of nurses and midwives towards ENCP (4.70 ± 1.52), indicating that most of the nurses and midwives in this research had positive subjective norms towards adherence to ENCP. This could be connected to the fact that many nurses and midwives in the hospital community in Ghana are very familiar with pregnancy and presenting issues. Confirming these findings, Baffour-Awuah et al. (2015) in Ghana and Raiskila et al. (2016) reported that midwives had positive beliefs and perceived newborn survival as a good pregnancy outcome. Supporting these findings, the majority of the respondents believed maternal and newborn survival is the responsibility of nurses and midwives (Magge et al., 2017). Christabel Enweronu-Laryea (2016), also reported policies and guidelines adaptation in ENCP to be the best remedy for maintaining gains in neonatal care. Furthermore, incorporating local remedies to training and supervising pregnant women on ENCP skills is key to the safety of mothers and newborns (Reisman et al., 2016; Reisman et al., 2015). Possibly this might have significantly contributed to the high subjective norm of the respondents in this study since it was conducted in the hospital environment where these perceived beliefs predominate.

Besides, this current study equally demonstrated positive beliefs and perception (subjective norms) among a larger number of the respondents, (81.5%, n = 269). This signifies that the majority of the respondents in this current study still have strong beliefs,
skills, and confidence in the welfare of pregnant women and their newborns without seeking approval from their authorities before undertaking essential newborn care practices. Beliefs and perceptions of Nurses and Midwives on ENCP influenced their care provision. These findings are confirmed by a study that reported that 92% of midwives in the study practiced essential newborn care (Attwell, Wiley, Waddington, Leask, & Snelling, 2018). Similarly, Fry and Attawet (2018), reported adherence to care practices among the majority of nurses and midwives in the study to have improved about 82.35% of quality services to mothers and their newborn care. With this quality of services provided, mothers are motivated to adhere to ENCP from the onset of pregnancy until their children are grown.

Also, the current study revealed a positive subjective norm of 78.5% (n=259) of nurses and midwives who were motivated and influenced by their peers to adopt ENCP. In line with these findings, Lundeen et al., (2019) in Rwanda, and Molina et al., (2020) in India reported that peer support to influenced adherence ENCP targeted at improved services to mother and newborn. Cordial relationship and workplace orientation among colleagues in the nursing and midwifery fraternity influence peer support activities towards providing care to mothers and their newborns. Moreover, this current study revealed 83.0% (n=274) of respondents agreed that their superiors insist on their adherence to ENCP regularly. This suggests that nurses and midwives in this study are encouraged and supported by their superior to partake in the active implementation of ENCP at various units to ensure the safety of the mother and newborn. With this revelation, it seems nursing and midwifery superiors believed that ENCP is the core mandate of the nurses and midwives in the maternal and welfare units (Morseth et al., 2020). Also, in conformity to these findings were reported findings of Delaney et al., (2017) who claimed that superior coaching is crucial to ENCP to
ensure better pregnancy outcomes. This can be ascribed to the professional orientation of the respondents. This belief encourages nurses and midwives to carry out ENCP at various maternal and child health units and that could perhaps suggest why nurses and midwives in this study demonstrated positive subjective norms.

5.4 Behavioural factors (perceived behavioural control) that affect nurses' and midwives’ adherence to ENCP

In this study, bahevioural factors (PBC) of nurses and midwives’ adherence ENCP was (4.76 ±1.19) signifying positive behavioural factors towards adherence to ENCP. These findings might point to the fact that the respondents were among those who adhere to ENCP. These perceptions together with prior experiences, resources, and technology facilitating conditions are determinants that encourage an individual to act or refuse to act (Ajzen, 1988, 2015). This implies that the self-motivated actions that abide and influence nurses and midwives in the execution of their duties towards pregnant women and their newborns result in better pregnancy outcomes for safe mothers and newborns.

Rostamkhan, Mokhtari Lakeh, Asiri, and Kazemnezhad Leili (2020), and Charkazi et al. (2013) in Iran reported positive behavioural factors on ENCP. This positive perceived behavioural control which could be attributed to the fact that frequent antenatal care visit and teaching of expectant mothers on ENCP accounted for the higher figures. In this current study majority (86.4% n=285) of the respondents demonstrated positive behavioural factors (PBC) towards adherence to ENCP. This implies that nurses and midwives’ self-efficacy could be associated with the inner desire of respondents towards ENCP. In conformity to these findings, Johnson et al. (2015) in Ghana and Magge et al. (2017) cited skills and a
frequent antenatal visit to be associated with effective implementation of ENCP resulting in improved mother and newborn survival. These findings seem to suggest the fact that nurses and midwives endorse and adhere to ENCP.

5.5 Nurse’s and midwives’ intention to adhere to ENCP

The study suggested that nurses and midwives exhibited positive behavioural intentions towards adherence to ENCP (5.20 ± 1.50) signifying that the respondents in this study had positive behavioural intentions towards adherence to ENCP. Jonas et al. (2016) in South Africa and Fontein-Kuipers et al. (2014) a study in the Netherlands reported nurses and midwives’ high positive intention to support mothers in care provision.

This could be connected to the fact that the majority of nurses and midwives in this study are females in their reproductive ages and could develop a special interest in ENCP because of their own pregnancy experience and also could be in preparedness for future pregnancy to ensure their safety and that of their newborns.

Moreover, these findings further emphasized that 87.6% (n = 289) of nurses and midwives in this survey had positive behavioural intentions towards adherence to ENCP, suggesting that these nurses and midwives had the intention to adhere ENCP. But the success of these practices rest on the shoulders of the mother and family compliance.
5.6 Relationships between attitudes, subjective norms, PBC, intention, and adhere to ENCP

Pearson correlation was performed to determine the relationship between the predictors (attitudes, subjective norms, PBC, behavioural intentions) and nurses’ and midwives’ adherence to ENCP. A couple of relationships were established: attitude and adherence to ENCP, subjective norm and adherence ENCP, PBC, and adherence ENCP and behavioural intention and adherence ENCP among nurses and midwives together with their mediating influence of behavioural intention on adherence ENCP.

The results revealed that there was a strong significant positive association between attitudes and nurses’ and midwives' adherence to essential newborn care practice \( (r = 0.59, p < .001) \). This denotes that an increase in attitudes of nurses and midwives lead to an increase in adherence to ENCP. In other words, nurses and midwives with a positive attitude adhere to ENCP. This implies an increase in the level of attitude (positive attitude) is correlated with a corresponding increase level of adherence ENCP (positive adherence) among nurses and midwives. This finding is similar to the views of Gagnon et al, (2015), that attitudes of nurses and midwives are positively associated with adherence (behaviour). Also, (L. A. Zinsser, K. Stoll, & M. M. Gross, 2016), equally revealed midwives’ positive attitude towards adherence (behaviour). Furthermore, according to Ojong et al. (2015), attitude can be described as positive or negative towards an individual, a thing, place, or something. Hence, an improvement in the opinions and attitudes of nurses and midwives will cause adequate adherence to ENCP.
Likewise, there was a strong significant positive relationship between subjective norms and nurses and midwives’ adherence to ENCP ($r = 0.51, p < .001$), signifying that an increase in subjective norms of the nurses and midwives leads to an increase in nurses and midwives’ adherence to essential newborn care practice. Thus, any improvement in subjective norm will trigger a further increase in adherence to ENCP among nurses and midwives. Additionally, peer, and superior influences towards practices and work environment subculture that promotes ENCP affect in the adherence of ENCP among nurses and midwives. This is comparable with the claim by Jonas et al. (2016), that colleagues and superior influences and motivate nurses and midwives to adhere to ENCP.

Also, perceived behavioural control in the current study is significant and positively associated with nurse and midwives’ adherence to ENCP ($r = 0.61, p < .001$). This designates that an increase in perceived behavioural control influences an increase in the performance of nurses and midwives towards adherence to ENCP. This further stressed that good self-efficacy would cause an equivalent adherence to ENCP among nurses and midwives. In confirmation of this assertion, Jonas et al. (2016) and Yang et al. (2016), indicated that self-efficacy is a predictor of behavioural intention in their findings. This signifies that as the confidence level of adherence increases, the level of adherence will cause a significant in ENCP among nurses and midwives. This would, therefore, mean that there is a need for health care facilities management to provide the necessary support and resources to assist nurses and midwives to overcome the difficulties of adherence to ENCP.
Furthermore, this current study on behavioural intentions demonstrated a significant positive and stronger correlation with nurse and midwife’s adherence to ENCP \( (r = 0.69, p < .001) \). This shows that an increase in behavioural intentions leads to an increase in nurses’ and midwives' adherence to ENCP. This also signifies that nurses and midwives’ positive behavioural intention is related to adherence to ENCP. There is evidenced in the claim of Gagnon, Cassista, Payne-Gagnon, and Martel (2015), that nurses' and midwives' intention to adhere to ENCP is influenced by attitude and PBC towards the behaviour. Mostly, believing that ENCP is useful, efficient, sensible, easy, and result-oriented could influence nurse and behavioural intention. This implies that nurses' and midwives' preparedness to adhere to ENCP will lead to improved newborn survival. The positive adherence to ENCP correlated to attitude, subjective norms, PBC, behavioural intention among nurses, and midwives could be linked to numerous factors. As earlier stated in the study, attitude of respondents, skills, self-efficacy, colleagues and superior influence, poor supply of basic resources and amenities, maternal factors, beliefs and practices, ease of use, and usefulness attributed to the high-level of adherence to ENCP among nurses and midwives.
5.7 The correlation between attitudes, SN, PBC, and intention towards adherence to ENCP

Pearson correlation analysis was performed to determine the relationship between attitudes, subjective norms, perceived behavioural control, and nurses’ and midwives' intentions and adhere to ENCP.

The findings suggested that there was a significant positive relationship between attitudes and nurses' and midwives' adherence to ENCP ($r = 0.77, p < .001$). This denotes that an increase in attitudes of nurses and midwives leads to an increase in nurses’ and midwives' behavioural intention towards adhering to ENCP. Furthermore, nurses and midwives with a positive attitude had the good behavioural intention to adhere to ENCP. This finding is similar to findings of Fontein-Kuipers et al. (2014) asserting that a positive attitude of midwives correlated to behavioural intention towards adherence. Findings of Okoli et al. (2016), equally confirmed this assertion. The current study findings revealed that attitude has a greater influence on nurse and midwives' adherence.

Also, the study reveals that there was a significant positive correlation between subjective norms, nurses and midwives’ intention towards adhering to ENCP ($r = 0.64, p < .001$), suggesting an increase in subjective norms of the nurses and midwives will cause an increase in nurses and midwives’ intention to adhere to ENCP. Also, perceived behavioural control was strong, significant, and positively associated with nurses' and midwives' intention to adhere to ENCP ($r = 0.61, p < .001$). This suggests that an increase in perceived behavioural control influences an increase in the performance of nurses and midwives towards adherence to ENCP.
5.8 Predictors of nurses and midwives’ adherence to ENCP

A multiple regression analysis was done to determine whether the predictors (attitude, subjective norms, perceived control, and behavioural intention) will predict nurses' and midwives' adherence to ENCP. The sociodemographic variables were used but none of them contributed statistical significance to the model at (p < 0.05) and was therefore excluded in subsequent analysis. The result of the study showed that perceived behavioural control and behavioural intentions were the major predictors of nurses' and midwives' adherence to ENCP. These predictors significantly accounted for 51% of the variance in nurses' and midwives' adherence to ENCP [R² = .51, x² (4, 325) = 82.79, p < .001]. However, attitude and subjective norms were not significant predictors of nurses and midwives' adherence to essential newborn care practices. These findings are consistent with Jonas et al. (2016), who asserted in their study that attitude and subjective norm are not predictors of adherence.

The findings showed that the attitude variable significantly predicted 34%, of the variance in nurses' and midwives' adherence to ENCP. This conforms to Zinsser et al, (2016) which asserted that nurses’ attitude is a predictor of behavioural intention to carry out certain actions. Muhammed et al. (2019), also reported midwives attitude predictor of behavioural intention. This study revealed that this attitude level could be attributed to in-service training they received during working in the maternal and newborn units. Another reason could be that majority of the nurses and midwives were women and would experience pregnancy and nurturing of their newborns.
Also, the results of this current study suggest that subjective norm independently accounted for 4% of the variation of nurses' and midwives' intention to adherence to ENCP. This finding is consistent findings Henshall, Taylor, and Kenyon (2016) and Vedam et al. (2009) which revealed subjective norm to predict behavioural intention towards adherence to ENCP. Interestingly, nurses and midwives work in pairs in their services delivery units which implies that there is always influence from a colleague(s). Additionally, peers would adhere to ENCP because is easy, convenient and results orientated. And pears could also adhere to ENCP possible for fear of sanctions from their superiors.

Furthermore, this current study reported that as perceived behavioural control increases, nurses and midwives will most likely adhere to ENCP. This suggests that 5% of nurses and midwives good perceived behavioural control in adhering to ENCP. These findings are similar to Gagnon et al, (2015) which reported PBC to be the main predictor of behavioural intention to adherence. PBC predicts behavioural intention to adhere to ENCP because basic resources were probable available and technological support. Experience and gaining self-efficacy could also influence behavioural intention towards adherence to ENCP.

5.9 Mediation effect of behavioural intention on subjective norm and behaviour (adherence)

The current study seeks to establish whether or not behavioural intention mediates the association between subjective norm and behaviour (adherence). The findings indicated behavioural intention partially mediates the relationship between subjective norm and behaviour (adherence). The findings revealed that behavioural intention is a significant partial mediator (P < 0.05) of subjective norm and behaviour (adherence). Most importantly,
this suggests that the extent to which nurses and midwives adhere to ENCP will depend largely on their behavioural intention to practice or otherwise. These findings correspond to earlier findings by (Chen, Brown, Bowers, & Chang, 2015). The partial mediation of behavioural intention between subjective norm and behaviour (adherence) is explained by the model which is the guiding framework of this study. According to the DTPB model, the relationship among attitude, subjective norm, and PBC to behavioural intention then, the behaviour might have been well associated. Hence, the behavioural intention may influence levels of attitude, subjective norm, and PBC. The extent of attitude, subjective norm, and PBC are influenced by behavioural intention might determine the level of adherence to ENCP.
CHAPTER SIX (6)

SUMMARY OF THE STUDY

This chapter deals with the summary of the entire study, implications, limitations, conclusion, and recommendations which were grounded on the findings of the study.

6.1 Summary of the Study

Adherence is a precarious factor in all the units of care for maternal and newborn care within the hospital setting. The attitude of nurses and midwives in the care of newborns affects newborn growth and survival. An essential part of good nursing and midwifery care is the ability to adhere to ENCP in the various maternal and newborn health units in the hospital. The purpose of the study was to investigate nurses and midwives’ adherence to ENCP in the Tamale Metropolis using the theory of DTPB as an organizing framework. A quantitative cross-sectional design was used and data collected from nurses and midwives on ENCP.

Data was collected from 330 nurses and midwives in three different hospitals within the Tamale metropolis using the behaviour questionnaire that was developed by Ma et al. (2016) and Venkatesh et al. (2003). The questionnaire was categorized into five (5) sections: the section A: demographic characteristics, section B: attitude, section C: subjective norm, section D: PBC, section E behavioural intention and behaviour, section F. Data were analyzed with SPSS Version 21.0. Data analysis was done by using descriptive statistical procedures to calculate mean, and SD for continuous variables while the percentages were used for categorical variables. In establishing the predictor variables and mediating effects, multiple regression, and mediation analysis was done.
The findings revealed that the mean score for attitude was (5.22 ± 1.4) signifying a positive attitude towards adherence to ENCP. The subjective norm means the score was (4.70 ± 1.52) representing a positive disposition towards superior and peers' influence on adherence to ENCP. The total mean score for behavioural factors (PBC) was (4.76 ±1.19) signifying nurses and midwives’ good self-efficacy and the total score for the behavioural intention was (5.20 ± 1.50) indicating good behavioural intention towards adherence to ENCP. The study established attitude, subjective norm, PBC, and behavioural intention to have a positive and statistically significant relationship with nurses and midwives’ behaviour (adherence) to ENCP. This, therefore, implies that an increased attitude, subjective norm, PBC, and behavioural intention of nurses and midwives would cause an increase in behaviour (adherence) to ENCP. Adherence behaviour rises when nurses' and midwives' attitude, subjective norms, PBC, and behavioural intentions are positive. This denotes that an increase in attitudes, subjective norm, PBC, and behavioural intention of nurses and midwives leads to an increase in adherence to ENCP. Most importantly, attitude, subjective norm, PBC, and behavioural intention had a positive and statistically significant relationship with behaviour (adherence).

The findings of the regression analysis established that the predictors of nurses' and midwives’ behaviour (adherence) in the current study are PBC and behavioural intention to behaviour (adherence) towards ENCP. Hence, PBC was the highest contributor to the model. This implies that nurses and midwives' confidence is key in their adherence to ENCP. The findings indicate that behavioural intention partially mediates the relationship between PBC and behaviour (adherence) to ENCP. This moreover implies that behavioural intention (p<
.05) is a significant mediator of the relationship between subjective norm and behaviour (adherence) to ENCP.

6.2 The implication of the Study

These findings of this study have implications for nursing and midwifery practice, and nursing research.

6.3 For Nursing and Midwifery Practice

The findings of the study revealed that nurses and midwives had positive attitudes, subjective norm, PBC, and behavioural intention towards behaviour (adherence) to ENCP. The benefit derived from the act of nurses and midwives’ adherence to ENCP would lead to lower newborn morbidity and mortality, and promote positive pregnancy outcomes among mothers. It is, therefore, necessary for managers in health services to encourage and support these nurses and midwives to continue the good behaviour of adherence to ENCP. Also, the consistency of nurses and midwives in practice would influence good pregnancy outcomes and lower the figures of newborn morbidity and mortality. Nurses and midwives working in these units should be encouraged and motivated to specialize in the field to deliver competent based services to mothers and newborns. Nurses and midwives in practice should cultivate and maintain the habit of assessing pregnant women and their newborns at regular intervals to identify at-risk pregnancies and dangers in newborns and manage appropriately. Finally, there is a need for nurses and midwives to revise their skills in practices to target evidenced-based to reduce the higher mortality numbers.
6.4 For Nursing Research

The existing findings of the current study indicated that nurses and midwives had a good attitude, subjective norm, PBC, and behavioural intention towards adherence to ENCP. The significant predictors of nurses' and midwives' adherence to ENCP were PBC and behavioural intention. This signifies that nurses' and midwives’ PBC and behavioural intention on adherence to ECNP is very key. Attitude and subjective norms were not significant predictors of nurses' and midwives' adherence to ENCP. However, the study did not establish the reason why attitude and subjective norm are not predictors of nurses' and midwives' adherence to ENCP. Thus, qualitative research could be done to ascertain nurses' and midwives' opinions on attitude and subjective norms. Also, there is a need to compare the adherence to ECNP between nurses and midwives for better understanding.

6.5 Limitations of the Study

This research took place in three different health facilities in one region out of the sixteen (16) regions in Ghana to give a holistic overview of the factors responsible for adherence to ENCP among nurses and midwives. These findings might not indicate a true reflection of the situation in the entire country since it was done only in the Tamale metropolis in the northern region of Ghana. Hence, it would be appropriate to replicate this research in other regions of Ghana. Even though prudent measures were put in place to avoid biases, the self-report nature of the questionnaires could have introduced some sort of bias. Also, cross-sectional studies do not establish cause and effect relationships among dependent and independent variables. Though there was a significant relationship among attitude, subjective norm, PBC, and behavioural intention, on nurses' and midwives' adherence to
ENCP, there is, therefore, the need for them to improve on their skills and provide timely intervention.

6.6 Conclusion

Realistic evidence was established to support the DTPB model. Attitude, subjective norm, PBC, and behavioural intention influenced nurses’ and midwives’ adherence to ENCP. To reduce newborn morbidity and mortality and improve newborn survival, efforts geared towards adherence to maternal and newborn care protocols must be embraced. The purpose of adherence to ENCP is grounded in the PBC and the behavioural intention of nurses and midwives. The benefits of adherence have a major influence on the health outcomes of newborns and their mothers. There is, therefore, the need for nurses and midwives to develop their adherence culture towards ENCP for better pregnancy outcomes and newborn survival. Convincingly, adhering to ENCP will place Ghana in a position to attain SDGs (3.2), which is determined to prevent the death of newborns and promote survival.
6.7 Recommendation

Based on the findings of the current study, recommendations were made to the Ministry of Health, Ghana Health Services, and Health facility management.

6.7a To the Ministry of Health

The Ministry of Health should:

1. Create an enabling environment for adherence to ENCP policies for the country and institute monitoring system as well as enforce disciplinary measures to restrain offenders.

2. Develop an award scheme policy to deserving nurses and midwives and acknowledge units with excellent work ethics.

6.7b To the Ghana Health Services

Ghana Health Services should:

1. Support nurses and midwives in their quest towards the implementation of adherence to ENCP policies for the country and institute monitoring system as well as enforce disciplinary measures at the various health care units.

2. Award deserving individuals as well as health facilities to motivate them and their colleagues to contribute their best in the work environment.
6.7c To the Health Facility Management

The health facility management should:

1. Ensure collaboration among nurses and midwives working in the various units for free-flow of information for proper planning, identifications, and management risk case to complications.

2. Organize and encourage periodic in-service training for nurses and midwives on ENCP and every newly posted nurse or midwives should undertake a period of orientation on maternal and newborn care practices before beginning official duty.

3. Institute punitive sanctions on nurses and midwives who violate the code of ethics in providing care to mothers and their newborns.

4. Make maternal and newborn care competency core in the training of nurses and midwives to ensure efficient care delivery.
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APPENDICES

Appendix A: Ethical clearance certificate

NOGUCHI MEMORIAL INSTITUTE FOR MEDICAL RESEARCH
Established 1979A Constituent of the College of Health Sciences

INSTITUTIONAL REVIEW BOARD

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My Ref No: DJ/22
Your Ref No:

ETHICAL CLEARANCE

FEDERAL-WIDE ASSURANCE FWA 00001824
NMIMR-IRB CPN 033/19-20
IRB 00001276
IORG 0000908

On 6th November 2019, the Noguchi Memorial Institute for Medical Research (NMIMR) Institutional Review Board (IRB) at a full board meeting reviewed and approved your protocol titled:

TITLE OF PROTOCOL: Adherence to essential newborn care practices among nurses and midwives in the Tamale Metropolis

PRINCIPAL INVESTIGATOR: Babakyirenaah Nestor, MPhil Cund.

Please note that a final review report must be submitted to the Board at the completion of the study. Your research records may be audited at any time during or after the implementation.

Any modification of this research project must be submitted to the IRB for review and approval prior to implementation.

Please report all serious adverse events related to this study to NMIMR-IRB within seven days verbally and fourteen days in writing.

This certificate is valid till 5th November, 2020. You are to submit annual reports for continuing review.

Signature of Chair: __________________________
Mrs. Chris Dadzie
(NMIMR – IRB CHAIR)
Appendix B: Introductory Letter

UNIVERSITY OF GHANA
DEPARTMENT OF MATERNAL AND CHILD HEALTH
SCHOOL OF NURSING

Ref. No.: 10702891

November 29, 2019

The CEO
Tamale Teaching Hospital
Northern Region

Dear Sir/Madam,

LETTER OF INTRODUCTION

This is to introduce to you Nestor Babakyirenaah, an MPhil second year student of the School of Nursing and Midwifery, University of Ghana.

The Institutional Review Board of Noguchi Memorial Institute has approved his study on the topic: “Adherence to Essential Newborn Care Practices Among Nurses and Midwives in the Tamale Metropolis”.

We shall be most grateful for any assistance to enable him collect data.

Counting on your usual co-operation

Thank you.

Yours faithfully,

Dr. Florence Naab
Head, Dept. of Maternal and Child Health
Appendix C: Introductory Letter

UNIVERSITY OF GHANA
DEPARTMENT OF MATERNAL AND CHILD HEALTH
SCHOOL OF NURSING

Ref. No.: 10702891

November 29, 2019

The Medical Superintendent
Tamale Central Hospital
Northern Region

Dear Sir/Madam,

LETTER OF INTRODUCTION

This is to introduce to you Nestor Babakyirenaah, an MPhil second year student of the School of Nursing and Midwifery, University of Ghana.

The Institutional Review Board of Noguchi Memorial Institute has approved his study on the topic: “Adherence to Essential Newborn Care Practices Among Nurses and Midwives in the Tamale Metropolis”.

We shall be most grateful for any assistance to enable him collect data.

Counting on your usual co-operation

Thank you.

Yours faithfully,

Dr. Florence Naab
Head, Dept. of Maternal and Child Health

COLLEGE OF HEALTH SCIENCES
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Appendix D: Introductory Letter

The Medical Superintendent
Savelugu Municipal Hospital
Northern Region

Dear Sir/Madam,

LETTER OF INTRODUCTION

This is to introduce to you Nestor Babakye Renoah, an MPhil second year student of the School of Nursing and Midwifery, University of Ghana who wants to pilot his research tool in your facility.

The Institutional Review Board of Noguchi Memorial Institute has approved his study on the topic: “Adherence to Essential Newborn Care Practices Among Nurses and Midwives in the Tamale Metropolis”.

I would be grateful if you could offer her the necessary assistance.

Counting on your usual co-operation

Thank you.

Yours faithfully,

Dr. Florence Noah
Head, Dept. of Maternal and Child Health

COLLEGE OF HEALTH SCIENCES

- P.O. Box LG 43, Legon, Accra, Ghana
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Appendix E: Introductory Letter

UNIVERSITY OF GHANA
DEPARTMENT OF MATERNAL AND CHILD HEALTH
SCHOOL OF NURSING

10702891
Ref. No.:..............................................

November 29, 2019

The Medical Superintendent
Tamale West Hospital
Northern Region

Dear Sir/Madam,

LETTER OF INTRODUCTION

This is to introduce to you Nestor Babakyirenaah, an MPhil second year student of the School of Nursing and Midwifery, University of Ghana.

The Institutional Review Board of Noguchi Memorial Institute has approved his study on the topic: “Adherence to Essential Newborn Care Practices Among Nurses and Midwives in the Tamale Metropolis”.

We shall be most grateful for any assistance to enable him collect data.

Counting on your usual co-operation

Thank you.

Yours faithfully,

Dr. Florence Naab
Head, Dept. of Maternal and Child Health

COLLEGE OF HEALTH SCIENCES
* P. O. Box LG 43, Legon, Accra, Ghana.
* Email: mch.son@chs.ug.edu.gh
* Telephone: +233 (0) 302 513 250 / 0289 531 213
* Website: www.nursing.ug.edu.gh
Appendix F: Consent Form

NMIMR-IRB CONSENT FORM TEMPLATE

Title: Adherence to essential newborn care practices among nurses and midwives in the Tamale Metropolis
Principal Investigator: Babakyirenaah Nestor
Address: Department of Maternal and Child Health, School of Nursing and Midwifery, College of Health Sciences, University of Ghana, Legon, babakyirenaahnestor@gmail.com, Tel: 0249077751

General Information about Research
The study seeks to understand how nurses and midwives adhere to essential newborn care practices. I have contacted you to participate in the study because you have been taking care of newborns. If you are willing to participate in the study, you have to sign a consent form and fill up a form based on questions asked. The duration of the questionnaire will last for 10-15 minutes. You reserved the right to skip any question that makes you uncomfortable and also can refuse to participate in the study. Moreover, your failure to participate in the study will not have any effect on your profession as well as care provision.

Possible Risks and Discomforts
There is no identified risks to your participation in this study

Possible Benefits
At the individual level, there are no direct benefits but your response to the questions will be used to modify or improve essential newborn care practice guidelines and protocols for better service delivery and good pregnancy outcomes.

Confidentiality
Your confidentiality will be ensured by strictly lock up all data and information about participants in a drawer under lock and key in the School of Nursing and Midwifery, University of Ghana, Legon. Folders containing participants' information will be saved with passwords and also saved in the researcher's email box. These folders will be labelled with code numbers and pseudonyms that have no clue to the participants' identities.
Your name will not appear anywhere in the document when the researcher is to publish the study. These documents containing this information will be discarded after 5 years according to the data protection rules.

**Compensation**

You will be given a pen and notepad for the time and energy spent on the questionnaire.

**Voluntary Participation and Right to Leave the Research**

You have the right to participate in this research voluntarily or refused to do so and you can withdraw from the study at any point.

**Contacts for Additional Information**

For any further enquiries about this study, you can contact the following personalities:

- Babakyirenaah Nestor: 0249077751 or babakyirenaahnestor@gmail.com
- Dr. Florence Naab: 0263741717 or fnaab@ug.edu.ph
- Rev. Dr. Tom Akuetteh Ndanu 0207580029 or nutcaresoft@gmail.com

**Your rights as a Participant**

This research has been reviewed and approved by the Institutional Review Board of Noguchi Memorial Institute for Medical Research (NMIMR-IRB). If you have any questions about your rights as a research participant you can contact the IRB Office between the hours of 8 am-5 pm through the landline 0302916438 or email addresses: nirb@noguchi.ug.edu.ph
VOLUNTEER AGREEMENT

The above document describing the benefits, risks, and procedures for the research title: Adherence to essential newborn care practices among nurses and midwives in the Tamale Metropolis has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

__________________________________________

Date

Name and signature or mark of volunteer

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

__________________________________________

Date

Name and signature of witness

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

__________________________________________

Date

Name Signature of Person Who Obtained Consent

VALID UNTIL: 05 NOV 2020
Appendix G: Tool for Data Collection

THE PLANNED BEHAVIOUR QUESTIONNAIRE

SECTION ONE: SOCIO-DEMOGRAPHIC DATA

INSTRUCTION: Please fill in the space provided and indicate by ticking (✓) in the box where applicable the appropriate answer for questions 1-5 below

1. How old are you?  
2. How long have you been practicing in this unit?  
3. What is your gender?  
   Male [ ]  
   Female [ ]  
4. What is your educational qualification?  
   Certificate [ ]  
   Diploma [ ]  
   Advanced nursing diploma [ ]  
   Undergraduate degree [ ]  
   Masters’ degree [ ]  
   Post-graduate degree [ ]  
   Others specify  
   5. What is your nursing/midwifery rank?  
   SM [ ]  
   SN [ ]  
   SSM [ ]  
   SSN [ ]  
   MO [ ]  
   NO [ ]  
   PMO [ ]  
   PNO [ ]  
   DDNS [ ]  
   Others (specify)  

VALID UNTIL  
05 NOV 2020
SECTION B
INSTRUCTION

The following statements are about your actions influenced by attitude, confidence and facilitating conditions, intentions and the behaviour that affects your use of protocols in your units. From statement, 1-31 indicate by ticking (✓) on a 7-point Likert scale the extent to which you agree or disagree for each of the statement below where 1 = Strongly Disagree (SD), 2 = Moderately Disagree (MD), 3 = Disagree (D), 4 = Neither (N), 5 = Agree (A), 6 = Moderately Agree (MA), 7 = Strongly Agree (SA).

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<thead>
<tr>
<th></th>
<th>SD</th>
<th>MD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>MA</th>
<th>SA</th>
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<tr>
<td>Question</td>
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Attitude (ATT)

Perceived usefulness (PU)

1. Using protocols is beneficial to me
2. The advantages of using protocols outweigh the disadvantages
3. Using protocols will improve patients’ outcomes in health

Perceived ease of protection (PEOP)

4. The instructions for using protocols is easy to follow
5. It is easy to learn how to use protocols during practice
6. It is easy to follow protocols during practice

Compatibility (COM)

7. Adhering to protocols fits into my work style
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<tr>
<td>8.</td>
<td>I think that using protocols fits well with the way I like to work</td>
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<td>9.</td>
<td>Adhering to protocols is compatible with all aspects of my work</td>
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<td>10.</td>
<td>Adhering to protocols is a good idea</td>
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<td>11.</td>
<td>I think following protocols in midwifery practice is a wise idea</td>
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<td>12.</td>
<td>I like the idea of following protocols during practice</td>
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<td>13.</td>
<td>Following protocols in practice is fun</td>
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**Subjective norm (SN)**

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<tr>
<th>Peer influence (PI)</th>
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<tr>
<td>14.</td>
<td>People who are important to me would think that I should follow protocols during practice</td>
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<td>15.</td>
<td>My friends would think that I should use protocols during practice</td>
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<td>16.</td>
<td>My colleagues would think that I should use protocols during practice</td>
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<td>17.</td>
<td>People who influence my behaviour would think that I should adhere to protocols during practice</td>
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**VALID UNTIL 05 NOV 2020**

**APPROVED DOCUMENT**
<table>
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<tr>
<th>Superior influence</th>
<th>18. My superior would think that I should use protocols during practice</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>19. I will use protocols because my superior expects me to</td>
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<td>Perceived behavioural control (PBC)</td>
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<td>20. I would be able to adhere to protocols during practice</td>
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<td>Self-efficacy (SE)</td>
<td>21. I have the knowledge necessary to adhere to protocols during practice</td>
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<td>22. I have the resources necessary to adhere to protocols during practice</td>
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<td></td>
<td>23. I could easily adhere to protocols if I wanted to</td>
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<td>24. I could follow protocols if there was no one around to tell me what to do as I go</td>
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<td></td>
<td>25. I would feel comfortable in following protocols</td>
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<td>Facilitating conditions (FC)</td>
<td>26. The equipment (computers, printers, etc.) and internet used for online search is available in my hospital for use</td>
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<td></td>
<td>27. The databases for searching for research evidence is compatible with other</td>
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<td>databases I am familiar with</td>
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<td>-----------------------------</td>
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<tr>
<td>28. I could use online databases to search for current evidence-based practice to care for patients</td>
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</table>

**Behavioural intention (BI)**

| 29. I intend to adhere to protocols during practice |
| 30. I predict I would adhere to protocols during practice |
| 31. I plan to adhere to protocols during practice |

**Behaviour (BE)**

| 32. I use the protocols depending on the number of cases |
| 33. I often use protocols |

THANK YOU FOR YOUR PARTICIPATION!