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FACTORS INFLUENCING NEWBORN CARE PRACTICES AMONG MOTHERS IN THE JIRAPA MUNICIPALITY OF THE UPPER WEST REGION OF GHANA.

BY

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DECLARATION

I, RHODA NYONGYELE ZOLKO-ERE declare that with the exception of cited works of people which have been duly acknowledged, this dissertation titled _Factors Influencing Newborn Care Practices Among Mothers in the Jirapa Municipality of the Upper West Region of Ghana‘ is the result of my own original work and that no part of it has been presented for another degree in this University or elsewhere.

Student‘s signature: _____ Date: _____

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Academic Supervisor‘s signature: _____ Date: _____

Dr. Emmanuel Asampong

DEDICATION

I dedicate this work to God Almighty, my parents Mr. and Mrs. Clement Zolko-Ere and my siblings Roger, Raina, Rudolf and Robert.

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ABSTRACT

Every year, four million infants die within their first month of life, representing nearly 40 per-cent of all deaths of children under age 5 globally. Also, over 99% of all newborn deaths occurs in developing countries with about two-thirds of them taking place in the Sub-Saharan Africa and Asia. Therefore, understanding factors that influence newborn care practices in the home environment where most newborns are cared for is essential in order to develop appropriate approaches and interventions for reducing neonatal mortality. This study sought to explore the factors that influence newborn care practices among mothers in the Jirapa Municipality of the Upper West Region of Ghana.

Methods: A cross-sectional study using mixed methods was used to evaluate newborn care practices. Quantitative data was collected from 341 postnatal mothers and analyzed using STATA 15.0 while qualitative data was collected from focus group discussions and analyzed with the help of NVIVO. A chi-square association and simple/multiple logistic regression were used to determine the association and extent to which socio-demographic factors and knowledge level influence the practice of newborn care among mothers and the cultural beliefs that influence newborn care practices.

Results: Findings from the quantitative analysis showed that, mothers who received information regarding newborn care practices from health professionals only, had 2.39 times (AOR=2.39, 95% CI=1.32-4.33, p-value=0.004) the odds of having a good practice of newborn care compared to mothers with multiple sources of information. Mothers who received monthly income (100-200GHC) had 4.62 times (AOR=4.62, 95% CI=1.38-15.47, p-value 0.013) the odds of a good practice of newborn care

compared to mothers who received no monthly income. Eighty-three percent (83%) of mothers who were living together with their partners as marital status category (AOR=0.17, 95% CI= 0.03-0.88, p-value=0.035) were less the odds of having a good practice of newborn care when compared to mothers who were never-married. More so, mothers with adequate knowledge of newborn care practices had 4.05 times (AOR=4.05, 95% CI=1.54-10.65, p-value=0.005) the odds of having a good practice of newborn care compared to mothers with inadequate knowledge. There exist cultural beliefs that influence mothers' practices of newborn care, such as the belief that a newborn baby will die if not fed, welcomed and invited with a drop of water, the belief that the umbilical cord will not heal fast if shea butter was not continuously applied and the belief that without the local substance "kpallah" in the newborn baby's eyes, the eyeballs would not be white and beautiful.

Conclusion: Increased education by health care providers on having health professionals as the main source of information regarding newborn care practices contributes greatly to good newborn care practices among mothers. Access to income has great impact on good practices of newborn care. Again, routine and continuous education of mothers by health care professionals on newborn care practices increases mothers' knowledge level which eventually reflects on good newborn care practices. Also, there are some cultural beliefs and practices that are detrimental to the health and survival of newborns hence should be discouraged by all.

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LIST OF ABBREVIATIONS

AOR:	Adjusted Odds Ratio
COR:	Crudes Odds Ratio
CHPS:	Community-Based Health Planning and Services
CI:	Confidence Interval
EBF:	Exclusive breastfeeding
ENC:	Essential Newborn Care
EPI:	Expanded Programme on Immunisation
FGD:	Focus Group Discussion
GHS:	Ghana Health Service
GDHS:	Ghana Demographic and Health Survey
GSS:	Ghana Statistical Service
HC:	Health Centre
IRB:	Institutional Review Board
MDG:	Millennium Development Goals
MICS:	Multiple Indicator Cluster Survey
MOH:	Ministry of Health
NMR:	Neonatal Mortality Rate
P:	P-Value
PNC:	Postnatal Care
RCH:	Reproductive and Child Health
RHA:	Regional Health Administration
UNICEF:	United Nations Children‘s Fund
UWR:	Upper West Region
WHO:	World Health Organization

DEFINITION OF TERMS

Newborn care: This is the care that every newly born baby needs regardless of where he/she is born or size. This starts immediately after the newborn baby is born till at least 28 days and continued until newborn becomes an infant (12months old).

Postnatal period: refers to age of one (1) to eleven (11) months or first year of life**.**

Early Exclusive Breastfeeding: refers to where a newborn baby is given only breast milk immediately (within 30 minutes) of birth and no other solids or liquids till about six (6) months after delivery.

Colostrum: refers to the first initial yellowish fluid that comes out from a mother's breast immediately after birth. It contains high protein and anti-bodies often referred to as the first immunization for newborn babies.

Clean Hygienic Cord Care: This refers to the series of steps applied in handling the umbilical cord. From the cutting off the stump after delivery with a sterilized blade, stump detachment until the cord heals completely by continuous cleansing with chlorhexidine and exposure to air.

Optimal Thermal Care (keeping Baby warm): refers to cleaning and wrapping the baby with dry cloths, delayed initial bath till six (6) or more hours after delivery, keeping the baby in the room including skin to skin to keep the temperature of the newborn baby.

Newborn Immunization: refers to the vaccination given to newborns at birth and after birth. These vaccinations are to help prevent newborns against childhood illnesses hence BCG and OPV0 vaccines often given during the 1st and 2nd PNC with health facility delivery

Eye Care for Newborns: refers to the care given to newborns eyes, from application of vitamin K with no other substance applied to the newborn‘s eyes.

Newborn Danger Signs: refers to the danger signs of newborns that need keen attention such as convulsions, poor suckling, fast breathing (60 or more breaths per minute), severe chest in drawing (difficulty in breathing), high temperature or extremely low tempearature and cord infections.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

About 2.9 million newborn deaths are recorded annually with about 2.6 stillbirths. An increase in neonatal deaths has resulted in the increasing percentage of under-five deaths from 37 percent in 1990 to 47 percent in 2012 (United Nations Inter-Group for Child Mortality Estimation, 2015). However, there has been a significant improvement in under-five mortality rates over the years in most developing countries with about 50 percent or more reduction in under-five deaths and a sustained decline in infant mortality mainly due to immunization, oral rehydration therapy, and other child-related survival interventions since 1990. Same cannot be said about neonatal mortality as stagnation in the rate of decline has been reported (United Nations Chidren's Fund [Unicef], 2013) . Four million newborns and many of these deaths occur in developing nations with the highest rates being in Africa (Lawn, Cousens, & Zupan, 2005). The major causes of neonatal mortality are infections, hypothermia, tetanus, sepsis, pneumonia, and diarrhea, complications from prematurity, birth asphyxia, and injuries (Bryce, Boschi-Pinto, Shibuya, & Black, 2005).

Over the last ten (10) years, there has been a decrease in maternal mortality and child (1-60months) mortality by 4.2 percent and 2.9 percent respectively as compared to 2.1 percent of neonates (day 0-28days) dying per year. This, therefore, implies that much more interventions should be put in place to check newborn deaths to help make significant progress (Lawn et al., 2012). Newborn deaths is much slower in reduction as compared to that of under-five deaths with Ghana not being an exception which might be a threat to achieving SDG goal 3.2 (Unicef, 2013). Improvement of newborn

care has since become a central concern at International fora to include Global Strategy for women and child. This implies that there is a unique need for newborns that must be attended to in the context of maternal and child health services (Tinker & Ransom, 2002). This is necessary as newborn care is crucial and thus very vital in reducing newborn deaths (Awunyo, 2011). Newborn care is an entitlement that is supposed to be enjoyed by every child as stipulated in the Conventions of the right of the child and hence should not be compromised (Unicef, 2013).

The Neonatal Mortality Rate (NMR) in Ghana is 28 per 1000 live births, a decline from the neonatal mortality rate for the year 2011 which was 32 per 1000 live births (WHO, 2018). Factors such as exposure and bathing of the baby immediately after birth, improper breastfeeding practices to include delayed initiation of breastfeeding, some socially oriented cultural beliefs and unhygienic and harmful cord care practices all contribute and account for the higher number of newborn mortality. A recent study from Ghana ascertains the role of early and exclusive breastfeeding in the reduction of neonatal deaths: immediate and exclusive breastfeeding within first 24 hours of delivery saves approximately 2.6 newborns the risk of dying through infections yearly infections (32%), asphyxia (23%), and preterm and low birth weight (27%) (Awumbila, 2003). Through verbal autopsy, infections is still seen as one of the leading causes of neonatal deaths (Liu et al., 2015).

Current UNICEF data showed some amount of changes, infections as a major primary cause of newborn deaths now stands at 32 per 1,000 live births (UNICEF, 2015b). Most developing countries like Ghana have practiced newborn care inadequately. Therefore, the slow reduction in mortality and morbidity of these newborns are attributed to infections resulting from non-adherence to recommended newborn care practices particularly at home.

1.2 Problem Statement

Progress has been made towards child survival over the years but not much has been done with regards to the newborn as higher numbers of neonatal deaths are still being recorded annually. Globally, 99% of all newborn deaths occur in low and middle-income countries with two-thirds of them occurring in Asia and sub-Saharan Africa (UNICEF, 2015a). Also, over a million African babies are estimated to die within the first four weeks of life with most dying at home which are mostly unaccounted for (Lawn, Mongi, & Cousens, 2006). Irrespective of all the interventions geared towards reducing neonatal mortality and improving newborn survival, there has not been much improvement as expected. As per the recommended newborn care standard guidelines, newborns are usually expected to be given timely, regular and continuous care after delivery and at home such as early initiation of breastfeeding, delayed sponge bathing and clean cord care practices so as to improve on the newborn's health and increase survival rate (MoH, 2014b). Unfortunately, many countries in Africa with Ghana inclusive still have most mothers not practicing recommended newborn care practices despite the great health benefits it has on the newborn (Darmstadt, Syed, Patel, & Kabir, 2006).

Several factors account for this which are associated with and not limited to knowledge factors and socio-demographics factors. Some of these reasons are also usually attributed to perceived beliefs and norms which have been accepted over the years (Bwalya, Mulenga, & Mulenga, 2016). The situation is not different in the Upper West Region as it recorded higher neonatal deaths coupled with a slow decrease in neonatal mortality when compared with other regions (Ghana Statistical Service, 2008) . Out of a total of 21,080 live births in 2016, 135 were neonatal deaths

with four out of eleven MMDA's recording high neonatal deaths: Nadowli (4.7%), Wa Municipal (8.9%), Sissala West (7.1%) and Jirapa (22.0%) (UWRHS Annual Report, 2016). The statistics showed that Jirapa records the highest neonatal deaths in the region. Elderly women who are more inclined to their cultural norms ask mothers to use all sorts of herbs and concoctions for treatment or protection of their newborn against diseases (Moyer et al., 2016). This study thus seeks to investigate the factors that influence newborn care practices among mothers in the Jirapa Municipality of the Upper West Region. Since an implementation of an effective program for newborns would necessitate an understanding of community and household traditional newborn care practices to enable the development of a program that promotes culturally sensitive and acceptable change in practices.

1.3 Justification of the Study

The greatest gap in care for the newborn is often within the first one week (7 days) of life known as the critical stage of the newborn. Most of the neonatal deaths occur within the home environment where there is minimal contact with formal health personnel upon discharge. Several factors, therefore, influence mothers to engage in some unacceptable newborn care practices which contribute to newborn infections and affect their survival greatly but then, no such research has been done in the Jirapa Municipality of the Upper West Region. The few researches that have been conducted cannot be generalized as there are variations in cultures and some of the research is limited to only institutional challenges. This study is therefore aligned with the conception of recommended standard newborn care practices outlined by WHO, it sought to identify the socio-cultural beliefs and other factors that predisposes the newborn to infections, morbidity and mortality.

1.4 Research Questions

1. What is the level of knowledge of new born care practices among mothers in the Jirapa Municipality?
2. What is the proportion of mothers who practice recommended newborn care in the Jirapa Municipality?
3. What are the socio-demographic and knowledge factors that influence mothers‘ practice of newborn care in the Jirapa Municipality?
4. What are the Cultural beliefs that influence newborn care practices among mothers in Jirapa Municipality?

1.5 Research Objectives

1.5.1 General Objective

The general objective of the study is to examine the factors that influence the use of newborn care practices among mothers in the Jirapa Municipality of the Upper West Region. The specific objectives are:

1.5.2 Specific Objectives

1. To assess the level of knowledge of newborn care practices among mothers in the Jirapa Municipality.
2. To identify the proportion of mothers‘ who practice recommended newborn care in the Jirapa Municipality.
3. To identify the socio-demographic and knowledge factors that influence mothers‘ practice of newborn care.
4. To explore the cultural beliefs that influence newborn care practices

1.6 Conceptual Framework

The conceptual framework for the study is presented in Figure 1.

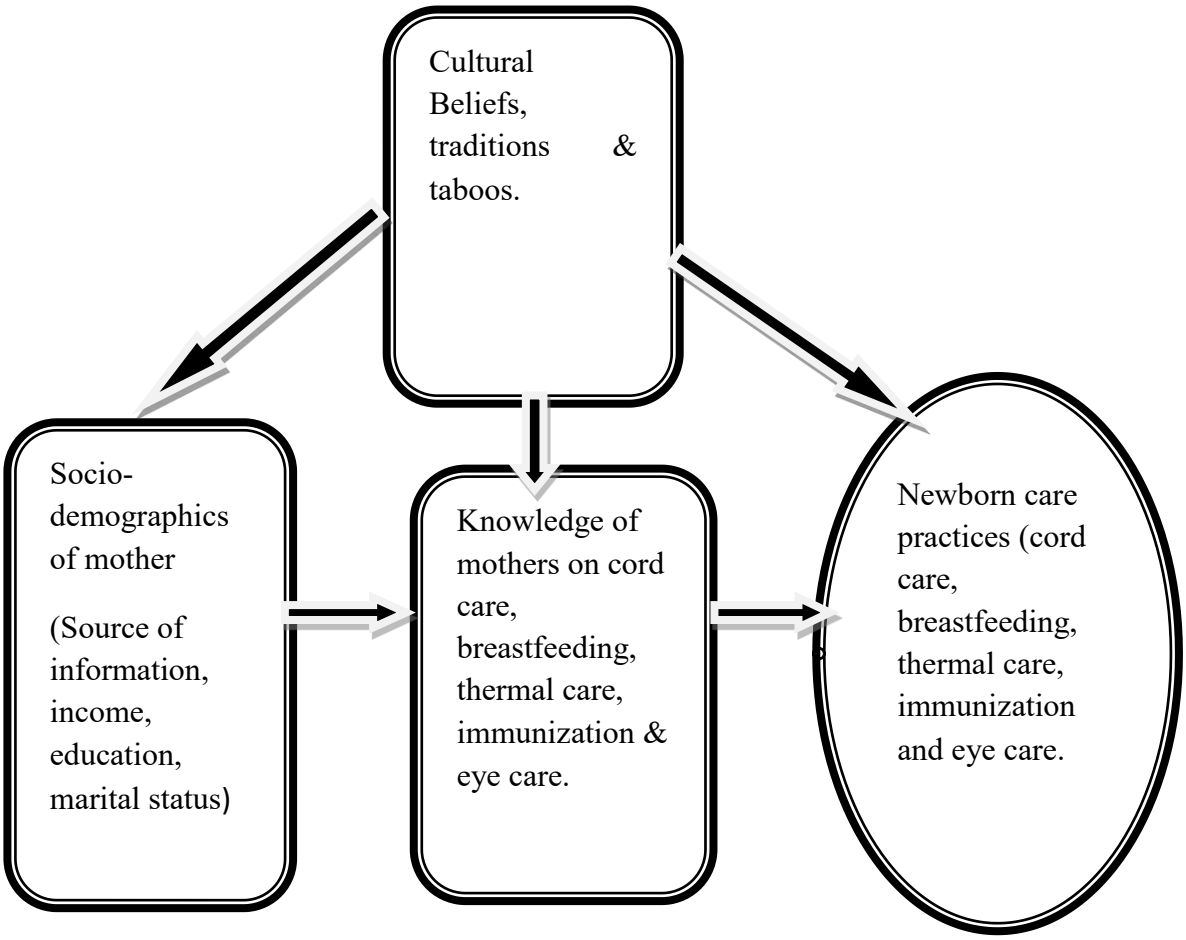

Figure 1: Conceptual Framework

Source: Adapted from Tuladhar (2010).

Concepts in the framework seek to explain the relationship between the dependent variable (newborn care practices) and the independent variables (factors influencing newborn care practices). Several factors play a role in determining newborn care practices and survival. The health of a mother and her newborn are interconnected and hence the socio-demographic characteristics of a mother can also positively or negatively have an impact on the newborn. Such as mothers source of information regarding how to care for her newborn, mothers education, mothers income, marital

status and mothers knowledge of newborn care. The existence of some cultural beliefs also plays a role in how mothers care for their newborns. It is also imperative to identify additional conditions and care that would require counseling in the appropriate period a newborn should be sent to a health facility. These form the pre-requisite to the provision of good newborn care (Darmstadt et al., 2008).

Basic essential care for all newborns include encouraging and promoting early exclusive breastfeeding, early immunizations, providing warmth, promoting increased hand washing, providing hygienic and safe umbilical cord care (WHO, 2013). Knowledge of health services are also important in maternal and newborn health, Some of these include antenatal care services knowledge which addresses birth preparedness and delivery by a skilled birth attendant at a designated place of delivery for the mother before during and after the delivery of the newborn. The processes involved at this stage inform and create awareness of the mother on the essential newborn care practices. The mother‘s knowledge, however, is relevant as she becomes the first access to the newborn and every situation that may be presented to the child. Underlying all the above determinants are the culture of a people, rituals, taboos, tradition, and beliefs that have been accepted over the years in communities which influence the practices of newborn care directly and indirectly (Tuladhar, 2010). These known practices are most often flawed by culture, traditional beliefs within the home environment of the newborn. Mothers are also compelled to comply as there is no readily available health service personnel to monitor and ensure the appropriate practices being carried out.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The study used both empirical and theoretical literature. The former consists of various researches done on related topics of factors influencing newborn care practices (Early exclusive breastfeeding, clean and hygienic cord care, optimal thermal care, newborn immunization and eye care). The theoretical review adapted and used the conceptual framework from Tuladhar to understand the phenomenon under study.

2.2 Global Overview on Newborn Care

A newborn, also known as a neonate is an infant who is only hours, days, or up to four-weeks-old (28 days) after birth. Any death of an infant that occurs within the first month of life (neonatal period) is termed as a neonatal death. The newborn is at the highest risk of death in the first week of life with greatest of this risk being on the first day (Lawn, Cousens, & Zupan, 2005). This high risk of mortality is attributed to the many physiological and anatomical changes that occur at birth, therefore the environment and the circumstances surrounding these changes greatly influence the survival of a neonate. Newborn Care is recommended as a way to reduce neonatal morbidity and mortality. The Essential Newborn Care refers to a set of practices that helps in reducing neonatal morbidity and mortality such as practice of clean cord care, keeping baby warm by wrapping in clean and dry clothes and delaying bathing until 24 hours after birth also referred to as thermal care and giving baby colostrum by initiating breastfeeding within 60 minutes (first hour) of birth (WHO, 2013).

Over the last 22 years, all regions have experienced slower reductions in neonatal mortality than in fewer than five mortalities. Globally, neonatal mortality has declined from 32 deaths per 1,000 live births in 1990 to 22 in 2011—an average of 1.8 percent a year, much slower than for under-five mortality [2.5 percent per year] (United Nations Inter-Group for Child Mortality Estimation, 2015).

2.3 Sub- Saharan Africa Newborn Care

According to Stanton, Lawn, Rahman, Wilczynska-Ketende, and Hill (2006), Sub-Saharan Africa alone records 880, 000 stillbirths annually. Yet there isn't much attention to these deaths that occur (Lawn et al., 2012). In most situations, it is difficult to distinguish stillbirths from those newborn deaths that occur within the first hours and early days because almost one-third of these stillbirths usually occur during labor. Many of these deaths are preventable with the same solutions that would save a lot of mothers and their babies (Lawn et al., 2012).

With mortality in later childhood decreasing, it is the reverse for early days of life for newborns as the proportion of deaths that take place in the neonatal period has been increasing. Infections (to include tetanus, diarrhea, sepsis and pneumonia), Intrapartum related conditions (birth asphyxia) and preterm births are the three topmost causes of deaths among newly born babies, estimated to about 88% of newborn deaths in Sub-Saharan Africa (Black, Cousens, Johnson, Lawn, & Rudan, 2010). In addition to the major causes, up to 90% of newborns who lose their lives are due to low birth weight (<2,500 grams) including preterm babies, who are relatively exposed and have the greatest risk of losing their life's compared to other newborns. Some measures can be put in place to save a larger number of these newborns. Very simple mechanisms such as paying attention to newborn danger signs (poor suckling,

chest in drawing etc.), early treatment of newborn infections, promotion of healthy and hygienic newborn practices can all help in newborn survival (Lawn, Mongi, & Cousens 2006).

Childhood illnesses (pneumonia, diarrhea and malaria etc.) contribute to about two-thirds of child deaths. At best, prevention of these illnesses is encouraged at all levels but in cases where it‘s impossible, management and treatment of these illnesses are recommended to ensure restoration of newborn health and to reduce mortality (Black et al., 2010). Undernutrition of most newborns is also another contributory factor to child mortality in sub-Saharan Africa; undernutrition increases a child's risk of dying from infections in particular. With over 31 million African children underweight, the nutritional risk factors—including vitamin A and zinc deficiencies and suboptimal breastfeeding—contribute to more than one-third of postneonatal child deaths (Black et al., 2008). While the five major causes of newborn and child mortality are similar across countries in Sub Saharan Africa, there are some slight variations in the numbers and proportions most especially with countries that have been affected by epidemics and Pandemics like Ebola and HIV AIDS. For instance, more than half of all child deaths recorded in South Africa are attributed to HIV/AIDS despite the fact that all HIV/AIDS child deaths account for 4% in the entire Sub-Saharan region. Also, countries hit by Ebola have the majority of their child deaths resulting from Ebola as well since it is an infectious disease and children been vulnerable are at a greater risk. Maternal deaths resulting from Tuberculosis, Pneumonia and HIV/AIDS accounts for at least 38% of maternal deaths in South Africa (Bradshaw, Chopra, Kerber, Lawn, & Bamford, 2008).

2.4 Newborn Care in Ghana

Studies revealed that Ghana's progress on the reduction of under-five mortality over the last half-decade has been still. The major underlying factor is stagnation resulting from an increase in the numbers of neonatal mortality ranging from 30 to 32 per 1000 live births. Death of newborns has thus become a vital aspect of under-five mortality. This accounts for as high as 40% of all under-five deaths in Ghana (Ghana Statistical Service, 2011a). Neonatal mortality now constitutes a major cause of concern and requires urgent redress in the country. The Ghana Demographic and Health Survey Report showed a 30% decrease in the under-five mortality rate, it decreased from 111 per 1000 live births in 2003 to 80 per 1000 live births in 2008, but then infant mortality rate in 2008 was at 50 per 1000 live births compared to 64 per 1000 live births in 2003. In effect, Neonatal Mortality Rate (NMR) has seen a much slower decline from 43 per 1000 live births in 2003 to 30 per 1000 live births in 2008 respectively (GSS, GHS, & Macro, 2009; GSS, 2011).

Since then, Ministry of Health and Ghana Health Service (MOH/GHS) in collaboration with organizations and other stakeholders saw the need in developing and implementing plans, projects, and programs to help curb the increasing trend of high under-five mortality. Some of these frameworks include the Under 5 Child Health Policy: 2007–2015 and Under 5 Child Health Strategy: 2007–2105 (MOH, 2007). The MDG Acceleration Framework and Country Action Plan: Maternal Health (MAF) initiatives of the accelerated phase of WHO's Expanded Programme on Immunization (EPI) (MoH, 2013) which led to the introduction of modern and additional vaccines and projects with support from Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria. However, most of these policies and frameworks gave little

attention to neonatal period and care for the newborn hence the development of the Ghana National Newborn Health Strategy and Action Plan 2014–2018 designed to bridge this gap (MoH, 2014).

2.5 Newborn Care Practices

2.5.1 Providing Warmth for Newborn (Thermal Care)

Studies showed that newborn loses heat more easily in view of this mechanism; newborns are recommended to be dried immediately and thoroughly with clean towels as soon as the head and body are delivered to prevent abnormally low body temperature (hypothermia). Newborn babies are not expected to be bathed immediately after birth until a minimum of 24 hours, in cases where cultural beliefs are a challenge bathing of the newborn can take place at least after 6 hours upon delivery. It is also important to clothed newborns with warm clothing so as to keep their body temperature warm always and it is also recommended that newborns and mother should stay together in the same room to promote attachment and discourage separation (WHO, 2013).

2.5.2 Clean Umbilical Cord Care Practices for Newborn

For over a decade, WHO has advocated for clean cord care as it is very important and crucial in infection prevention. In situations where cord care practices are poor, newborn infections are relatively high. The cord stump should be cut with a sterilized blade, tired using a clean thread, cleaned with chlorhexidine with no substance applied to the cord stump (WHO, 2013). The umbilical stump is the main source of infections after a baby is born. Per WHO recommended standard guidelines of cord care, the cord stump is left untouched after it is being cut to dry by itself. It is also important to know that no substance should be applied on the umbilical stump both

within the health facility and the home environment. When exposed to air, the stump by itself dries and mummifies without any dressing and bandages. It should be kept from any liquid such as urine but protected with clean dry clothes to prevent soiling. No cleaning is required especially when it's dry. However, if it's soiled, the cord can be cleaned with sterile water or chlorhexidine with the help of dried and clean cotton or gauze. Practices such as putting all kinds of substances on the stump whether in health facilities or home should be carefully examined and discouraged as they could be harmful to the newborn (WHO, 2015).

2.5.3 Early and Exclusive Breastfeeding for Newborn

As part of the MOH recommendations, newborns should be breastfed within the first 60 minutes after delivery with breast milk from the newborn mother only and should be continued till six (6) months before introduction of any form of food. Exclusive breastfeeding (EBF) rate for Ghana has risen steadily since 1993 from 7% to 31% and subsequently in 2003 to 53% (Odei, 2013). The percentage of Ghanaian children ever breastfed is between ninety-seven percent (97%) – ninety-eight percent (98%) (GSS, 2011).

2.5.4. Immunization of Newborn against Childhood Illnesses

The Ghana National EPI Policy stipulates that each child should receive one dose of BCG at birth, three doses of DPT, (at 6, 10 and 14 weeks), four doses of OPV (at birth, 6, 10 and 14 weeks) one dose of measles (at 9 months) and one dose of yellow fever (at 9 months) (MOH, 2007). Every woman of child bearing age (15-44 years) should receive 5 doses of tetanus toxoid. In 2002, Ghana replaced DPT in the scheme with the pentavalent vaccine (DPT-Hib- HeB). In the circumstance where perinatal infections are frequent, it is recommended to administer the first dose as soon as possible after birth (WHO, 2003).

2.5.5. Eye Care for Newborn

As part of newborn care, it is recommended that newborns receive eye care at birth and after birth. Using a soft washcloth or clean cotton ball, clean plain water and with baby‘s eyes closed newborns eyes are carefully cleaned by wiping gently from the inside to the outside corners Newborns with abnormal eye discharges should be referred to eye specialists who prescribe medications when need be to include eye drop (WHO, 2013).

2.5.6. Newborn Danger Signs

As per the WHO recommendations, newly born babies should also be observed immediately after delivery for crying and other signs like movement , breathing and in cases where newborns are asphyxiated you resuscitate them (WHO, 2013). When home, newborns should be observed for signs such as poor suckling, extremely high temperature and change in color. This is necessary for ensuring healthy newborns (WHO, 2015).

2.6 Factors Influencing Newborn Care Practices

Several authors have identified factors that are associated with newborn care practices. Such factors include educational level of the mother where mothers with higher education are seen to have clean cord care and breastfeeding practices (Shahjahan, Ahmed, Rahman, & Afroz, 2012).

Also, due to poor knowledge of mothers, some sub-optimal feeding practices including; juice, formula feed, water, semi-solid and solid complementary foods are still being used in most part of the country. It has been a common feeding habit to infants such that, one in four children received prelacteal feeds especially in Ashanti

region, Western region, Upper East region and the Central region of the country (Awumbila, 2003).

Another factor that has been identified to have an influence on newborn care practices is source of information of newborn care practices. Most mothers are seen to either have a single source of information or multiple sources of information which eventually determines the kind of newborn care practices mothers have especially when at home (Amolo, Irimu, & Njai, 2017). Also in Nepal, studies reveal that, income levels of mothers have the tendency to influence the way a mother would care for her newborn. Most mothers who had some level of income could afford to go an extra mile to buy the necessary items needed as part of bed preparedness whiles the impoverish mothers were incapacitated to buy these birth preparedness items (Shrestha, Adachi, Petrini, Shuda, & Shrestha, 2015). These are all pre planning activities that are very essential as it prepares the mother towards receiving her newborn.

Whereas improved clean cord care practice promote survival and minimize infections of newborns, this practice is been challenged with locally oriented practices and beliefs. Several practices such as using grass as a blade to cut the cord which is detrimental to the health of the newborn coupled with the various substances that are applied on the umbilical stamp once it's been cut to include, cow dung, ash, rat feces oil and butter which all introduces infection to the newborn (Amare, 2014). Also, in some parts of northern Ghana, mothers are been compelled to give drops of water to newly born babies as a belief of initiating them into a new home (Awumbila, 2003).

As part of cultural factors that makes mothers initiate early bathing of newborns, a study by from Tanzania acknowledges that most mothers in some parts of that country

are engaged in early bathing of newborns because it is a belief that the blood of the newborn is bad blood and due to that most mothers found it shameful to keep newborns for long hours without bathing them. It is also believed to cleanse newborns of that dirt (Shamba et al., 2014).

2.7. Summary

In sum, newborn care practices has to a large extent improved in some parts of the globe where mothers have adopted the recommended newborn care practices (WHO, 2015). In Sub- Saharan Africa and Ghana inclusive, mothers still engage in all sorts of harmful practices that are detrimental to the survival and health of the newborn resulting from several factors..

CHAPTER THREE

METHODS

3.1 Introduction

This chapter presents the methodology of the study. Its main focus is on the research design, study population, sample size, sampling techniques, ethical considerations, data collection and data management.

3.2 Study Design

The study was a descriptive cross-sectional design which employed mixed methods. Mother‘s source of information regarding newborn care as part of socio-demographic characteristics and knowledge of newborn care were assessed quantitatively through the use of a questionnaire. A qualitative method which used a Focus Group discussion was also used to identify the cultural beliefs and practices that influenced the practice of newborn care. This study design was most appropriate because it sought to provide an in-depth understanding of the factors associated with newborn care practices.

3.3 Study Area

Jirapa Municipal Assembly is among the fastest-developing Municipalities in the Upper West Region of Ghana. The Municipality was established by Legislative Instrument (LI) in 1902 and was carved out of the then Jirapa-Lambussie District as part of a further enlargement and deepening of Ghana‘s decentralization processes in 2007. The Municipality is located in the north-western corner of the Upper West Region of Ghana and lies approximately between latitudes 10.25^{o} and 11.00^{o} North and longitudes 20.25^{o} and 20.40^{o} West with a territorial size of 1,188.6 square

kilometers representing 6.4 percent of the regional landmass (GSS, 2014). Jirapa Municipality is bordered to the south by the Nadowli-Kaleo District, to the north by the Lambussie-Karni District, to the West by Lawra Municipality and to the east by the Sissala West District. The Municipal capital, Jirapa, is 62 km away from Wa, the Regional capital. Its location presents a special development advantage for the Municipality.

According to GSS (2014) survey, agriculture remains the main economic activity in the Municipality. Sixty-seven percent (67.1) of the people in the Municipality are engaged in agriculture, which is largely subsistence in nature. Very few farmers are engaged in large-scale production of cereals and legumes in Hain and Mwankuri areas. Cash crops cultivated in the Municipal are shea nuts, cotton, groundnuts, and cashew. Subsistence agriculture, animal rearing, and fishing are major activities among the populace. The rearing of cattle, sheep, goats, pigs, and poultry are mainly produced as a supplement to crop farming. A few farmers, however, engage in large-scale livestock production in the Han and Ping areas. The Municipality has a total population of 88,402 distributed across all ages and different sexes. The total population consists of 53.0 percent females and 47.0 percent of males. On transport and communication, bicycles, motorcycles, tricycles, minibusses, metro mass transport and market trucks are the main means of transport. Vodafone, Tigo, and MTN network services are available in about 90% of the total land area though with the poor quality of service in some communities (GSS, 2014).

3.4 Analysis of the Health Sector

The Municipality has thirty-one (31) health facilities. One (1) hospital (St. Joseph‘s Hospital), which serves as the Municipal Hospital, eight subdistricts comprising seven

(7) health centers, one (1) polyclinic and twenty-two (22) functional CHPS zones. Three (3) health centers and the only hospital out of the 31 health facilities are Christian Health Association of Ghana (CHAG) facilities. On community-based service providers, there are 137 communities, 127 outreach points 275 CBAs 137 community-based surveillance volunteers, 169 medicine practitioners and 10 chemical sellers. There are three (3) health training institutions serving the region and beyond. These are the Midwifery Registered General and Community Health Nurses Training Schools (UWRHS Annual Report, 2016).

From the District Health Information Management System (DHIMS), the doctor-patient ratio for 2016 was one (1) is to 24,891 whiles the nurse-patient ratio was one (1) is to 1,220. Some of the OPD morbidity were malaria, upper respiratory tract infections, diarrhea, pneumonia and non-communicable diseases were hypertension, home injuries, snake bites, sickle cell disease, malnutrition and diabetes. Whiles the causes of deaths include heart failure, pneumonia, cirrhosis, hypoglycemia, and malaria (GHS DHIMS, 2017) . The health sector has so many challenges to include inadequate doctors, inadequate ambulances and access to transportation especially for the critically ill due to the bad road network connecting most villages to the health facilities which hinder timely delivery of intervention and services (UWRHS Annual Report, 2016).

3.5 Study Population

The study population comprised mothers in their reproductive age (15-49 years) within communities in Jirapa Municipal of the Upper West Region who had delivered a baby in the past one year preceding the study. These groups of mothers had engaged or were still engaged in the newborn care practices (optimal thermal care, clean and

hygienic cord care, early exclusive breastfeeding, immunization and eye care for newborns) under study.

3.5.1 Inclusion Criteria

Mothers of reproductive age with babies less than 12 months old residing in Jirapa Municipal for the past one year were within the inclusion criteria.

3.5.2 Exclusion Criteria

Mothers of reproductive age who were taking care of another woman's baby and also not a resident of Jirapa Municipal for the past one year were excluded for the study.

3.6. Research Variables

3.6.1. Outcome Variables

The outcome variable for the study was Newborn care Practices (Optimal thermal care, Clean and hygienic cord care, Early exclusive breastfeeding, immunization and eye care for newborns)

3.6.2. Predictor Variables

The predictor variables are maternal age, marital status, mother‘s knowledge level of newborn care practices, a mother‘s highest educational level, mother‘s profession, mother‘s monthly income and cultural beliefs.

3.7 Sample Size Determination

The sample size was determined using a statistical formula for cross-sectional studies as outlined by (Cochran, 1977). With reference to a similar study done in Ghana in the Effutu Municipal in the Ashanti region which showed a 72 percent prevalence in one of the newborn care practices (exclusive breastfeeding) (Nkrumah, 2017). Hence

the maximum sample size was arrived at using the assumption of 72% prevalence.

$$\boldsymbol{n} = \frac{\boldsymbol{z^2 * p(1-p)}}{\boldsymbol{d^2}}$$

Where n=required sample size, z= confidence level at 95% (standard value of 1.96), p =proposed percentage of any of the newborn care practices (50%) and d = margin of error at 5% (standard value of 0.05).

$$\boldsymbol{n} = \frac{1.96^2 * 0.72(1 - 0.72)}{0.05^2}$$

$$\boldsymbol{n} = 309.7 \approx 310$$

Adjusting for 10% non-response rate

$$\boldsymbol{n = 1.1 * 310 = 341.}$$

3.8 Sampling and Sampling Techniques

For Quantitative sampling techniques, The Jirapa Municipal has eight health subdistricts. The only hospital is in the Jirapa subdistrict which was purposively selected. Simple random sampling was employed to select three (3) other subdistricts that had functional health centers and CHPS compounds which rendered postnatal services to mothers. Communities in these Four (4) out of the eight subdistricts were selected randomly for the data collection. Data was collected on PNC days and in some cases during PNC home visits from mothers who fell within the inclusion criteria. Convenient sampling was employed but with prior consent of the participant. For Focus group discussion, participants were purposefully selected. A focus group discussion each at the only Municipal hospital, a Health Centre, and a CHPS compound were held.

3.9 Data Collection Instruments

3.9.1 Questionnaire

The questionnaire was pre-tested in the Wa subdistrict in the Wa Municipality of the Upper West Region. Wa Municipality has similar socio-demographic characteristics with Jirapa Municipality. The questionnaire had a total of 36 questions with three sub-sections comprising socio-demographic characteristic questions, knowledge of newborn care questions and practice of newborn care questions. The questionnaire was administered to ten participants whiles seven mothers, on the other hand, participated in a focus group discussion as part of pretesting prior to the actual data collection. The pre-testing helped to examine the reliability of questionnaire and validity of the tool which were 0.8 and 0.9 respectively as participants made inputs to the way some questions were asked and were taken into consideration. The principal investigator met with the field assistants in a brief meeting and reviewed the questions for finalization. The questionnaire were administered in Dagaare since that is the official local language of the study area and all mothers understood and communicated using that.

The structured questionnaire had three (3) sub-sections. Section 1: comprised of questions regarding the socio-demographic characteristics of the participants. Section two (2) comprised questions on knowledge of some recommended newborn care practices and section three (3) were questions on the participant's practice of some identified newborn care practices. These questions were asked based on five (5) newborn care practices which constituted the overall composite newborn practice for mothers of the study (Optimal thermal care, Hygienic umbilical cord care, Early and exclusive breastfeeding, Immunization and eye care for newborns). This questionnaire

was developed based on WHO recommended newborn care practices and readings from other publications regarding newborn care practices. Based on reviewed literature similar to the research study, each most appropriate response was scored one (1) point and an inappropriate response scored zero (0) point.

3.9.2 Focus Group Discussion

According to Eeuwijk & Zuzana (2017), six to ten (6-10) individuals form a focus group for a discussion (Eeuwijk & Zuzana, 2017) . In total, the results from three focus group discussions were used. The fourth and fifth focus group discussion verified that indeed the point of saturation was reached. The first three focus group discussions were held in the only Municipal hospital, the second (2^{nd}) in Tizza Health center and the third in a CHPS compound. The purpose of the focus group discussion was to give an in-depth understanding of those cultural factors that influence a mother‘s practice of newborn care practices.

3.10 Data Collection Techniques

3.10.1 Quantitative Collection Techniques

Data was collected by a single administration of a questionnaire to participants who were newborn mothers and had visited a health facility in any of the selected four (4) subdistricts for PNC services. Before the commencement of administration, issues regarding ethics were read and interpreted to participants. Participants were then asked to consent by signing for those who could while others thumb printed. Questionnaire was administered in the Dagaare language; responses to each question were ticked in the appropriate column by research assistants. The principal

investigator assisted in some instances where mothers had a bit of language barrier or need further explanations.

3.10.2 Qualitative Collection Techniques

Qualitative data was obtained through the use of Focus Group Discussion. This was to understand the cultural dimension of newborn care practices and to also give some explanations for the quantitative data. Three Focus group discussion results were obtained and transcribed after reaching a point of saturation since the fourth (4^{th}) and fifth (5^{th}) focus group discussion did not add any new information.

The first Focus group discussion had eight (8) mothers in their middle age between 25 to 35, the second (2^{nd}) focus group had nine (9) younger mothers who were teenagers and some in their early twenties (20s) whiles the third (3^{rd}) focus group comprised seven (7) mothers who were much older above 35 years (older mothers). In each of the focus group discussions, the principal investigator was usually introduced by the facilitator (research assistant) as a student who was only doing the study for academic purposes. The facilitators also allowed everyone else participating in the discussion introduce themselves to ensure familiarity and ease tension especially on the part of the mothers who were the participants of the study. All the focus group discussions were held in a convenient environment free-from noise and all participants had similar characteristics. One of the Research assistants facilitated the discussion since he had command over the local language. The principal investigator made notes and also asked probing questions as and when the situation demanded while the other research assistant recorded the discussion with the help of a phone which was put on flight mode to prevent calls and messages coming through. The maximum time for each focus group discussion was 45 minutes. After each focus group discussion, the

participants were appreciated for their time and also informed that the study's findings would be shared with them.

3.11 Data Processing and Analysis

Data coding and entry were done concurrently with data collection after questionnaire were checked for completeness. Data from the questionnaire was entered into a computer using STATA version 15.0 whiles thematic analysis with the use of NVIVO was used to analyze data from Focus Group Discussion.

3.11.1 Quantitative Analysis

Initially, descriptive summary statistics such as proportions were done to see the distribution of variables in the dataset. Chi-square analysis was used to establish the relationship between the outcome variable (newborn care practices) and selected predictor variables (mothers age, education, monthly income, ANC visits attended, the source of information, maternal knowledge etc.). A logistic regression analysis was then employed to determine the extent of association of selected independent variables as against the outcome variable newborn care practices. Conclusions were drawn based on the strength and direction of the association between the predictor and outcome variables which were presented in the results.

3.11.2 Qualitative Analysis

Narratives from FGDs were transcribed and translated into English from Dagaare. Using the framework for thematic analysis by Braun and Clarke. Transcribed data were read and reread to ensure familiarity with the content of the information gathered, sections that were relevant to the topic under study were coded according to semantic and latent content, the codes were then collated into potential themes and

reviewed to ensure they were coherent and reflected the content of the dataset. The names of the final themes were then generated and determined.

3.12 Data Quality Control

Two (2) Data Collection Assistants were trained on how to effectively administer questionnaires, assist and conduct a focus group discussion and also how to handle ethical issues during fieldwork.

3.13 Ethical Consideration

A study proposal was submitted to the Ghana Health Service's (GHS) Ethical Review Committee on November 13, 2017, for review and clearance before the commencement of data collection. Approval was also sought from The Municipal Director of Health Services for Jirapa and also from the Medical Director of the St Joseph Hospital. The Municipal Health Information Officer at the DHA and the PNC in charge at the hospital respectively upon instruction from municipal health director and medical director granted the research team access to the participants at the various health facilities PNC clinics.

3.13.1 Consenting

The Principal Investigator and Data Collection Assistants read and explained information on the consent form to the participants. This was done individually prior to the interview. The nature, purpose, risk, and benefits of the study were explained to each participant. All participants who agreed to the terms and conditions in the consent form appended their signatures or thumbprint before they were interviewed. The same procedure was followed for participants of Focus Group Discussion.

3.13.2 Privacy and Confidentiality

Priority in confidentiality was to protect all information given by participants as no names were written on the questionnaires. Participants were equally informed prior to the data collection that information was strictly for academic purposes and findings would be communicated to them through the MHD and Hospital authorities.

3.13.3 Data Storage/Security

Data collected from the field were stored in a wooden box under lock with only the Principal investigator having access. Soft copies of information‘s including audio recording were also password protected.

3.13.4 Data Usage

Data collected was used purposely for academic work as part of exploring the factors that influence the practice of newborn care practices among mothers after which findings and recommendation would be made available for adoption.

3.13.5 Voluntary Withdrawal

Participants in the study had the right to withdraw from the study at any point in time without any replications. Those who would have withdrawn would have had their information exempted but fortunately, there was no such incident.

3.13.6 Compensation/Payments

No payments were made for the time of the respondents during the study.

3.13.7 Conflict of Interest

There was no issue of conflict of interest for the purpose of this research study.

CHAPTER FOUR

RESULTS

4.1. Introduction

This chapter presents the various results of data analysis and their respective interpretations.

4.2. Socio-demographic Characteristics of Participants

The respondents were drawn from four subdistricts with those in Jirapa subdistrict constituting seventy-three percent 250 (73.3%). About half of the respondents were in their middle age 24-34 (51.3%) On marital status 79.8% of them were married whiles the remaining were never married, widowed, living together or divorced. Respondents were predominantly practicing Christians 284 (83.3%) whilst the rest belonged to other faiths. From the results, the respondents with the Secondary+ as the highest level of education were 10.3%. Most of these respondents were semi-skilled (51.61%) whiles Professionals were just few 2.05%. On Parity, respondents with a single child were 103 (30.2%) whiles those with two (2) children were 148 (31.7%). Majority of the respondents were either earning zero income 41.9% or were earning less than 100GHC. On the source of information regarding newborn care, only 91 (26.7) responded to having only health professional as their source of information on newborn care practices. On their practice of ANC visits, those who had four (4) and more visits during their last pregnancy were 82 (24%).

Table 1: Socio-demographic characteristics of Participants

Variables	Frequency	Percentage
Subdistrict		
Hain	58	17.01
Jirapa	250	73.31
Tizza	30	8.8
Tuggo	3	0.88
Facility Type		
Hospital	143	41.94
Health Center	44	12.9
CHPS/Community	154	45.16
Age		
15-19	51	14.96
20-24	87	25.51
25-29	88	25.81
30-34	87	25.51
35-39	18	5.28
40-44	10	2.93
Place of delivery		
Hospital	261	76.54
Health Center	22	6.45
CHPS	9	2.64
Home	13	3.81
Others	36	10.56
Form of delivery		
Normal Viginal	286	83.87
CS	39	11.44
Assisted/vacuum	16	4.69
Religion		
Christian	284	83.28
Muslim	47	13.78
ATR	8	2.35
Other	2	0.59
Marital status		
Never married	33	9.68
Married	272	79.77
Widow	2	0.59
Divorced/separated	9	2.64
Living together	25	7.33
Highest level of education		
No education	114	33.43
Primary school	119	34.9
Middle/JSS/JHS	73	21.41
Secondary+	35	10.26

Table 1: Socio-demographic characteristics of Participants (continued)

Variables	Frequency	Percentage
Current occupation		
No skill	84	24.63
Semi-Skilled	176	51.61
Skilled	74	21.7
Professional	7	2.05
Monthly Income(GHC)		
Zero income	143	41.94
Less than 100GHC	148	43.4
100-200GHC	24	7.04
200GHC and above	26	7.62
Parity		
1	103	30.21
2	108	31.67
3	56	16.42
4 and above	74	21.7
Ever lost a child		
Yes	39	11.44
No	306	88.57
Source of information		
Multiple	250	73.31
Health professional	91	2.69
ANC visits in last pregnancy		
3 or fewer visits	259	75.95
4visits and above	82	24.05

4.3. Knowledge of Newborn Care Practices among Participants

Overall knowledge of mothers was assessed. Seventy-seven percent (77.42) of the mothers had adequate knowledge level of newborn care practices whilst the rest of the mothers were seen to have average knowledge level of (13.20%) and poor knowledge of (9. 38%). Over ninety percent, (90%) of mothers were seen to have more knowledge in early exclusive breastfeeding whereas a little over sixty (60%) of these mothers were seen to have knowledge on cord tiring and use of chlorhexidine to clean the cord area whiles exposing the cord area to air.

Table 2: Knowledge of newborn care practices among Participants

Variable	Frequency	Percentage
Knowledge of providing warmth		
Agree	269	78.89
Disagree	23	6.74
Don‘t know	49	14.37
Knowledge of delayed sponge bath		
Agree	254	74.49
Disagree	35	10.26
Don‘t know	52	15.25
Knowledge of umbilical care for cord area		
Agree	278	81.52
Disagree	19	5.57
Don‘t know	44	12.90
Knowledge of umbilical cord not being tired		
Agree	215	63.05
Disagree	69	20.23
Don‘t know	57	16.72
Knowledge of Chlorhexidine/spirit for cord cleaning		
Agree	238	69.79
Disagree	20	5.87
Don‘t know	83	24.34
Knowledge of early initiation of breastfeeding (30mins-1hour)		
Agree	288	84.46
Disagree	12	3.52
Don‘t know	41	12.02
Knowledge of 6months exclusively breastfeeding		
Agree	319	93.55
Disagree	6	1.76
Don‘t know	16	4.69
Knowledge of colostrum breastfeeding	321	94.13
Agree	9	2.64
Disagree	11	3.23
Don‘t know		
Knowledge of newborn Immunizations		
Agree	301	88.27
Disagree	13	3.81
Don‘t know	27	7.55
Knowledge of newborn eye care		
Leave it as it is	186	54.55
Eye drop(when recommended)	63	18.48
Don‘t know	92	26.98
Overall Knowledge level*		
Adequate	264	77.42
Average	45	13.20
Poor	32	9.38

A composite score of all the ten knowledge questions, a score of 7 and above is adequate, score of 5 to 6 is average and a score of 4 and below is poor knowledge.

4.4 Newborn care Practices of Participants

Overall maternal practice of newborn care was assessed. Twenty-eight percent (28%) constituting 94 mothers had a good practice of newborn care whiles seventy-two percent (72%) representing 247 mothers had a poor practice of newborn care. Twenty-eight percent (27.57) of mothers had a good practice of newborn care. Immunization was highly practiced by almost all mothers‘ nighty-six percent (96.48%). The practice of colostrum feeding was also good among mothers (97.07%) with over fifty percent (50%) of them initiating breastfeeding less than 1hour of delivery whiles less than half had a good practice of exclusive breastfeeding of their newborns. Mothers who had sponge bathed newborns between six to- twenty-four hours (6- 24 hours) were forty-two percent (41.94%).

Table 3: Newborn care practices among Participants

Variable	Frequency	Percentage
Practice of newborn warmth		
keep newborn close to mothers skin (skin to skin)	96	28.15
wrap the newborn with warm clothes	66	19.35
Skin to skin and use of warm clothes	96	28.15
None	27	7.92
Other	56	16.42
Practice of initial sponge bathe		
Before 6hours of delivery	135	39.59
6-24hours after delivery	143	41.94
24-48hours after delivery	31	9.09
48hours and above	5	1.47
Don't know	27	7.92
Practice of cord area exposure to air and dryness		
Yes	245	71.85
No	28	8.21
Don't know	68	19.94
Practice chlorhexidine application		
Yes	130	38.12
No	49	14.37
Don‘t know	7	2.05
Other	155	45.45
Practice of umbilical stump tiring		
Yes	130	38.12
No	49	14.37
Don't know	7	2.05
Other	155	45.45
Practice of early initiation breastfeeding		
Within 1hour of birth	193	56.6
1-6hours of birth	122	35.78
6hours and more after birth	25	7.33
Don‘t know	1	0.29
Practice of colostrum breastfeeding		
Yes	331	97.07
No	4	1.17
Don't know	6	1.76
Practice of exclusive breastfeeding (6months)		
Yes	146	42.82
No	130	38.12
I still do	65	19.06
Practice of immunization		
At birth	320	93.84
First PNC	9	2.64
No	12	3.52
Practice of eye care		
Leave it as it is		
Eye drop (recommended)	210	61.58
Don't know	63	18.48
	68	19.94
Overall Newborn care Practice		
Good Practice	94	27.57
Poor Practice	247	72.43

Overall practice: Poor practice (score of 0-7) whilst Good practice was (8-10).

4.5 Factors Associated with Newborn care Practices among participants

4.5.1. Socio-demographic Characteristics Association

Socio-demographic characteristics such as religion, place of delivery, child's age and ever lost a child were not associated with the practice of newborn care since their p-values were not significant (below the alpha level of 0.05).

Rather, Mothers age was associated with Practice of newborn care (p-value 0.016), older women (35-44) had a good practice of seven percent (7%) and poor practice of ninety-three percent (93%) as against younger mothers (15-24) who had a good practice of thirty-three percent (33%) and poor practice of sixty-seven percent (67%).

Mothers who were married had a good practice of twenty-seven percent (27%) and a poor practice of seven-four percent (74%) compared to mothers who were never married who had a good practice of forty-two percent (42%) and poor practice of fifty-eight percent (58%).

On the subdistrict level, all three (3) mothers from Tuggo subdistrict had a one-hundred percent (100%) good practice of newborn care practices compared to mothers from Hain subdistrict with a seventeen percent 10 (17.2%) good practice (p-value 0.006) .

Maternal source of information regarding newborn care practices showed that mothers with health professionals only as their main source of information regarding newborn care practices had forty-five percent (45%) good practice of newborn care practices whiles those with multiple sources of information had twenty-one percent (21%) good practice of newborn care practices (p-value 0.000).

Fifty percent of mothers (50%) with an average income of 100-200GHC had a good practice of newborn care practices while twenty percent (20%) of mothers who did not receive any monthly income had a good practice of newborn care practices p-value (0.001).

Table 4: Socio-demographic characteristics Association with newborn care practices among Participants

Variables	Newborn care practices		Chi-square value	p-value
	Poor n (%)	Good n (%)		
Age categories			8.29	0.016
15-24 years	92 (66.67)	46 (33.33)		
25-34 years	129 (73.71)	46 (26.29)		
35-44 years	26 (92.86)	2 (7.14)		
Marital status			12.251	0.016
Never married	19(57.58)	14(42.42)		
Married	200(73.53)	72(26.67)		
Widow	0(0.00)	2(100)		
Divorced/Separated	6(66.67)	3(33.33)		
Living together	22(88.00)	3(12.00)		
Education			11.749	0.008
No education	92(80.70)	22(19.30)		
Primary	85(71.43)	34(28.57)		
Middle/JSS/JHS	52(71,23	21(28.77)		
Secondary+	18(51.43)	17(48.57)		
Occupation			8.4907	0.037
No skill	56(66.67)	28(33.33)		
Semi-Skilled	138(78.49)	38(21.59)		
Skilled	50(67.57)	24(32.43)		
Professional	3(42.86)	4(57.14)		
Income			16.4265	0.001
Zero income	114(79.72)	29(20.28		
Less than 100GHC	108(72.97)	40(27.03)		
100-200GHC	12(50.00)	12(50.00)		
Above 200GHC	13(50.00)	13(50.00)		
Religion			3.289	0.349
Christian	210(73.94)	74(26.06)		
Muslim	32(68.09)	15(31.91)		
ATR	4(50.00)	4(50.00)		
Other	1(50.00)	1(50.00)		
Place of delivery			5.5524	0.235
Hospital	184(70.50)	77(29.50)		
Health Center	15(68.18)	7(31.82)		
CHPS	6(66.67)	3(33.33)		
Home	12(92.31)	1(7.69)		
Others	30(83.33)	6(16.69)		
Parity			9.6031	0.022
One (1)	71(68.93)	32(31.07)		
Two (2)	70(64.81)	38(35.19)		
Three (3)	44(78.57)	12(21.43)		
Four (4) and above	62(83.78)	12(16.22)		
Source of Information			19.0138	0.000
Multiple sources	197(78.8%)	53(21.20)		
Health professionals only	50(54.95%)	41(45.05)		
Subdistrict			12.5812	0.006
Hain	48(82.76)	10(17.24)		
Jirapa	175(70.00)	75(30.00)		
Tizza	24(80.00)	6(20.00)		
Tuggo	0(0.00)	3(100.00)		

4.5.2. Knowledge level Association

Results revealed that knowledge as a variable was significantly associated with newborn care Practices (p-value of 0.000). Mothers with adequate knowledge level had thirty-three percent (33.3%) good practices of newborn care compared to sixty-seven (66.7%) with inadequate knowledge who had a poor practice of newborn care. Also, mothers with average knowledge had a thirteen percent (13.3%) good practice of newborn care practices while eighty-eight percent (86.7%) had a poor practice of newborn care. Additionally, mothers with poor knowledge had one-hundred percent (100%) poor practice of newborn care practices. However, there were only three socio-demographic characteristics associated with maternal knowledge which were mother‘s age, education, and income but this study‘s focus is limited to the association of knowledge level with the practice of newborn care.

Table 5: knowledge level association with newborn care practices among Participants

Variables	Newborn care practices		Chi-square value	p-value
	Poor n (%)	Good n (%)		
Poor knowledge	32(100.00)	0(0.00)	21.1413	0.000
Average knowledge	39(86.67)	6(13.33)		
Adequate knowledge	176(66.67)	88(33.33)		

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4.6 Factors Influencing Newborn Care Practices among Participants

4.6.1 Socio-Demographic Characteristics Factors

The study explored the magnitude of influence socio-demographic factors had on the practice of newborn care among mothers.

Adjusting for all other variables, results from the logistic regression analysis revealed thirty-nine percent (39%) middle age (25-34) mothers AOR=0.61 and thirty-nine (39%) older age mothers (35-44) AOR=0.61 were less likely to have a good practice of newborn care when compared with younger mothers (15-24). This implies that, as mothers age increases, the less likely she is to have a good practice of newborn care. However, the difference in practice for all ages did not differ with p-values 0.161 and 0.577 respectively.

On marital status, thirty-three percent (33%) AOR= 0.67 of married were less the odds of having a good practice of newborn care practices when compared with never-married mothers. Whiles divorced/separated mothers were 1.78 times (AOR=1.78, 95% CI =0.26-12.11) the odds of having a good practice of newborn care when compared with never-married mothers. The difference in practice, however, did not differ when p-values were compared. On the other hand, eighty-three percent (83%) of mothers within living together category (AOR=0.17, 95% CI= 0.03-0.88, p-value=0.035) had less odds of a good practice of newborn care when compared to never-married mothers category. This suggests that mothers who were seen as living together with their spouses had a relatively poor practice when compared to mothers who were never married. The margin of difference in the practice of newborn care practices was significant for living together mothers compared with never-married mothers.

Only eight percent (8%) of mothers with primary education (AOR=0.92, 95% CI =0.44-1.92, p-value 0.832) had less odds of good practice of newborn care when compared with mothers with no education. whereas mothers with middle/JSS/JHS education had 1.35 times (AOR=1.35, 95% CI =0.58-3.11, p-value 0.483) the odds of having a good practice of newborn care practices compared to mothers with no education. As the educational level increased to Secondary and beyond, mothers were 0.4 times more likely (AOR=1.4, 95% CI=0.40-4.87, p-value= 0.595) to have a good practice when compared with mothers with no education. Apart from the eight percent (8%) decline in the practice of newborn care practices among primary education mothers, an additional increase in the level of education led to an increase in the practices of newborn care except that the difference in practices at all the educational levels did not differ when making reference to their various p-values (0.832, 0.482 and 0.595) respectively. This means that the higher a mothers' level of education the likely she is to have a good practice of newborn care, although the practice is insignificant across all levels.

On occupation, Semi-skilled mothers were forty-four percent (44%) (AOR=0.66, 95% CI =0.26-1.70, p-value=0.395) less the odds of having a good practice of newborn care when compared to mothers with no skill. whereas 51% of skilled mothers (AOR=0.49, 95% CI=0.17-1.37, p-value=0.174)) had less odds of having a good practice of newborn care practices when compared with no skill mothers but as mothers occupation increased to professional level only 5% (AOR=0.95) of these professional mothers had a poor practice of newborn care practices when compared to mothers with no skill just that the variations in practice did not differ across all occupations when p-values are compared.

Mothers who received a monthly income of 100GHC or less were 2.09 times (AOR=2.09, 95% CI= 0.90-4.83, p-value= 0.085) the odds of having a good practice of newborn care practices compared to mothers who did not receive any monthly income. As income increased to 200GHC, mothers were 4.62 times (AOR=4.62, 95% CI=1.38-15.47, p-value= 0.013) the odds of having a good practice of newborn care practices. As mothers monthly income increased further beyond 200GHC, mothers practice level of newborn care were still 1.56 times (AOR=2.56, 95% CI=0.70-9.32, p-value 0.154) more of a good practice above mothers who earned no monthly income.

With regards to parity, mothers with two (2) children were 1.30 times (AOR=1.30, 95% CI=0.592.89, p-value=0.515) the odds of having a good practice of newborn care practices compared to mothers with one (1) child. When parity increased to three (3) forty-two percent (42%) of these mothers (AOR=0.58, 95% CI=0.20-1.66, p-value=0.311) were less the odds of having a good practice of newborn care when compared to mothers with one (1) child. As parity further increased to four (4) and beyond forty percent (40%) of mothers (AOR=0.60, 95% CI=1.20-1.86, p-value=0.379) were still seen to have less practice of newborn care (poor practices) when compared with mothers with one child. An additional increase in parity results in a decrease in mother‘s practice of newborn care practices with the exception of mothers with only two (2) children although the difference in practice did not differ.

On the source of information regarding newborn care practices, mothers with health professional only as the only source of information were 1.39 times the odds (AOR=2.39, 95% CI=1.32-4.33, p-value=0.004) of having a good practice of newborn care compared to mothers with multiple sources of information.

For the various subdistricts practices of newborn care, mothers from Jirapa subdistrict and Tuggo subdistrict had the same practice of newborn care as Hain subdistrict AOR=1.00 and AOR=1.00 respectively. Only fourteen percent (14%) of mothers from Tizza subdistrict (AOR= 0.86) had a relatively poor practice of newborn care when compared to all the other three (3) subdistricts. Meaning, the practice of newborn care practices across all the subdistricts did not differ with p-values (0.996) and (0.832) for Jirapa and Tizza subdistrict respectively.

4.6.2 Knowledge Level Factors

Subsequently, overall knowledge was categorized in two (2) scales for the logistic regression analysis where adequate knowledge was a score of seven (7) and above whiles six (6) and below (summation of average and poor knowledge) was classified as Inadequate knowledge. Results from the logistic regression revealed that when other variables associated with the knowledge level of mothers were adjusted (mothers age, education and income) mothers with adequate (high) knowledge level of newborn care practices were 4 times the odds of having a good practice of newborn care practices compared to mothers with inadequate knowledge level of newborn care (AOR=4.05, 95% CI= 1.54-10.65, p-value =0.005). When all other variables were not adjusted for (crudes odds ratio), mothers with adequate knowledge were 5.9 times (COR=5.9, 95% CI=2.47-14.15, p-value=0.000) the odds of having a good practice of newborn care compared to mothers with inadequate knowledge.

This means that the higher a mother‘s knowledge level, the higher she is to have good newborn care practices.

Table 6: socio-demographic characteristics and knowledge level influence on newborn care practices among participants.

	CRUDES ESTIMATES			ADJUSTED ESTIMATES		
Variable	**COR**	**CI**	**P**	**AOR**	**CI**	**P**
Age categories						
15-24 years	1			1		
25-34 years	0.71	0.44-1.16	0.175	0.61	0.31-1.22	0.161
35-44 years	0.15	0.35-0.68	0.013	0.61	0.11-3.43	0.577
Marital status						
Never married	1			1		
Married	0.49	0.23-1.03	0.058	0.67	0.24-1.87	0.445
Widow	1			1		
Divorced/Separated	0.68	0.14-3.19	0.624	1.78	0.26-12.11	0.558
Living together	0.19	0.46-0.74	0.017	0.17	0.03-0.88	0.035
Education						
No education	1			1		
Primary	1.67	0.91-3.08	0.099	0.92	0.44-1.92	0.832
Middle/JSS/JHS	1.69	0.85-3.36	0.135	1.35	0.58-3.11	0.483
Secondary+	3.95	1.76-8.88	0.001	1.40	0.40-4.87	0.595
Occupation						
No skill	1			1		
Semi-Skilled	0.55	0.31-0.98	0.043	0.66	0.26-1.70	0.395
Skilled	0.96	0.49-1.87	0.904	0.49	0.17-1.37	0.174
Professional	2.67	0.56-12.74	0.219	0.92	0.13-6.70	0.935
Monthly Income						
Zero income	1			1		
Less than 100GHC	1.46	0.84-2.51	0.177	2.09	0.90-4.83	0.085
100-200GHC	3.93	1.60-9.65	0.003	4.62	1.38-15.47	0.013
200GHC and above	3.93	1.65-9.30	0.002	2.56	0.70-9.32	0.154
Parity						
1 child	1			1		
2 children	1.21	0.68-2.14	0.526	1.30	0.59-2.89	0.515
3 children	0.61	0.28-1.30	0.197	0.58	0.20-1.66	0.311
4 children+	0.43	0.20-0.91	0.026	0.60	1.20-1.86	0.379
Main source of Information						
Multiple sources	1			1		
Health professionals only	3.05	1.83-5.09	0.000	2.39	1.32-4.33	0.004
Subdistrict						
Hain	1			1		
Jirapa	2.06	0.99-4.28	0.054	1.00	0.38-2.60	0.996
Tizza	1.2	0.39-3.69	0.751	0.86	0.22-3.42	0.832
Tuggo	1			1		
Inadequate knowledge	1			1		
Adequate knowledge	5.92	2.47-14.15	0.000	4.05	1.54-10.65	0.005

4.7 Cultural beliefs Influencing Newborn Care Practices Among Mothers

The results from the focus group discussions showed that most mothers had adequate knowledge of newborn care practices. During the discussion, some of the themes that emerged were tradition, culture, poverty, cord care, breastfeeding, rooming in, newborn vaccination, newborn danger signs and eye care for newborns and these were themes for understanding how cultural beliefs and challenges influenced the practices of newborn care among mothers in their communities. Some newborn danger signs that were mentioned by mothers were increased temperature, change in skin colour of the baby, continuous sleep, poor or refusal to suckle, constant crying and discharge from eyes.

On early exclusive breastfeeding, Mothers knew it is wrong to introduce any form of food (liquid/solid/semi-solid) to the baby until the baby was six (6) months old. But the focus group discussion revealed that some mothers occasionally gave a drop of water and a bite of food to their newborns as a belief of inviting the baby to the food and a sign of welcoming baby to a new family/home.

Mothers also believe the introduction of supplementary food such as porridge was just to complement the breast milk especially for babies who eat a lot.

> *"It is our belief that, when you eat any food or drink anything, you give the newborn a drop or bite respectively. It's seen as an invitation. This is mostly done for newborns that are believed to incarnate else they would go back to the ancestors (die).* **FGD 3 mother, age 40.**
>
> *"I give artificial foods and light porridge to my newborn because she eats a lot and the breast milk alone will not satisfy her ".* **FGD 1 mother age 29.**
>
> *"I gave her artificial milk because I was a first-time mother; I didn't have enough my breast milk so I improvised with artificial milk".* **FGD 2 mother, age 19.**

On Clean and hygienic cord, mothers who delivered at home engaged in practices such as cord stump tiring and the reason was to stop the blood. Mothers also used warm water and a piece of cloth or towel to clean the cord area and then apply the local shea butter to hasten healing after which the cord area is covered to prevent it from hurting.

> *"We grew up seeing our grandmothers use warm water to clean the cord area and shea butter applied to prevent it from drying up. That has been our tradition, health workers say we should not apply shea butter but to be honest, it makes the cord heal faster".* **FGD 3 Mother, age 42.**
>
> She smiles *"Due to poverty, I am unable to afford cotton and spirit to clean the cord area, so I resort to the use of shea butter which is free to get because I make it myself. I only need to melt the Shea butter dip my finger and apply it on the newborn's umbilical cord".* **FGD 1 mother, age 34.**

Mothers believe the most critical of keeping a newborn warm is to bath the newborn with very warm water, smear the baby with shea butter, wear them clothes and keep the newborn indoors at all times**.** Some mothers are believed to bath newborns with some traditional herbs to make them stronger**.** On the use of warm clothes and skin to skin, this is what a mother had to say. Mothers also heat the room with the help of coal pots.

> *"I do not have money to buy warm clothes. It is only a few mothers who actually use warm clothes. Most of us just wear them second-hand newborn clothes and then make sure we cover them with our worn out pieces of cloths, however, you can use a new cloth if it's within your capacity*—**FGD 2 mother, age 21.**
>
> *"Well, most of us would always want to practice skin to skin but we are farmers and cannot adequately practice skin to skin because the weedicides can touch the baby's skin, enter the eyes or mouth. We rarely practice skin to skin when at home".* **FGD 1, age 31.**

The focus group discussion revealed that mothers use a local black substance called ‗kpallah'. Mothers believed this local substance cleanses the eyes, makes the eyeballs white and beautiful. Some mothers are believed to also press their own breastmilk

into their newborn's eyes as part of cleansing all dirt and to prevent infection of the eye.

> *"I remember the nurse told me to stop using that substance "kpallah" but I want my newborn's eyes to look white so I still use it occasionally especially when going out with the baby".* **FGD 2, age 23.**

> *"In the past, some mothers used breast milk to cleanse the newborn's eyes but we do not do that again. Only some few mothers do it when they are unable to buy eye drop prescribed by a health professional".* **FGD 3 mother, age 37.**

On immunization, mothers during the focus group discussion exhibited knowledge of the relevance of immunization. They knew and believed immunization of newborns prevented their babies from childhood diseases such as polio. Therefore, all mothers try as much as possible to present their newborns for immunization irrespective of the place of delivery.

> *"Although our tradition says a newborn must be a week old before others can see it, flawed that tradition by sending our newborns for vaccination especially for those who deliver at home. We do not joke with immunization at all".* **FGD 1 Mother, age 27.**

Mothers from the focus group discussion were seen to have made their newborns available for all immunizations. In many of the cases, the community health volunteer who is usually a resident of the community identified all children due for immunization and the community health officers visited them to ensure their newborns were immunized appropriately.

CHAPTER FIVE

DISCUSSIONS

5.1 Introduction

Irrespective of the adequate knowledge level of mothers on practices of newborn care, most of them still have poor newborn care practices, hence this chapter brings to bear summary of findings compared with other related studies conducted around the world.

5.2 Socio-Demographic factors influencing newborn care practices among participants

There is a good newborn care practices among younger mothers compared to middle age and older mothers. This means as mothers age increased, their practice of newborn care decreased which conforms to a similar study in the United States of America where an increase in mothers age led to a decreased in the practice of newborn care practices (Hamrick et al., 2016) . However, the variation in the practices of newborn care of this study and that of USA was that poor practice of immunization in the USA was seen in the birthing centers whereas the variation in this study was seen in the various subdistricts of the Municipality. Also in this study was the finding that, an increased in mothers education increased the practice of newborn care though not significant which contradicts the Hamrick et al. (2016) study finding that educated mothers rather had a bad practice of immunization because there did not see the need to get their newborns vaccinated because they read extensively and found no effects with no vacinnations of newborns.

Parity was identified as a factor influencing the practice of newborn care practices in this study, mothers with two (2) children were likely to have a one (1) time good

newborn care practices compared to mothers with just a single/one (1) child but as the number of children increased to three (3) and beyond, mothers good practice of newborn care practices declined. The reason to a decrease in good practice of newborn care practices with additional increase in parity is due to the fact that mothers with two (2) children would have seen the need to ensure the survival of their second (2nd) child after the challenges they encountered during caring for their first (1st) child and therefore were more cautious and adhered to standards of practices of newborn's compared to first (1st) time mothers who were new to the practice of caring for newborns and flawed recommended practices or didn't even know how to care for their newborns. Additionally, as mother's parity continuously increased, they become reluctant and overlooked some basic newborn care practices with the assumption that they have adequate experiences already in caring for newborns. Mothers with three (3) and more children had almost similar practices with mothers with just one (1) child. However, this finding slightly varies with a study conducted in Kavrepalanchok Municipal of Nepal where mothers with two (2) or more children rather had a good practice of newborn care practices (Thapa, 2017) with almost all mothers having a good practice of immunization.

Receiving information from health professionals only as the main source regarding practices of newborn care was associated with newborn care practices such that mothers who had health care professionals only as their information source (nurses, CHO and CHV) were 2 times likely to have a good practice of newborn care practices compared to mothers with multiple sources of information regarding newborn care practices. This finding concurs with a study conducted in Kenyatta national hospital PNC wards by Amolo, Irimu and Njai (2017) where mothers who received newborn care practices information (nurses and doctors only) as their main source of

information were seen to have good newborn care practices. This is attributed to the fact that mothers who attended four (4) or more ANC visits had the tendency to comply with what has been told them by their caregivers compared to mothers who attended three (3) or fewer visits. However, the findings in this study and that of Kenya by Amolo et al. (2017) varies with a study conducted in the USA by Hamrick et al., (2016) where twenty-four percent (24%) of mothers who received multiple sources of information regarding newborn care practices ended up refusing vaccinations practice. This is the case because mothers had fewer ANC visits and also read widely on the internet that gave them different ideas and interpretations on some of the newborn care practices that eventually affected their decision and practice of vaccination. These mostly in the long run have adverse effects on the survival of the newborn since not all information gotten on the internet are authentic or reliable, the majority of online information are mostly peoples views and not standardized for practice.

The finding that income levels of mothers is associated and influence newborn care practices where average income mothers had good newborn care practices compared to mothers who did not earn any monthly income is been supported by a study conducted in Nepal by (Shrestha et al., 2015). The Nepalese study established poor newborn care practices to be attributed to poverty where mothers with lower income levels did not have a good practice of newborn care. Reasons to this include mothers' inability to purchase some necessary basic needs of newborns such as cotton and chlorhexidine whereas average income mothers were able to purchase these and that increased their newborn care practices.

5.3 Knowledge level influencing Newborn care practices among participants

This study revealed that knowledge level is associated and predicts the practice of newborn care practices. Factors associated with knowledge were maternal age, education, and income. Whereas a study in Eastern Tigray, Ethiopia by (Misgna, Gebru, & Birhanu, 2016) identified marital status being associated to the knowledge level of mothers, another study in India said mothers age did not have any association with mothers knowledge as seen in this study. This study revealed that the higher a mother‘s knowledge level of newborn care practices the likely she is to have 4 times good newborn care practices. This means that, mothers newborn care practices increased as mothers‘ knowledge level of newborn care increased compared to mothers with inadequate knowledge of newborn care practices.

Also, Misgna et al., (2016) finding in Eastern Ethiopia showed that, eighty percent (80.8%) of mothers with good knowledge level had ninety-two percent (92.2%) of newborn care practices. Furthermore, studies in Ghana on the patterns and determinants of newborn care practices in Northern Ghana also revealed that there was an association of knowledge of newborn care practices with the practice of newborn care practices where mothers who knew four or more danger signs of newborns were 4 times likely to have a good practice of newborn care practices (Saaka & Iddrisu, 2014). Also with regards to knowledge level influencing newborn care practices, a recent study from Varanasi revealed mothers with incomplete knowledge of newborn care practices were engaged in harmful practices of newborn care such as refusal to feed babies with colostrum and also delayed initiation of breast milk (Kumar, Srivastava, Ahmad, & Upadhyay, 2015). Additionally, a study conducted in Indonesia by Nasir, Amran and Nakamura (2017) asserts that, mothers

who attend mother class where maternal child health handbook was given to mothers by health professionals as newborn care practices reference material increased their knowledge level of newborn care practices which eventually led to an increased breastfeeding practices among mothers. Also, other studies contrast this study findings, Northern Ghana, and Ethiopian study.

However on the contrary, an Indian study by Mandal and Ghosh (2016) showed that newborn care practices among mothers with adequate knowledge level of newborn care and mothers with inadequate knowledge level of newborn care did not differ with reasons being language barrier between the health professionals who give information on newborn care practices and the mothers who engage in newborn care practices. The adverse effects of knowledge and practice gap were the increasingly low newborn care practices which eventually lead to newborn morbidity and increased mortality.

5.4 Cultural beliefs influencing Newborn care practices among mothers

The practice of feeding newborns with colostrum and early initiation of breastfeeding was identified as one of the common practices of mothers from this study, the reason being that mothers were aware of the benefits of early exclusive breastfeeding to their newborns. However, mothers from the study were also seen to have practices such as giving drops of water and bites of foods to newborns which were culturally motivated and refusal to comply with these traditional cultural practices would mean newborns are not welcomed to the family and hence might end up returning to the ancestors (dying). This finding is same as the belief of ushering and welcoming newborns into the family as found by a study conducted in the northern part of Ghana where

newborns were equally given drops of water and bites of food before their sixth (6^{th}) month (Awumbila, 2003).

According to another study conducted in Varanasi by Kumar et al.., (2015) there have been several harmful practices of newborn care among mothers where mothers delayed initiation of breastfeeding and also refused to feed newborns with colostrum with the reason that, colostrum feeding for newborns was attributed to the prohibitions by family customs (Kumar et al., 2015). This finding is in contrast with this study as mothers of this study fed their newborn babies with colostrum since that cultural belief has been in non-existent for over a century and regarded as a practice of the past.

Rooming in was a common practice of the majority of mothers in this study, this was same as a practice of most mothers in Nepal as well. Skin to skin was not seen as the constant practice of mothers in this study and mothers of Southern Tanzania, unlike Nepal where the majority of mothers practiced skin to skin (Thapa, 2017). Reasons for the minimal practice of skin to skin by mothers of this study were that they were subsistence farmers and could not adequately practice skin to skin especially whilst in the farm due to the fact that they used chemicals such as weedicides whilst working on farmlands and therefore wouldn‘t endanger the lives of their newborns.

A Tanzanian study by Shamba et al.,(2014) also showed less practice of skin to skin, they believed skin to skin would injure the babies, give them chest problems or would hurt the cord hence the rare practice of skin to skin for small babies though they knew its relevance (Shamba et al., 2014). The implication of less skin to skin especially for mothers with small babies is the increased loss of heat which mostly lead to hypothermia and hence the increased deaths of newborns.

Still, on thermal care, the common practice from this study was drying up and delaying sponge bath for mothers who delivered at a health facility. however, for most mothers who had home deliveries, newborns were sponge bathed within 6 hours of birth. This same practice was seen in the Tanzanian study by Shamba et al., (2014) where mothers only delayed bathing upon health professional advice at health facilities but initiated early bathing when a mother delivers at home. The reason for early sponge bath to mothers of this study was the belief that the blood of the baby was considered as bitter blood" zing tuo" which needed to be washed off immediately through bathing else the baby would smell. This belief was similar to the views of some mothers in Lindi and Mtwara in Southern Tanzania where newborn mothers also believed newborns blood was dirty, particularly if the newborn baby had vernix, it was believed to be sperms and it will be shameful to have a baby with sperms (Shamba et al., 2014).

The practice of applying substances such as shea butter to the cord in this study was seen to be similar in Nepal, Pakistan, Uganda, and Ethiopia where mothers applied various forms of substances to the cord. In Nepal, most mothers use mustard oil (Misgna et al., 2016) reasons for substance application for these various studies according to mothers was to help keep the cord moist and aid healing. In Pakistan, coconut oil, purified butter, Mustard oil, and turmeric were all substances applied to the newborn's cord to hasten the cord to heal (Gul, Khalil, Yousafzai, & Shoukat, 2014). However, these substances have the tendency to introduce infections in newborns and this may have led to the increased number of newborn morbidity and mortality due to cord infections such as neonatal sepsis.

Additionally, a local substance called "kpallah" was used by some mothers from this study in newborns eyes. According to mothers, it makes the babies eyes white and

beautiful which wasn't different from the study conducted in Karachi where mothers applied a substance called ‗Kohl' (Gul et al., 2014). These are all contributory factors to neonatal sepsis.

5.5 Limitations of the Study

With regards to questionnaire administration, some mothers had to be followed consistently to complete the responses due to their busy schedules.

It was observed that, focus group discussions that had the presence of health professionals were not as fruitful as compared to discussions without the presence of health professionals.

Also, focus group discussions that were held at the PNC clinics were occasionally interrupted by health care professionals and other mothers.

Another limitation, especially for the focus group discussion, was getting mothers to form a quorum since each mother was interested in going back home after being attended to at the PNC clinic to enable them to go to the farm as it was a farming season.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Source of information, maternal age, mother's income, marital status and knowledge level were seen to be significantly associated with newborn care practices. Parity and education were also seen to be associated with newborn care though not significant. Mothers who had JHS level education and above had a positive association with newborn care practices whiles mothers with three (3) or more children had a negative association with newborn care practices. Findings from the focus group discussion also showed that mothers were unable to adequately practice newborn care due to the traditional beliefs that were associated with some of the practices such as shea butter makes the cord heal faster, the use of the local substance "kpallah" to make the babies eyes look beautiful and the giving of babies food as a sign of welcoming them to the home and to prevent them from returning to the ancestors especially for newborns believed to be reincarnates. These are culturally oriented beliefs and norms that have adverse effects on newborns survival in the Municipality.

6.2 Recommendations

Recommendations for Policy

1. The Municipal Director of Health Services should negotiate with various traditional authorities in the Jirapa Municipality to discourage harmful traditional practices such as the giving of newborns drop of water that is detrimental to the health of the newborn.
2. The Municipal assembly and other stakeholders should make it a priority to

empower mothers in the Jirapa municipality to enable them earn income that can aid them have a good practice of newborn care by providing newborn basic needs

Recommendation for Practice

3. Health professionals should continue educating and encouraging mothers to mainly seek health professional's advice during pregnancy (ANC Visits) and after delivery (PNC visits).
4. Health professionals should encourage mothers to adhere to recommended newborn care practices such as the use of chlorhexidine for cord cleaning and no substance applied.

Recommendation for Future research

5. Further researches should be done on the factors influencing knowledge levels of newborn care practices since knowledge of newborn care influences the practice.

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APPENDICES

Appendix 1: Participants Information Sheet

SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

Project Topic:

FACTORS INFLUENCING NEWBORN CARE PRACTICES AMONG MOTHERS IN THE JIRAPA MUNICIPALITY OF THE UPPER WEST REGION OF GHANA

Introduction

I am Rhoda N.Zolko-Ere a graduate student from the School of Public health, University of Ghana, Legon, Accra. I am undertaking a research study on the **topic 'Factors influencing Newborn care Practices among mothers in the Jirapa Municipality of the Upper West Region of Ghana'**. The purpose of the study is to investigate the factors influencing newborn care practices among mothers in the Jirapa Municipality. This informed consent is to ensure that participants understand the purpose and your responsibilities in the research before you decide whether to participate or not participate.

Study procedure

This is a research study that would involve answering questions to an interviewer using a questionnaire to assess mother's knowledge of newborn care. The questions have threue sections which include socio-demographic characteristics of mothers, mother's knowledge on recommended newborn care and questions on mother's practice of newborn care practices. Also, focus group discussions will be organized to identify the practices of newborn care adopted and the socio-cultural beliefs that

influence these practices adopted by mothers. The whole study will last for about one month but your participation will only be for today which will take about 45 minutes.

Voluntary participation

Participants have the right not to participate in the study or to withdraw from the study at any time without any consequences should you choose to withdraw, the information provided earlier would be discarded outright. Each individual is entitled to ask questions at any point in the study for clarification. Any aspect of the questions that are not well understood will be clarified by the interviewer.

Risk and benefits

No risks are associated with the participation in this study except that it will take part of your precious time and the need to provide some personal information. Benefits in this study will be identifying factors influencing newborn care practices which will enable the reproductive and child health unit of the Jirapa Municipal Health Directorate and Hospital to device appropriate strategies to promote healthy child practices among mothers. In circumstances where data collected shows clearly some practices of mother‘s poses risk to the health of the baby, the mother will be educated on the effects of the practice after which she would be recommended to see the nearest health personnel for expert review and advice.

Compensation

No payment will be made for your time.

Confidentiality

All information provided during this research will be protected as much as possible. No discussion will be held regarding the research outside the team. All responses will be treated as confidential as no names will be placed on the questionnaires.

This research has been reviewed and approved by the Ghana Health Service Ethical Review Board.

In case of any concerns, kindly Contact the following persons

Ghana Health Service
Ethical Review Committee
Administrator
Miss Hannah Frimpong
Hannah.Frimpong@ghsmail.com
O5O7041223

Ghana Health Service
Ethical Review Committee
Administrator
Miss Abena Nana Kwaa
nanatuesdaykad@yahoo.com
0244712919

Appendix 2: Participant's Consent Form

FACTORS INFLUENCING NEWBORN CARE PRACTICES AMONG MOTHERS IN THE JIRAPA MUNICIPALITY OF THE UPPER WEST REGION OF GHANA.

I have read through the foregoing information/the foregoing information has been read and interpreted to me and I fully understand all that has been explained to me about the objectives, benefits, risks and my rights to withdraw from the study at any time without any consequences to me. I have been given the opportunity to ask questions and have been answered satisfactorily. I, therefore, agree to participate in this study.

Please confirm your participation by signing below.

_____

Signature/Thumbprint of participation Date: _____

P.I/Research Assistants name: _____

Signature: _____

Appendix 3: Structured Questionnaire

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PROJECT TOPIC:

FACTORS INFLUENCING NEWBORN CARE PRACTICES AMONG MOTHERS IN THE JIRAPA MUNICIPALITY OF THE UPPER WEST REGION OF GHANA.

I am Rhoda N. Zolko-Ere, a student of the University of Ghana, I would need your support to answer this questionnaire on **Factors Influencing Newborn care practices among mothers in the Jirapa Municipality of the Upper West Region of Ghana.** Be assured information provided would be used strictly for academic purposes and confidentiality is fully assured.

Questionnaire number: _____ Interview Date: ___/___/_2018

Subdistrict _____

Facility type: 1. Hospital
2. Health center/Polyclinic
3. CHPS

Question No.	Question	Response	
Section I	**Socio-Demographic Characteristics of the mother**	**Please indicate a correct answer in box e.g. 1 or tick appropriate answer visibly eg √**	
1.	What is your age	1. 15-19 2. 20-24 3. 25-29 4. 30-34 4. 35-39	

		5. 40-44 6. 44-49	
2.	Where did you deliver your current baby	1. Hospital 2. Health Centre 3. CHPS 4. Home 5. Other (specify).....	
3.	What form of delivery was it	1. Normal vaginal delivery 2. CS 3. Assisted delivery(use of vacuum)	
4.	What age is your current child in months	1. Day1-1month 2. 1month-6months 3. 6months -12months	
5.	Sex of the child	1. Male 2. Female	
6.	Which Religion do you belong to	1. Christian 2. Muslim. 3. Traditional 4. Other.....	
7.	What is your highest level of Education	1.No education 2. Primary school 3. Middle/JSS/JHS 4. Secondary+	
8.	What is your Marital Status	1. Never married 2. Married 3. Widow 4. Divorced/Separated 5. Living together	
9.	What is your current Occupation	1. No skill(Home keeper) 2. Semi-skilled(farmer, pito brewing, food vendor) 3. Skilled(seamstress or hairdresser) 4. Professional (nurse, teacher etc) 5. Other.....	
10.	How much do you earn averagely in a month(GHC)	1. Zero income 2.less than 100cedis 3. between 100 -200cedis 4. above 200cedis	
11.	How many children do	1. one(1)	

	you have	2.Two (2) 3.Three(3) 4. Four(4) and above	
12.	Please have you lost any of your children before?	1. Yes 2. No 3. Don't know	
13.	IF YES in Q12, what age was your child	1. Less than 1month 2. 1month to 6months 3. 6months-12months 4. 1year-5years 5. 5years and above	
14	Place of Residency		
15.	Where has been your source of information regarding newborn care practices	. 1. Close Family/relative(mother, sister, mother in law) 2. Trained Health professional only (Nurse/Doctor) 3. Community (TBA, Elder women, Chiefs etc.) 4. Both family and Nurse 5. Family, nurse, and community **6.** Other, specify……	
16.	How many ANC visits did you attend during your last pregnancy	1. Zero visits 2. 1- visit 3. Between 2 -3 visits 4. 4-8 visits and above	
Section 2	**Knowledge Questions**		
17.	As part of thermal care (keeping baby warm) newborns should be kept close to mother, as well as the use of warm clothes.	1. Agree 2. Disagree 3. Don't know	
18.	Newborns should not be sponged bathed immediately unless 6hours or more after delivery	1. Agree 2. Disagree 3. Don't know	
19.	The umbilical cord area must be exposed to air	1. Agree	

	and kept dry at all times	2. Disagree 3. Don't know	
20.	The umbilical stump should not be tired	1. Agree 2. Disagree 3. Don't know	
21.	Chlorhexidine/Spirit should be used to clean the umbilical stump	1. Agree 2. Disagree 3. Don't know	
22.	First initial breastfeeding should start within 30mins to 1hour of delivery if mother and baby are in good condition	1. Agree 2. Disagree 3. Don't know	
23.	Newborns should be exclusively breastfed with only mothers breast milk for at least 6months	1. Agree 2. Disagree 3. Don't know	
24.	Newborns should be breastfed with the first yellowish milk(Colostrum) from its mother	1. Agree 2. Disagree 3. Don't know	
25.	In your opinion, what should be applied in the newborn's eyes	1. Leave it as it is 2. Apply an eye drop recommended by the facility 3. Don't know	
26.	Immunization of newborns help prevent them against childhood illnesses	1. Agree 2. Disagree 3. Don't know	
Section 3	**Practice Questions**		
27.	How do you keep your newborn warm	1. Keep baby close to mothers skin 2. Wrap baby with warm clothes 3. Keep baby close to mothers skin and use of warm clothes 4. None 5. other	
28.	When did you have first initial sponge bathe for your current baby	1. Before 6hours 2. Between 6-24hours 3. Between 24-48hours 4. 48hours and beyond 5. Don‘t know	
29.	Did you expose the	1. Yes	

	umbilical cord area to air to keep it dry at all times	2. No 3. Don't know	
30.	Did you tire your baby's umbilical stump	1. Yes 2. No 3. Don't know	
31.	Did you apply spirit/ chlorhexidine to your baby's cord at home	1. Yes 2. No 3. Don't know 4. Other specify.....	
32.	When Did you initiate the first breastfeeding for your current baby	1.Within 1hour of birth 2. 1hour-6hours 3. 6hours or more 4. Don‘t know 5. Other	
33.	Did you give your baby the first yellowish breast milk(Colostrum)	1. Yes 2. No 3. Don't know 4. Other specify.....	
34.	Did you exclusively breastfeed your current baby with only your breast milk for at least 6months	1. Yes 2. No 3. I still do	
35.	Did you make your baby available for immunization on your scheduled/expected PNC date given after delivery	1. No, Different date 2. Yes, Exact date 3. Don't know	
36.	What did you apply in your babies eyes	1. Leave it as it is 2. Applied a substance 3. Don't know 4. Other specify.....	

Appendix 4: Focus Group Discussion Guide

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PROJECT TOPIC:

FACTORS INFLUENCING NEWBORN CARE PRACTICES AMONG MOTHERS IN THE JIRAPA MUNICIPALITY OF THE UPPER WEST REGION OF GHANA.

Introduction

My name is _____ I am here together with Rhoda N. Zolko-Ere a student of University of Ghana School of public health.

We are happy to meet you all and we want to welcome you to this gathering. We are here to seek your opinions on **'Factors influencing Newborn care practices among mothers in the Jirapa Municipality of the Upper West Region of Ghana',** Particularly, those beliefs that influence the decision to care for your newborn. All should be comfortable to share what you know. Everything said today will go a long way to help put the right measures in place to help both you and your children.

A few grounds rule

1. No answer in this discussion is right or wrong
2. Everyone will introduce herself
3. Participants should note that this discussion is very important to us
4. Every discussion here shall be recorded on a tape in order to replay them later, also notes shall be taken
5. Only one person can talk at a time so that we can all here clearly, give

comments and ask questions for more clarification

6. You may also ask me questions or contributions as the discussion is on going

Please we must try to finish within an hour

Date: ___/____/_____ Facilitator: _____

Moderator: _____

No. of participant: _____ Time for discussion 1hr. Start: _____ End: _____.

INSTRUCTIONS

1. Introductions.
2. Explain the purpose of the study.
3. Assure discussants of confidentiality.
4. Ask discussant for their informed consent to participate in the discussion.
5. Explain the importance of recording the discussion.

Practices and Cultural Belief Questions

1. What do you understand by newborn care practices
2. How do mothers in this community provide care to their newborns
3. How do traditional practices in this community relate to the following;
    a. Cord care
    b. Keeping the baby warm
    c. Breastfeeding
    d. Immunization
    e. Eye care for newborns
4. How do cultural beliefs and taboos in this community relate to;
    a. Cord care
    b. Keeping the newborn warm

c. Breastfeeding?

d. immunization

e. Eye care for newborns

5. In your own opinion, what are the main reasons why some mothers in this community deliver at home?

6. What challenges prevent mothers in this community from carrying out the recommended newborn care practices?

7. Any other issues (Some space would be given to group members to raise any other issues that they feel are relevant)

END.

Thank you for your time, cooperation and participation.