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Midwives' Experiences of Early Identification and Management of Neonatal Jaundice in the Offinso Municipality.

BY

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DECLARATION

I, Gloria Asamoah, hereby attest that this thesis is my original research work done under the awesome supervision of Dr Mary Ani-Amponsah and Dr Caroline Badzi. This research work has never been submitted wholly or partly for any award at any other institution.

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DEDICATION

I am grateful to Almighty God and also to my family for their prayers and support.

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ABSTRACT

Neonatal jaundice (NNJ) is a common condition requiring early identification and effective management by midwives. In the world of neonates being fragile, vulnerable and a non-verbal population, the foundation of their care by midwives is dependent strictly on observations to identify subtle cues and deviations. This study investigated midwives' experiences in identifying and managing NNJ early at the St Patrick's hospital in Maase- Offinso. An exploratory descriptive design purposively sampled seventeen (17) midwives who were engaged in interviews and focus group discussion using a semi-structured interview guide and a focus group discussion guide after ethics approval was obtained. A Thematic content analysis was conducted, yielding four (4) major themes: Attitude, Subjective norms, Intentions and Behavior, three emerging themes: Perceived Consequences, Separation Anxiety and Perceived risk of NICU admission, and Support Services for NICU Mothers and further had twenty (20) subthemes. The key findings revealed that midwives' attitudes, intention and behavior were influenced by their knowledge, emotions, and significant others. Despite their motivation to provide quality care, midwives faced challenges in communicating with parents, collaborating with healthcare teams, and optimizing resources. Recommendations, include formulating screening tools, high-risk neonate follow-up, and discharge policies, as well as providing support services for mothers at the NICU. The study highlights the need for a comprehensive approach to addressing NNJ management. Future directions include integrating families especially grandmothers and also male involvement in the care of the neonates at the facility level as social influences and collective care in the communities affected the early identification and management of NNJ. This will enhance the degree of care given to neonates with NNJ and improve health outcomes.

Key words: Midwives, Management, Neonatal jaundice, Offinso municipality

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LIST OF ABREVIATIONS

ABE: Acute Bilirubin Encephalopathy

CHAG: Christian Health Association of Ghana

EBT: Exchange Blood Transfusion

EIF: Early Intervention Foundation

GHS: Ghana Health Service

HRIF: High-Risk Infant Follow-Up

IDI: Individual In-depth Interviews

KSD: Kernicterus Spectrum Disease

NFU: Neonatal Follow-Up

NICU: Neonatal Intensive Care Unit

NNJ: Neonatal Jaundice

PNW: Postnatal Ward

PSG: Pediatric Society of Ghana

TCB: Transcutaneous Bilirubinometer

TPB: Theory of Planned Behavior

TRA: Theory of Reasoned Action

TSB: Total serum Bilirubin

WHO: World Health Organization

CHAPTER ONE

INTRODUCTION

An overview of the research field, including pertinent problems and important ideas, is given in this chapter. The research problem and the study's significance are clearly stated, and the chapter provides a comprehensive definition of the terminology and concepts that will be employed in the investigation.

1.0. Background of the Study

Since every child deserves the finest start in life, it is imperative to protect them from situations that can threaten their future and negatively impact their development. Bilirubin build up can be problematic, as high levels of unconjugated bilirubin can harm the developing brain (Ansong-Assoku et al., 2024). Midwives' sense of the most common condition neonatal jaundice based on their experiences, towards neonatal jaundice identification and management is very vital determinants of whether midwives will predict and identify it early and seek prompt medical attention and care for the neonate. Delayed medical care and bad clinical judgments such as whether to treat or not to treat , are all caused by a lack of understanding and poor perception of NNJ (Ayete-Nyampong & Udofia, 2020; Demis et al., 2021). When viewed as a condition that does not need much attention or a condition that cannot harm the neonate, then little attention and importance will be attached to it. Therefore, to predict, prevent, protect, identify, diagnose and promote the health and well-being of the jaundice neonate, midwives' experience of the early identification of the condition is key. In the complicated environment of the Neonatal Intensive Care Unit (NICU), multiple requirements must be satisfied at once. For

families, infants, and midwives in NICUs stress is an inevitable component of daily existence. Lee-Winn et al., (2023) have reported that the neonatal intensive care unit (NICU) presents an emotionally charged atmosphere for both parents and healthcare staff. A study also emphasized coping practices and stress for nurses at the NICU (Musto, 2021). The fact that jaundice in the newborn is a common disease that newborns encounter, will increase the number of babies receiving care at the various NICUs. It is undoubtedly a contributing factor to the competing demand and the inherent stress for midwives.

The yellow tint that many babies exhibit is called jaundice (CDC, 2020). Neonatal jaundice is the term for the yellow staining of the skin or other organs brought on by the body's buildup of bilirubin, (Huang et al., 2022). Worldwide, NNJ affect 60% of babies born around 37 to 42 weeks and 80% of those born before 37 weeks experience clinical jaundice (Salia et al., 2021). Belay et al., (2023) state that NNJ is the most frequent cause of hospitalization worldwide and that it contributes to (re)admissions following hospital discharge following birth (Seneadza et al., 2022). Geographical variance may also have a role in the difference in the incidence of jaundice across different continents (Hansen, 2021). Although there are several guidelines for treating newborn jaundice, Zhang et al (2020) claim that, the criteria, quality, and recommendations of the guidelines may differ between nations and areas.

Globally by estimation 1.1 million babies may develop severe NNJ per year predominantly at the Sub-Saharan Africa and South Asia. Sub-Saharan Africa bears the highest burden of the newborn jaundice-related morbidity and mortality (Belay et al., 2023). Between 2015 and 2019, Ghana has experienced a rise in NNJ cases; 3,031, 4,251, 5,338, 7175, and 9273 as from the Ghana health service data (Ghana Health Service, 2019). Furthermore, a Tamale

metropolis study discovered that 9.7% of severe NNJ cases were common (Abdul-Mumin et al., 2021).

Belay et al., (2023), estimate that 481,000 late preterm and term neonates worldwide experience severe NNJ every year, leading to 114,000 deaths and 63,000 survivors who suffer permanent disability. For most newborns, jaundice may be a benign disease but, severe hyperbilirubinemia can result in kernicterus, or acute bilirubin encephalopathy, which can lead to intellectual incapacity, nerve deafness, choreoathetoid cerebral palsy, and even death (Karimzadeh et al., 2020; Zhang et al., 2020). Permanent neurological impairments, known as bilirubin-induced encephalopathy (BIE), can result from delayed diagnosis and treatment of pathologic and progressive indirect hyperbilirubinemia (Rathore et al., 2020).

Visual identification (Kramer method) of NNJ on the skin is easy for users to use because it is not invasive and can be used in resource limited countries (Dionis et al., 2021). Visual assessment, transcutaneous bilirubinometry (TCB) and total serum bilirubin (TSB) are the means used for identifying NNJ. A study by Sampurna et al., (2021) found Serum bilirubin levels varied greatly for each Kramer score. Regardless, Dionis et al., (2021) study revealed a good specificity of 86.1%, moderate sensitivity 70.5% and a diagnostic accuracy moderate 76%. Notwithstanding these findings, visual inspection has a positive predictive value and is mostly used by primary care givers to diagnose NNJ even before a confirmation of the TCB/TSB levels in Ghana. When using new technology for newborn screening in Sub-Saharan Africa, culturally acceptable methods for NNJ identification are taken into account.

According to the Organization for Economic Co-operation and Development OECD, (2019), primary health care has a major role in facilitating early detection in order to maintain a healthy adult free of developmental issues in the future, it is imperative to promote the neonate's

health through early identification. Therefore, to understand midwives' attitudes, subjective norms, purposeful action, and general behavior in recognizing neonatal jaundice early, the theories in (Ajzen & Fishbein, 1975). Theory of Reasoned Action was used.

1.1 Statement Problem

Every child deserves a perfect start and a bright future, even that healthy term babies have higher bilirubin loads because of their larger red blood cells (RBCs) and shorter RBC lifespans, this put all neonates at risk for NNJ (Ansong-Assoku et al., 2024). Although it might be a normal transition, over 80% of newborns experience some degree of jaundice that can cause irreversible damage (Kemper et al., 2022). Therefore, it is imperative to identify the source of NNJ early to avert dangerous outcomes (Ansong-Assoku et al., 2024).

Global research provides data on the prevalence of neonatal jaundice and informs that NNJ is a common condition in the early days of life (Belay et al., 2023) and a factor in (re)admissions after postpartum discharge (Seneadza et al., 2022). In Ghana, Ghana Health Service Data, (2019) affirm a steady rise in neonatal jaundice cases between 2015 and 2019, with reports of 3,031, 4,251, 5,338, 7,175, and 9,273. Abdul-Mumin et al., (2021) reported that the Tamale metropolis investigation discovered 9.7% of cases of severe hyperbilirubinemia. But the state of admission, whether these babies were reported late or early, is not known concerning these data.

Permanent neurological impairments, known as bilirubin-induced encephalopathy, can result from delayed diagnosis and treatment of pathologic and progressive indirect hyperbilirubinemia (Rathore et al., 2020). According to Kemper et al., (2022), hospitalization, early intervention and continuous monitoring of the newborn are crucial because bilirubin buildup may lead to acute bilirubin encephalopathy and kernicterus. The majority of population-based research

focuses on newborns who are hospitalized and either have severe hyperbilirubinemia or kernicterus spectrum disorder (Donneborg et al., 2020). The above studies are evidence of the late identification and late management of NNJ, which confirms babies living with irreversible neurological sequelae even when they become adults. This permanent damage due to bilirubin neurotoxicity in delayed identification and management is important in neonatology.

At the study setting, also in Ghana, a five-year period from 2019 to 2023 recorded 3,066 NNJ hospitalizations with 30 newborns dying, translating to a fatality rate of 9.7 per 1,000 live births. For complications of NNJ and ABE, 7 in 2019 and 14 each in 2020 and in 2021, data for 2022 and 2023 on complications or ABE could not be retrieved in the annual report and records. Complications of NNJ, ABE, and kernicterus from 2019 to 2021 were 35 out of 1,870 babies, and therefore 18.7 per 1,000 live births had complications of NNJ (St Patrick's Hospital, 2023). Most babies reported with complications are already from referral centers and homes, and a few develop them on the ward. This data indicates and emphasizes the late identification of NNJ leading to late management of the condition; hence, babies suffer the consequences of bilirubin neurotoxicity.

The data on the late identification of NNJ in the Offinso municipality might be due to the fact that there has not been an empirical solution to the phenomenon, or probably due to the lack of risk prediction tools that will help address the case early, or because most babies, whether having risk factors for developing NNJ or not, are discharged within 24 hours after birth, or even the failure of midwives to comprehend risk factors for developing NNJ. Also, there is scanty literature on early identification of NNJ. Even though studies have been done in some parts of Ghana on NNJ, there has not been much research on the phenomenon under study.

In the phase of these statistics, 18.7 per 1000 live-born babies that developed complications of NNJ at the study settings that may possibly live with irreversible kernicterus spectrum disorders and also the fatality rate of 9.7 per 1000 live births. The question that is worth asking is, what are the means of early identification of NNJ in Ghana, especially in the Offinso municipality? The research made an in-depth inquiry of midwives' responses and preparedness in identifying and managing neonatal jaundice early by exploring their attitudes, subjective norms, intentions, and behaviors impacting the early identification and management of NNJ, especially in Ghana, which has seen a steady rise in cases with time.

1.2 Purpose of the Study

The study explored the experiences of midwives on early identification and management of neonatal jaundice at the Offinso municipality.

1.3 Research Objectives.

The specific objectives of the study were to:

1. Examine the attitude of midwives in early identification and management of neonatal jaundice in the Offinso municipality.

2. Describe the subjective norms of midwives in early identification and management of neonatal jaundice in the Offinso municipality.

3. Identify midwives' behavioral intentions in early identification and management of neonatal jaundice in the Offinso municipality.

4. Describe the behavior of midwives in early identification and management of neonatal jaundice in the Offinso municipality.

1.4. Research Questions

The study addressed the following questions:

1. What are the attitudes of midwives in the early identification and management of NNJ?
2. What are the subjective norms influencing midwives in the early identification and management of NNJ?
3. What are the behavioral intentions of midwives in the early identification and management of NNJ?
4. What are the behaviors of midwives in the early identification and management of NNJ?

1.5. Significance of Study

The study's conclusions and suggestions would be helpful to health professionals as it will function as a source of knowledge for midwives, health practitioners, even communities at large. It will again be for use by the Pediatric Society of Ghana (PSG) as it is an existing problem in the country for midwives. It will enrich literature on identification of neonatal jaundice. Moreover, it will serve as a reference for health practitioners interested in the topic under study. It will also fill the gap in research concerning early identification of the neonatal jaundice. More so this study seeks to contribute to the development of evidence-based strategies for improving early identification and management of NNJ especially in Ghana.

1.6 Operational Definition

Early identification: Is the process of recognizing and detecting diseases, conditions, or needs at an early stage, ideally before they become severe or cause significant complications.

Experience: The accumulated knowledge, skills and practical application of midwifery practices gained through time and professional development.

Management: The systematic, multidisciplinary approach, that aims to optimize patient care through prevention and proactive interventions based on evidence-based guidelines.

Midwives: Is a person who has successfully completed a midwifery education program that is duly recognized in the country where it is located, who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and who demonstrates competence in the practice of midwifery.

Neonatal jaundice: According to the WHO's perspective is a condition resulting from elevated levels of total serum bilirubin, manifesting clinically as a yellowish discoloration of the skin, sclera and mucous membranes in newborn.

Organization of the Study.

Chapter One: Pertinent information on the problem, the importance of the study and what the study seeks to achieve are stated and explained clearly and an operational definition of some key terms.

Chapter Two: Literature supporting the topic under enquiry is highlighted and a justification of model used in the study were provided.

Chapter Three: Entails the research methods that were employed for the study in order to evaluate the set objectives. Design, setting, data collection and management, setting inclusion and exclusion criteria, the philosophical underpinning is the content of this chapter.

Chapter Four: This chapter presents and clarifies the findings of the study. The findings demonstrate the outcome of the in-depth interview and focus group discussion had with midwives on their experiences of the early identification of NNJ and management.

Chapter Five: The study's results are discussed in this chapter. Participants' demographics, midwives' attitudes, subjective norms, intentions to identify and manage NNJ early and promptly, and midwives' behaviors regarding early NNJ identification and management are all covered in the discussion.

Chapter Six: This chapter provides a summary, limitations, gaps and implications of the study. Also, the conclusion and recommendations are presented in this chapter.

CHAPTER TWO

LITERATURE REVIEW

In this chapter, relevant research supporting the topic under inquiry is highlighted. It offers a clear-cut and intelligible defense of the study's argument. The analysis also highlights the data that is now available in the nursing field that is focused on early identification and management of jaundice in the neonate. Literature on the midwives' attitude, intentional behavior, subjective norms and behavior that will help them recognize subtle cues for early NNJ identification was reviewed.

2.0. Justification of Choice of Theoretical Framework.

There are numerous health behavior change models available; while they have certain similarities, they vary in the kinds of health behaviors they apply, the constructs they center on, and the usefulness of the models in the present study. Rosenstock, (1974) Health Belief Model (HBM), Abraham, Norman, & Conners, (2000) Protection Motivation Model (PMM), the Reason of Action Approach, The Theory of Planned Behavior (Ajzen, 1991) and the Theory of Reasoned Action (Ajzen & Fishbein, 1975) are all theories of development in psychology that have greatly emphasized and have been applied to models of health behavior change.

The first model the Health Belief Model was developed by Irwin M. Rosenstock a social psychologist in the United State Public Health Service in the 1950s (Rosenstock, 1974). The model was formulated to explain and predict health-related behaviors and to assess the inability of individuals to implement disease preventative measures or screening tests for early disease detection.

The model has six constructs namely perceived susceptibility, perceived severity, perceived benefit, perceived barriers, modifying variables, cues to action and self-efficacy. Although the Health Belief Model holds the same assumption as the theory of reasoned action, it fails to account for the attitude, beliefs and the significant others that impact a person's health decision. It explains preventative health behaviors and takes into consideration that a person holds a drive to prevent illness and they will necessarily take action to avoid sickness. The drive to prevent the physiology of the Red Blood Cell breakdown is not with the neonate or the midwives. Since even healthy term babies have higher bilirubin loads because of their larger red blood cells (RBCs) and shorter RBC lifespans (Ansong-Assoku et al., 2024) it mean even healthy term babies can develop jaundice.

The second model considered was the Protection Motivation Model (PMM) (Abraham, Norman, & Conners, (2000), this model focuses on precautionary behaviors to Health behavior change. Abraham, Norman and Conner are all social psychologists and their work has a focus on various health-related behaviors and the model explored factors like self-efficacy, attitudes and social influence in shaping behaviors. It has four components the threat appraisal, coping appraisal, reward appraisal and response cost appraisal. It evaluates specifically the idea that a person will respond to a threat and develop a coping response. Neonates and midwives cannot develop a coping response to the threat of Red Blood Cells break down and the immature liver that cannot conjugate the bilirubin for this reason although the Protective Motivation Model is a Behavior Change Model, it is not applicable for the said study although, PMM was used in Meta-Analysis on application of Protection Motivation Theory in preventive behaviors against COVID-19 (Rastgar, 2020).

The Reasoned Action Approach (RAA) (Fishbein & Ajzen, 2010), Theory of Planned behavior (TPB) (Ajzen, 1991) and Theory of Reasoned Action (Ajzen & Fishbein, 1975) all these theories have Ajzen as an author. The Theory of Planned Behavior is an extension of the Theory of Reasoned Action (TRA) it has these constructs attitude, subjective norms and perceived Behavioral control. It adds perceived behavioral control and a predictor of behavior. Reasoned Action Approach is a more recent and comprehensive framework that incorporates elements of TRA and TPB as well as another psychological factor. The Theory of Reasoned Action proposes that behavior is a function of behavioral intention which is influenced by attitudes and subjective norms. RAA also has attitudes, perceived norms, perceived behavioral control and intentions, these constructs are similar to those in TPB, but the RAA again includes additional variables that can influence behavior such as behavioral willingness, reasoned action and automatic motivation. A study done in the United Kingdom that explored associations between demographics, beliefs of people, and compliance with behaviors to prevent the transmission of the SARS-CoV-2 virus that causes COVID-19 used the RAA (Norman et al., 2020).

Exploring all the above frameworks on behavior change HBM, PMM, the Theory of reasoned action (Ajzen & Fishbein, 1975)was selected. And again, comparing and analyzing the TPB, RAA and TRA After exploring these models too, the Theory of Reasoned Action again was chosen above TPB and RAA because it uses the fewest assumptions and variables necessary, avoids redundancy and complexity and it is equally efficient and elegant in its explanation or prediction, more focused on attitude. The researcher chose the behavioral, social sciences and psychological theoretical framework, the Theory of reasoned action.

2.1. Theoretical Framework: Theory of Reasoned Action.

The theory of reasoned action Ajzen & Fishbein, (1975), is a mathematical model that allows scientists to forecast behavioral intentions as a function of attitudes and subjective norms. The theory of reasoned action was first proposed by psychologists Martin Fishbein and Icek Ajzen as an improvement of the information integration theory, another model of human behavior. This is classified as part of the effective models in predicting human behavior and globally been used to measure, estimate and explain human behavior in many spheres of life. Studies that used this theory included; An intentional study to perception and intentions (Burke et al., 2021), Conspiracism and government distrust predict, COVID-19 vaccine refusal (Zilinsky & Theocharis, 2025).

The four most important components of the theory of reasoned action are attitudes, subjective norms, intentions and behavior (figure 2.1).

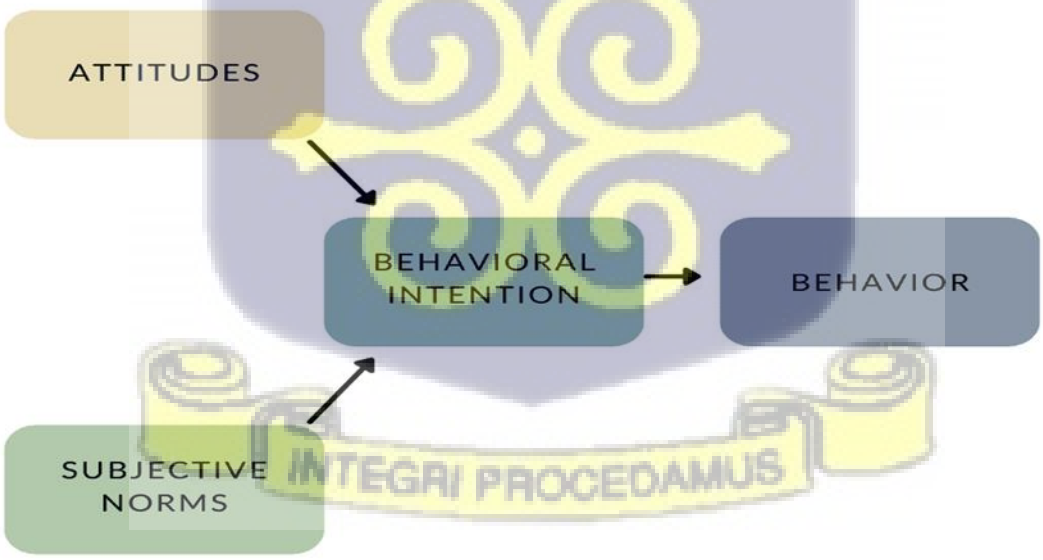


Figure 2.1: Theory of Reason Action

In this study, it explained midwives' behavior in early identification and management of neonatal jaundice. The theory emphasizes and presume that the important marker and best predictor of a person's behavior is the intention to perform the behavior in any given situation. Ajzen & Fishbein, (1975) however, from the framework this intention is in turn a function of the attitude and the subjective norms towards the behavior.

2.2. Meaning of the Constructs in the Theory of Reasoned Action

2.21. Attitude

Attitudes concern whether or not someone thinks that outcome is favorable or unfavorable, Attitude is a disposition to respond favorably or unfavorably towards some psychological object (Ajzen & Fishbein, 1975). Attitudes are formed when someone thinks about the outcome of a behavior and then they evaluate that outcome.

2.22. Subjective Norms

According to recent studies, subjective norms refer to the personal perception of social pressures imposed to adopt a specific behavior (Bosnjak et al., 2020) . They are the perceived social pressure to engage in or refrain from engaging in a specific action. Accordingly, a person's concept and choice to engage in a specific conduct are motivated and enforced by their awareness of the possible consequences and/or the actions that are expected by their family, friends, and that these significant others may approve of the action.

2.23. Behavioral Intentions

According to the notion, intention is the mental image of a person's willingness to carry out an action. The willingness to carry out an activity is known as behavioral intention. This

characterizes the likelihood that someone will act in a particular way (Conner & Norman, 2022). The way someone plans to act in response to their attitudes and beliefs is known as their intention, however a different level of influence on intention is exerted by attitude and subjective norms as it varies greatly from persons to persons in performing a behavior at different times. A hierarchy for the theory of reasoned action was put forth by Fishbein and Ajzen. They held that intention, which in turn influences conduct to some degree, is influenced by attitude and subjective norms. Behavioral scientists frequently treat each of these elements as a component of an equation meant to forecast human behavior. As a result, they are all connected elements that eventually influence behavior (Ajzen, 2020).

2.24. Behavior

According to Ajzen and Fishbein, (1975), behavior is "an individual's overt action or reaction to a particular situation, including both verbal and non-verbal responses". It is seen as the result of intentions, attitude and subjective norms after a deliberate and rational process of weighing the pros and cons of performing a behavior.

2.3. Applicability of the construct of the Theory of Reasoned Action to the research.

The Theory of Reasoned Action (Ajzen & Fishbein, 1975) suggests that midwives' behavior in identifying and managing neonatal jaundice is largely influenced by three key constructs: attitude, subjective norms, and behavioral intention. Specifically, behavioral intention serves as a crucial indicator of midwives' actual behavior. Therefore, their experiences in the early identification and management of NNJ are dependent on and are influenced by these constructs in the theory that shaped this study. Attitudes according to Ajzen and Fishbein are formed when an individual considers how favorable or unfavorable the outcome of his/her action

is. And for attitude that considers the outcome that is favorable, it will lead to a positive behavioral intention (Masek et al., 2022). Therefore, the attitude of midwives in the early identification and management of NNJ is greatly impacted by the beliefs and the perceived outcome of identifying and managing NNJ promptly.

Therefore, if midwives comprehend the outcome and consequences of the neurotoxicity caused by late identification and management of NNJ favorable and positive attitude will be formed in the early identification and management of NNJ. A 2023 commentary on neonatal jaundice management highlights the importance of improving clinical knowledge among nurses and midwives to enhance attitudes and practices. According to (Donkor et al., 2023) good knowledge and attitudes are positively associated with practices toward neonatal jaundice management.

Subjective norms have to do with the colleagues of the midwives, their supervisors, mothers and fathers of the babies they care for, available protocols. They are the perceived social pressure to engage in or refrain from engaging in a specific action. A behavior will be performed when an individual is influenced by their important others (Ajzen, 1991). Applying to the study, midwives will be motivated by their colleague, superiors, ward protocols and parents to identify and manage neonatal jaundice early. This will help in preventing the neurotoxicity that will be caused by bilirubin build up in the brain stems of the neonate that will occur due to late identification and management of neonatal jaundice. On the other hand, if midwives are motivated negatively by their significant others, then it will influence negatively the identification and management of NNJ early.

Behavioral intention from the theory of Reason Action, is the readiness to perform an action, and is impacted by both attitude and subjective norms. Seneadza et al., (2022) highlighted the importance of healthcare workers' knowledge and attitudes in managing NNJ effectively.

These studies support the idea that midwives' intentions to identify and manage NNJ early or late are influenced by their beliefs, attitudes, and perceived expectations of others. Intention is how a persons' mind is prepared and ready to perform a particular behavior. Behavioral intention has been shown as an important predictor of motivation and behavior performance (Maalaoui et al., 2022).

Behavior, of the midwife in the early identification and management of NNJ therefore would be the measurable outcome or action that the midwife will exhibit in the early identification and management of neonatal jaundice after combining all the three construct to perform an action. The application of the Theory of Reasoned Action in this study will provide insight to make a scrutiny in midwives' experience in the early identification and management of NNJ.

2.4. Review of Related Literature

Literature on midwives' attitudes and behaviors towards NNJ was reviewed mostly using the constructs in the Theory of Reasoned Action as a guide and a framework to structure the study in understanding midwives' experiences in the early identification and management of neonatal jaundice. The sources of literature relevant to the study include databases such as Cochrane, Scopus, PubMed, Science direct, Cumulative Index of Nursing and Allied Health Literature (CINAHL). The review was done by querying the above databases using MeSH headings such as: "Midwives attitude", "Neonatal jaundice", "Newborn Jaundice", "Management of neonatal jaundice", "Neonatal jaundice treatment", "Practices towards neonatal jaundice". Subsequent search was focused on these keywords: Attitude, Subjective Norms, Intentions, Behaviors, Newborn care. The review was mainly focused on the theoretical

framework and studies that have been done using the framework. The scope of literature review was based on literature that have been published from 2019 to 2025.

2.5. Attitude of midwives in early identification and management of NNJ.

A person's attitude is influenced by several factors' belief, experiences, knowledge the midwives' knowledge on NNJ empowers them. The above factors, enhance their critical thinking skills for midwives to evaluate information more effectively, leading to a more informed and nuanced attitude (Alves et al., 2023). Attitude is formed greatly by once information and knowledge and knowledge is a basic aspect of all health care institutions which is vital in the care for the vulnerable and non-verbal neonate. Majority of studies have been conducted to assess nurses and midwives' knowledge in the care of the neonate. Studies to assess midwives awareness, attitude and practices on the immediate care of the newborn by midwives found gap between knowledge and practices towards immediate care of the newborn (Riaz et al., 2021). This was also the case with a study in Ethiopia on newborn care by midwives which also concluded that regardless 85.7% of the midwives received in service course, they had poor knowledge towards the newborn care. Again, study done in Ghana found midwives had lowest score on newborn resuscitation and umbilical cord care (Adams et al., 2023).

Similarly, when it comes to midwives knowledge on neonatal jaundice, a study in Ghana showed there was a lack of awareness when it comes to NNJ and G6PD and therefore makes it necessary to address the lack of awareness of the connection between NNJ and regular prenatal screening tests, particularly blood group type and G6PD status, Seneadza et al., (2022) and this low level of knowledge and the risk factors for NNJ impact the midwives' attitude towards the condition. A study in Ghana found that health care givers had poor knowledge towards neonatal jaundice. However, most of the care givers could tell the place to identify jaundice and also

define jaundice in the neonate. For the majority of the care givers they exhibited poor attitude towards NNJ (Salia et al., 2021)

Attitude varies from person to person and acts as a guide for an individual and also defines a person's identity. The neonate cannot define their identity, process information and guide actions and consequences and is not aware of their health problem so the attitude of the care giver being positive or negative is a vital determinant of their lives. Recognizing the physiology of the illness, as fetal hemoglobin breaks down and the immature hepatic metabolic pathway is unable to sufficiently eliminate bilirubin causing physiological jaundice. For this reason, the midwives must be empowered and equipped on the possibility that every infant may develop NNJ (Gupta, 2023). Early detection and intervention, according to the Early Intervention Foundation, can improve children's home and family life, shield children from danger, reduce the need to refer children to child protection services, and assist children in developing the strengths and abilities they'll need to be prepared for adulthood (Early Intervention Foundation, 2021).

A study by Wolski et al., (2024), in Ghana on community health workers knowledge and perceptions of NNJ revealed that community health workers held misconceptions about the causes of neonatal jaundice, including beliefs that it could be caused by mosquito bites, spiritual factors like the "evil eye" or witchcraft, and germs in breastmilk. Notwithstanding the above another study in Ghana found majority of healthcare workers had good attitude towards neonatal jaundice management (Donkor et al., 2023).

Attitude can refer to a person' idea, however studies found bad results, delayed medical care, and bad clinical judgments, such as whether to treat or not to treat, are all caused by a lack of understanding and a poor perception of NNJ (Ayete-Nyampong & Udofia, 2020; Demis et al., 2021). Numerous studies have revealed disparities in the knowledge and attitudes of caregivers

regarding newborn jaundice (Alhassan et al., 2022; Huang et al., 2022; Seneadza et al., 2022) in low and middle-income countries, Ghana is not exempted. Demis et al., (2021), in their study found, 186 (48.9%) had a favorable attitude whereas 194 (51.1%) had an unfavorable attitude towards NNJ. More than half (51.1%) had unfavorable attitude towards NNJ and attitude in the world of neonates whether mothers or midwives impacts the neonate negatively or positively (Demis et al., 2021). Attitudes of health professionals affect a mothers' intention, and health seeking behavior for their newborns, if satisfied there is a higher chance of reporting to the facility when a mother is not satisfied based on health providers attitude even when NNJ is identified other alternatives to managing it will be sought for.

Other research has documented the lack of awareness and attitudes among caregivers in low- and middle-income nations, such as Ghana, regarding newborn jaundice (Boateng et al., 2024; Salia et al., 2021; Seneadza et al., 2022).

2.6. Subjective norms of midwives in the early identification and management of NNJ

According to literature, norms strengthen conformity and create a connection between people's normative views and actions (Badea et al., 2021). It also refers to how prominent others are perceived to behave (Ahn, & Kahlor, 2020). Ideas also have an impact on subjective norms; attitudes are shaped by ideas about the outcomes of actions and how those outcomes are evaluated (Ajzen & Fishbein, 1975). Subjective norms have to do with an individual's perception of what others think they should behave, their culture, religion, families shape these norms by defining acceptable beliefs, value, acceptable behavior. Within a society. For the child to be identified and feel belong the child's family, community, family's spirituality is crucial. Respecting a child's individuality and their uniqueness based on their culture, religion, and

values are essential. Midwives are better able to identify potential health hazards and take necessary action when they follow the process of identifying and interpreting their values, culture, and identity within a community as they align them to their babies' health.

According to Kain, (2021), the medical staff needs to treat parents and infants from diverse religious and cultural backgrounds with the highest dignity and respect. When necessary, NICU nurses employ translators, overcome language hurdles, and modify their communication methods to account for cultural differences. They pay attention to nonverbal signs, practice active listening, and choose language and terminology that is sensitive to cultural differences (Kynoe et al., 2020). Numerous patient safety events, including missed screenings, unexpected negative medication responses, harmful treatment interactions from concurrent use of traditional medicines, healthcare-associated infections, unfavorable birth outcomes, inappropriate care transitions, and poor patient adherence to follow-up visits and provider recommendations, can result from failing to address cultural, linguistic, and health literacy.

Identifying and addressing culturally unsafe practices is vital in the neonatal population by the (American Medical Associationof American Medical Colleges, 2021). If what their religion or culture expects of them to be done for their children are undermine, parents will have a negative mindset of not visiting that facility again or may develop a poor health seeking behavior. Better patient connections and care are the outcomes of culturally appropriate care, which also incorporates cultural safety care, aims to reduce culturally dangerous behaviors, and is delivered with humility. To support clinicians and increase their awareness and comprehension of the concept when providing care for patients and families from varied cultural backgrounds, it is crucial to clarify and refine the idea of culturally sensitive communication (Charles & Khoo, 2023).

However, a deeper comprehension of the social dimensions of illness is seen to be the key to overcoming a variety of communication obstacles as well as an introspection of one's own communication strengths and shortcomings while interacting with various groups (Nabiha et al., 2023). Moreso, it was thought to be advantageous for people to be free to discuss their spiritual ideas and uncertainties while ill without fear of condemnation. It should be possible for medical personnel to identify patients who require assistance in locating appropriate spiritual care services, as spirituality is an aspect of being a human (Hvidt et al., 2020). Seneadza et al.'s (2022) study on assessing maternal knowledge, attitude and perception, highlighted mothers included the use of herbal medicines, being advised to expose the baby to sunlight.

2.7. Behavioral intentions of midwives in the early Identification and management of NNJ

Behavioral intention is the plan to perform a specific behavior and is influenced by attitude and subjective norms. Additionally, intention has been shown as a crucial predictor of motivation and behavior performance (Kelly et al., 1991; Rogers W., 1983). A positive outlook raises the likelihood of behavioral intention claim (Maalaoui et al., 2022). Behavioral Intentions are self-instruction to carry out a specific action and a state of cognitive or mental preparedness. It explains intentional actions meant to influence healthcare-seeking behavior, in a country like Ghana a parents' intention to seek health care is greatly influenced by the experiences of the elderly who mostly care for the newborn and this equally affects the intentions of the midwives in caring for the newborn. A study by Adama et al., (2021) concluded that respect for the elderly, use of herbal medicine, and communal living are time- honored practices when make use of, can help the care of the babies in the community. Being viewed as a time-honored practice will give midwives an intention about the elderly and their practices for the neonate in the community. Within the cultural structure, healthcare expert should negotiate to assist parents and the

community to provide safe care culturally for preterm infants in their community (Adama et al., 2021).

The elderly impact the intentions of parents and healthcare givers behavior towards the neonate care a cliché in the Ashanti Twi dialect mostly said to primary care givers who seeks change is “Wo koraa saa ara na yeye wo” literally meaning “even you went through the same care”. Furthermore, people's spiritual beliefs lead their passions and minds toward a therapeutic modality, a study by Hvidt et al., (2020) found that participants lives were deeply ingrained with spiritual ideas, which were evident in their self-definition and the sources of their comfort and optimism. Therefore, being deeply ingrained with spiritual beliefs makes it a possible determinant of a person’s behavior and so the intention to opt for and seek a treatment modality whether positive or negative is driven by a person’s spirituality, culture and even religion. The intention to perform that behavior as predict behavior often leads to actual behavior and influence choices and actions. By identifying intentions, the health care provider can develop strategies to promote behavior change (Koulouvari et al., 2025). And it is reasonable to assume that families that get disrespectful treatment during or after childbirth will steer clear of further postnatal care.

For the midwife, intentions to perform a task are sometimes based on their religion, culture, the hospital’s policy, staffing, time, personal attitude, maternal-centric care of the person involved (Parkinson, 2025). Nursing professionals may find it challenging to interact with parents in an effective manner, to establish trust, and to speak with empathy if they lack the necessary information, abilities, or attitudes toward forming relationships (Cho & Oh, 2023). Per the above study if the midwife’s attitude to forming a better relationship with parents’ is questioned and also if midwives lack the necessary information on NNJ, then there will be no

such intention to give mother discharge instructions on the need and how to assess for NNJ to parents. In intensive care units, correlations have already been shown between improved working conditions, sufficient nurse staffing, and decreased rates of incomplete nursing care (Chiappinotto et al., 2022; Vincelette et al., 2023). Patient-to-nurse ratios, medical outcomes, and the quality of patient care can all be significantly impacted by the nursing shortage (Batiha, 2025; Elmdni, 2025; Tenorio et al., 2021). Nonetheless if midwives collaborate mutually, they can work to prevent and mitigate certain problems that may arise. As a result, parents can simply assess and provide for their child's care needs at home (Bohlin, & Lilliesköld, 2020).

Early intervention and continuous monitoring of the newborn are crucial because bilirubin buildup may lead to acute bilirubin encephalopathy and kernicterus (Ansong-Assoku et al., 2024). Despite the fact that mothers, families, and babies have higher expectations while their babies are in the care of these caregivers, these care providers also have caregiving experience and deal with a variety of circumstances that affect their intentions towards neonatal care. A study found that, limited personnel remained one of the main weaknesses in the Sub-Sharan Africa health system (Maphumulo & Bhengu, 2019; Spencer et al., 2023), therefore the intention to manage the neonate with jaundice promptly and well may be impacted by the available equipment and the number of staff to the neonates being managed at the neonatal intensive care unit.

2.8. Behavior of midwives in the early identification and management of NNJ

A health behavior refers to the actions of a person that enhance or hurt their quality of life (DiMatteo et al., 2025). Practices refer to the behaviors or actions that someone perform in a specific context. According to Wolski et al., (2024) study, some trained CHWs had insufficient

knowledge of NNJ treatment, according to CHWs' perceptions some mentioned antibiotic and some unknown medication for treating NNJ, some equally held on to prevailing beliefs and practices as using extract from unripe pawpaw water, herbal and home medications. This describes the reason why NNJ may be identified late and the diagnosis are missed at the early stage. Once the majority may not be able to identify the risk factors causing it and do not even know the management for NNJ, then the likelihood of suggesting the appropriate behavior will equally be missed. Even so, a midwives' awareness of NNJ may not necessarily translate to positive behavior and practices. Health workers perception of prevailing beliefs coupled with mothers prevailing beliefs on the understanding of NNJ and its management is a marker in babies with NNJ reporting late as mothers will have to exhaust the treatments, they know before they will report to the hospital. Several studies on NNJ mentioned some traditional beliefs and practices mother do. In Salia et al's., (2021) study, about 140(69.3%) out of the 202 of caregivers as a means of managing jaundice stated that they will put breast milk in the baby's eyes, and 158(78.2%) will not feed with first breastmilk as a way of preventing jaundice, 143(70.8%) in preventing jaundice will keep their babies away from light, and 27.2% will cut the areas between the baby's eyebrow to help prevent jaundice.

Moreso, a study by Al-Zamili & Saadoon, (2020) in Iran that used 101 mothers found that 85(84.4%) will use herbs in managing NNJ. The decision to report for prompt treatment when a neonate develops jaundice is greatly affected by who picks the cue and the interpretation and treatment the person deems important. Although personal health decisions are extremely important, not everyone is able to make them on their own, as is the case with neonates. According to NNJ guidelines visual assessment of detecting and identifying NNJ deviate from the recommendation in most of the clinical practice guidelines which advise bilirubin

measurement by TCB or TSB in all newborns before discharge after birth and also in newborns older than 24hours with suspected jaundice (Kemper et al., 2022).

At the various maternity units, in the context of this study, healthy term babies are discharged before and within 24 hours after delivery whether or not the newborn had risk factors for possible neonatal jaundice. When healthy newborns are at home on the fifth- or seventh-day following delivery, this is usually when neonatal jaundice peaks (Slaughter et al., 2022). Behavior encompasses a range of actions and includes verbal and nonverbal communication. According to Kukora and Laventhal, (2023) communication issues have a detrimental effect on parents' experiences in the neonatal intensive care unit (NICU) and have major long-term repercussions for them, such as regret, grief, and difficulty in making decisions. Parents that have regret, grief and difficult in making decision based on past experience with the healthcare provider may resort to behaviors that may affect their neonates negatively. In addition, moral distress and fatigue among caregivers can be exacerbated by communication problems, especially when it comes to goals of care, and differences in values. In the complicated environment of the Neonatal Intensive Care Unit (NICU), multiple requirements must be satisfied at once. For families, infants, and health care personnel (HCP) in NICUs, stress is an inevitable component of daily existence Lee-Winn et al., (2023). NNJ being a common condition is undoubtedly a contributing factor to the competing demand and the inherent stress for healthcare professionals.

Current research often emphasized on respectful maternity care although the newborn is inclusive but are less developed for newborns than for women. Respectful maternity care (RMC) for women's autonomy and rights during the whole delivery process and urges health systems to be set up and run in a way that puts women's human rights at the center of their treatment

(Bohren et al., 2020). Which may affect the behaviors of midwives towards the newborn care. Literature suggests that midwives and obstetricians may have maternal focus, prioritizing the mothers' health and well-being over the baby's and for some midwives the ideal newborn assessment after delivery may be over looked. The quality of care throughout the postpartum and neonatal periods is crucial yet frequently overlooked (Mespreuve et al., 2024). Babies of C/S mothers are sometimes sent to the NICU from postnatal being severely jaundiced after 24 hours, Midwives at the postnatal wards can add monitoring of babies who are not on admission on the ward as they are nursing their mothers to aid in detecting NNJ early as delay in detecting can lead to emotional distress, lack of trust, hypervigilance and non-adherent.

A behavior change from maternal-centric to a mother- baby focus is the way to go, WHO has introduced guidelines to improve maternal and newborn health by focusing on high-quality care that addresses the needs of women, newborns, and families, promoting their overall well-being and thriving in the short and long term (Wojcieszek et al., 2023).

2.9. Summary of Literature Review

Literature search was based on the constructs in the Theory of reasoned action which is a health behavior change model by Ajzen & Fishbein, (1975), the model describes how attitude and subjective norms influence behavioral intention and the resultant behavior. Themes like poor knowledge and unfavorable attitude were across the studies for attitude; for subjective norms; cultural beliefs and misinformation from healthcare workers and significant others; The behavioral intention; for the midwife is affected by staffing, time and for parents' disrespectful care during delivery and long-honored practices and for behavior, for the midwife themes like maternal-centric care, stressed environment and wrong practices. There were some

inconsistencies concerning attitude while some studies claimed healthcare workers had good attitude towards their patients' others found health workers had poor attitude. Limitations to the literature were that for subjective norms and behavioral intentions the literatures reviewed were not specifically on the topic being studied. Findings from the literature used supported the theory of reasoned action as the intention of parents were strongly determined by cultural beliefs and information from significant others. Parents past experiences based on disrespectful care, maternal centric care and communication informed their intent to attending postnatal clinics. The summary of the reviewed literature is highly connected to the research objective to ascertain midwives' attitude, subjective norms behavioral intention and behavior and the TRA informs the study's investigation.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter concentrated on the specifics of the research methods employed for this study to address the research objectives. The chapter outlines the research design, the research setting, and target population. It also explains the data gathering tool, data gathering procedure, data management, inclusion and exclusion criteria as well as how the data was analyzed.

3.0. Philosophical Underpinnings of the Study

This study was underpinned by the constructivism approach as the researcher is part of her world and her experiences as a midwife and a NICU nurse cannot be separated from her world. Meaning was co-developed through the shared experiences and ideas of the participants and the researcher. This philosophical orientation allows for the in-depth description of participants and researchers shared experiences in the meaning making process for better understanding from multiple perspective. **Axiology** has to do with the role of morality, values and ethics in social research (Andrade et al., 2020). **Reality** is viewed and constructed through social interactions, subjective individual experiences and collective experiences, beliefs and values (Glavå, 2025). According to constructivism, all knowledge is constructed from human experience, and reality is perceived to be subjective (Prakash Chand, 2023). The nature of reality and its attributes are central to the **ontological debate** (Sharma & Martini, 2025). This study was conducted with the ontological position to explain the early identification of neonatal jaundice from midwives' experiences. The constructivist **epistemological approach** views knowledge to be constructed. Participants are viewed as experts in their own experiences, social

beings and co-researchers. From this perspective, data collection for the study was through face-to-face in-depth interviews with the participants. The findings of the study were supported with verbatim quotes from the participants, which gave them a role in generating knowledge.

3.1. Research Design

Charli et al.'s (2022) study stated that research design is a plan that details the who, where, and the when of data collection and analysis. This study employed an exploratory descriptive design within qualitative research to explore midwives' experiences in early identification and management of neonatal jaundice, guided by the constructs of the Theory of Reasoned Action (Ajzen & Fishbein, 1975). A non-probability sampling method specifically purposive sampling was used.

3.2. Study Settings

The Ashanti Region's far northwest is home to the municipality of Offinso. With a total land size of 585.7 square kilometers, it makes up 2.4% of the Ashanti Region. The municipality shares borders with Offinso North to the north, Ejura-Sekyedumase Municipality to the east, Sekyere South Municipality to the southeast, and Atwima Nwabiagya and Ahafo Ano South Municipalities to the west (Ghana Statistical Service, 2021).The municipality has 137,272 people living in it, with 66,569 men and 70,703 women, and a population density of 234 people per square kilometer, according to Ghana's 2021 Population and Housing Census. The Ashanti Region is divided nearly symmetrically by the main trunk road that is a part of the Trans-African Highway, which serves as the main entrance to the Ashanti Region from the Northern and Brong-Ahafo Regions. The Ashanti region's capital, Kumasi, is only about a half-hour's drive from the municipal capital. There are roughly thirty towns in the Offinso municipality.

The study was conducted at the Infant Jesus Unit which is the Neonatal Intensive Care Unit (NICU) and postnatal unit of the St. Patrick's Hospital a district hospital which is a Christian Health Association Ghana (CHAG) institution located at Maase in the Offinso Municipality of the Ashanti Region. St. Patrick's Hospital serves as the referral hospital for health centers in the Offinso Municipal Assembly. The obstetric unit has the Antenatal clinic, Antenatal ward, Labor ward, labor ward theatre, the obstetric emergency unit, the Gynecological ward, the postnatal ward and the Neonatal Intensive Care Unit. The NICU of the St Patrick's Hospital serves as the only referral intensive care unit for neonate in the Offinso Municipality and the unit was started in the year 2012 and has since been providing care for the fragile neonates and its tiniest patients with 101 average admissions per month the facility has an average 3,700 deliveries annually at its labor ward (St Patrick's Hospital, 2023).

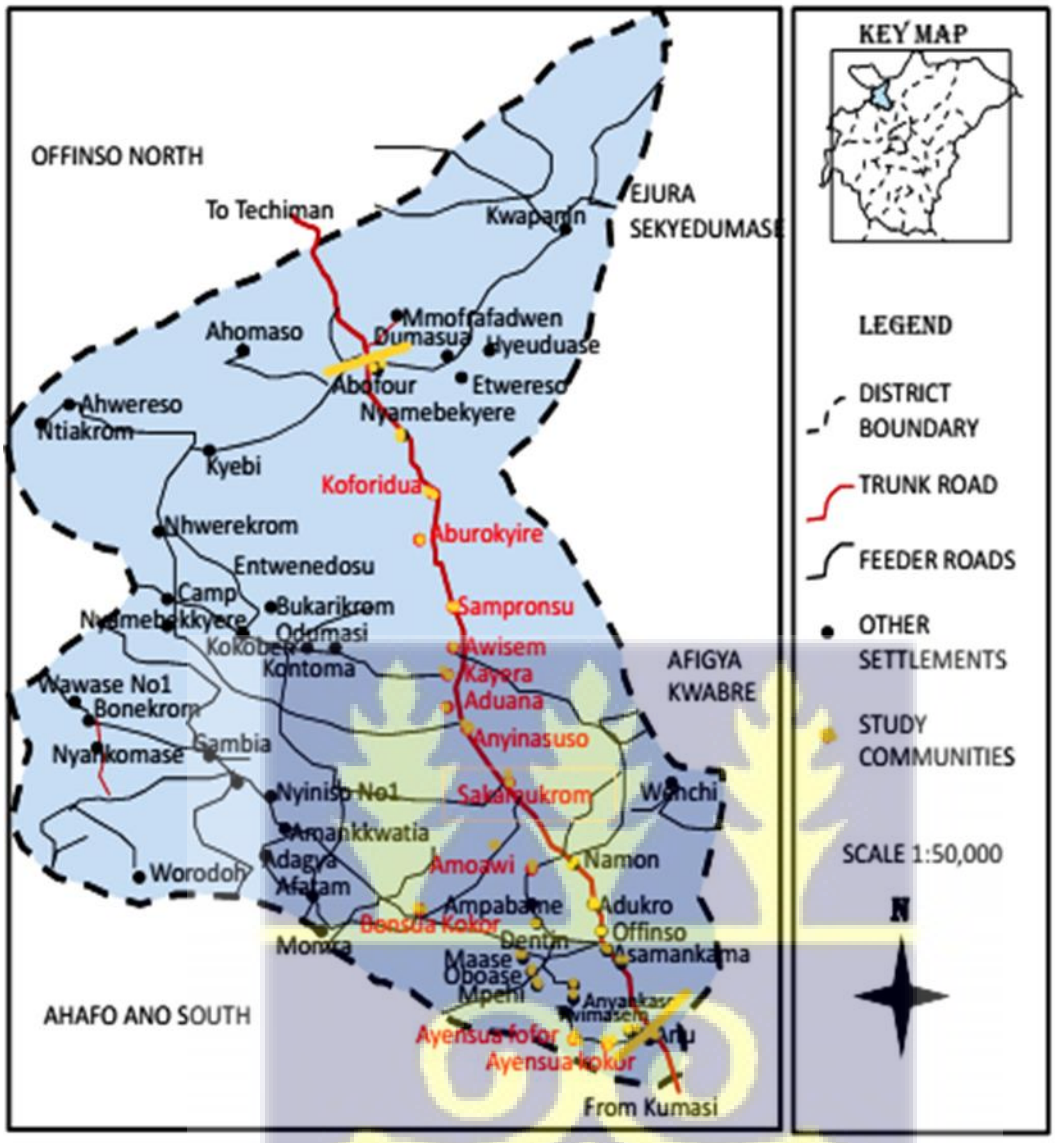


Figure 3.1: Map of Ghana showing the Offinso municipality. www.researchgate.net

3.3. Population

The study population recruited midwives caring for babies at the NICU and postnatal ward of St. Patrick's Hospital in the Ashanti region of Ghana. There are 17 midwives in the study population.

Inclusion criteria:

1. Midwives who have worked at the NICU and PNW for at least 3months or more at the St Patrick's hospital.
2. Midwives at the NICU and PNW who have cared for newborns and will be available at the time of the study.
3. Midwives with prior experience (≥ 1 year) in the NICU or PNW, currently working in any unit within the maternity unit.

Exclusion criteria:

1. Student midwives that were be available at the NICU and PNW at the time of the study
2. Rotational midwives at the NICU and PNW and were available at the time of the study
3. Midwives working at the Offinso municipality but not working at the St Patrick hospital.
4. Midwives at the NICU and/or PNW of the St Patrick's hospital that were be available but cannot provide informed consent due to sickness.

3.4. Sampling and Sampling Procedure

The study used a purposive sampling technique to select midwives caring for newborns in the Postnatal Ward (PNW) and Neonatal Intensive Care Unit (NICU) at St. Patrick's Hospital. Potential participants were identified at the selected facility and informed about the study. Participants were provided with information about the study, and informed consent was obtained through implicit verbal agreement. Seventeen midwives (9 from NICU and 8 from PNW) were selected for the study, determined by data saturation.

Data were collected through individual in-depth interview, seven (7) initial interviews were initially analyzed, followed by a Focus Group Discussion (FGD), 6 participants (3 from PNW

and 3 from NICU) instead of the eight (8) participants participated in a focus group discussion to confirm or challenge the perspectives gathered from the individual interviews. Purposive sampling was used to target midwives with relevant experience in caring for newborns in the specified units. The sample size was determined by the principle of saturation, which was reached at the 17th interview.

3.5. Data Collection Tool

The tool used for data collection was a semi-structured interview guide that was developed based on the objectives of the study (Appendix. II) for focus group discussion and (Appendix III) for individua in-depth interviews. The objectives were derived from the constructs of the model employed for this study. The guide contained open-ended questions which helped the researcher to collect in-depth information about the phenomena. Individual interviews were conducted at different times depending on the participants' schedule and convenience. It consisted of questions relating to the respondent's cadre, years of experience, rank of nurses and the department. A digital recorder was used for the recording of the interview. After the 17th participant, it was observed that, no new information or theme emerged from additional data collected except similar responses and repetitive concepts. Reviewing the data, evaluating the depth of information and considering the research objectives, data collection was stopped due to saturation.

3.6. Pretesting the Interview Guide

A pretest of the data collection instrument was done with three participants from the Offinso Heath Centre. The recordings for the three interviews were transcribed verbatim, coded

and analyzed using thematic analysis. This helped in reframing inconsistencies and ambiguous questions.

3.7. Data analysis

Data collected was analyzed concurrently and continued throughout the study process as is the case in qualitative studies using the Braun and Clarke, (2022) steps in analyzing qualitative data. The researcher was actively involved in the transcription and analysis of the data and the six steps used explained as below: The audio recording in the Ghanaian language (Twi) was transcribed to text in English and was cross checked to confirm text was same as audio recordings. The researcher familiarized with the data by reading and re-reading. Data was coded by identifying initial codes and themes after several reads and re-reads. All selected codes were underlined and highlighted, subthemes were then searched for and so the codes were grouped into subthemes. Mapping of subthemes was done whereby the researcher used a different word sheet and the codes were collated into potential subthemes.

Thematic content analysis was done; the codes were reviewed and rearranged to fit themes and subthemes to know its applicability under the themes of the construct in the theoretical framework used for the study. Subthemes were analyzed based on the concept of the chosen model and reports were formed. The researcher ensured reflexivity by reflecting researchers own role in the research process, followed by member checking with participants to ensure accuracy and finally data were analyzed objectively by researcher setting aside personal assumptions.

3.8. Data management

Data collected from each participant was identified with a serial number to track for the individual interview and F indicating focus plus the first letter for each unit was used as serial numbers for ease rate of retrieval from each interview. During data entry, after completing analysis of each individual interview, it was indicated, and analysis was done concurrently in preventing duplicate analysis. The data was backed up to Microsoft One-drive online and an external drive at the end of each day.

3.9. Methodological Rigor

Rigor is about how a researcher convinced the audience that the findings of a study are deserving of attention to meet this standard Lincoln, and Guba, (1985) initially proposed the four criteria for evaluating qualitative research, however, Polit and Beck, (2020), provided a more comprehensive framework for evaluating the rigor of qualitative research studies and added a fifth strategy. The strategies are credibility, dependability, confirmability, transferability, and authenticity.

Credibility

Credibility pertains to the veracity of the data or the participant's perceptions, interpretation, and accurate portrayal of the information that the researcher collected from the participants. It evaluates if the results make sense and whether they accurately reflect the opinions of the participants. Credibility involves approaches that suggest that results are reliable, plausible, or accepted (Lincoln & Guba, 1985). It evaluates if the results make sense and whether they accurately reflect the opinions of the participants (Enworo, 2023). To ensure the credibility of the study, a healthy partnership was built with the participants. Every process in the study was

explained to help build trust in them and make them be at ease during the interview. Again, the researcher guaranteed that participants' recruitment met all the inclusion criteria. Enough time to engage the participants fully to uncover all the vital information required was ensured and adequate time was allocated to transcribe and analyze each interview before the next interview. The data collection was coded separately and compared to work out differences and validate that the position of the participants was well demonstrated. Also, the researcher kept a field note of the behavior and emotional responses of the participants as well as the researcher perceptions of some of the reactions of the participants. Knowledge was reviewed and retrieved and placed on the topic so that the conclusions represent exactly the stance of the participants. To determine the degree to which the instrument can cover all of the study's objectives, a pretest was also carried out.

Dependability

Data stability or constancy (reliability) throughout time and conditions is referred to as dependability. It is attained once a study's credibility has been thoroughly assessed. The researcher tracked and documented any decisions that might have affected the research findings in order to maintain an audit trail of the events and procedures and guarantee reliability. The data were coded again and compared to determine any variation in the coding. The researcher thoroughly explained the research design, methods, and data analysis for ease of replication (Tuval-Mashiach, 2021).

Confirmability

The degree to which a study's findings are consistent with another or supported by other researchers working in the same setting is known as confirmability. The research maintained a

reflective record (field note) of the events (participants' behavior and emotional reactions) that transpired throughout data collection in order to guarantee confirmability. In order to avoid skewing the data from the participants, the researcher evaluated and eliminated his thoughts, including motivations, prejudices, and viewpoints regarding the study (Zia UI Haq et al., 2023). In order to minimize or steer clear of asking leading questions, open-ended inquiries were also used. The researcher ensured that no needless incentives were used to entice volunteers. Lastly, thorough audit trails were preserved as proof that the study was indeed carried out.

Transferability

Transferability refers to how easily the results of a study conducted in one location may be used in another (Lincoln, & Guba, 1985) . In order for the study to be transferable, the researcher gave a thorough explanation of the design, including how the participants were recruited, data collection methods, analysis, and genuine explanations of other procedures or steps used in the study. This ensured that the study could be readily replicated by another individual in the same setting and with the same conditions. Once more, an audit record of all actions taken during the process was maintained, along with a thorough description of every step in the study.

Authenticity

The extent to which the researcher fairly and accurately portrays and illustrates the spectrum of reality or truth of the study participants is known as authenticity (Polit & Beck, 2020). To guarantee authenticity in hermeneutics phenomenology, the researcher used reflexivity by reflecting regularly on her own assumptions, experiences and biases, did member checking, peer debriefing, triangulation, transparent reporting and also use participant feedback to check

authenticity. The study's findings are presented by the researcher to reflect the participants' true positions and views.

3.11. Ethical consideration

This deals with the role of values, ethics and morality in social research (Barad, 2025) . Ethical clearance and approval were obtained for the study from the Christian Health Association of Ghana Institutional Review Board (CHAG-IRB). The anonymity, confidentiality of the participants was ensured and an informed consent was obtained.

Ethical approval was sought from the Christian Health Association of Ghana Research Department Institutional Review Board (CHAG-IRB) before the start of the data collection the ethical clearance (Appendix VI) ID was CHAG-IRB05042024. Also, permission was sought from the Hospital administrator by using an introductory letter obtained from the institution and the ethical clearance certificate obtained from CHAG-IRB. A copy of the approved ethical letter as well as a consent form explaining the rights of the participants were used to ensure that client consent to be part of the study willingly.

Participants were given a consent form that clearly stated the objectives, purpose of the study, possible benefit, risk, voluntary participation associated with the study. The participants for the individual in-depth interview, were assured of confidentiality and privacy by letting them know that no other person apart from the researcher and supervisors will have their data. They were informed that for privacy no third person will be allowed to be part of the interview apart from the participant and the researcher. Participants for both interviews and focus group discussion were assured of anonymity and the right to participate willingly and withdraw

anytime they wished to. For anonymity all participants were deidentified and given an identification number.

For the participants used for the focus group discussion, with the issue of confidentiality and privacy, they were informed and made to understand that confidentiality cannot be assured as other members in the group may get to know of whatever information that will be discussed and also there cannot be privacy as other participants will be present during the discussion. However, they may choose not to answer or leave the hall but cannot ask to stop the recordings as the discussion will be audiotaped. Every person's experience and viewpoint were valuable, and there were made to understand there were no right or incorrect solutions.

The potential participants that consented to be part of the study were given a consent form to complete Appendix I for those who had the individual in-depth interviews and Appendix II for the participants that engaged in the focus group discussion. It involved signing a consent form to attest to their informed consent and volition (Polit & Beck, 2020). The consent form that was filled and signed confirmed that participants were involved in the study based on their own free will without any form of coercion before the interviews were started. Participants received assurances that the data they share will only be used for research and will be kept in the researchers' possession for at least three years after the dissertation. The Participant data was only accessible by the researcher and her supervisors. The said study did not come with any risk and also did not invade on participants' privacy and moreover participants were made to understand that any publication from the study would not provide any cues to respondents' identity to the information.

CHAPTER FOUR

FINDINGS OF THE STUDY

The study's results are presented and explained in this chapter. The results have been divided into themes in accordance with the goals of the study and the theoretical framework's constructions, specifically the Theory of Reasoned Action by Ajzen & Fishbein (1975). The findings demonstrate the outcome of the in-depth interview and focus group discussion had with midwives on their experiences of the early identification of NNJ and management. The socio demographic characteristics of the participants were presented then the other findings.

4.0. Description of the study population

A total of 17 participants comprising of 9 midwives from the NICU and 8 from the PNW at the St Patrick Hospital Maase Offinso were interviewed instead of the proposed 18-20 participants that were estimated prior to the study. From the total participant 6 constituting 3 each from NICU and PNW had a focus group discussion for triangulation and validation to confirm or challenge the initial individual in-depth interviews. For the age of participants, the age that had the highest participant was 30 years old, two participants were 28 years old, and the remaining 11 participants had different ages. For participant rank, eight (8) participants were Senior Staff Midwives (SSM) and had the highest rank, five (5) of the participants were Staff Midwife (SM), three (3) were Midwifery Officers (MO) and only a participant was a Senior Midwifery Officer (SMO). For the unit, nine were from the NICU and eight were Postnatal ward midwives. Only a participant out of the 17 participants is a Muslim. Concerning participants marital status, eleven are married and the remaining six are single. All 17 participants have their

formal education up to the tertiary level, Diploma in Midwifery and BSc in Midwifery and were all Ghanaians. The tables below give a detail of participants demographic characteristics (Table 4.0 and Table 4.1).

Table 4.0: Participants' Socio-Demographic Data Focus Group

Participant	Age	Educational level	Rank	Unit	Years of Experience	Religion	Marital status
FP 1	30	Diploma in Midwifery	SSM	PNW	5	Christian	Married
FP 2	28	Diploma in Midwifery	SM	PNW	2	Christian	Single
FP 3	37	Diploma in Midwifery	SM	PNW	1	Christian	Married
FN 1	30	Diploma in Midwifery	SM	NICU	3	Christian	Single
FN 2	30	Diploma in Midwifery	SSM	NICU	5	Christian	Single
FN 3	28	Diploma in Midwifery	SSM	NICU	3	Christian	Married

FP- Focus group Postnatal Participant, FN- Focus group NICU Participant, SM- Staff Midwife, SSM- Senior Staff Midwife.

The participants who were part of the focus group discussion got their participant identification number by combining the first letter of focus group discussion thus "F", then the first letter of the unit the participant belong "P" or "N" and lastly number from 1 to three. Thus, those from the Postnatal (PNW) had FP1 to FP3 and participants from NICU that were part of

the discussion had identification numbers as FN1 to FN3. The in-depth interviews also had Individual In-depth Interview (IDI-P) for all the participants as shown below:

Table 4.1: Participants' Socio-Demographic Data Individual Interview.

Participants	Age	Educational level	Rank	Unit	Years of experience	Religion	Marital status
IDI-P1	43	BSc Midwifery	SMO	NICU	12	Muslim	Married
IDI-P2	29	Diploma in Midwifery	SSM	NICU	5	Christian	Married
ID-P3	34	BSc Midwifery	MO	PNW	9	Christian	Single
ID-P4	25	BSc Midwifery	MO	NICU	1	Christian	Single
ID-P5	27	Diploma in Midwifery	SSM	NICU	3	Christian	Married
ID-P6	33	Diploma in Midwifery	SSM	PNW	5	Christian	Single
ID-P7	30	Diploma in Midwifery	SSM	NICU	5	Christian	Married
ID-P8	36	BSc Midwifery	MO	PNW	9	Chrisian	Married
ID-P9	30	Diploma in Midwifery	SSM	PNW	5	Christian	Married
ID-P10	32	Diploma in Midwifery	SM	PNW	4	Christian	Married
ID-P11	31	Diploma in Midwifery	SM	NICU	3	Christian	Married

ID-P- Individua In-depth Interview Participant, SM- Staff Midwife, SSM- Senior Staff Midwife SMO- Senior Midwifery Officer, MO-Midwifery Officer, PNW- Postnatal ward, NICU- Neonatal Intensive Care Unit.

4.1. Organization of the Themes

Thematic content analysis was used for the analysis of the data from participants and seven major themes were derived. These themes were namely Attitude, Subjective norms, Behavioral Intention, Behavior and Perceived Consequences, Separation Anxiety and Perceived

risk of NICU admission, Support Services for NICU Mothers. Out of the seven major themes, four were in line with the constructs of the framework used to guide and develop the study. Twenty (20) subthemes in all were produced from the analysis of the data gathered from the participants.

The themes and subthemes were formed from the content analysis of the data collected from participants. These steps were used to aid in the analysis. Transcription: Despite participants being midwives and educated, they preferred expressing themselves in Twi their native language to convey nuanced thought and emotions more effectively. The Audio recording in the Ghanaian language (Twi) was transcribed to text in the English language and was cross checked to confirm text is same as the audio recordings. And there was familiarization with the data by reading and re-reading. Initial Keywords/Statement/ Codes were formed: Codes/Keywords/ Statements were selected underlined and highlighted. All codes were inserted into the comment box. Searching for subthemes to match themes under used theoretical Framework: Subthemes were searched and highlighted. Mapping of Subthemes: A different word sheet was opened and codes were grouped (Sub) themes. Codes were collated into potential subthemes using a blank word sheet.

Rearranging/ reviewing codes and key quotes to fit themes and subthemes: Categories were rearranged and reviewed to know it applicability under the themes of the construct in the theoretical framework used for the study. Analysis/ interpretation of keywords/ codes/subthemes and generating report: Codes/ subthemes were analyzed based on the concept of the chosen model and reports formed. A tabular representation of the themes and sub-themes is shown in Table 4.2.

Table 4.2 Organization of Major Themes and Sub-themes

	Major themes	**Subthemes**
1	Attitude	a. Midwives' Awareness of Neonatal Jaundice b. Midwives' Practices towards Neonatal Jaundice c. Midwives' Concerns and Emotions about NNJ
2	Subjective norms	a. Commitment to Standard Protocol b. Prevailing Beliefs and Misconceptions c. Negotiating Maternal autonomy: Influences and Trade-Off d. Spiritual/Faith-Based Health Belief
3	Behavioral intention	a. Goal for Timely Treatment b. Optimizing Resources and Workload
4	Behavior	a. Educational Empowerment b. Parental Communication: The Role of Scare Tactics c. Gaps in Postpartum Care: Premature Discharge and Unfinished Care d. Collaborative Approaches and Lack of Teamwork
	Emerging themes	**Sub themes**
1	Perceived Consequence	a. Neurological/Developmental problems b. Death c. Exchange Blood Transfusion
2	Separation Anxiety and Perceived Risk of NICU Admission	a. Emotional Attachment to baby b. Desire for Physical Proximity
3	Support Services for NICU Mothers	a. Breastfeeding Support for NICU Mothers b. Social Support for NICU mothers

4.2. Attitude

In response to the questions, Attitude became a major theme and was informed by several reasons such as degree of knowledge, emotions, and the passion to provide prompt and timely treatment to avert neurological, developmental and health issues. Out of the data, 3 sub-themes emerged as: Midwives awareness of neonatal Jaundice, Midwives Practices towards NNJ, Midwives Concerns and Emotions about NNJ.

4.21. Midwives' Awareness of Neonatal Jaundice

Awareness is the mental orientation or perspective that influences how individuals process information, perceive situation and make decisions. The midwives focus on early identification and management reflects their knowledge, beliefs, values and perceptions.

From the gathered data, two participants could said early identification of NNJ prevents staining of the brain stem with bilirubin and made remarks as follows:

> *"If a child gets jaundiced and is identified early it helps us to transfer the child to where we term NICU for them to start phototherapy, before we start the phototherapy……. Identifying it early prevents it from getting severe and prevents staining of the basal ganglia of the brain with bilirubin"* ***(IDI-P1, NICU, 12 years).***
>
> *"… if we see the jaundice early in the first place the help for the babies, it helps to prevent complications too bad for the baby, and some of the complications are when the bilirubin stains the brain stem, a baby that will have to walk will not and babies that will have to speak will not speak at the same age as their age mates"* ***(IDI-P2, NICU, 5 years).***

Some midwives also could affirm and mentioned some of the possible developmental delays that may be averted if babies with jaundice are identified early:

> *"For me I think when neonatal jaundice is identified early it helps to prevent complications of the babies becoming invalid, and also a child's inability to walk while everyone is walking"* ***(FP2, PNW, 2 Years).***

> *"When we identify the jaundice early it helps because the jaundice has many effects and complications on the babies like the baby cannot talk, have difficulty hearing, cerebral palsy, so when it is identified early it prevents these complications****". (IDI-P9, PNW, 5 years).***

Majority of the participants shared similar views both for the IDI or the Focus group as they stated early identification and prompt management prevents complications:

> *"Yes, early identification of NNJ helps because if the baby is yellow and you identify it early and send to NICU to start phototherapy it is better in preventing a lot of complications…".* ***(IDI-P3, PNW, 9 Years).***

> *"When we identify it early it helps to avoid babies developing the complications that may set in especially, those babies that are at risk within the first 24 hours it is really important to identify them and start management".* ***(IDI-P6, PNW, 5 Years).***

A participant equally mentioned the goal of early treatment as babies that are treated early get well soon without further deterioration.

> *"When it is identified early it helps in the prevention of brain disorders because if the baby is managed early with phototherapy, it helps the neonate to get well soon, so I think that if it is identified early and managed promptly the child will be free from neurological disorders as mentioned earlier aha"* ***(IDI-P7, NICU, 5 years).***

Only a participant mentioned the emotional stress attached to identifying NNJ late and the cost associated with admission

> *"What I can say is aside the complications that will prevent in the babies it will also save the mother hospital cost, bills and the emotional stress because for a mother to get*

*pregnant for 9 months and we will not diagnose NNJ early to the extent that the child may die then it means the woman has suffered in vain". **(FN3, NICU, 3 Years).***

A participant even mentioned how the neurological disorders are misinterpreted to mean a curse and that those children actually belong to the river gods:

*"I also think early detection helps because if it is not identified early and managed promptly it may lead to kernicterus and the baby may twitch have developmental delays, the child may delay and sit for quite a longer time without standing up, drooling which mostly is associated to child of the river ("Nsuo ba") …". **(FP3, PNW, 1 Year).***

The following midwives exhibited their awareness by being able to recognize the prevalence of NNJ in their units:

*("Hmm saa asem wie y3tae y3tae hyia") "hmm this issue we mostly encounter NNJ; the ones we normally encounter is the breastfeeding related type of jaundice." **(IDI-P3, PNW, 9 years).***

*"Eii eno de3 gyae oo, jaundice no de3 y3fa no tes3 de3 y3fa nsuo no" eii for the jaundice stop, don't go there we get it as if we are fetching water, I can say that at times on the ward if there are 10 babies we can have like seven (7) who are all on account of NNJ". **(IDI-P7, NICU, 5 years).***

Midwives interviewed could acknowledge neonatal jaundice as the main cause of admission especially midwives from the neonatal Intensive care unit:

*"For jaundice we admit babies I will say it is the main cause of admission here in a day should we have about 10 admissions, six (6) out of the 10 will be because of NNJ". **(IDI-P11, NICU, 3 Years).***

*"At times out of the 30 babies on admission about 20, 22 or 24 may be due to NNJ but I can say all of them will survive those that are identified early". **(IDI-P1, NICU, 12 Years).***

Still midwives at the NICU could even estimate the number of admissions due to NNJ they care for on the ward:

> *"For monthly admission for jaundice, I will say, so if I am using rough estimate let's assume the whole month, if we have 30 admissions jaundice will be around 22 or 20 because most of the cases also end up with jaundice except those that are more than 7 days old that came with sepsis. But almost all the babies that come to NICU end up with jaundice. So, if I am estimating if we got let's say 30 admissions, jaundice can take about 20 or 22".* ***(FN1, NICU, 3 Years).***

> *"Okay in a month an average admission could be about 150 and jaundice could take more than 80 of the admissions".* ***(IDI-P2, NICU, 5 Years).***

A participant attributed the higher numbers of neonatal jaundice admission on the ward to the fact that the facility is a referral center:

> *"I think partly because our facility is a referral center, the peripheral facilities refer cases to the unit. They refer the jaundice babies that report to them to us So, we cannot say but averagely on a daily basis 6 NNJ cases."* ***(FN3, NICU, 3 Years)***

Also, for knowledge attitude, some midwives could recognize sign and symptoms of NNJ, where they look for jaundice and how it is assessed:

> *"Okay the way we can recognize jaundice is that, is some babies when you touch the bridge of the nose, others the sclera when you see it is yellow, I am aware we are being taught in school so when the person checks, can tell this baby is yellow or turning yellow and so must take prompt action"* ***(FP3, PNW, 1 year).***

> *"As we do assessment, some children when you press the skin, nose you may get a clue that the child is yellow and then you confirm with the TCB.* When you see such babies and you are not sure of the visual inspection done you use the TCB, …*"* ***(IDI-P11, NICU, 3 years).***

From the findings above midwives' awareness of neonatal jaundice and their opinion on the essence of early identification and management were based on their knowledge and their belief about the condition. Their awareness on the perceived consequences was a reason for them to identify neonatal jaundice early. They were aware about the causes, the signs and symptoms, the prevalence and consequences of neonatal jaundice.

4.22. Midwives' Practices towards Neonatal Jaundice.

Practices are actions, observable activities exhibited by individuals or groups taken to identify, manage and prevent jaundice and it is influenced by ones' awareness, emotional responses and values.

Majority of the participants provided these responses. For midwives' practices, some of the responses highlighted the actions and practice of the participants if a baby is jaundice:

> *"During handing over I move from bed to bed, so I do not only assess the mothers. I check the babies, their skin color and general appearance".* ***(IDI-P9, PNW, 5 Years).***

> *"...we do assessment so if through the assessment we detect that a baby is yellow, we use the TCB to check so when we check and see that the bilirubin level is high, we take sample for blood investigation and keep the baby under the phototherapy then we inform Dr. about it".* ***(IDI-P5, NICU, 3 years)***

While some midwives will do assessment of the neonate, the findings below showed that some midwives go the extent of taking blood sample for investigation to know the bilirubin level:

> *"At work because we work on newborns, we mostly have those experience for instance a baby on admission because of hypoglycemia, we know the baby is at risk than the others that are breastfed. And so, we observe them frequently, so when we observe and see the baby is yellow, we take the blood sample to the laboratory and so get the results early to inform our decision. When it happens that way, we are able to identify and manage it early"* ***(IDI-P11, NICU, 3 Years).***

Some midwives mentioned they start phototherapy for babies after taking sample for total serum bilirubin:

> *"...before we start the phototherapy, we must first take blood sample to know the extent of bilirubin, when we see it early, we first use TCB on the forehead and sternum to know the bilirubin level"* ***(IDI-P1, NICU, 12 Years).***

> *"At times when you touch them and release your hands you can see that part is jaundice. Then I will take sample for SBR then start the phototherapy and call the medical officer, to confirm whether the baby needs the phototherapy or not."* ***(FN1, NICU, 3years).***

A participant at the postnatal ward mentioned fixing babies to breast for early initiation of breastmilk for mothers that cannot put their babies to breast:

> *"What I do is when I am on duty, quickly I observe the baby but if I should say I do it thoroughly then that is not true. Every mother that does not know how to help and fix baby to breast I teach them because delay in initiating breastfeeding can cause jaundice".* ***(FP2, PNW, 2 Years).***

The findings under midwives' practices show midwives application of knowledge and skills in managing neonatal jaundice. The findings captured the behavioral aspect of midwives' attitude at the unit. This was evident through statement showing participants do assessment and observation of the neonate, take blood samples, set up fluids, help and fix babies to breast when they are on duty.

4.23. Midwives Concerns and Emotions about Neonatal Jaundice.

Midwives' emotional concerns refer to their feelings or sentiments toward the neonate under their care. Participants from both NICU the PNW were concerned seeing babies with severe jaundice and also were sad as some of the babies report or develop complications of NNJ.

Some participants were very emotional sharing their experiences about babies they have seen suffered complications of NNJ and some babies living with neurological sequalae:

> *"I have experienced such a case to be honest I was sad it was not severe but the baby died. We were doing intensive phototherapy but after three days, I was on night shift and realized in the morning was exhibiting signs of kernicterus all of a sudden".* ***(FN1, NICU, 3 Years).***

> *"Yes, some of them when the complications of jaundice set in then you are worried, you can even perceive that the child may suffer developmental delays or neurological disorders …. it is a worrisome situation"* ***(IDI-P4, NICU, 1year).***

A midwife emphasized the emotional stress mothers and healthcare provider go through and how babies with complications of jaundice suffer on the ward:

> *"… when you do not see it early it causes the babies to suffer and the mothers too go through a lot and for us the care provider's we become disturbed and feel bad…"* ***(IDI-P11, NICU, 3 years).***

Other midwives felt bad and were affected by babies that expired on ward due to Neonatal jaundice and the fact that it is not a good experience:

> *"For my experience I have not been at the NICU for quiet a longer time but when I got there, I met a lot of jaundice babies and some were bad with Kernicterus and the next day a baby died because of complications of NNJ it was not good".* ***(FN3, NICU, 3 Years).***

> *"I see it that the delay that causes some babies to loss their lives is not a good thing that experience is worse because for a mother to get pregnant and go through the pains during labor and deliver a child and at the end of the day later lost the child because of jaundice that is treatable it is not a good thing."* ***(IDI-P3, PNW, 9 years).***

Midwives shown concern according to the analysis of the data gathered above. They exhibited emotional reactions and feelings towards babies that suffered complications of neonatal jaundice. And the phrases and quotes above captured the affective aspect of midwives' attitude.

4.30. Subjective Norms

Subjective norm was the main theme to describe the perceived influence on participants readiness and ability to engage in a behavior that will lead to early identification and management of NNJ. This influence emanated from protocols, colleagues, parents, relatives, and significant others. Out of this theme these were deduced; commitment to ward protocols, prevailing beliefs and misconception and balancing maternal autonomy and medical necessity. The above subthemes were evident in both the focus group discussion and the individual in-depth interview however healthcare provider influence, Spiritual/Faith-Based Health Belief were derived from the analysis of the focus group discussion.

4.31. Commitment to standard protocols

Some statement that proved participants abided by the local guidelines included some of the statements below:

> *"So, first of all, we take samples to the laboratory, start phototherapy then wait for the results because based on the result you will know whether you will do extra or exchange blood transfusion".* ***(FN1, NICU, 3Years).***

> *"The guidelines when we identify a jaundice or yellow baby, the first thing is admission, we will inform the mother, take blood samples for laboratory investigations, start phototherapy and make you understand for the day of delivery till the 7 days, your baby will be nurse under the phototherapy, …"* ***(IDI-P1, NICU, 12 Years).***

From the interview and discussion some mentioned fluids are set up for the babies with high levels of bilirubin while reaching phototherapy:

> *"For the children that are severely jaundice we set up fluid, to prevent hypoglycemia and also the frequent the mothers from picking the severely jaundice babies from under the phototherapy for breastfeeding then we manage the child until the child is okay."* ***(IDI-P2, NICU, 5 years)***

> *"With protocols here we have our protocols, when a baby arrives, we do our assessment, check the vital signs, check the bilirubin with TCB. If they are coming from the OPD they TCB has already been checked for the Dr to diagnose before the baby will report for admission. We take our samples for SBR, the one whose case is severe it is requested as urgent, we check FBC, blood group, G6PD and so when we are done if there is no sepsis apart from the NNJ, some of them when it gets to the extreme that have high temperature so with that if the doctor has requested for antibiotics we start other than that, in the absence of any other diagnosis we start phototherapy and if the baby needs intensive phototherapy with fluids, we set the fluid".* ***(IDI-P5, NICU, 5 years)***

The participants below shared the fluid used during intensive phototherapy for the babies doing intensive phototherapy:

> *"The babies with high levels of bilirubin that have not reached the exchange blood transfusion level we set up fluid for the babies and encourage the mothers to limit the number of times the babies are being taking out of the phototherapy machine also we would want to set the 10% Dextrose in 1/5th N/S to prevent hypoglycemia,"* ***(FN3, NICU, 3 Years).***

> *"... once the baby comes to NICU, we take the sample which is the SBR, and we also check their bilirubin level with the TCB to know how severe the bilirubin level is. So, the one whose bilirubin level is very severe we set up fluid 10% dextrose in 1/5th N/S for about 24 hours and with that one, normally we suspend breastfeeding.".* ***(IDI-P7, NICU, 5 Years).***

As some said intensive phototherapy with fluid other midwives mentioned exchanged blood transfusion when the bilirubin levels are very high:

> *"If they are jaundice oh when they report like that, we put them under the phototherapy, some of them too if they are being managed under the phototherapy and the serum bilirubin is very high then there is the need for exchange blood transfusion and it is also done".* ***(IDI-P4, NICU 1 Year).***

> *"But when it exceeds a level there is what we call exchange transfusion we will take most of the blood that is affected with bilirubin and give fresh blood without bilirubin that is the main guidelines for those with severe hyperbilirubinemia".* ***(IDI-P1, NICU, 12 Years).***

For some participants from the PNW for protocol on their ward if a baby is jaundice is that the baby will be sent to NICU:

> *"We do not do much, we cannot manage them. PNW if we check the TCB and the bilirubin level is high we sent the baby to NICU that is what basically we do over there".* ***(FP1, PNW, 5 years)***

> *"So, at my unit we don't wait for the Drs. to come we send those babies to NICU right away even before the Drs. will come so that if there are any laboratory investigations they can take blood samples to know the bilirubin level and start phototherapy early".* ***(IDI-P3, PNW, 9 Years).***

Almost all the participants from the PNW stated there is no guideline or protocol that guides their care for the jaundice neonate apart from three of the participants some responses included:

> *"I don't think there are specific guidelines but because of the collaboration between NICU and PNW every day, I will have to go through all the mothers so any baby that will be identified to be yellow, whether the doctor has seen or not whether discharged or not, I speak to the mother and send the baby to NICU but I don't know of any protocol on the ward.".* ***(IDI-P6, PNW, 5 years)***

> *"Apart from the health education and the Drs. review we don't have any other strict guidelines ahaa. For the Drs. side is them checking the bilirubin levels using the transcutaneous bilirubin meter and we as the midwife if we also suspect that a baby is jaundice, we request the serum bilirubin for the baby before the start of the phototherapy. ...."*. ***(IDI-P3, PNW, 9 years).***

Although majority of the PNW staff did not know of any protocol guiding them in caring for the newborn with jaundice. The findings above proved the NICU staff made use of the ward's protocol in assessing and managing neonatal jaundice in the care of the neonates they cared for, the use of TCB, taking sample for TSB, knowing when to start phototherapy and call the Dr, for EBT indicated they were committed to their wards protocol in managing and diagnosing neonatal jaundice.

4.32. Prevailing beliefs and misconceptions

This sub theme was a major reason midwives felt mothers refused admission for their neonates, majority confirmed encountering misconception among their colleague midwives.

A midwife mentioned mothers together with some colleagues held to the exposure of babies under the sunlight as a management of NNJ:

> *"...the mothers some say the early morning sunlight, when you expose the baby under the sunlight the sunlight will get rid of the bilirubin, some of my colleagues too say that when a baby is exposed under the sun like the mothers"*. ***(IDI-P5, NICU, 3years).***

The following statement attested that some midwives also recommended exposure under the sunlight to mothers as a means for managing NNJ:

"*When I got to the midwife, she said three days old baby is physiological and so I should expose her under the early morning sun, but my baby was not born term so I called a doctor and he said I should bring the child. When I got there and the SBR was done it was high and above phototherapy level.".* ***(FP2, PNW, 2 years).***

"Yes, I have heard some myth from both colleague midwives and parents and some of the myths the parents talked of were that in the olden days if a child is jaundiced the child must be exposed under the sunlight or baby will be given glucose to drink." ***(IDI-P1, NICU, 12 Years).***

For the midwife below, exposing babies under the sunlight was a discharge instruction she gives to mothers during discharge:

"Okay recommendation that we do is after discharge that the mother will keep the baby under the sunlight it is very effective". ***(IDI-P9. PNW, 5 Years).***

A midwife stated the most frequently heard misconception that affect management of NNJ is sunbathing:

"The misconceptions concerning NNJ are many but the most heard is the exposure of jaundice babies under the sunlight So, for some of them once you mention that the baby is jaundice and has to be admitted they will not agree but there you a family member's baby was jaundice and it resolved after exposing the baby under the sunlight and so refuses the admission for the phototherapy to be started.". ***(IDI-P11, NICU, 3 Years).***

Three participants, stated some mothers' belief food eaten by pregnant women causes their babies to be jaundice after delivery thus affecting early identification and management:

"Yes, I have heard mothers saying that when they eat egg the yoke that is yellow during pregnancy, the baby will be jaundice. That is one thing I have heard." ***(IDI-P4, NICU, 1year).***

"I remember my sister told me her baby's color is carrot because of the carrot she was eating during pregnancy. Her baby's color is nice because of carrot she said…" ***(FN2, NICU, 5 Years).***

"If you are pregnant and you eat oily food, margarine, fried plantain, oil rice that is what the majority say if you eat that when you are pregnant after delivery your baby will be jaundice". ***(IDI-P7, PNW, 5 years).***

A participant again affirmed, some mothers think feeding babies with colostrum causes jaundice and getting some mothers to feed babies with colostrum is difficult:

Additionally, some midwives shared more than two misconceptions about neonatal jaundice management that she has heard of:

"Yes, I have heard several misconceptions. Some of the mothers will not want the admission but will say they will expose the baby under the early morning sunlight (na ewia no behye Jaundice no) and the sunlight will burn the jaundice. Other say if a baby has yellow sclera and you put breastmilk on the eye that too helps. And other also say when you feed babies with colostrum it does not help it causes jaundice." ***(IDI-P6, PNW, 5 Years).***

"Another one that I experience on my ward was a mother whose baby could not feed well on breast and was told to express milk into a cup to feed the child. After expressing the breastmilk, the colostrum that is yellow she said her mother, thus the baby's grandmother says it will cause the child to be yellow. The other she expressed that was yellow too she did not bring it but threw it away again". ***(FN3, NICU, 3 Years).***

The participant below also knew of several misconceptions but unlike the midwives above she added bathing the babies with herbs:

"I have heard several misconceptions some of the mothers say if you are pregnant and you eat oil; your newborn will be jaundice and some of my colleagues we went to a health facility for education a colleague mentioned you can cover the child's eyes and expose under the sunlight. Even some of my colleagues together with some of the mothers

says there are herbs we bath the neonates with jaundice with and the baby will be okay the jaundice will go. So, for that, I have heard a lot of myths" ***(IDI-P2, NICU,5Years).***

Only two of the participants said some parents associate NNJ to be a spiritual condition not to be treated at the hospital:

"I have also heard especially my ward when the mothers come, they say this is not any ailment the green veins on the stomach it is "ASRAM" when I do herbal treatment it will go so the admission will not help the child so discharge my child for me to go and do herbal treatment". ***(FN1, NICU, 3 years).***

*"…some of them think the jaundice will resolve and others think when they do herbal treatment it will resolve and so it makes it difficult when counseling them****". (IDI-P4, NICU 1 Year).***

A Participants also mentioned how her colleagues associated the frequency of the condition to the routine drugs given to pregnant women:

"For my colleagues what was being said at a time we were admitting many babies due to jaundice was that the medications the pregnant women are given during ANC that was what the said causes it and some mothers too felt some of the medication they use for their enemas causes NNJ." ***(IDI-P10, PNW, 4 years).***

The conclusions from the above data not only show mothers had prevailing beliefs in managing neonatal jaundice but even midwives' belief routine drugs as a cause for NNJ and sunbathing and herbal treatment are means of managing babies with jaundice. From the findings it means despite being able to talk about the causes, prevalence, consequences signs and symptoms some midwives still hold misconceptions about the effectiveness of sunbathing in treating jaundice and therefore the unsafe practices persist which is often driven by deep-seated beliefs and cultural practices.

4.33. Negotiating Maternal Autonomy; Influences and Trade-Offs

For the non-verbal neonate and minor, parents/families are significant others whose decision affects their care. Some of the responses from the participants indicated that mothers and families influence affect the care for the neonates and shared how managing a neonate with jaundice can be difficult for them. Six participants, shared experiences whereby maternal and social issues negatively influenced the management of NNJ.

Social influences from significant others surfaced as having negative impact of the management of the jaundice neonate and some are as follow:

> *"...some of them (mothers) listen to their family members more, a grandmother can visit the mother at the mothers' room after the visit if you don't check on the mothers may report to the unit with herbal preparation ..."* ***(IDI-P2, NICU, 5 years).***

> *"Sometimes after you have started the phototherapy, when the grandmother visits as they are waiting at the waiting area then the grandmother that is the mother of the baby's mother will be advising the mother so you will see the mother will come for the baby when you inquire then they say the grandmother says it is "ASRAM" inform the doctor to discharge me if I do herbal treatment it will help".* ***(FN3, NICU, 3 Years).***

A participant shared the extent the grandmothers could go to disturb them and refuse the admission and treatment for their grandchildren:

> *"Some of the grandmothers will come from the house and disturb that they would not want the admission for their grandchildren and will not allow the grandchild to be nursed under the phototherapy a home remedy will be use and the child will be okay"* ***(IDI-P5, NICU, 3 years).***

A participant also on the issue of social influence impacting the identification and management of NNJ shared how a mother obeyed the baby's grandmother and left the facility:

"Yes, the mother herself understood but the grandmother they say is the DCE's wife when she got to the unit, she said she will not understand for the grandchild to be admitted so when I pick the mothers ANC book and asked the mother to follow me with the child to NICU by the time I realized the grandmother had picked the grandchild to their car and left the book with me". ***(IDI-P8, NICU, 9 years).***

Some participant has experienced mothers using their autonomy over the neonate as a means to refuse admission:

"So, in our setting the mothers think they have delivered their own children and so have to make most of the decision concerning their children. And we do not have any specific law, if even there is a law it is not strict against them … So, the mothers have effect and influence in the care of their children." ***(IDI-P3, PNW 9 years).***

A participant also shared how mothers' experiences influence their decisions regarding their babies' health:

"Yes, it has happened before the mother said her previous baby was yellow and at the NICU the baby was nursed under blue light and so when the second child was discharged and became yellow on the second day, she did not even bother to bring the baby for admission. She bought a blue fluorescent light and the baby was sleeping under the blue light. By the time she came, complications had already set in and the baby even had an exchange blood transfusion" ***(IDI-P10, PNW, 4 years).***

"Me too what I know is that, some of them has ever delivered and their babies were jaundice but was not admitted but resolved and nothing happened to them so for those mothers it will take only the last person standing here in the facility to explain things to them. You can tell them everything book and everything home but they will not understand". ***(FP3. PNW, 1 Year).***

Concerning the perceptions of anticipated behavior from significant others, influence emanated from supervisors' expectations concerning neonatal jaundice care:

"Our in-charges expect that any baby that we identify to be jaundice we will manage them based on the standard management plan so that the baby can go home well" ***(FN2, NICU, 5years).***

"Yes, left to them every 2 days we will have to repeat the SBR, strict monitoring some of them the mother after picking the child to breastfeed it will take quite some time and the child is not put back in the machine our supervisors expect if not for anything there must be a change in the bilirubin level for them to know the bilirubin level is reducing". ***(IDI-P7, NICU, 5 years).***

These midwives mentioned that their supervisors expect that babies with jaundice will be managed promptly after identifying it:

"Please, they expect that we identify it early and after the identification inform the appropriate person for prompt action to be taken". ***(FP2, PNW, 2 Years).***

"They have expectations that we can identify it early especially mothers at risk that we may identify them early and start treatment early so that the mother will go happy with the baby". ***(IDI-P6, PNW,5 Years).***

"Yes, please, for expectations they have expectations looking at my unit neonatal jaundice is the highest cause of admission and every year NNJ tops the incidence of conditions on the ward. We get neonatal jaundice and is the majority of cases their expectation is that if for instance is as a result of G6PD is highly unpreventable if the baby becomes jaundice, it is not the fault of the mother and it is also not the fault of the midwives their expectation is for us to provide prompt intervention and prevent complications to our neonates ...." ***(IDI-P2, NICU, 5years).***

Another midwife also mentioned that their supervisors would not want babies' jaundice to become severe:

"Our supervisors don't want the situation whereby it (NNJ) will become severe to affect the brains of the neonates we don't want the case whereby neonatal jaundice will cause

neurological disorders at all. So, for the supervisors left to them alone there should always be milder cases that can be manage under the phototherapy for them to go home we don't want complications of neonatal jaundice." ***(IDI-P3, PNW, 9 Years).***

Some of the responses address situations where there are discrepancies in situations the care provider's plan of care is different from the parents. Some participants mentioned how maternal autonomy and medical necessity were balanced:

".. If she still says no and refuses the admission then we are compelled to admit the baby because the baby is a minor and cannot take decision on its own so we will have to take the best decision that will help the child". ***(IDI-P8, PNW, 9 years).***

"If mothers don't understand for child to be admitted the neonate is a minor that cannot decide for him/herself and so something that will affect the child we will not allow the sole decision of the parent to affect the child. It may arouse disagreement but we will admit the baby and start the treatment and then they comply some mothers regardless of explanations and educations will not understand". ***(IDI-P2, NICU, 5 years).***

From some participants narration, medical necessity outweighs the autonomy of the mother when it comes to deciding and managing babies with jaundice:

"We mostly do what is best for the baby, aha because the child does not only belong to the mother as a minor but also the nation. If even she goes home will come back the following day". ***(FN3, NICU, 3 Years).***

"For me for the child to get well is my motive and so I will try to understand whatever any mother does but I will make sure the baby is sent to NICU". ***(IDI-P6, NICU,5 years).***

Some participants shared experiences where the health providers influence led to mother reporting late even if mothers identify it early:

"For instance, my own self when I delivered my child it was a Monday and I was supposed to go for postnatal clinic on Wednesday for BCG. When I got there after the

nurse held my baby and released her hand that part was yellow and ask me to show it to the midwife. When I got to the midwife, she said three days old baby is physiological and so I should expose her under the early morning sun. but my baby was not born term so I called a doctor and he said I should bring the child. When I got there and the SBR was done it was high and above phototherapy level. Exchange blood transfusion was to be done; my baby's blood was to be taken out and replaced with a fresh whole blood. Thanks to God my child finally got well, if I had stayed back because I was told it was physiological then I may have lost my child." ***(FP2, PNW, 2 years).***

"My sister's child was jaundice on the fourth day and was taking to a private hospital. When they assessed the child, they said it was nothing serious so we should go back and open the curtains every morning to check.". ***(FN1, NICU, 3 Years).***

A participant shared how a father refused the admission of his child even after the mother agreed for the baby to be admitted on account of neonatal jaundice:

"The mother had accepted the admission but the father was refusing the admission. The father too was saying it is his money that will be used for the admission and so will not allow for the admission. He does not have money after paying the wife's bills, he does not have any other money to pay bills for the baby for the wife to stay back again it a no" ***(FN1, NICU, 3 Years).***

It was quite obvious from the findings that when nursing the baby with neonatal jaundice it is a collective care where social influences from grandmothers and the autonomy of parents can never be left out. Although some midwives were able to manage based on the child's interest medically there were evident and emphasize of some babies reporting back in a very bad state. For concerns from significant others their superiors influenced them positively in caring for babies while some colleagues were a bad influence in the diagnosis and management of neonatal jaundice.

4.34. Spiritual/Faith-Based Health Belief

Spirituality and the belief of the parents according to some participants impacted the management of NNJ even if they identified it early, a participant mentioned a mother felt she has been cursed and other too felt it was a traditional ailment that must not be treated at the hospital:

> *"(Eye a omo susu se obi na ato yare3 no ama akora no anaase akora no ye nsuo ba) they belief someone bought and gave the jaundice to the baby or the child is a child from the river gods but studies have made us understand that cerebral palsy and the rest may be a complication of NNJ".* ***(IDI-P9, PNW, 5 Years).***

For the midwives below, even if it is identified, they refuse to accept the diagnoses believing that God will do it:

> *"The challenging thing that makes identifying NNJ early on my ward is most of the parents even after identifying and telling them they find it difficult to accept even if she accepts, some of them because of their belief and spirituality they will always say God will do it ("Nyame beye, Nyame beye"). It ever happened on my ward later when the woman reported with the child, she lost the child."* ***(FP2, PNW, 2 years).***

> *"This is one of the difficult things we face at PNW for a mother to accept admission and go to NICU but we try at times you will have to even go to google and download some of the pictures of babies with NNJ and you explain to the simplest form for them to understand. Some when you explain and mention the admission the say in the name of Jesus nothing will happen to my child."* ***(IDI-P6, PNW, 5 years).***

All the above phrases and findings proved that some mothers refuse admission and hospital management of neonatal jaundice because they belief it is not a condition to be managed at the hospital. Others belief because they have God even when their newborns are jaundice their babies will not develop any complications of Jaundice because God will heal them.

4.40. Behavioral Intentions

Behavioral intention was the main theme and two sub themes emerged from the data. Responses provided by participants on how their experiences have influence their decision, plans to ensure timely screening, mean of following up on high-risk neonates and barriers that hinders or facilitates midwives' intention to perform desired behaviors.

4.41. Motivation to Provide Timely Care

Some of the participants were motivated to provide quality and timely care regardless of factors that may affect the prompt management. They knew prompt treatment prevents complications:

> *"Because of what I have seen, for what I have seen it makes me want to identify and manage NNJ early. I have my eyes on the babies although I equally have mothers to nurse". **(P9, PNW, 5 years).***

> *"Per my experience knowing the complications and deaths that late identification can cause, I took it upon myself that every day when I get to work, I will educate the mothers when they see that their babies are jaundice, they should not delay but report for prompt treatment so that we can prevent any complications". **(FP2, PNW, 2 Years).***

For a participant what her colleague's baby went through on the ward boosted her mental readiness to identify and manage NNJ early:

> *"... I have also experienced that on my ward she is even a staff at the facility sister E, she is having that history earlier she did not know about ABO incompatibility her 1st child had 2 exchange blood transfusion. So, her second pregnancy immediately the baby was born early SBR, prophylaxis phototherapy was done which averted later complications that could have happened". **(FN3, NICU, 3 Years).***

> *"Recently September this year, a staff that has risk factor whose first child was admitted and had an exchange blood transfusion delivered her second child and immediately after the C/S was sent to NICU because of her history and she felt her second child may end up*

*at NICU. The NICU staff that was at the theatre brought the child to NICU for prophylaxis phototherapy even that the baby had an exchange blood transfusion". **(IDI-P5, NICU, 3 years).***

A midwife also added that for mothers not to lose hope, and go home with a live baby, they were motivated to provide quality and prompt care:

*"... we do not want the jaundice to complicate, we do not want the situation whereby a mother will report to the ward with the baby due to NNJ and develop signs of complications of NNJ while on admission or the mother will lose hope that she cannot take her baby back home..." **(IDI-P11, NICU, 3 years).***

This participant below gains her positive intention from the uncertainties associated with caring for the jaundice neonate:

*"A baby that started phototherapy as early as day two and have been under the phototherapy for three days with SBR within phototherapy level but not exchange level how come the baby all of a sudden show that kind of signs of complications. For that reason, I decided and made up my mind that every baby that will be admitted for jaundice regardless of the bilirubin level whether high or low, I will have to make sure that if the baby needs the phototherapy, then the baby must get the therapy well and not that the mother will be picking the baby frequently from under the phototherapy. I decided I will have to observe closely all babies that are jaundice. At first, I felt the babies that are jaundice don't need strict and close monitoring but that baby gave me the understanding that, I will have to observe and monitor closely all babies diagnosed with neonatal jaundice". **(FN1, NICU, 3 Years).***

Some midwives had experience mothers lost their babies due to NNJ and that informed their decision for timely care. Some statements included:

"From my experience I have come to understand every child is different because I have seen mothers that have lost their babies for refusing admission and so I have come to

*understand any mother and baby must seek care for us to investigate and confirm the baby is okay before we discharge home". **(FP1, PNW, 5 Years).***

*"Yes, there is this one case that the mother in her previous history had a jaundice baby and the baby did exchange blood transfusion but the baby did not survive the mother did not tell us when she came this time. We did not see it early this time although the baby survived but what the baby went through it informed me that if it is identified and managed early it will help". **(IDI-P6, PNW, 5 years).***

Midwives whose children had develop neonatal jaundice before and were admitted were influenced and had a personal interest and emphasized how vigilant they are in detecting and managing NNJ promptly:

*"Alright, personally my child has had jaundice before, for my case we were discharged but after the discharge I realize my child was jaundice I pinch his nose and chest so I went back to the medical officer actually while I was going, I did not like it but I had to". **(IDI-P7, NICU, 5 years).***

*"Yes, my first child had jaundice, personally my blood group is O positive and my husband is AB, so my first child after we were discharged. I realized was yellow and so I took him outside to check and he was jaundice so immediately I send him to the hospital for management and my second child also had jaundice, I saw it early and so treatment was started early" **(IDI-P2, NICU, 5 years).***

Another midwife that had C/S also mentioned that if not because her child's NNJ was identified early, it could have progressed:

"... my own child third born delivered through c/s but the third day my girl was jaundiced according to the pediatrician and true to her words and the TCB results coupled with my experiences on the ward I did not delay I gave the and I allowed phototherapy for my child immediately, then took blood samples and samples were taking 2 days apart. I spent around 9 days, and was discharged but I know if it was not

*identified early and maybe progressed it could have been fatal". **(IDI-P1, NICU, 12 Years).***

There was an emphasis on late identification of NNJ. A participant also affirms the presentation of a baby with jaundice that was identified late:

*"Yes, it is about a child I remember the baby was yellow from the PNW, they did not identify it early when they came to the ward kernicterus had already set in the head was falling back so I was like this jaundice "eei jaundice yi" I think it was my first time I was at the NICU. That influence my decision to observe and monitor the babies strictly to identify and manage NNJ early because if that was my baby it would have been a problem for me so I decided once I identify a baby to be yellow, I must not waste time but try to provide prompt treatment. I do not want to see what I saw with that baby again". **(IDI-P7, NICU, 5 Years).***

The findings about midwives' intent to provide timely and quality care was greatly influenced by the perceived consequences of the condition, for others positive intention and positive mindset were from the uncertainties associated with caring for the jaundice neonate and for others because they have had a child suffered NNJ before they were vigilant to provide quality care.

4.42. Optimize Resources and Workload.

Participants decisions were influenced by their intentions to make the most effective use of the available resources. Management and decision were affected by workload and resources. Some of the findings from the data included pairing of babies for phototherapy:

"I was saying that my facility has some phototherapy machines but per our number of admissions and the number of jaundice babies the phototherapy machines are not enough, they are placed in between 2 cots and sometimes put 2 babies in each cot and so

the babies are not getting the adequate exposure. So, it does not make the treatment effective enough." ***(FN3, NICU, 3 years).***

"My unit has the phototherapy machines so regardless you must accept although the machines are not many so that each child will have his/her own phototherapy machine they are paired and label them with their names so that each mother knows where the baby is and if they are not many it could be a baby to a phototherapy machine". ***(IDI-P1, NICU, 12 Years).***

Some participants affirmed provision of care without taking the individual baby's bilirubin levels in titrating the phototherapy as more than 2 babies may share a phototherapy machine due to inadequate equipment:

"Oh, when they come what makes the work difficult is that at times the spaces under the phototherapy may be occupied it is really disturbing. So, at times you will keep a baby, and at a point switch the space of the baby then keep another. Normally when we check the bilirubin level the ones with the higher levels of bilirubin are changed gradually. And so, I am saying at times based on the number of babies on the ward the phototherapy machines are not enough". ***(IDI-P7, NICU, 5 Years).***

".... and the phototherapy machine too we may need some more because at times you would like to do intensive phototherapy but you may have two babies in the cot and the machine is serving two different cots and we may have four (4) babies under one phototherapy while you will want to do intensive phototherapy that does not help". ***(FN1, NICU, 3 Years).***

For some of midwives, staffing and workload were emphasized, for them managing NNJ coupled with other conditions on the ward was hectic:

"So, I think that erm okay so with the barriers the first one I will say is the phototherapy machine what we have here is not enough so at times we may see like three babies under one phototherapy machine and it is not encouraging at least should we get one

phototherapy for two babies. … the workload and the number of staff for instance 2 staff to about thirty neonates it makes the work difficult" ***(IDI-P5, NICU, 3 years).***

"When my baby was on admission there, I realize night there are only three (3) staff and a rotation if they are to take care of every baby as in their peak where they may have about 40 babies and imagine they changing all of their diapers and picking the babies that will be crying plus their medications and the rest they will breakdown". ***(FP2, NICU, 2 Years).***

Some of the midwives mentioned that the transcutaneous bilirubinometer is only one and it is used for babies at the NICU, taking for reviews at the PNW and also for babies at the OPD:

"One thing I have noticed that is a barrier is recently the TCB machine was reading error, so I think looking at the number of neonatal jaundice admissions in the unit, I think we deserve 2 or 3 more TCB because it is one TCB machine that is used to check the babies that come from the OPD, PNW and still being used at the NICU.… it is one Transcutaneous bilirubin meter that is used to check the babies that come from the OPD, PNW and still being used at the NICU…". ***(FN1, NICU, 3 years).***

"Yes, yes apart from workload the first barrier if I am rating workload is the first barrier, but apart from that some minor ones as the transcutaneous bilirubin meter that we use to check their bilirubin level it is only one that is rotating between NICU and postnatal ward at times when you get to NICU you may not get the transcutaneous bilirubin meter so if you should miss it (3BO FA W'ANI SO) and that you are unable to assess and know the level, sometimes the transcutaneous bilirubin meter helps when you check with it and the level is high it is helpful than just doing assessment and doing visual inspection". ***(IDI-P3, PNW, 9 Years).***

The mental readiness and preparedness of the midwives in the early identification and management of NNJ was also impacted by inadequate resources, the workload and the number of staff as the above data affirmed.

4.50. Behavior

Behavior was a main theme and 4 subthemes were produced from the data. The four subthemes showed that measurable and observable actions that the midwives' do in the early identification and management of NNJ.

4.51. Educational Empowerment

From the interviews, midwives empowered parents and equip them by providing them with education on NNJ, how to identify NNJ, explain the condition, signs and symptoms, signs of complications and the effects of the condition to mothers:

> *"... a baby is admitted due to jaundice, I sit the mother down and explain the condition how it happens, and the complications of the condition to her"* ***(FP1, PNW, 5 years).***

> *"As I said, we do education at the ANC and also at the PNC too we do education in the morning so with the education we let them know what exactly the NNJ is, the mothers whose babies are at risk we let them know about the complications of the condition. That education helps them to know about the severity of the condition and how helpful the early identification is".* ***(IDI-P10, PNW, 4 Years).***

Another participant mentioned she uses picture and videos to educate mothers whose babies are on admission:

> *"When you educate them for them to know the yellow is not just systemic that bath will wash away but circulating in the blood then they will calm down and I use the pictures and some available videos for some to understand for their babies to be admitted".* ***(IDI-P2, NICU, 5 years).***

Some midwives empowered and equipped mothers by educating them on the signs and symptoms and how to identify a baby that is jaundice:

"Okay postnatal, when we go to work, we do education, during education we tell although you have been seen by the pediatrician and discharged but your baby can be yellow with time in the house and so they are taught how they can identify the yellow discoloration". ***(FP3, PNW, 1 Year).***

"We educate them on the signs and symptoms and those that have the experience we mention their names to them for them to understand". ***(IDI-P9, PNW, 5 years).***

While answering how participants handle parents that refuse the admission /referral because of NNJ, some of the participants means of education were inadequate and included **"this and that" "this can happen**":

"We talk to the mother that the baby is jaundice if she does not allow us to do the treatment ***this and that can happen" (IDI-P7, NICU, 5years).***

"First of all, you will let the mother know that this is the problem the child is facing then you explain for her to understand that if she refuses admission, ***this and that can happen*** *to the child the complication may be swift or later in life. Some of them will then understand for you to admit the baby".* ***(IDI-P8, PNW, 9 Years).***

A participant likewise deem education most important equally from her findings too, she provided insufficient in-depth of education to equip mothers of babies with NNJ:

*Okay so our plan the most important one is the heath education amidst the workload that affect the plan we know that the children are by their mothers so if we help the mother to understand that "****this and that****" when she sees them, she should bring the child or inform us for us to also check it helps".* ***(IDI-P3, PNW, 9 Years).***

Some participants mentioned giving mothers discharge instruction and follow up information, however the education the discharge instructions were also inadequate:

"Before they are discharge, we educate the mother that, your baby this and that can make them yellow so we tell them to come for PNC and again we call them to inquire if all is well". ***(IDI-P9, PNW, 5 years).***

"Many times, the mothers will want to see that the yellow is all over the body before the baby will be brought to the hospital to be reviewed. So, we teach them that when you get home and you see this you go to the nearest facility". ***(IDI-P11, NICU, 3 years).***

From the above narration the participants education whether before admission, during admission and even discharge instructions had inadequate information. Although midwives knew they could empower mothers through education the information given them were insufficient.

4.52. Parental Communication: The Role of Scare Tactics

Communication was a sub category in the experiences of the participants and they had difficulties communicating and used fear appeal to get mothers to accept admission:

"If you educate them on the consequences, at times I show them some pictures from my phone a baby that was not identified early. You mention exchange blood transfusion and mention some signs of complications like opisthotonus it scares them and then they understand for the newborn to be admitted." ***(IDI-P2, NICU, 5 years).***

"Some of them you can tell them the child may have neurological disorders ("gyimi gyimi, yarefoo") may have developmental delays and cannot thrive like children in their same age group some understand" ***(FP1, PNW, 5 Years).***

Some participant message indicates a potential drawback of using complication focused approach in communicating with the mothers an example of a lack trust and refusal of admission:

"We mention that the baby can have neurological disorders, delays with sitting, walking which cannot help the child. Some of them after you mention the complications they understand for others too regardless of the explanation they will not understand but

*rather will tell you they will take the child home and do sun bathing". **(IDI-P7, NICU, 5 Years).***

*"Aah this question is a question I really like because mostly we have many of such issues, usually the understanding on the part of the mothers mostly is lacking aha. We try and explain to them that if the baby is managed under the phototherapy for some time, it is better in the management of the jaundice rather than going home and reporting with the baby in a severe form such that if it affects the baby's brain or cause some neurological disorders as it is a complication. For some of them if you make them understand that its complication is the yellow affecting the child's brain some of them become scared but for others regardless of the explanation do not understand". **(IDI-P3, PNW, 9 Years).***

Another participant mentioned that letting mothers know the seriousness of the complication is only to get them accept the admission and not a scare tactic:

*"What I have also seen at NICU is that, we hammer more on the complications not that we would want to scare them but make them aware of the seriousness that it can even end up in death. Most of them when they hear about the complication accept the admission" **(FN3, NICU, 3 Years).***

*"But when you find time and explain to them the consequences the baby may suffer in the future then they accept it, it has to do with time and patience for you to explain the phototherapy management and what may happen if they refuse the admission. So, if you take your time and explain with pictures they understand well" **(IDI-P6, PNW 5 Years).***

Another midwife mentioned she informs mothers specifically of some potential developmental delay:

*"As my colleague said, if you mention some of the complications like the developmental delays and the neurological disorders ("gyimi gyimi, obetenafom akye"), if the bilirubin stains their brain the child may not speak like children of the same age group, cannot walk, then they understand" **(FP3, PNW, 1 Year).***

> *"The child may not walk and may have difficulty hearing. It may happen that the child will not perform well in school so when you mention these, then she accepts the admission for you to manage the child".* ***(IDI-P8, PNW, 9 Years).***

For a midwife, her means of getting mothers to start the management is telling her know how she will suffer parenting such a baby should complications set in later in life:

> *"So, if you educate the mother well and explain the child may have neurological disorders and may be invalid, the mother will suffer with parenting the child because it may affect almost development and growth of the child it helps for them to accept the admission for us to start phototherapy".* ***(IDI-P1, NICU, 12 Years).***

As a means of scaring mothers to accept the management of NNJ a participant goes to the extent of explaining exchange blood transfusion for babies with very high levels of bilirubin:

> *"We communicate to them about the complications the child may suffer if the baby is not managed under the phototherapy at times, we will have to take out the baby' blood and replace with a fresh blood that is the exchange blood transfusion. Once you mentioned that the mother becomes anxious and accepts the admission some will even say that whatever that you will do to help my baby you do it".* ***(IDI-P7, NICU, 5 Years).***

> *"...If you educate them on the consequences, at times I show them some pictures from my phone babies that was not identified early. You mention exchange blood transfusion and mention some signs of complications like opisthotonos it scares them and then the they understand for the newborn to be admitted".* ***(IDI-P2, NICU, 5 years).***

Only a participant response reflected a communication strategy without any feal appeal or difficulty:

> *"First thing they are made to understand if the baby is jaundice it is not their fault, it is very common and every bay can be jaundice, a nurse, midwife, even the medical officer's child as well as even the president's child. It is a common condition that every neonate may suffer. After explaining for them to understand it is a common condition, the causes*

are also explained and then explain the phototherapy management and how long the baby will be under the phototherapy machine" ***(IDI-P5, NICU, 3 years).***

All the above responses on communication tells that the means of communicating in an emotionally charged environment as the NICU amidst the fact that mothers needed emotional support was the use of scare tactics and fear appeal to make mothers accept the admission of their babies diagnosed with neonatal jaundice.

4.53. Gaps in Postpartum Care: Premature Discharge and Missed opportunity to care

There were instances of near missed cases were babies reported with acute bilirubin encephalopathy and severe hyperbilirubinemia. According to some midwives, few diagnoses were missed that led to missing the opportunity to provide prompt intervention:

"It has ever happened at the PNW that a baby has been severely jaundice it was a home delivery that was brought to the postnatal ward in the evening so I may say it was an oversight because it in the morning the following day when the Drs. did the review which was day 2 after delivery, they realize the neonate was severely jaundice. The baby was rushed but had to undergo exchange blood transfusion even the baby could not survive." ***(IDI-P2, NICU, 5 years).***

"Yes, a woman who was admitted at the PNW we did miss the diagnosis and the baby was discharged home, she reported with signs of complications and we did an exchange ..." ***(IDI-P10, PNW, 4 years).***

Other midwives affirmed that babies that were healthy and well after delivery were discharged within 6 to 24 hours after delivery without taking into consideration babies that are at a higher risk for developing NNJ:

".... if you deliver SVD within 24 hours you will be discharge but for the onset of jaundice it may occur from the 3 day onwards and if you are discharged you will come on review at the PNC the 3rd day if care is not taken they may come after 7 days when

you cannot start the phototherapy so it is a barrier in the early identification and management of NNJ for us" ***(IDI-P2, NICU, 5 years).***

"Another challenge is that everyone that delivers the next day or six hours after the review once the baby is discharged by the pediatric team should I even see it and tell the mother she will tell you the Dr. even said the baby is fine so that is one thing that is challenging on my ward." ***(FP2, PNW, 2 years).***

Few participants emphasized the insufficient attention given to babies born to C/S mothers when their babies are discharged while the mothers are on admission some response as below:

"Yes other barriers that affect the early identification of NNJ until it is identified in a severe form is that some mothers after C/S day 1, baby may be reviewed by a Dr and diagnose as a well-baby and discharged the baby while the mother might still be on admission for monitoring or wound dressing because the child is discharged much attention is not given to those children and so if the mother does not strictly observe the baby and ask the midwife to come and see the child, we mostly miss the diagnosis for those children because they are discharged and no longer part of the records" ***(IDI-P1, NICU, 12 years).***

For some of the participant at the PNW if a baby is discharged and diagnose as well baby by the pediatric team and mother is still on admission but later becomes yellow, mothers refuse findings and diagnosis of jaundice:

"Yes, the C/S and at times the mothers that deliver on their own and had complications like PPH or had some maternal labs to do. Once they have been discharged by the Pediatric team whatever you say they don't accept because Dr. has confirmed a well-baby and discharged prior to the identification". ***(FP2, PNW, 2 Years).***

"For the negative influence, maybe the mother had C/S and she has not been discharged but the baby has been seen by the pediatric team and discharged after diagnosing as well-baby. Because the baby is still with the mother at PNW if you should identify that the

*baby is jaundice the following day and informs the mother the baby will be admitted, she will never accept. She will tell you that it was just yesterday that the doctor discharged me after diagnosing well baby so why do you the next think my baby should be admitted you may say all you have to but refuse the admission". **(IDI-P8, PNW, 9 Years).***

There were missed opportunities to care that lead to some babies developing bilirubin neurotoxicity and also death. Some diagnoses were missed due to inadequate equipment to check and others were due to premature discharge. This tells how the postnatal and neonatal periods maybe overlooked.

4.54. Collaborative Approaches and lack of teamwork

It is imperative to collaborate with interdisciplinary team and colleagues in the stressful NICU environment. Some midwives claimed there were collaboration with other health providers in ensuring timely identification and appropriate management of NNJ:

*"Oh, okay normally, we work with postnatal ward, OPD, postnatal clinic, ANC. All of us are aware we have talked about it for all of them to know concerning the neurological disorders. We let them know particularly about the jaundice that when mothers report for CWC they should check their eyes and skin, immediately the postnatal clinic staff see that, they prompt us that they are bringing a baby. At times they come together with the mother to the NICU aha then we also continue from there". **(IDI-P7, NICU, 5 Years).***

According to some midwives they mention they do task sharing and ensure everyone does what is assigned go be done:

*"That was what I said, so if we know we are four on duty we share the task two are for wound dressing, another for mother and one for babies. So, because the baby is assigned to care for the babies regardless, she will check and see. Notwithstanding the load, if you are assigned you will do it." **(IDI-P10, PNW, 4 years).***

"I do assessment on my part and with the workload, at the end we will have to achieve what we have to, so we will share the work among ourselves and after the assessment you make sure you do your intervention you will not sit back after the assessment and whatever thing that must be done you do it". ***(IDI-P5, NICU, 3 years).***

Some of the participants were emotional responding to the question: How do you collaborate with other health professionals to ensure timely and appropriate management? Some shared their colleagues' statement to mothers that affect management of NNJ:

"At times some can even say it to the hearing of the mother that the baby's jaundice is not severe and it is very difficult to be at the NICU when your baby is admitted. Once the mother hears that it will seem to them that it is you that wants the baby to be admitted." ***(IDI-P10, PNW, 4 years).***

"Oh yeah, I have that experience before there was some tint of yellow and I suggested by morning the baby's yellow discoloration will be severe. A colleague mentioned you suggesting admission for this baby the next thing you know the baby will be hyperthermic and we may start antibiotics. Let the baby go home for the mother to breastfeed effectively. One way or the other you may meet one at times I don't know if it is out of sympathy or but that too at times affect the care". ***(IDI-P7, NICU, 5 Years).***

A participant mentioned how a new house officer refused to accept suggestion from them and ended up with readmission in a severe form:

"erm a new house officer came to review babies on the ward a baby was reviewed on account of hypoglycemia so the child was admitted the day the mother was lactating immediately the house officer discharged the baby we said it that the discharged was so quick but he did not mind us 3 days after the neonate was brought back severely jaundice and unfortunately when the baby was brought back the serum bilirubin above 300umol/l but it is really disturbing when we share our opinion and some house officer think we are compelling them to do that not thinking we are all helping together as a team so if you suggest why not wait a little and observe for the baby for NNJ the person see it that you are not helping him in any way so it is the first barrier." ***(IDI-P2, NICU, 5 years).***

While few mentioned there were collaboration others also mentioned lack of collaboration or teamwork. From the above the care for the jaundice neonate were affective with the collaborative and lack of collaborative approaches.

Emerging Themes from the Data

Three main themes emerged from the findings of the data gathered from participants. Two of the three additional themes were from analysis from both the individual in-depth interviews and the third theme (support services for NICU mothers) was obtained only from the analysis of the focus group discussion. The three themes that emerged were Perceived Consequences, Separation Anxiety and Perceived Risk of NICU admission and lastly Support Services for NICU mothers.

4.60. Perceived Consequences

Perceived consequences were evident from all the participants and all the midwives share their concerns and emotions on the complications and the possible neurological and or developmental disorder. Some added exchange blood transfusion and death. All the data collected from participant emphasized late identification and the perceived consequences.

4.61. Neurological / Developmental problems

About eleven of the participants mentioned some of neurological and developmental sequelae babies suffer because of bilirubin neurotoxicity and some shared experiences of grown-up living with the consequences of complications of NNJ till now responses:

> *"... We went for a training and a mother shared her experience, that her 10 years old child cannot walk because of jaundice she did not see it early and when she recognizes*

but she did not send the child also the hospital and it has affected the child the child has still not stand to walk but always on the floor and the baby has become a burden to the mother. So, when it is identified early, some of these complications will be prevented early to avoid these complications" ***(IDI-P2, NICU, 5 years).***

"... there at the hospital I worked before I came here; the protocol is 7 days postnatal visit so the baby was yellow and had complication when the baby was brought for PNC on the 7 day the baby had signs of complication and up to date the baby has not walk the child uses audio hearing aid to be able to hear". ***(IDI-P9, PNW. 5 years).***

For some midwives some of the babies reported very late for admission with signs of encephalopathy:

"So, at times the mothers will bring their babies from the house with signs of kernicterus already. Some of the babies will have their heads falling back". ***(IDI-P4, NICU, 1 Year).***

"I have seen several children that came with jaundice some were admitted as a referral from health centers and nearby facilities because the bilirubin crossed the blood brain barrier immediately you see those children you can tell the all is not well and you know as for the exchange blood transfusion it will be done ..." ***(IDI-P1, NICU, 12 years).***

Some participants mentioned some of the perceived consequences associated with NNJ when there is delay in identification and management:

"I also think early detection helps because if it is not identified early and managed promptly it may lead to kernicterus and the baby may twitch have developmental delays, the child may delay and sit for quite a longer time without standing up, drooling which mostly is associated to child of the river ("Nsuo ba")". ***(FP1, PNW, 5 Years).***

"Neonatal jaundice can cause cerebral palsy, blindness, developmental delays, hearing impairment all these happen". ***(IDI-P10, PNW, 4 Years).***

The above findings are evident enough and tells how babies are suffering from complications of NNJ as it reflects participants experiences when it comes to babies whose condition were identified late and had signs of complications.

4.62. Death

For some participants they shared how some babies did not survive after mothers refused admission:

> *"Yes, as we keep working and adding to our number of years of experience then we are learning from what happens aha there has been an instance a mother refused admission and forcefully took her child home even though we communicated severally she reported back with severe hyperbilirubinemia that had already affected the child's brain that was not reversible and we could not do much aha and even later the child died aha"* ***(IDI-P3, PNW, 9 years).***

> *"So, I also think early detection can save life because from my experience I know a mother that refuse admission after diagnosing NNJ whose child jaundice became complicated when she took the child home and lost the child at the long run".* ***(FP1, PNW, 5 years).***

Some also mentioned babies that were rushed to the ward for treatment after complications had set in but still died regardless of treatment:

> *"Death Yes, there was a time I came for night shift the morning of shift they rushed a baby from home when they came the baby was severely jaundice and the next night shift when I came back to work the baby had expire, I felt they did something at home the abdomen was distended and we aspirated some greenish secretions and so with that it has influence my decision.".* ***(IDI-P5, NICU, 3 years).***

> *"It has ever happened at the PNW that a baby has been severely jaundice it was a home delivery that was brought to the postnatal ward in the evening so I may say it was an*

oversight because in the morning the following day when the Drs. did the review which was day 2 after delivery, they realize the neonate was severely jaundice. The baby was rushed to NICU but had to undergo exchange blood transfusion even the baby could not survive" ***(IDI-P2, NICU, 5 years).***

A midwife also confirmed a referred baby expired after the mother went home and reported later after 7 days following the referral:

"So, she took her to a maternity home name deidentified and they said because the baby is a preterm the baby was referred to my unit. The woman did not come and stay back in the house for about a week with the reason of her also not feeling well, and the distance of the facility and her other children. She felt once the baby could breastfeed the baby is doing well, until the baby was unable to feed then she brought the baby. Seriously the child was very yellow, even if the sample had some tint of yellow the baby spent three hours on the ward, then expired" (FN1, NICU, 3 years).

The findings from the narrative proved that the timing of treatment is really important to keep babies alive and not just providing treatment anytime. The emphasize of treatment from the above findings is prompt treatment of babies with NNJ.

4.63. Exchange blood transfusion

The emphasize of late identification and babies reporting with signs of complications of NNJ surfaced where some of the responses from participants experiences affirmed babies that had to go through exchange blood because of their bilirubin level:

"Yes, please, that one I went to the OPD to do something the baby was really yellow and I think kernicterus has already set in and when she came, she was told the Drs. are having a meeting I asked her to follow me to the ward and we took sample for urgent SBR, blood group and G6PD and GXM. Exchange blood transfusion was done for the baby and the mother was very grateful". ***(IDI-P2, NICU 5 Years).***

> *"Erm, a situation one that happened, I would say even kernicterus nearly set it, for that baby the mother was very cooperative and the father was also cooperative, we did an exchange transfusion. They were admitted for quite a longer time but when the baby was discharged the baby was well, …".* ***(IDI-P11, NICU, 3 Years).***

For a midwife there was a challenging case that was identified early regardless the child had to undergo exchange blood transfusion:

> *"Yes, at times we have challenging cases, on my ward a baby was admitted because of hypoglycemia, on day two of admission the baby was seen to be yellow and I started the baby with phototherapy. I was thinking identifying it early and managing it early the serum bilirubin could reduce but it was increasing with days. Even under the phototherapy the yellow discoloration was rather worsening. The child had an exchange blood transfusion and a whole lot but hopefully and thanks to God the child recovered. We did not expect that it would have reached exchange level but it did.".* ***(FN1, NICU, 3 Years).***

A participant shared an experience of a colleague's baby undergoing two (2) different exchange blood transfusions while on admission:

> *"As my sister said I have also experienced that on my ward she is even a staff at the facility sister E, she is having that history earlier she did not know about ABO incompatibility her 1st child had 2 exchange blood transfusion".* ***(FN3, NICU, 3 Years).***

The above findings confirmed and emphasize late identification of NNJ and babies that developed complications of NNJ and so underwent exchanged blood transfusion.

4.70. Separation Anxiety and Perceived Risk of NICU Admission

The care of the neonate and the midwives experience cannot do away with the emotional effect midwives go through managing babies in the NICU environment and also what mothers experience if their babies are on admission. It is really important that for midwives to be able to

manage NNJ promptly, mothers' emotions and how mothers perceived the admission of their babies to the NICU be addressed.

4.71. Emotional attachment to her baby.

From the study findings, participants shared how the emotions of mothers affect the care they provide:

> *".. some of the mothers even as you have set up fluid for the baby and expect the mother to keep the baby under the phototherapy for intensive phototherapy the mother will be picking the baby from under the phototherapy. You will see the baby on the mother's laps."* ***(FN3, NICU, 3 Years)***

> *"...If the child is lying next to her then she knows she has her baby next to her..."* ***(FP3, PNW, 1 year)***

A participant mentioned how uncomfortable it is for the mothers if they are restricted not to pick babies undergoing phototherapy:

> *"Okay so the biggest, the negative aspect when the jaundice is severe, we restrict breastfeeding so the mother will see that the baby is crying but she cannot pick the baby from the phototherapy and so it becomes uncomfortable for them. And with those that are feeding too, at times after picking the baby from under the phototherapy the mother will be holding the baby even up to an hour. Because she would want to hold and feel the baby".* ***(IDI-P5, NICU, 3 years).***

> *"You will tell them allow the baby to have enough of the phototherapy you will get there and mother has picked the baby not that the baby is crying, but on her laps and she is admiring the baby".* ***(FN1, NICU, 3 Years).***

A midwife's response also indicated how mothers report to the NICU for admission having a pre conceived idea of the stress at NICU:

"... because staying at the NICU is stressful, what I do is to calm them down, some of them from the postnatal ward even after the medical officer informs them, they report to NICU as though they are not aware of the admission" ***(IDI-P5, NICU, 3 years).***

4.72. Desire for physical proximity

Mothers have a natural instinct to care for and nurture their babies. Being physically close to their babies allow to fulfil this role and also physical proximity can provide reassurance and comfort.

A participant shared how a mother refused admission because of the distance from PNW to NICU while the mother needed her baby to be closer to her:

"*I had an encounter with a mother at the PNW who was refusing admission to the NICU she says the distance from the PNW to NICU is her problem because she was known HPT, she will come to the PNW then be called back that the baby is crying she will get back and because she was not having time to rest her BP could not be controlled. If the child is lying next to her then she knows she has her baby next to her".* ***(FP3, PNW, 1 Year).***

"*Another thing I have witnessed on the ward is the mothers who deliver on their own. For this particular case the mother delivered in the house and was preterm the mother was not close to our facility. So, she took her to a maternity home name deidentified and they said because the baby is a preterm the baby was referred to my unit. The woman did not come and stay back in the house for about a week with the reason of her also not feeling well and the distance of the facility to her other children. She felt once the baby could breastfeed the baby is doing well, until they baby was unable to feed then she brought the baby. Seriously the child was very yellow, even if the sample had some tint of yellow the baby spent three hours on the ward, then expired".* ***(FN1, NICU, 3 Years).***

4.80. Support Services for NICU Mothers

Coordination and support in the midst of the exhaustive environment were some of the reasons the participants could be helpful for the mothers whose babies are admitted. The unavailable support services for NICU mothers were a reason why some mothers refused admission even after the diagnosis have been made.

4.81. Breastfeeding support for mothers

Breastfeeding support for mothers whose babies are jaundice is key in managing babies with neonatal jaundice as breastfeeding will allow babies pass meconium and get rid of some of the bilirubin through their stool. However, some mothers face unique breastfeeding challenges.

Some participant shared how even after taking a baby to the PNW to be assisted and put to breast the mother will not be supported to breastfeed the baby:

> *"You will take a baby to the PNW for the mother to put the baby to breast, you will be expecting that the staff or midwife on duty to support they will bring the baby to you that the baby could not suckle. However, you will go there yourself and put the baby to breast and the baby will be sucking and you will feel like how. The PNW staff thinks it has to do with the neonate and it is the work of NICU and that NICU staff will have to do that but here is the case if I should leave my ward, we are understaff who will take care of the rest of the babies. So, if the mother is in your care and we should bring the baby to you and we will expect that you help with something kindly help. Because it is an ICU and we do not want it that way that we will move a baby to the PNW to be fed but once it happens that we will have to send the baby to be fed and we bring them you should try your best and help us".* ***(FN3, NICU, 3 Years).***

Another participant mentioned even the PNW staff can equally support breastfeeding of the babies by expressing breastmilk from mothers at the PNW to feed babies who are on admission at the NICU and their mothers are on admission at the PNW:

> *"...with the issue of breastfeeding if not even bringing the baby to PNW the staff at the PN can help express the breastmilk into a cup. Some of them the breast is engorged and it becomes painful to express so they will not express. But if the staff should help and make them understand that it is painful but you will have to express, I think that too will help. If we are waiting on them for the breastmilk, they will give excuses of no breastmilk but later the baby will be admitted to NICU. When it happens that way then the staffing issue and the workload comes it, it is very difficult and loaded working at the NICU so you will have to help us".* ***(FN1, NICU, 3 Years).***

The participant below was able to detect the admission from PNW on account of NNJ were mainly due to breastfeeding jaundice and her she shared her support for first time mothers:

> *"we mostly encounter NNJ and the ones we normally encounter are the breastfeeding related type of jaundice, we normally get the breastfeeding jaundice so we try as much as possible that for the new mothers that come to the postnatal ward we let them sit up position and attach their babies to breast for us to see how they are breastfeeding aha so you will explain to them about the essence of 2 hourly breastfeeding but sometimes some of the mothers are reluctant and so we mostly find time for the first time mothers".* ***(IDI-P3, PNW, 9 years).***

Some participant message showed how mothers lack the correct information about the first yellow milk (colostrum) and so express and discard away:

> *"Another one that I experience on my ward was a mother whose baby could not feed well on breast and was told to express milk into a cup to feed the child. After expressing the breastmilk, the colostrum that is yellow she said her mother, thus the baby's grandmother*

says it will cause the child to be yellow. The other she expressed that was yellow too she did not bring it but threw it away again". ***(FN3, NICU, 3Years)***

"And others also say when you feed babies with colostrum it does not help it causes jaundice". ***(IDI-P6, PNW, 5 years).***

Information gathered from midwives that participated in the study above stated breastfeeding support for mother at the NICU is a means of assisting mothers emotionally and also aids in managing neonatal jaundice.

4.82. Social Support for NICU Mothers

In addition to offering physical help, emotional support, and a sense of belonging, thus social support might lessen the detrimental effects of NICU admission on mothers' mental health. Some of the findings supported the idea that effective NICU care involves holistic, individualized support for mothers, extending beyond medical treatment.

A participant mentioned the strategy and how she gets the mothers to accept the admission if they refuse admission because of financial issue:

"The strategy I also use is some of the mothers also have issues with money and mostly thinks about the money so at times if I am on duty the little I do is every morning one of my counsel to them is once you have life you have a precious thing and ("sebe sebe se wo wu mpo aa, w'abusuafoo beba abetua") should you even expire your family members will settle the bills because they will gain and benefit with your corpse so think about your life now. Some of them think the monies they have saved can be used for clothes to attend CWC during the 40 days so for me I advise them that if there is money somewhere they should use it to treat the child. Also, the money issue should not hinder them because there can be a way and we will not take the money before the treatment we will nurse and care for the child even if the money is not available on the time of discharge, you can

arrange the payment with the hospital management and know how you will pay the bills afterwards". (FP2, PNW, 2 Years).

A participant also shares how some mothers will go to NICU but return to PNW because they do not have money:

"..... regardless of how the mother is I will make sure I take the child to NICU then take my time to explain. Some will go to NICU and come back to you that she does not have money..." ***(IDI-P6, PNW, 5years).***

Another participant shared an experience whereby a mother refused admission because the husband was not around to assist in paying the bills and suggested if the government can assist

"I have experienced some just last week at NICU all her issue was related to finances that her husband is not around and that she does not have money to pay the bills should the baby be admitted... I think if Government can help so that NNJ can be treated free of charge, I believe most of the mothers will not refuse admission.". ***(FN2, NICU, 5 Years).***

Beyond the financial issues another aspect of social support was the need to care for other babies in the home:

"Some of the mothers it is not the admission that is their problem some of them they have other babies in the house they don't have anybody to take care of, others too it has to do with financial issues". ***(P11, NICU,3 years).***

The participant below mentioned providing tangible assistance and practical aid when the mothers at PNW are not well and cannot feed their babies at night and have to rest:

"I came for night the rate that they (NICU) were disturbing a mother, I had to go to NICU and tell them even if they can set up fluid on the baby, there are days the mothers are not so well but you will inform the staff (NICU) and they seem not to understand it normally happen during the night shift ..." ***(FP3, PNW, 1 Year).***

A participant indicated having someone to explain things and having a payment plan was the reason her sister accepted admission for her babies with NNJ:

> *"My sister delivered twins and they were jaundice she did her caesarian section here and she had a lot to pay so she did not understand why her babies will be admitted for her to pay other bills again so it took somebody that could explain and there was a plan for the payment. The bills were divided into three for her to be paying the three bills at an arranged plan now she and her babies are home doing well. She is aware on her 40 days visit she will have to come with some money to pay some of the bills".* ***(FN2, NICU, 5 Years).***

A mother that had been at the NICU before refused the admission because of how stressful the NICU environment is, she was offered a private room, then she accepted the admission:

> *"The client that refused the admission the baby was earlier admitted to NICU and was discharged so when she came and the baby was to be readmitted, she realizing the stress she went through did not want to accept the admission because she suffered a lot. The nurse manager had to come in and give her one of the private rooms before she accepted the admission. She told another mother the private room is very nice and so if the baby will have to be admitted and she refuses the admission that room will be given to her. Truly, she equally did that and she was taken to that room to join her. Do you get me? This stressful situation affects the mothers so let's see how you can help them".* ***(FP3, PNW, 1 Year).***

All the above findings from the participants indicated mothers to be able to accept admission of the babies diagnosed with neonatal jaundice will need some social support. Providing mothers with tangible assistance can affect the care and management of neonatal jaundice. It was also seen that prompt management of neonatal jaundice was greatly affected by financial issues.

Summary of Findings

The study analyzed the attitudes, subjective norms, behavioral intentions and behaviors of 17 midwives caring for neonates with jaundice (NNJ) at St. Patrick's Hospital. From the key findings, midwives had good knowledge, but some held misconceptions this coupled with mothers prevailing beliefs such as exposing babies to sunlight and spiritual beliefs affected management. Social issues, maternal autonomy, supervisors' expectations influenced midwives care for the baby with jaundice. Most midwives had good attitude and their readiness and decision to identify and manage NNJ promptly was based on their emotions and concerns about late identification and complications of NNJ. Again, lack of urgency, resource optimization, and work-related barriers affected midwives' intentions to provide quality care. Midwives' behaviors included missed opportunities, premature discharge and empowering parents with education, but some provided insufficient depth, and used scare tactics to communicate with parents. NICU midwives knew their ward protocol, but most postnatal ward midwives did not even know of any protocol on their unit when it comes to babies that becomes jaundice. Collaboration between units was lacking. Finally, the unexpected themes from the study findings Perceived Consequences, Separation Anxiety, Support Services for NICU Mothers highlighted the need for a more comprehensive approach to addressing the challenges of neonatal jaundice management as some findings expresses supports other than medical management in shaping the parents' acceptance or refusal in managing NNJ promptly.

CHAPTER FIVE

DISCUSSION OF FINDINGS

The study's results are discussed in this chapter. In the Offinso Municipality of Ghana, the study made an inquiry and examined the experiences of midwives with the early NNJ identification and treatment. Participants' demographics, midwives' attitudes toward early NNJ identification and management, subjective norms influencing midwives' early NNJ identification and management, midwives' intention to identify and manage NNJ early and promptly, and midwives' behaviors regarding early NNJ identification and management are all covered in the discussion.

5.0 Demographic Features of the Participants.

A total of seventeen (17) midwives participated with their ages ranging between 25 to 43 years. The working experience of participants was within 1 year to 12 years. The data from this study suggest that knowledge was not influenced by midwives' rank, age or years of experience, all participant at the NICU had good care practices regardless of their years of experiences, rank or age probably because they managed babies with NNJ daily. Similarly, a previous study in West Java, Indonesia highlighted no significant association between healthcare cadre and level of education, age, marital status and skills in the prevention of stunting. The knowledge and motivation of health cadres to prevent stunting did not significantly correlate with age, marital status, occupation, or level of education (Mediani et al., 2022). The educational levels of the participants had no significance on mothers' knowledge concerning NNJ. This findings is different from a study that found the level of education of the respondents had a significant

positive relationship with respondents knowledge about NNJ (Huang et al., 2022). This might be so because the respondent used for the studies and the methodology used were different.
More than half of the participants nine (9, 53.0%) had worked for 5 years or more but it was a different finding for a study that found most participants 24 (68.8%) have 1 to 4 years' experience (Nambinga & Nghitanwa, 2023).

Regarding religion, only one participant was a Muslim, while the other sixteen were all Christians. This demonstrated that Christianity is practiced by the majority of participants (16, 94.1%). In the most recent population and housing census, the Ghana Statistical Service verified this. Christians make up around seventy one percent of the population (Ghana Statistical Service, 2021).

5.1. Attitudes of Midwives in Early Identification and Management of NNJ.

In terms of midwives' awareness concerning neonatal jaundice, participants were aware of the definition of neonatal jaundice and were able to identify its symptoms, prevalence, and complications. These are consistent with Donkor et al., (2023) study among nurses that assessed their knowledge attitude and practices towards neonatal jaundice, the study found that most respondents were aware about NNJ. Similarly Salia et al., (2021) study in Ghana reported that almost fifty percent of the nurses had good knowledge. Although the aforementioned studies used different methodology, they had similar response probably because targeted trainings and awareness they may have taken place as the years went by. Several studies have reported that respondents exhibited limited knowledge about NNJ (Demis et al., 2021; Olatunde et al., 2020). The difference in response is greatly due to the different targeted population while the studies mentioned used mothers the current studies used midwives this could account for the variation in

the knowledge level. On the other hand, a study in China revealed most mothers had inadequate knowledge (Huang et al., 2022). This could be due to the difference in geographical settings and the difference in years and probably the different approaches used compared to the current study.

From this current study, some participants reported a prevalence of 6 out of 10 admissions or 8 out of 10 NNJ admission although the findings from this study did not mention whether the data were for babies born term or preterm. This is supported by the data that said about 60% of terms and 80 % of preterm (Hansen, 2021). The similar percentage in both studies might be due to the physiology of the RBCs breakdown in the midst of the immature liver of the newborn and the life span of the RBC's a physiology that is same for all neonates globally Ansong-Assoku et al., (2024). Participants' emotions and concerns highlighted the need for early detection of NNJ because participants witnessed infants who have experienced complications of NNJ and or babies living with some neurological disorders. The majority of participants had a favorable attitude, according to the summary of their knowledge, their awareness, practical and actionable patterns, and emotional concerns towards NNJ. The results are consistent with a study in Ghana that found respondents' attitudes regarding NNJ were favorable (Donkor et al., 2023).

According to some participants, the baby's condition before discharge serves as a marker for late identification of NNJ. Therefore, if a baby had EBT and was later discharged, termed it early identification. This could mean that the acquired knowledge of participants was only from their experience at the PNW and NICU. For midwives' practices, the NICU midwives had satisfactory practices compared to participants from the PNW probably because babies are referred to the NICU nurses for management. The participants' behaviors in this study contrasted with the findings of Elslemy et al's., (2023) investigation of nurses' performance in providing humanized care. Furthermore, according to Bura'a and Younis', (2023) forty-five percent of

nurses knowledge about phototherapy were adequate and in twenty nine percent of nurses their awareness of how to administer phototherapy to newborns were good. This indicates there are still knowledge gap in neonatal jaundice management. Regarding midwives' emotions and concerns toward the identification and management of NNJ, some participants' (midwives') shared experiences demonstrated how emotionally and upset they were to witness some newborns die or experience NNJ problems, and other babies live with neurological sequelae. This confirms the saying that NICU is an emotionally charged environment for parents and health practitioners (Lee-Winn et al., 2023).

5.2. Subjective Norms Affecting Midwives' Early Identification of NNJ

Concerning midwives' practice about routine nursing care related to neonates with jaundice, and the commitment to standard protocol, evidence-based nursing practice, all participants from the NICU were aware of the ward protocol and had satisfactory practice. This finding could be as a result of the regular use of the ward protocol in caring for babies with jaundice. Evidence-based practice was the standard of practice. This result is similar to a study that used fifty four articles and thirty studies showed a positive significant effect in either patient-related nursing outcomes or guideline adherence (Spoon et al., 2020). The majority of the nurses in the study stated that, in order to diagnose NNJ, the newborn's jaundice is confirmed by taking a blood sample for total serum bilirubin after visual inspection, this is consistent with a study by Nambinga and Nghitanwa, (2023), in which 68% of the participants agreed that the only way to confirm newborn jaundice is to check the total serum bilirubin. The results may be congruent probably because the midwives used for the study confirmed it is the top cause of admission at the unit and so they have been caring and managing for NNJ cases and so know and are equipped in managing the condition they daily manage.

According to a study that found TcB measures are a reliable screening test for NNJ, participants for this study also indicated utilizing the Transcutaneous Bilirubinometer to check the bilirubin level following visual inspection for NNJ (Hulzebos et al., 2021; Kemper et al., 2022). Prevailing belief and misconceptions were mentioned by all the participants as an indicator for parents and families in refusing admission due to NNJ. These myths affected the prompt care given to babies that develop NNJ as mothers explore first these socio-cultural practices. From the findings a participants recommended exposure under the sun as a management aside hospital treatment for babies with NNJ, most participants indicated some of their colleagues and majority of mothers preferred to expose their babies under the sunlight which even after they explain to them about the need for medical management it is congruent with a study on mothers that expose babies with jaundice under the sunlight (Huang et al., 2022; Seneadza et al., 2022). These are consistent with this study because it explains how the practices towards NNJ are driven by deep rooted beliefs and cultural practices other than educational levels and midwifery practice. Also colored food, putting breastmilk on the eyes of babies, herbal medicine was some of the practices that affected the early identification and management of NNJ by participants. All the participant mentioned them as why mothers refuse admission these echoed results from some studies (Salia et al., 2021). A participant shared how some of her colleagues use to say the routine drugs that are given to pregnant women cause NNJ in babies.

For social influence participants shared how grandmothers' words and decisions were abided by mothers this confirms a study conducted in Ghana on sociocultural practices affecting the care of preterm infants in the Ghanaian community by Adama et al., (2021) that stated In Ghana, caring for infants is seen as a collective duty rather than just the parents' job. The findings highlighted the significant role of spiritual/religious beliefs in shaping health decisions

among participants. Spirituality/faith-based health beliefs emerged as a subtheme, illustrating how participants' spiritual convictions influenced their attitudes toward medical treatment. This phenomenon is consistent with a recent study that found religious adults with mental illness may seek mental health support from religious leaders in conjunction with secular mental health therapists. This highlights the complex relationship between religiosity and health behaviors (Boateng et al., 2024). The belief, culture, religion, and spirituality of the parents whose children were in the care of the participants (midwives) had an impact on the midwives' ability to provide timely care. This confirms statement that healthcare professionals should be able to recognize patients who need help finding the right spiritual care services, as spirituality is an aspect of human being (Hvidt et al., 2020). This study emphasizes how important it is for medical professionals to take these views into account when speaking with patients because some parents who refused admission because of their spirituality later reported when their infants developed acute bilirubin encephalopathy.

Making the decision to admit a newborn with NNJ was stressful and challenging, particularly when the participant believed that the parents were holding onto their culture that NNJ was not a serious condition and can be managed home with herbs and sunlight. This supports Parish et al.'s (2022) assertion that stress is a natural part of decision-making for families, babies, and medical professionals. Given their knowledge of their children's interests

, parents are typically in a better position than others to comprehend their requirements and make informed decisions on their health care (Spriggs, 2023). But the babies' best interests also played a role in the care; according to seven of the participants, if the child needs to be admitted, the parents do not have the final say in the matter; instead, what is best for the child is carried out. Some decision-makers were able to strike a compromise between medical necessity

and mother autonomy this is true according O'Brien and Newport, (2023) as taking insight, having empathy, and a great deal of analytical and communication skills to strike the correct balance between parental autonomy and the doctor's role in shared decision-making.

Similarly, this confirms Charles et al., (2023) statement that it is crucial to clarify and refine the idea of culturally sensitive communication.

5.3. Behavioral Intentions of Midwives in Early Identification of NNJ

According to the study, every participant understood the need for treatment, and as a result, midwives' intentions to provide timely and prompt care were impacted in difficult cases. Notwithstanding the positive intentions many babies reported already with complications already as a referred case from their homes which emphasized late identification. For some participants, they missed out on early intervention because the babies' NNJ complications developed quickly and they required exchange blood transfusions without any underlying risk factors. This was in line with earlier research that discovered that in the majority of instances, the cause of high hyperbilirubinemia was unknown (Donneborg et al., 2020). The uncertainties associated with NNJ and the perceived implications of the condition were the reason for the participants' desire to provide timely care. The majority of individuals spoke of infants whose problems could have been prevented with early detection.

According to a number of studies, women who had previously experienced NNJ in their babies were typically aware of the condition and sought treatment for it (Seneadza et al., 2022). Midwives with a history of NNJ in their child were perceived as being expected to be vigilant due to their personal experience in providing timely care, in contrast to the other participants whose child had never experienced NNJ. This is consistent with the findings that indicated

mothers with a history of NNJ in their previous children had 7.5 times higher odds of knowing about NNJ than their counterparts (Demis et al., 2021). Even though each of the aforementioned studies employed a different methodology, they all agreed with the current research, midwives who have had one or more child(ren) suffered NNJ had a good intention in providing timely quality care probably because the methodology could not impact their past experience.

Even when the disease that accounts for readmissions is present, there are less and fewer health care resources at the study setting this aligns the revelation that shortage of personnel remained one of the main weaknesses in the Sub-Sharan Africa health system (Spencer et al., 2023). Midwives worked harder to complete all the required interventions despite the lack of sufficient human and material resources. This supports the claim made by Mutshatshi and Munyai, (2022) that nurses at their facilities will need to put in more effort to complete their nursing tasks. For participants some had an intent to optimize resources so that they can manage babies that are jaundice notwithstanding the inadequate resources. Staffing and inadequate TCB machine and phototherapy causes an optimization of the available resource and per participants it affected their care provision and it supports the analysis that says Patient-to-nurse ratios, medical outcomes, and the quality of patient care can all be significantly impacted by the nursing shortage (Batiha, 2025; Elmdni, 2025). Also, unfinished nursing treatment has been linked to a number of variables, including the work atmosphere, staffing numbers, and the sufficiency of resources (Pereira Lima Silva et al., 2020; Simonetti et al., 2021). Professionals who are overworked and under pressure to complete all caregiving responsibilities in a timely manner frequently struggle with making decisions and prioritize technical caring tasks over providing for their families (Stemmer et al., 2022).

5.4. Behaviors of Midwives in Early Identification and management of NNJ

Giving parents information on newborn jaundice, its causes, symptoms, signals of problems, and danger signs is a crucial part of encouraging timely baby care and this was an evident behavior from participants. Parents will be more likely to seek medical attention if they are informed. According to evidence, it is essential to raise mothers' awareness of neonatal danger signs throughout the continuum of care. As a behavior in the early detection and management of NNJ, some participants mentioned ongoing education (Kebede et al., 2020).

In this study, four participants (4,23.5%) experienced incomplete care and missed opportunities. According to Lake et al., (2020), missed care is a constant indicator for evaluating quality. The percentage of nurses who missed one or more activities during their most recent shift rose from 67% to 75% between 2006 and 2016, according to a longitudinal survey of hospitals in four US states (Lake et al., 2020). The percentages may differ from this study in the following ways: the method used. Concerns regarding early discharge and if a newborn is more vulnerable to NNJ were raised by a few study participants. This is not in line with the discharge plan and recommendation of the AAP 2022 guideline, which states that the time between discharge and follow-up and the requirement for further bilirubin measurement should be determined using the difference between the bilirubin concentration (TSB or TcB) and the phototherapy threshold at the time of measurement. (Kemper et al., 2022), this is probably different because of infrastructure, logistic and inadequate resources in LMICs.

A participant shared her emotions about mothers who delivered via caesarian section and their neonates would be discharged by the pediatric team then later after a day or two would be admitted to the NICU with severe NNJ. This confirms truly, that the quality of care throughout

the postpartum and neonatal periods is crucial yet frequently overlooked (Mespreuve et al., 2024).

Lack of team work and collaboration resulted from the findings of the focus group, the disconnect between the postnatal staff's understanding of mothers' concern and the NICU staff's perspective on managing and caring for the neonate impacted their collaboration and teamwork. This is congruent with the revelation that the provision of high-quality healthcare depends on effective nursing teamwork, which is defined as the efficient collaboration of two or more nurses working in the same unit to provide care and carry out other activities for patients (WHO., 2020). It cannot be denied that a supportive team culture has been found to be one of the most valued factors impacting upon workplace wellbeing. Collaboration among healthcare professionals not only enhances patients outcomes but also reduces potential risk (Salim et al., 2025). As nurses comprise a substantial component of the worldwide healthcare profession, encouraging stronger teamwork among nursing staff is crucial to achieve effective interdisciplinary teamwork (Costello et al., 2021). Some midwives equally emphasized calling the physician after their assessment and some PNW midwives also mentioned contacting the NICU this is true and authenticate the statement that in healthcare settings, nurses serve as the foundation for interdisciplinary teamwork by acting as an intermediary between other healthcare professionals (Tale et al., 2024).

Difficulty in communication was mentioned by almost all the participant except one participant that stated it was not difficult. Scare tactic were used as a strategy to communicate reasons to accept admission by highlighting the consequences of the condition, this is in line with the meaning of fear appeal according to Stolow et al., (2020) fear appeals are persuasive statements designed to inspire fear by emphasizing the potential harm and risk that could arise

from disregarding the advice they provide. Similarly, a study came to the conclusion that women had challenges as a result of the staff's technique, the clarifications given on their child's condition, and the parenting advice that was offered. Participants were anxious that expressing objections could have negative effects on their child's care (Mathew & Dani, 2025).

For follow up on babies that are at a higher risk of developing NNJ and Acute Bilirubin Encephalopathy, there was no plan to follow up on those neonates except for the routine child welfare clinic and taking contacts to inquire from mothers about the state of their babies. Some of the parents reported with their babies after they had signs of bilirubin neurotoxicity. It was obvious from the shared experiences of the participants that babies were discharged within six (6) to twenty-four (24) hours after delivery even those that were at a higher risk did not have any special plan to neonatal follow up clinic except for the routine follow up and even those discharged with kernicterus, this was different from the recommendation of the American Academy of Pediatrics Kemper et al., (2022) that visual evaluations for jaundice should be performed on all newborns at least every 12 hours after delivery until they are discharged.

5.5. Perceived Consequences

Bilirubin build up can be problematic, as high levels of unconjugated bilirubin can harm the developing brain and nervous system, potentially leading to severe, lasting damage or fatal outcomes (Ansong-Assoku et al.,2024). All participant shared the perceived consequences of the condition that affects their decision for early identification and management of NNJ, the consequences urged them to identify NNJ early. Participants mentioned Kernicterus, Acute Bilirubin Encephalopathy (ABE), Exchange Blood Transfusion (EBT), and death. Several population based researches confirm that ABE still happens at rates of 1.2 to 1.3 per 100,000

people, despite the rigorous implementation of the recommendations for the prevention and treatment of severe neonatal hyperbilirubinemia in high resource settings (Donneborg et al., 2020). Some participants mentioned how some cases were only picked after the babies had developed signs of complications of neonatal jaundice and this is consistent with a study that found some cases of severe hyperbilirubinemia were not attended to till evident signs of ABE were apparent (Iskander & Gamaleldin, 2021). This might be so in both studies because some cases of ABE develop swiftly and so any minute left unattended to can lead to bilirubin induced neurotoxicity.

Almost all the participant mentioned two or more neurological disorder suffered by neonates that develop sign of complications and had kernicterus, this is in congruent with a study in Denmark (Donneborg et al., 2020). In terms of the kind and extent of damage, individuals with bilirubin neurological injury represent a wide range of illnesses. Some participants brought up kernicterus spectrum diseases (KSD), which include deafness and cerebral palsy which confirms Karimzadeh et al., (2020) study on bilirubin induced encephalopathy leading to the above-mentioned complications. These findings are consistent with the notion that KSD is a neurological consequence of severe hyperbilirubinemia, which is the cause of all neurological consequences of bilirubin neurotoxicity. This finding of complications of NNJ and kernicterus confirms that hyperbilirubinemia and acute bilirubin encephalopathy is a problem in Ghana, some of the consequences mentioned by participants was the exchange blood transfusion some babies had to go through due to very high bilirubin levels as also is revealed by other studies (Boskabadi et al., 2021; Okulu et al., 2021).

Participants shared how some babies expired due to kernicterus and ABE when they reported late this accession correspond with the conclusion that stated ABE is frequent and a

common reason for death in the neonate (Fajolu et al., 2022). Belay et al., (2023), estimate that 481,000 late preterm and term neonates worldwide experience severe NNJ every year, leading to 114,000 deaths and 63,000 survivors who suffer permanent disability. The fatality rate from the data collected from the St Patrick's hospital recorded a rate of 9.7 per 1,000 live births and cases of ABE were 18.7 per 1000 live births from 2019 to 2023. It is not different from a study in India that had sixty seven babies that had ABE, 5 died after discharge and 2 died during hospitalization with the remaining sixty that lived and would be subjected to long-term neurological and developmental assessment (Kumar et al., 2021).

However, Ansong-Assoku et al.'s (2024) study in Ghana reported a fatality rate of 8.1% compared to the rate 9.7/1000. The fatality rate may have been different due to the period used to collect the data while this study combined a 5-year data from 2019 to 2023 the other study used only 3 months data from October to December, 2020.

5.6. Separation Anxiety and Perceived Risk of NICU Admission.

Research has shown that mothers often experience significant stress and anxiety when their newborn is hospitalized (Ataş & Kılıçaslan, 2023). This confirms the findings that stated separation anxiety and perceived risk of NICU admission. The similarity between the study mentioned and the current study might be because geographical variation, the method used and even the topic under study cannot change the tension, worry and emotional concerns of midwives working at the NICU and mothers whose babies are on admission at the NICU. These results suggest that healthcare providers should address mothers' emotional concerns and perceived risks when recommending NICU admission. Moreso, Lee-Winn et al., (2023) have reported that the neonatal intensive care unit (NICU) presents an emotionally charged atmosphere for both parents and healthcare staff.

The changes in the role of parents and the appearance of their newborn and behavior are a vital means of NICU stress. Babies were separated from mothers for intensive phototherapy without breastfeeding thus reducing mother-child bonding which is a reason for the anxiety some mothers go through, and also the inability to nurse a child due to their condition. Meanwhile studies show support from medical personnel for mothers is required in the NICU to reduce the likelihood of mother-child bond breakdown after the newborn is admitted after delivery (Alinejad-Naeini et al., 2020).

Again the confession of the midwives that severe hyperbilirubinemia management disrupt the bonding between mother and baby was not different from the conclusion of a study in Namibia that used 35 registered nurses in a quantitative, descriptive cross-sectional design, majority of their participants 85.7% agreed that NNJ interfere with mother and baby bonding (Nambinga & Nghitanwa, 2023). The disparity in the number of participants that confess the disruption in mother-baby bonding could be as a result of the variations, in the methods used. Moreso, Wang et al., (2021) assert that interferences with mother-infant bonding are a critical component effecting the psychosomatic development of their separation from their mother in extreme settings for therapy. Ionio et al., (2024) concluded that postpartum anxiety is associated with difficulties in maternal bonding. This affirms the revelation and the subtheme separation anxiety and perceived risk of NICU admission, that is to say regardless of where ever a baby will be hospitalized in a NICU there is a perceived risk and separation anxiety. The systemic review and meta-analysis found that about twenty three percent of fathers and forty-nine percent of mothers felt anxious due to the admission of their babies (Shetty et al., 2024).

Notwithstanding another study that used a different method also found similar results that parents experienced symptoms of anxiety when their newborns are hospitalized at NICU (Issac

et al., 2023). This aligns with the separation anxiety and the perceived risk that emerged as a theme from the findings.

5.7. Support Services for NICU Mothers

Social support during the puerperal period normally is given by members of one' family, spouse and the primary health care givers, lack of support from these significant others is a trigger factor for depression, while a buffer against depression is a social tie that is stronger (Assal-Zrike et al., 2022). Admission of babies to the NICU can be a stressful experience, during this time, social support from family, friends, healthcare providers and support groups can play a vital role in helping mothers cope with the emotional and practical demand of NICU care. Most participants mentioned holding on breastfeeding during intensive phototherapy for babies with severe hyperbilirubinemia however, a study by Meek and Noble, (2022) suggested clinicians should promote breastfeeding within the first hour after birth and provide breastfeeding and the promotion of breastfeeding can be done be supporting mothers given them information and helping mothers to fix or express breastmilk for their babies. It was evident from the data gathered that, some parents refused admission because of the cost of the care should they accept the admission this aligns with a study that found most families were worried the children's medical expenses (Miller et al., 2024).

The findings suggested difficulties in supporting mothers to breastfeed when their babies are on admission, however a study concluded babies who do not initiate breastfeeding early are at a greater risk of not breastfeeding exclusively with Mothers Own Milk (MOM) (Scholten et al., 2022). Some of the midwives mentioned how mothers were disturbed if babies are to be managed with intensive phototherapy on fluid management without breastfeeding this is congruent with a study that found negative experiences during lactation and/or breastfeeding

might exacerbate psychological problems in mothers (Spannhake et al., 2021). A participant mentioned how she supports first time mothers with breastfeeding and it support a statement that numerous women experience difficulties when they first start breastfeeding, which leads to an early end to breastfeeding (Moss et al., 2021).

It is really a great thing to assist mothers in the care of their newborn, although findings showed NICU staff could not support mothers as needed this is different from what Gutiérrez et al., (2020), Shared that healthcare workers that are trained could assist mothers to engage in nursing their babies and also reduce their stress by providing them with information. With this study the information and education given by midwives were insufficient, this could equally add to the stress of the mothers whose babies are on admission. Parents experiences of admission at the NICU due to prematurity of the newborn, stated the need for assistance as the findings of that studies (Akbari et al., 2020).

For social support for mothers in the midst of the separation anxiety and the perceived risk of NICU admission, a participant mentioned if she sees the baby that needs intensive phototherapy but the baby is on the mothers' lap and the mother looking at the baby, she will put the baby back and continue the treatment. Although the midwife deems to see the baby recover the mother likewise want a healthy baby, the mother admiring the sick baby may reflect her unseen dreams. A study suggested when babies are admitted to NICU, the mother's hopes of bringing home a healthy kid are crushed and depressive symptoms for these mothers are high (Ataş & Kılıçaslan, 2023). On the issue of social needs and support at the NICU there was a disconnection between the PNW midwives and NICU midwives' priorities. The NICU nurses seem to prioritize the baby's medical needs, potentially overlooking the mother's social and emotional needs. In contrast, the PNW staff appear to focus on the mothers' needs, potentially

overlooking the baby's need which suggest a more improved coordination among PNW and NICU in providing support services for NICU mothers and babies. The study found that the actual support that NICU midwives give to the mothers did not meet the support expected from mothers and it is similar to the findings from a conclusion of an ethnography study (Negarandeh et al., 2021).

A study did not only found the greater levels of stress from being separated physically from their newborn also there was a financial burden compared to parents whose babies are well (Shetty et al., 2024). It confirmed the finding from this study were midwives mentioned mothers having issues and refusing admission due to the financial burden that comes with NICU admission. The focus group discussion concluded that the PNW midwives overlooked the care of the baby whilst the care of the mother was overlooked by the NICU midwives this is similar to a study that found that while the NICU staff focus on the health of the baby the psychological health of the mothers might be overlook sometimes (Negarandeh et al., 2021).

CHAPTER SIX

SUMMARY, IMPLICATIONS, LIMITATIONS, CONCLUSION AND RECOMMENDATIONS

The previous chapter has comprehensively discussed the findings made from the interviews. This chapter provides a summary, limitations, gaps and implications of the study. Also, the conclusion and recommendations are presented in this chapter.

6.1 Summary of the Study

The study explored midwives' attitude, subjective norms, behavioral intentions and behavior in the early identification and management of NNJ in the Offinso municipality of Ghana. Neonatal jaundice commonly affects neonates within the first seven days of life. Bilirubin conjugation by the immature liver of the newborn and high levels of unconjugated bilirubin that cannot be conjugated may cross the blood brain barrier, stain the basal ganglia and cause kernicterus spectrum disorders due to bilirubin neurotoxicity that may be irreversible. The increasing data on NNJ in Ghana triggered the study and therefore sought to inquire midwives' attitude, subjective norms, behavioral intentions and behavior in the early identification and management of NNJ.

This qualitative study explored the experiences of midwives caring for babies in the Postnatal Ward (PNW) and Neonatal Intensive Care Unit (NICU) at St. Patrick's Hospital. Participants were purposefully selected for their direct involvement with the research topic. Related literature was reviewed. After obtaining ethics approval, data were collected through f and ace-to-face interviews using a semi-structured interview guide and focus group discussions

using a semi-structured focus group discussion guide. The study ensured trustworthiness by applying Guba and Lincoln's criteria. Data analysis was conducted concurrently using Braun and Clarke's six-step thematic analysis framework. Thematic content analysis technique using the TRA as a guide was used for the data analysis. The study produced four main themes namely attitude, subjective norms, behavioral intentions, behavior, and three emerging themes perceived consequences, separation anxiety and perceived risk of NICU admission and NICU-PNW coordination and support.

The attitude of participants considering their awareness, practices, concerns and emotions about NNJ, majority of participants had good attitude although their marker for defining early identification even in the midst of exchange blood transfusion or complications of NNJ was based on discharge. Participants could recognize signs and symptoms, prevalence, the complications and emphasized late identification of NNJ. For midwives' practices the participants at NICU all knew about the practices and protocol and all participants were affected by neonates that died or suffered neurological disorders. Culture, the elderly, supervisors, prevailing belief, commitment to standard protocol, spirituality/faith-based belief significantly affected participants decision in the early identification and management of NNJ. They were motivated by their intentions to provide timely care and quality care. Scare tactics as a strategy in communication, continuous education, premature discharge, lack of team work, missed opportunity to care were the behaviors of participants. The participants expressed how perceived consequences, separation anxiety and support services for NICU mothers influenced their care. Participants acknowledge how environmental and emotional factors affected the early identification and management of NNJ.

6.2 Implications of the study

The study's results have implications for midwifery practice, policymakers, and future research.

6.21 Implication for Midwifery Practice.

The current study on the early identification and management of NNJ suggest that effective neonatal jaundice management requires a multifaceted approach, considering cognitive, emotional, and environmental factors. Maternal and family influence, prevailing beliefs, workload, emotional strain, inadequate resources, premature discharge and spirituality/faith-based belief were some of the negative influences in the early identification and management of NNJ. Therefore, the need for cultural competence care is imperative in the care of the neonate in a multicultural country as Ghana. The refusal of admission by parents and its resultant complications, exchange blood transfusion and death are a huge impact in neonatology in Ghana. Insufficient depth of education given the shared experiences and the definition of early identification using the successful discharge of babies even after EBT as a marker to classified those babies that were discharged as being identified early, suggested participants confusion in classifying NNJ early or late, which calls for more theoretical understanding and training on NNJ. Overall, the findings emphasized the importance of effective communication, interdisciplinary coordination and collaboration, targeted support services for NICU mothers, follow up for high-risk babies, adequate resources and staffing, intensive education and empowering parents, ethical solutions in the midst of mothers being surrogate for their babies and midwives being advocates for the neonates under their care.

6.22. Implication for Midwifery Policy

The implications of NNJ identification on nursing policy are significant. Midwives play a critical role in identifying and managing NNJ, and policy changes can impact their practice, patient outcomes, and healthcare systems as a whole. Policies that will help the early identification of NNJ and its management may include midwifery policy to standardized NNJ screening and management protocols. Policy makers should ensure midwives receive regular education and training on NNJ recognition and care. Policy should promote evidence-based practice in NNJ management to reduce variability in care.

6.23. Implication for Midwifery Research

Midwifery research is the most practical and fundamental source of midwifery knowledge for evidence-based midwifery practice. Given that NNJ data has been steadily increasing in Ghana, according to GHS data, midwives should concentrate more on nursing research to comprehend midwives' readiness for early NNJ identification. In Ghanaian and for midwifery, it is essential to understand how these infants are reported, recognized, and managed. Given the prevalent conditions for admission and (re)admission in Ghana, it is extremely prudent for our country to be aware of the condition of our infants when they are admitted.

6.3 Limitations of the Study

Every study, regardless of design or methodology, will inevitably have some limitations. The current study's first restriction stems from its geographical location. The results of this study may not have the same cultural impact elsewhere because it was carried out in the Ashanti region's Offinso municipality. Nonetheless, the results can be applicable. Additionally, only one

hospital in the area was used to enroll the participants. The results might not apply to other hospitals in the area or the nation at large. Moreso, data collection was conducted in Ashanti Twi, with participants code-switching to English. This may have affected the precision of transcription and translation, potentially influencing data interpretation as words near meanings were used. Although some nuances may have been lost in translation, the researcher employed back translation. Three of the data (15%) that were translated to English underwent back-translation to the original language and text to ensure translation accuracy and consistency.

6.4 Conclusion

This study examined midwives' attitude, subjective norms, behavioral intentions and behaviors in the early identification and management of NNJ using the TRA. From the study, participants demonstrated good attitude, however their awareness and knowledge about NNJ was incomplete as the index for measuring late or early identification of NNJ, was based on the state of the neonate during discharge regardless of baby developing signs of complication or undergoing exchange transfusion. Prevailing belief, spirituality/faith-based belief, maternal and family influence, supervisors' expectation, balancing maternal autonomy and medical necessity and the participants experience of a child or more being jaundice before influenced the early identification of NNJ. For participants intention to identify NNJ early and provide prompt treatment the perceived consequences of late identification of NNJ motivated and positively influenced participant in providing timely and quality management. Some of the behaviors were missed opportunity/unfinished care, scare tactics as a communication strategy, empowering mothers, collaborative approaches and lack of team work. Separation anxiety, support services for NICU mothers also affected participants management of NNJ. Cultural, spiritual/ faith-based,

prevailing belief, unfinished care, lack of teamwork, inadequate resources, support services, and emotional attachment influenced the identification and management of NNJ, negatively.

The emerged themes demonstrate that care decisions and midwives' behavior in the early identification and management of NNJ are influenced by more than just cognitive consideration as identified by TRA, they are also shaped by emotional, environmental factors and impulsivity. The identified themes impacted midwives' experiences on the early identification and management of NNJ. There is the need therefore to address these factors to help in caring for these fragile and vulnerable population with NNJ.

6.50. Recommendations of the study.

The following recommendations aim to improve neonatal care in Ghana by addressing key areas identified in this study. Implementing these recommendations can help reduce morbidity and mortality, improve health outcomes, and enhance the overall quality of care.

6.51. Recommendations for Ghana Health Service (GHS)

Ghana Health Service should:

i. Develop policies on high-risk neonate follow-up after discharge and home visits.
ii. Provide ongoing support and resources to healthcare providers.
iii. Ensure cultural competence in nursing and midwifery
iv. Evaluate training needs for healthcare providers on neonatal jaundice care at the facility and community levels and develop targeted training programs.

v. Build capacity by assessing and addressing knowledge gaps in neonatal jaundice identification and management among healthcare staff, ensuring they have the necessary skills and competence.

6.52. Recommendations for Ghana College of Nursing and Midwifery (GCNM)

The recommendation for GCNM is to:

i. Incorporate cultural awareness training into curriculum.
ii. Emphasize interdisciplinary collaborative approaches in nursing education.
iii. Conduct research to explore the nuances of midwives' perceptions on neonatal jaundice identification and management to inform targeted interventions
iv. Develop and disseminate evidence-based guidelines for neonatal jaundice management to healthcare providers.

6.53. Recommendations for Ministry of Health (MOH)

The ministry of health should:

i. Allocate resources to support healthcare providers.
ii. Develop policies to reduce health disparities.
iii. Launch public awareness campaign and education initiatives to raise awareness about neonatal jaundice, and the importance of timely medical attention.
iv. Implement quality improvement initiatives to ensure adherence to guidelines and protocols for jaundice care.

6.54. Recommendations for Nursing and Midwifery Council (NMC) of Ghana.

The nursing and midwifery council of Ghana should:

i. Ensure cultural competence in nursing and midwifery practice.
ii. Incorporate into the curriculum spiritual management programs to equip trainees.
iii. Provide opportunities for nurses and midwives to engage in continuing professional development (CPD) activities focused on neonatal jaundice care.
iv. Establish mentorship and preceptorship programs to support newly licensed nurses and midwives in developing skills and competence in neonatal jaundice identification and care.
v. Emphasize the importance of professional accountability and continuing education for nurses and midwives in maintaining competence in neonatal jaundice care.

6.55. Recommendations for Pediatric Society of Ghana (PSG)

The study recommends that the Pediatric society of Ghana should:

i. Foster collaboration with healthcare between healthcare providers to ensure comprehensive care for the neonate with jaundice and high-risk follow ups.
ii. Support implementation of screening tools and best practices.
iii. Engage with local communities to understand their perspectives and beliefs about neonatal jaundice and develop culturally sensitive interventions.
iv. Establish mentorship programs to support healthcare providers in developing their skills and competencies in neonatal jaundice care.

6.56. Recommendations for Christian Health Association of Ghana (CHAG).

The Christian Health Association of Ghana should:

i. Utilize churches and other faith-based platforms to educate congregations about neonatal jaundice, its symptoms, and the importance of seeking medical attention.
ii. Organize community outreach programs, leveraging CHAG's network of churches and community groups, to raise awareness about neonatal jaundice and promote healthy practices.
iii. Facilitate collaboration between faith communities and healthcare providers to ensure seamless care and support for neonates with jaundice.
iv. Advocate for the needs of vulnerable populations, such as rural or underserved communities, to access healthcare services for neonatal jaundice.
v. Implement quality improvement initiatives to ensure adherence to guidelines and protocols for jaundice care in all CHAG facilities.

6.57. Recommendations for Health Facility

Health facilities and departments that provide neonatal care should also:

i. Engage with community leaders to understand cultural beliefs.
ii. Provide support services and support group for mothers in NICU.
iii. Encourage bonding opportunities between mothers and newborns.
iv. Conduct regular needs assessments to identify knowledge gaps and training needs among healthcare staff.
v. Implement quality improvement initiatives at the unit level to ensure adherence to guidelines and protocols.
vi. Foster a multidisciplinary approach to neonatal jaundice management, involving doctors, nurses, midwives, and other healthcare professionals.

REFERENCES

Abdul-Mumin, A., Owusu, E. A., Wondoh, P. M., & Tabiri, S. (2021). Maternal Knowledge and Awareness of Neonatal Jaundice in Term Neonates admitted to the Neonatal Intensive Care Unit of the Tamale Teaching Hospital. *Journal of Medical and Biomedical Sciences*, *8*(1), 12–17.

Abraham, C., Norman, P., & Conners, M. (2000). *Understanding and Changing Health Behaviour: From Health Beliefs to Self-Regulation* (Eds). Psychology Press. https://doi.org/10.4324/9781315080055

Adama, E. A., Sundin, D., & Bayes, S. (2021). Sociocultural Practices Affecting the Care of Preterm Infants in the Ghanaian Community. *Journal of Transcultural Nursing*, *32*(5), 458–465. https://doi.org/10.1177/1043659620975098

Adams, Y. J., Ray, H. E., Sladek, L., & Amason, J. (2023). Knowledge of immediate newborn care and management of complications among midwives in Ghana. *Midwifery*, *121*. https://doi.org/10.1016/j.midw.2023.103654

Ahn, J., & Kahlor, L. A. (2020). No regrets when it comes to your health: Anticipated regret, subjective norms, information insufficiency and intent to seek health information from multiple sources. *Health Communication, 35*(10), 1295– 1302. https://doi.org/10.1080/10410236.2019.1626535

Ajzen, I. (1991). *The theory of planned behavior. Organizational Behavior and Human Decision Processes*. *50*(2), 179–211.

Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior and Emerging Technologies*, *2*(4), 314–324. https://doi.org/10.1002/hbe2.195

Ajzen, I. &, & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, *82*(2), 261–277. https://doi.org/10.1037/h0076477

Akbari, V., Asayesh, H., Haji Mohammad Hoseini, M., Sharififard, F., Shahidi, M., & Goudarzi, M. (2020). Needs of Family with Hospitalized Infant in Neonatal Intensive Care Unit: A Comparison between Mothers' and Nurses' Viewpoint. *Qom Univ Med Sci J*, *14*(3), 10–18. https://doi.org/10.29252/qums.14.3.10

Al-Zamili, A. H., & Saadoon, Z. A. (2020). Knowledge, attitude and practice of mothers to neonatal jaundice. *Medico-Legal Update*, *20*(1).

https://doi.org/10.3750/v20/i1/2020/mlu/194442

Alhassan, A., Brago, A. M., Abena, K. A., Kekeli, C. J., & Nuamah, A. J. (2022). Knowledge , Attitude and Practices Regarding Neonatal Jaundice among Mothers. *Journal of Nursing & Care*, *11*(August), 1–9. https://doi.org/10.37421/2167-1168.2022.11.556

Alinejad-Naeini, M., Peyrovi, H., & Shoghi, M. (2020). *Emotional disorganization: The prominent experience of Iranian mothers with preterm neonate: A qualitative study. Health Care for Women International. 42*((4–6)), 815–835. https://doi.org/10.1080/07399332.2020.1797040

Alves, M.N, Seixas, C., Castro, A., & Leitão, A. (2023). *Promoting the Transition to a Circular Economy: A Study about Behaviour, Attitudes, and Knowledge by University Students in Portugal. Sustainability (Switzerland)*. *16*(1). https://doi.org/10.3390/su16010343

American Medical Association, & A. of A. M. C. (2021). *Cultural practices and their impact on healthcare. [Report]*. www.ama-assn.org/cultural-%09practices-report-2021

Andrade, M. L. de, Leite, R. S., Ibrahin, S. T. C. de A., & Costa, K. C. (2020). Axiology, personal values and ethical rationalities: a proposal for theoretical frameworks integration. *Revista de Ciências Da Administração*, *21*(55), 115–133. https://doi.org/10.5007/2175-8077.2019v21n55p115

Annisa, P., Astuti, A. W., & Sharma, S. (2023). Neonatal Jaundice Causal Factors: A Literature Review. *Women, Midwives and Midwifery*, *3*(1), 45–60. https://doi.org/10.36749/wmm.3.1.45-60.2023

Ansong-Assoku, B., Shah S.D, Maalaoui, A., & Ankola, P.A. (2024). Neonatal Jaundice. *Statpearls Publishing*.

Assal-Zrike, S., Marks, K., & Atzaba-Poria, N. (2022). Prematurity, maternal emotional distress, and infant social responsiveness among Arab-Bedouin families: The role of social support as a resilience factor. *Child Development*, *93*(2), 582–593. https://doi.org/10.1111/cdev.13705

Ataş, N., & Kılıçaslan, F. (2023). *The Effect of Hopelessness on Depressive Symptoms in Mothers of Infants Hospitalized at Neonatal Intensive Care Unit: The Mediating Role of Anxiety. Psychiatry,*. *86*(3), 187–199. https://doi.org/10.1080/00332747.2022.2161260

Ayete-Nyampong, J., & Udofia, E. A. (2020). Assessment of knowledge and quality of essential newborn care practices in La Dade Kotopon Municipality, Ghana. *PLoS ONE*, *15*(8 August

2020), 1–15. https://doi.org/10.1371/journal.pone.0237820

Badea, C., Binning, K. R., Sherman, D. K., Boza, M., & Kende, A. (2021). Conformity to group norms: How group-affirmation shapes collective action. *Journal of Experimental Social Psychology*, *95*(April). https://doi.org/10.1016/j.jesp.2021.104153

Barad, D. (2025). Step-by-Step Guide on Preparing Ethical Clearance Documents. *Researchgate*, *January*. https://doi.org/10.13140/RG.2.2.32527.29600

Batiha, A. M. (2025). Evaluating nurse-to-patient ratio legislation to improve patient safety and care quality: A mixed-methods policy study. *Applied Nursing Research*, *84*(May), 151989. https://doi.org/10.1016/j.apnr.2025.151989

Belay, G., Gerbi, A., Gebremariam, T., Tilahun, T., Chimdi, E., & Etefa, T. (2023). Jaundice and its associated factors among neonates admitted to selected referral hospitals in southwest oromia, Ethiopia: Multi-center cross-sectional study. *Heliyon*, *9*(5), e16019. https://doi.org/10.1016/j.heliyon.2023.e16019

Boateng, A. C. O., Sebu, J., Lekwauwa, R., Britt, K. C., Oh, H., & Doolittle, B. (2024). Religiosity & mental health seeking behaviors among U.S. adults. *International Journal of Psychiatry in Medicine*, *59*(2), 248–264. https://doi.org/10.1177/00912174231187841

Boateng, K.-H. T., Sarah, B. A., & Asirifi, S. K. A. (2024). Awareness and Knowledge Level of Puerperal Mothers on Neonatal Jaundice: A Qualitative Study in Northern Ghana. *Asian Journal of Pediatric Research*, *14*(6), 45–60. https://doi.org/10.9734/ajpr/2024/v14i6354

Bogale, T. N., Worku, A. G., Yalew, A. W., Bikis, G. A., & Kebede, Z. T. (2018). Mothers treatment seeking intention for neonatal danger signs in northwest Ethiopia: A structural equation modeling. *PLoS ONE*, *13*(12), 1–15. https://doi.org/10.1371/journal.pone.0209959

Bohlin, K., & Lilliesköld, S. (2020). Family-centered care: nice to have or a real need? *Innovations and Frontiers in Neonatology. Karger Publishers*, *Eds*, 159–168.

Bohren, M. A., Tunçalp, Ö., & Miller, S. (2020). Transforming intrapartum care: Respectful maternity care. *Best Practice and Research: Clinical Obstetrics and Gynaecology*, *67*, 113–126. https://doi.org/10.1016/j.bpobgyn.2020.02.005

Boskabadi, H., Maamouri, G., Abbasi, M., & Heidari, E. (2021). Causes of Neonatal Jaundice Requiring Exchange Transfusion. *Journal of Comprehensive Pediatrics*, *12*(4), 0–4. https://doi.org/10.5812/compreped.109539

Bosnjak, M., Ajzen, I., & Schmidt, P. (2020). The Theory of Planned Behavior: Selected Recent

Advances and Applications. *Europe's Journal of Psychology, 16*(3), 352–356. https://doi.org/10.5964/ejop.v16i3.3107

Braun, V., & Clarke, V. (2022). *Toward good practice in thematic analysis: Avoiding common problems and be(com)ing a knowing researcher. International Journal of Transgender Health*. *24*(1), 1–6. https://doi.org/10.1080/26895269.2022.2129597

Brites, D., & Silva, R. F. M. (2021). Bilirubin neurotoxicity: A Narrative Review on long lasting, insidious, and dangerous effects. *Pediatric Medicine*, *4*(April), 1–24. https://doi.org/10.21037/pm-21-37

Bura'a, L. N., & Younis, N. M. (2023). Nurses' knowledge regarding to phototherapy at neonatal care units in Mosul City, Iraq. *Rawal Medical Journal*, *48*(2), 379–381. https://doi.org/10.5455/rmj.20230206070704

Burke, P. F., Masters, D., & Massey, G. (2021). Enablers and barriers to COVID-19 vaccine uptake: An international study of perceptions and intentions. *Vaccine*, *39*(36), 5116–5128. https://doi.org/10.1016/j.vaccine.2021.07.056

Center for Disease Control and Prevention-(CDC). (2020). *Jaundice and Kernicterus*. https://www.cdc.gov/ncbddd/jaundice/facts.html.

Charles, F. G., Ismaiel, N., & Khoo, C. (2023). *Promoting Culturally Sensitive Communication with Diverse Patient Populations. ASA Monitor*. *87*(4), 18-19.

Charli, M. S., Eshete, S. K., & Debela, K. L. (2022). Learning How Research Design Methods Work: A Review of Creswell's Research Design: Qualitative, Quantitative and Mixed Methods Approaches. *The Qualitative Report*, *27*(12), 2956–2960. https://doi.org/10.46743/2160-3715/2022.5901

Chiappinotto, S., Papastavrou, E., Efstathiou, G., Andreou, P., Stemmer, R., Ströhm, C., Schubert, M., de Wolf-Linder, S., Longhini, J., & Palese, A. (2022). Antecedents of unfinished nursing care: a systematic review of the literature. *BMC Nursing*, *21*(1), 1–24. https://doi.org/10.1186/s12912-022-00890-6

Cho, I. Y., & Oh, W. O. (2023). Fostering Partnership Between Pediatric Nurses and Parents of High-Risk Infants: A Mixed Method Approach. *Journal of Child and Family Studies*, *32*(9), 2681–2698. https://doi.org/10.1007/s10826-023-02538-8

Conner, M., & Norman, P. (2022). Understanding the intention-behavior gap: The role of intention strength. *Frontiers in Psychology*, *13*(August), 1–16.

https://doi.org/10.3389/fpsyg.2022.923464

Costello, M, Rusell, K, & Coventry, T. (2021). Examining the average scores of nursing teamwork subscales in an acute private medical ward. *BMC Nurs.*, *20*(1), 84.

Demis, A., Getie, A., Wondmieneh, A., Alemnew, B., & Gedefaw, G. (2021). Knowledge on neonatal jaundice and its associated factors among mothers in northern Ethiopia: A facility-based cross-sectional study. *BMJ Open*, *11*(3). https://doi.org/10.1136/bmjopen-2020-044390

DiMatteo, M. R., Martin, L. R., & Haskard-Zolnierek, K. B. (2025). *Health behavior change and treatment adherence: Evidence-based guidelines for improving healthcare.* Oxford University Press.

Dionis, I., Chillo, O., Bwire, G. M., Ulomi, C., Kilonzi, M., & Balandya, E. (2021). Reliability of visual assessment of neonatal jaundice among neonates of black descent: a cross-sectional study from Tanzania. *BMC Pediatrics*, *21*(1), 1–6. https://doi.org/10.1186/s12887-021-02859-x

Donkor, D. R., Ziblim, S. D., Dzantor, E. K., Asumah, M. N., & Abdul-Mumin, A. (2023). Neonatal Jaundice Management: Knowledge, Attitude, and Practice Among Nurses and Midwives in the Northern Region, Ghana. *SAGE Open Nursing*, *9*. https://doi.org/10.1177/23779608231187236

Donneborg, M. L., Hansen, B. M., Vandborg, P. K., Rodrigo-Domingo, M., & Ebbesen, F. (2020). Extreme neonatal hyperbilirubinemia and kernicterus spectrum disorder in Denmark during the years 2000–2015. *Journal of Perinatology*, *40*(2), 194–202. https://doi.org/10.1038/s41372-019-0566-8

Early Intervention Foundation. (2021). *About early intervention: Why it matters*. https://www.eif.org.uk/why-it

Elmdni, A. A. E. (2025). *The Impact of Nurse–Patient Ratios on Patient Outcomes in Intensive Care Units. Nursing in critical care*. *30*(3), e70054.

Elslemy, M. M., Bahgat, R. S., & Baraka, N. I. (2023). urses Performance regarding Humanized Care of Newborn with Hyperbilirubinemia. *Tanta Scientific Nursing Journal*, *28*(1), 12–30.

Enworo, O. C. (2023). Application of Guba and Lincoln's parallel criteria to assess trustworthiness of qualitative research on indigenous social protection systems. *Qualitative Research Journal*, *23*(4), 372–384. https://doi.org/10.1108/QRJ-08-2022-0116

Fajolu, Iretiola Bamikeolu. Satrom, Katherine. Megan., Ezenwa, Beatrice. Nkolika, Kein, Angela. Christine., Slusher, Tina. Marye., & Ezeaka, Veronica, C. (2022). Current Trends in Neonatal Morbidity and Mortality: Experiences from a Tertiary Center in Lagos, Nigeria. *Am J Trop Med Hyg*, *107*(3), 617–623. https://doi.org/https://doi.org/10.4269/ajtmh.22-0009

Fishbein, M. &, & Ajzen, I. (2010). *Predicting and Changing Behavior: The Reasoned Action Approach* (1st Editio, p. 538). Psychology Press. https://doi.org/10.4324/9780203838020

Ghana Health Service Data. (2019). *Newborn Jaundice on the Increase for the Past Five years, recording 9, 273 cases in Cited in Graphic Online.* www.graphic.com.gh

Ghana Statistical Service. (2021). *Ghana 2021 Population and Housing Census*.

Glavå, G. (2025). The Governing Dynamics of Social Reality: A Unified Theory. *Journal for the Theory of Social Behaviour*, *55*(3), 1–5. https://doi.org/10.1111/jtsb.70009

Gupta, P. K. (2023). Bilirubin metabolism & pathophysiology of neonatal jaundice. *IP International Journal of Medical Paediatrics and Oncology*, *9*(3), 83–86. https://doi.org/10.18231/j.ijmpo.2023.017

Gutiérrez, S. S. R., García, P. E., Prellezo, A. S., Paulí, L. R., Del Castillo, B. L., & Sánchez, R. B. (2020). Emotional support for parents with premature children admitted to a neonatal intensive care unit: A qualitative phenomenological study. *Turkish Journal of Pediatrics*, *62*(3), 436–449. https://doi.org/10.24953/turkjped.2020.03.011

Hansen, T. W. R. (2021). The epidemiology of neonatal jaundice. *Pediatric Medicine*, *4*, 1–14. https://doi.org/10.21037/pm-21-4

Huang, Y., Chen, L., Wang, X., Zhao, C., Guo, Z., Li, J., Yang, F., & Cai, W. (2022). Maternal knowledge, attitudes and practices related to neonatal jaundice and associated factors in Shenzhen, China: a facility-based cross-sectional study. *BMJ Open*, *12*(8), 1–11. https://doi.org/10.1136/bmjopen-2021-057981

Hulzebos, C. V., Vitek, L., Coda Zabetta, C. D., Dvořák, A., Schenk, P., van der Hagen, E. A. E., Cobbaert, C., & Tiribelli, C. (2021). Screening methods for neonatal hyperbilirubinemia: benefits, limitations, requirements, and novel developments. *Pediatric Research*, *90*(2), 272–276. https://doi.org/10.1038/s41390-021-01543-1

Hvidt, N. C., Nielsen, K. T., Kørup, A. K., Prinds, C., Hansen, D. G., Viftrup, D. T., Assing Hvidt, E., Hammer, E. R., Falkø, E., Locher, F., Boelsbjerg, H. B., Wallin, J. A., Thomsen,

K. F., Schrøder, K., Moestrup, L., Nissen, R. D., Stewart-Ferrer, S., Stripp, T. K., Steenfeldt, V. Ø., … Wæhrens, E. E. (2020). What is spiritual care? Professional perspectives on the concept of spiritual care identified through group concept mapping. *BMJ Open*, *10*(12), 1–10. https://doi.org/10.1136/bmjopen-2020-042142

Ionio, C., Ciuffo, G., Christiansen, P., Della Vedova, A. M., Fallon, V., Figlino, M. F., Landoni, M., Silverio, S. A., Smorti, M., & Bramante, A. (2024). Postpartum-Specific Anxiety and Maternal–Infant Bonding: A Predictive Validity Study amongst Italian Women. *European Journal of Investigation in Health, Psychology and Education*, *14*(6), 1614–1626. https://doi.org/10.3390/ejihpe14060107

Iskander, I., & Gamaleldin, R. (2021). Seminars in Perinatology Acute bilirubin encephalopathy : Some lessons learned. *Seminars in Perinatology*, *45*(1), 151353. https://doi.org/10.1016/j.semperi.2020.151353

Issac, Alwin., Dhiraaj, Sanjay., Halemani Kurvatteppa., Thimmappa, Latha., Mishra, Prabhakar., Kumar, Basant., & Mavinatop, A. (2023). Efficacy of Early Enteral Nutrition on Gastrointestinal Surgery Outcomes: A Systematic Review and Meta-Analysis. *Eur J Pediatr Surg*, *33*(6), 454–462. https://doi.org/10.1055/s-0043-1760837

Kain, V. J. (2021). Perinatal Palliative Care: Cultural, Spiritual, and Religious Considerations for Parents—What Clinicians Need to Know. *Frontiers in Pediatrics*, *9*(March), 1–10. https://doi.org/10.3389/fped.2021.597519

Karimzadeh, P., Fallahi, M., Kazemian, M., Taslimi Taleghani, N., Nouripour, S., & Radfar, M. (2020). Bilirubin induced encephalopathy. *Iranian Journal of Child Neurology*, *14*(1), 7–19. https://doi.org/10.22037/ijcn.v14i1.27890

Kebede, A. A., Cherkos, E. A., & Taye, E. B. (2020). Mother's Knowledge of Neonatal Danger Signs and Health-Seeking Practices and Associated Factors in Debretabor, Northwest Ethiopia: A Community-Based Cross-Sectional Study . *Research and Reports in Neonatology*, *Volume 10*, 47–58. https://doi.org/10.2147/rrn.s257768

Kelly, R. B., Zyzanski, S. J., & Alemagno, S. A. (1991). Prediction of motivation and behavior change following health promotion: Role of health beliefs, social support, and self-efficacy. *Social Science and Medicine*, *32*(3), 311–320. https://doi.org/10.1016/0277-9536(91)90109-P

Kemper, A. R., Newman, T. B., Slaughter, J. L., Maisels, M. J., Watchko, J. F., Downs, S. M.,

Grout, R. W., Bundy, D. G., Stark, A. R., Bogen, D. L., Holmes, A. V., Feldman-Winter, L. B., Bhutani, V. K., Brown, S. R., Panayotti, G. M. M., Okechukwu, K., Rappo, P. D., & Russell, T. L. (2022). Clinical Practice Guideline Revision: Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation. *Pediatrics*, *150*(3). https://doi.org/10.1542/peds.2022-058859

Koulouvari, A. D., Margariti, A., Sakellari, E., Barbouni, A., & Lagiou, A. (2025). Applications of Behavioral Change Theories and Models in Health Promotion Interventions: A Rapid Review. *Behavioral Sciences*, *15*(5). https://doi.org/10.3390/bs15050580

Kukora, S. K., & Laventhal, N. T. (2023). Serious Communication in the Neonatal Intensive Care Unit: Evidence for Strategies and Training. *Principles of Neonatology*, 765–775. https://doi.org/10.1016/B978-0-323-69415-5.00089-8

Kumar, V., Kumar, P., Sundaram, V., Munjal, S. K., Malhi, P., & Panda, N. K. (2021). Childhood neurodevelopmental outcomes of survivors of acute bilirubin encephalopathy: A retrospective cohort study. *Early Human Development*, *158*(April), 105380. https://doi.org/10.1016/j.earlhumdev.2021.105380

Kynoe, N. M., Fugelseth, D., & Hanssen, I. (2020). When a common language is missing: Nurse–mother communication in the NICU. A qualitative study. *Journal of Clinical Nursing*, *29*(13–14), 2221–2230. https://doi.org/10.1111/jocn.15212

Lake, E. T., Riman, K. A., & Sloane, D. M. (2020). Improved work environments and staffing lead to less missed nursing care: A panel study. *Journal of Nursing Management*, *28*(8), 2157–2165. https://doi.org/10.1111/jonm.12970

https://doi.org/10.2174/1573396313666170815100214

Lee-Winn, A. E., El-Metwally, D., & Sibinga, E. M. S. (2023). NICU Environment for Parents and Staff. *Principles of Neonatology*, 7–11. https://doi.org/10.1016/B978-0-323-69415-5.00002-3

Lincoln, YS. & Guba, E. (1985). Naturalistic Inquiry. *Newbury Park, CA: Sage Publications.*

Maalaoui, A., Partouche, J., Safraou, I. &, & Viala, C. (2022). Senior entrepreneurship: how subjective age affects seniors' entrepreneurial intentions. *Rev Manag Sci*, *17*, 443–465. https://doi.org/10.1007/s11846-022-00537-5

Masek, A., Paimin@Abdul Halim, A. N., Hashim, S., Abdullah, N. S., & Wan Muda, W. H. N. (2022). The Role of Knowledge, Emotion, and Intention in Influencing Students' Behaviors

During COVID-19 Pandemic. *SAGE Open*, *12*(2). https://doi.org/10.1177/21582440221089954

Mathew, S., & Dani, R. P. (2025). *Communication Difficulties Faced by Mothers of Neonates in Selected Neonatal Care Units*. *17*(4). https://doi.org/10.7759/cureus.81799

Mediani, H. S., Hendrawati, S., Pahria, T., Mediawati, A. S., & Suryani, M. (2022). Factors Affecting the Knowledge and Motivation of Health Cadres in Stunting Prevention Among Children in Indonesia. *Journal of Multidisciplinary Healthcare*, *15*, 1069–1082. https://doi.org/10.2147/JMDH.S356736

Meek, J. Y., Noble, L., Feldman-Winter, L., Bunik, M., Kellams, A., Stellwagen, L., Thomas, J. P., Ware, J., Parker, M., & Fleur, R. (2022). Technical Report: Breastfeeding and the Use of Human Milk. *Pediatrics*, *150*(1), 1–30. https://doi.org/10.1542/PEDS.2022-057989

Mespreuve, A. S., Apers, L., Moller, A. B., & Galle, A. (2024). Postnatal quality of care measures for mothers and newborns at home: A scoping review. *PLOS Global Public Health*, *4*(8), 1–17. https://doi.org/10.1371/journal.pgph.0003498

Miller, M. E., Donohue, P., Seltzer, R., Kwak, C., & Boss, R. D. (2024). Costs of Neonatal Medical Complexity: Impact on New Parent Stress and Decision-Making. *Am J Perinatol*, *41*(S 01). https://doi.org/10.1055/a-1948-2580

Moss, M. Katrina, Dobson, J. Anette, Tooth, Leigh., & MiShra, D. G. (2021). Which Australian Women Do Not Exclusively Breastfeed to 6 Months, and why? *J Hum Lact*, *37*(2), 390–402. https://doi.org/10.1177/0890334420929993

Musto, G. (2021). *Research Regarding the Stress and Coping Practices of Neonatal Research Regarding the Stress and Coping Practices of Neonatal Intensive Care Unit Nurses Intensive Care Unit Nurses*. https://digitalcommons.pace.edu/honorscollege_theses

Mutshatshi, T. E., & Munyai, V. (2022). Challenges Experienced By Primary Health Care Nurses Rendering 24 Hours Service at Designated Clinics in Musina Local Area, Limpopo Province. *The Open Public Health Journal*, *15*(1), 1–7. https://doi.org/10.2174/18749445-v15-e2202241

Nabiha, N., Najah, S., & Sakrani, R. (2023). *Communication Barriers in Work Environment : Understanding Impact and Challenges*. *13*(11), 1489–1503. https://doi.org/10.6007/IJARBSS/v13-i11/19498

Nambinga, N., & Nghitanwa, E. M. (2023). Knowledge, attitude and practices of registered

nurses regarding neonatal jaundice at the neonatal intensive care unit in a tertiary hospital in Khomas region, Namibia. *Journal of Public Health in Africa*, *14*(10), 6. https://doi.org/10.4081/jphia.2023.2476

Negarandeh, R., Hassankhani, H., Jabraeili, M., Abbaszadeh, M., & Best, A. (2021). Health care staff support for mothers in NICU : a focused ethnography study. *BMC Pregnancy and Childbirth*, *3*, 1–12. https://doi.org/10.1186/s12884-021-03991-3

Norman, P., Wilding, S., & Conner, M. (2020). Reasoned action approach and compliance with recommended behaviours to prevent the transmission of the SARS-CoV-2 virus in the UK. *British Journal of Health Psychology*, *25*(4), 1006–1019. https://doi.org/10.1111/bjhp.12474

O'Brien, C., & Newport, M. (2023). Prioritizing women's choices, consent, and bodily autonomy: From a continuum of violence to women-centric reproductive care. *Social Science and Medicine*, *333*(February), 116110. https://doi.org/10.1016/j.socscimed.2023.116110

OECD. (2019). *Realising the Full Potential of Primary Health Care*. http://www.oecd.org/health/health-systems/OECD-Policy-Brief-Primary-Health-Care-May-2019.pdf

Okulu, E., Erdeve, Ö., Tuncer, O., Ertuğrul, S., Özdemir, H., Çiftdemir, N. A., Zenciroğlu, A., & Atasay, B. (2021). Exchange transfusion for neonatal hyperbilirubinemia: A multicenter, prospective study of turkish neonatal society. *Turkish Archives of Pediatrics*, *56*(2), 121–126. https://doi.org/10.14744/TurkPediatriArs.2020.65983

Olatunde, O. E., Christianah, O. A., Olarinre, B. A., Bidemi, A. A., Temidayo, A. A., Adebukola, F. O., Tolulope, A. O., Bamidele, T. A., Oludare, O. I., & Simeon, O. O. (2020). Neonatal Jaundice: Perception of Pregnant Women Attending Antenatal Clinic at a Tertiary Hospital in Southwest, Nigeria. *Global Pediatric Health*, *7*. https://doi.org/10.1177/2333794X20982434

Parish, O., Williams, D., Odd, D., & Joseph-Williams, N. (2022). Barriers and facilitators to shared decision-making in neonatal medicine: A systematic review and thematic synthesis of parental perceptions. *Patient Education and Counseling*, *105*(5), 1101–1114. https://doi.org/10.1016/j.pec.2021.08.033

Parkinson, J. A. (2025). Promoting Behavioral Change to Improve Health Outcomes. *Behavioral*

Sciences, *15*(4), 4–10. https://doi.org/10.3390/bs15040417

Pereira Lima Silva, R., Gonçalves Menegueti, M., Dias Castilho Siqueira, L., de Araújo, T. R., Auxiliadora-Martins, M., Mantovani Silva Andrade, L., & Laus, A. M. (2020). Omission of nursing care, professional practice environment and workload in intensive care units. *Journal of Nursing Management*, *28*(8), 1986–1996. https://doi.org/10.1111/jonm.13005

Polit, D., & Beck, C. (2020). *Essentials of nursing research: Appraising evidence for nursing practice. Lippincott Williams & Wilkins* (10th ed.). Wolters Kluwer Health.

Prakash Chand, S. (2023). Constructivism in Education: Exploring the Contributions of Piaget, Vygotsky, and Bruner. *International Journal of Science and Research (IJSR)*, *12*(7), 274–278. https://doi.org/10.21275/sr23630021800

Rastgar, A. (2020). *Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID- 19 . The COVID-19 resource centre is hosted on Elsevier Connect , the company ' s public news and information . January*.

Rathore, S., Kumar VK, C., & R, S. (2020). A critical review on neonatal hyperbilirubinemia-an Ayurvedic perspective. *Journal of Ayurveda and Integrative Medicine*, *11*(2), 190–196. https://doi.org/10.1016/j.jaim.2018.08.006

Riaz, S., Begum, R., Munir, A., Ghaffar, T., & Bibi, S. (2021). Examining the Knowledge, Attitudes, and Practices of Nurses and Midwives in Lahore, Pakistan for Immediate Newborn Care in Labour Rooms. *NURSEARCHER (Journal of Nursing & Midwifery Sciences)*, 26–29. https://doi.org/10.54393/nrs.v1i02.25

Rogers W., R. (1983). Cognitive and physiological processes in fear appeals and attitude change: a revised theory of protection motivation. *Social Psychophysiology: A Sourcebook*, *October*, 153–177.

Rosenstock, I. M. (1974). *Historical Origins of the Health Belief Model*. *2*(4), 328–335. https://doi.org/10.1177/109019817400200403

Salia, S. M., Afaya, A., Wuni, A., Ayanore, M. A., Salia, E., Kporvi, D. D., Adatara, P., Yakong, V. N., Eduah-Quansah, S. A., Quarshie, S. S., Dey, E. K., Akolga, D. A., & Alhassan, R. K. (2021). Knowledge, attitudes and practices regarding neonatal jaundice among caregivers in a tertiary health facility in Ghana. *PLoS ONE*, *16*(6 June), 1–20. https://doi.org/10.1371/journal.pone.0251846

Salim, H., Al, M., Alameer, M. H., Alsoliman, A., Alhumaid, M. A., Hadi, H., Albashrawi, D. S., Ibrahim, J., Bahrani, A., Khalifa, A., Ibrahim, F., Alawi, A., & Alkhuraym, H. M. (2025). *DIABETIC STUDIES United Frontline Of Healthcare : A Comprehensive Review Of The Roles , Contributions , And Collaborative Impact Of All Medical Workers In Advancing Patient Care , Quality , And System Sustainability*. *21*(S4), 80–88. https://doi.org/10.70082/35jmzp51

Sampurna, M. T. A., Mapindra, M. P., Mahindra, M. P., Ratnasari, K. A., Rani, S. A. D., Handayani, K. D., Angelika, D., Harianto, A., Utomo, M. T., Etika, R., & Sauer, P. J. J. (2021). Kramer score, an evidence of its use in accordance with indonesian hyperbilirubinemia published guideline. *International Journal of Environmental Research and Public Health*, *18*(11). https://doi.org/10.3390/ijerph18116173

Scholten, N., Mause, L., Horenkamp-Sonntag, D., Klein, M., & Dresbach, T. (2022). Initiation of lactation and the provision of human milk to preterm infants in German neonatal intensive care units from the mothers' perspective. *BMC Pregnancy and Childbirth*, *22*(1), 1–8. https://doi.org/10.1186/s12884-022-04468-7

Seneadza, N. A. H., Insaidoo, G., Boye, H., Ani-Amponsah, M., Leung, T., Meek, J., & Enweronu-Laryea, C. (2022). Neonatal jaundice in Ghanaian children: Assessing maternal knowledge, attitude, and perceptions. *PLoS ONE*, *17*(3 March), 1–13. https://doi.org/10.1371/journal.pone.0264694

Sharma, N., & Martini, A. (2025). *Dark tourism geographies: Ontological, epistemological and axiological perspectives. Tourism Geographies*. *27*(3–4), 589-598.

Shetty, A. P., Phil, M., Halemani, K., Phil, M., Issac, A., Phil, M., Thimmappa, L., Dhiraaj, S., Radha, K., Phil, M., Mishra, P., & Upadhyaya, V. D. (2024). *Prevalence of anxiety , depression , and stress among parents of neonates admitted to neonatal intensive care unit : a systematic review and meta-analysis*. *67*(2), 104–115.

Simonetti, M., Asociada, P., Cerón, C., Alejandra, A., Mph, G., Coordinadora, E., Basada, D. P., & Lake, E. E. T. (2021). *Hospital work environment , nurse staffing and missed care in Chile : A cross- - sectional observational study*. *September*, 1–12. https://doi.org/10.1111/jocn.16068

Slaughter, J. L., Kemper, A. R., & Newman, T. B. (2022). Technical Report: Diagnosis and Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation.

Pediatrics, *150*(3). https://doi.org/10.1542/peds.2022-058865

Spannhake, M., Jansen, C., Görig, T., & Diehl, K. (2021). "It Is a Very Emotional Topic for Me"—Managing Breastfeeding Problems among German Mothers: A Qualitative Approach. *Healthcare (Switzerland)*, *9*(10). https://doi.org/10.3390/healthcare9101352

Spencer, S. A., Adipa, F. E., Baker, T., Crawford, A. M., Dark, P., Dula, D., Gordon, S. B., Hamilton, D. O., Huluka, D. K., Khalid, K., Lakoh, S., Limbani, F., Rylance, J., Sawe, H. R., Simiyu, I., Waweru-Siika, W., Worrall, E., & Morton, B. (2023). A health systems approach to critical care delivery in low-resource settings: a narrative review. *Intensive Care Medicine*, *49*(7), 772–784. https://doi.org/10.1007/s00134-023-07136-2

Spoon, D., Rietbergen, T., Huis, A., Heinen, M., van Dijk, M., van Bodegom-Vos, L., & Ista, E. (2020). Implementation strategies used to implement nursing guidelines in daily practice: A systematic review. *International Journal of Nursing Studies*, *111*, 103748. https://doi.org/10.1016/j.ijnurstu.2020.103748

Spriggs, M. (2023). Children and bioethics: clarifying consent and assent in medical and research settings. *British Medical Bulletin*, *145*(1), 110–119. https://doi.org/10.1093/bmb/ldac038

St Patrick's Hospital. (2023). *Incidence of neonatal jaundice at the Infant Jesus Unit from 2019-2023, Maase Offiso, Ashanti Region Ghana*.

Stemmer, R., Bassi, E., Ezra, S., Harvey, C., Jojo, N., Meyer, G., Özsaban, A., Paterson, C., Shifaza, F., Turner, M. B., & Bail, K. (2022). A systematic review: Unfinished nursing care and the impact on the nurse outcomes of job satisfaction, burnout, intention-to-leave and turnover. *Journal of Advanced Nursing*, *78*(8), 2290–2303. https://doi.org/10.1111/jan.15286

Stolow, J. A., Moses, L. M., Lederer, A. M., & Carter, R. (2020). How Fear Appeal Approaches in COVID-19 Health Communication May Be Harming the Global Community. *Health Education and Behavior*, *47*(4), 531–535. https://doi.org/10.1177/1090198120935073

Tale, M. O. S., Ajeebi, S. A. M., Mansouralbaishi, M., Almash, S. H. A., Alajam, G. Y., Saleh, M. S., Zoheri, W. M. A., Shiwhi, A. M. A., Majrashi, S. A., & Namis, H. A. (2024). Improving patient outcomes through teamwork among nurses and health aides. *Journal of International Crisis and Risk Communication Research*, *7*(S6), 1248–1255. https://www.proquest.com/scholarly-journals/improving-patient-outcomes-through-teamwork-among/docview/3186336420/se-

2?accountid=46437%0Ahttps://media.proquest.com/media/hms/PFT/1/yTLCc?_a=ChgyMDI1MDQyNDAyMTcwNzMyMzoxMDIzODYSBTQyMDM1GgpPTkVfU0VBUkNIIg0xODA

Tenorio, M. R., Aletreby, W. T., S, Alhammari, B., Almuabbadi, B., Mwawish, H., & Montegrico, J. (2021). The Interrelation between nurse-to-patient ratio, nurse engagement, and missed nursing care in King Saud Medical City: Basis for development of nurse–patient quality of care. *Saudi Journal for Health Sciences*, *10*(2), 116–124. https://doi.org/10.4103/sjhs.sjhs_74_21

Tuval-Mashiach, R. (2021). *Is replication relevant for qualitative research?. Qualitative Psychology,*. *8*(3), 365.

Vincelette, C., D'Aragon, F., Stevens, L. M., & Rochefort, C. M. (2023). The characteristics and factors associated with omitted nursing care in the intensive care unit: A cross-sectional study. *Intensive and Critical Care Nursing*, *75*(October 2022). https://doi.org/10.1016/j.iccn.2022.103343

Wang, J., Guo, G., Li, A., Cai, W. E. N. Q. I., & Wang, X. (2021). *Challenges of phototherapy for neonatal hyperbilirubinemia (Review)*. 1–11. https://doi.org/10.3892/etm.2021.9662

WHO. (2020). *State of the world's nursing 2020: investing in education, jobs and leadership. World Health Organization;. p. 9240003274*.

Wojcieszek, A. M., Bonet, M., Portela, A., Althabe, F., Bahl, R., Chowdhary, N., Dua, T., Edmond, K., Gupta, S., Rogers, L. M., Souza, J. P., & Oladapo, O. T. (2023). *WHO recommendations on maternal and newborn care for a positive postnatal experience : strengthening the maternal and newborn care continuum*. 8–11. https://doi.org/10.1136/bmjgh-2022-010992

Wolski, A., Moyer, C. A., Amoah, R., Otoo, B., Kaselitz, E., & Bakari, A. (2024). Community health worker knowledge and perceptions of neonatal jaundice in Kumasi , Ghana. *Discover Public Health*. https://doi.org/10.1186/s12982-024-00235-5

Zhang, F., Chen, L., Shang, S., & Jiang, K. (2020). A clinical prediction rule for acute bilirubin encephalopathy in neonates with extreme hyperbilirubinemia: A retrospective cohort study. *Medicine (United States)*, *99*(9), 1–5. https://doi.org/10.1097/MD.0000000000019364

Zia UI Haq, K., Rasheed, R., Rashid, A., & Akhter, S. (2023). CUNY Academic Works Criteria for Assessing and Ensuring the Trustworthiness in Qualitative Research How does access to

this work benefit you ? Let us know ! *International Journal of Business Reflections*, *4*(2), 141–173.

Zilinsky, J., & Theocharis, Y. (2025). Conspiracism and government distrust predict COVID-19 vaccine refusal. *Humanities and Social Sciences Communications*, *12*(1), 1–12. https://doi.org/10.1057/s41599-025-05267-z

APPENDICES

Appendix I CHAG IRB - Consent Form (Individual In-depth Interview)

Midwives' Experiences of Early Identification and Management of Neonatal Jaundice in the Offinso Municipality

The purpose of this interview is to explore the attitude, subjective norms, the behavioral intentions and behaviors of midwives in early identification of neonatal jaundice. I therefore request humbly that you share your experiences in the identification of this condition. You have to selected to participate in the study because you meet the inclusion criteria. A recorded in-depth interview that may take between 30 to 60 minutes will be recorded with a digital recorder.

Possible Risks and Discomforts: the study will not come with any potential or possible risk. However, if answering any question will be discomforting, participant may choose not to respond to the question not withstanding there is no right or wrong answer.

Possible Benefits: The study might not reward instantly, however, participation in the study has the potential in creating awareness on the experiences, attitudes, subjective norms, intentions and behavioral intentions of midwives. The findings will help fill the gap concerning early identification of neonatal jaundice in Ghana. The study's conclusions and suggestions will be helpful to health professionals as it will function as a source of knowledge for midwives, health practitioners, families and even communities at large.

Confidentiality: Participants will be de-identified using pseudonyms, there locations, names and any information there will expose and make identifying them will not be accessible. Any information obtained during data collection will be treated with the strictest of confidentiality and your privacy will be protected at all times. Your identity will not be revealed at any point of the study.

Compensation: The only compensation that may come with this study will be snacks after the interview but no other compensations will be given to members whether monitory or kind.

Voluntary participation: Your participation in this study is entirely voluntary. If at any point in the study for any reason, you feel strongly to withdrawal your participation, you are allowed to do so without negative consequences whatsoever.

Your Rights as a Participant: This research has been reviewed and approved by the Institutional Review Board of Christian Health Association of Ghana (CHAG-IRB). If you have any questions about your rights as a research participant, you can contact the IRB Administrator, Mrs. Sarah Sackey Martei-Olletey on 0202904777 or email to chagirb@chag.org.gh.

VOLUNTEER AGREEMENT

The above document describing the benefits, risks and procedures for the research title ……..... ……. has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

_____ _____

Date Name and signature or mark of volunteer

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

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

_____ _____

Date Name and signature of witness

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

_____ _____

Date Name Signature of Person Who Obtained Consent

APPENDIX II CONSENT FORM (CONSENT FORM FOCUS GROUP)

Midwives' Experiences of Early Identification and Management of Neonatal Jaundice in the Offinso Municipality

The purpose of this interview is to explore the attitude, subjective norms, the behavioural intentions and behaviours of midwives in early identification of neonatal jaundice. I therefore request humbly that you share your experiences in the identification of this condition. You have to selected to participate in the study because you meet the inclusion criteria. The interview may take between 60- 90 minutes.

Possible Risks and Discomforts: The study will not come with any potential or possible risk. However, if answering any question will be discomforting, participant may choose not to respond to the question notwithstanding, there is no right or wrong answer.

Possible Benefits: The study might not reward instantly, however, participation in the study has the potential in creating awareness on the experiences, attitudes, subjectives norms, intentions and behavioural intentions of midwives. The findings will help fill the gap concerning early identification of neonatal jaundice in Ghana. The study's conclusions and suggestions will be helpful to health professionals as it will function as a source of knowledge for midwives, health practitioners, families and even communities at large.

Confidentiality: Confidentiality cannot be ensured in the focus group as other members in the group may get to know of whatever information that will be discussed. Participant may choose not to answer or leave the hall but cannot ask that we stop the recording. As the discussions will equally be audiotaped.

Compensation: The only compensation that may come with this study will be snacks after the interview but no other compensations will be given to members whether monitory or kind.

Voluntary participation: Your participation in this study is entirely voluntary. If at any point in the study for any reason, you feel strongly to withdrawal your participation, you are allowed to do so without negative consequences whatsoever.

Your Rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of Christian Health Association of Ghana (CHAG-IRB). If you have any questions about your rights as a research participant, you can contact the IRB Administrator, Mrs. Sarah Sackey Martei-Olletey on 0202904777 or email to chagirb@chag.org.gh.

VOLUNTEER AGREEMENT

The above document describing the benefits, risks and procedures for the research title ……..... ……. has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer in the focus group discussion that may take between 40 to 60 minutes. Details of the focus group have been explained to my satisfaction and I give consent to be audiotaped during the discussion. I understand what I say during the discussion will be known to other participants and therefore cannot be confidential and also know that the focus group discussion will be recorded and I cannot ask for the recorder to be turned off but can opt not to answer any question and or leave the room.

_____ _____

Date Name and signature or mark of volunteer

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

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

_____ _____

Date Name and signature of witness

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

_____ _____

Date Name Signature of Person Who Obtained Cons

Appendix III Data Collection Instrument (Individual Interview)

Interview Guide **ID ……**

The purpose of this interview is to explore the attitude, subjective norms, the behavioral intentions and behaviors of midwives and parents in early identification of neonatal jaundice. I therefore request humbly that you share your experiences in the identification of this condition.

SECTION A

Demographic data of Midwives.

1. Age of staff……
2. Educational status……
3. Rank: ……..
4. Unit……
5. Years of experience: ……
6. Religion: Christian [ ] Islam [ ] Traditional [ ] Other specify……
7. Marital status……

SECTION B.

Attitudes of midwives in early identification and management of NNJ

1. How do you think early identification is in preventing complications?
2. Have you encountered misconceptions or myths about jaundice among parents and colleagues? How do you handle parents that refuse admission due to misconceptions
3. How do you collaborate with other healthcare professionals to ensure timely and appropriate management?

SECTION C.

Subjective norms affecting Midwives early identification in management of NNJ.

1. Are there any local guidelines or protocol that influence your practice regarding neonatal jaundice identification and management?
2. What are the expectations of your supervisors concerning jaundice care?
3. How do you think your colleagues and parents would perceive your decision to refer or suggest admission because of NNJ? How do parents influence positively or negatively in managing NNJ?

SECTION D

Behavioral intention of midwives in early identification and management of NNJ

1. Mention some barriers you have encountered in identifying and managing jaundice and your plans to overcome them?
2. Do you have any way you follow up on parents whose babies are discharged after delivery but are at a higher risk of developing NNJ?
3. How do you intend to prioritize early identification of NNJ in your practice given your busy workload?

SECTION E

Behaviors of midwives in early identification and management of NNJ

1. Can you describe a situation where you identified a newborn as a high risk for NNJ and took prompt action? How often do you encounter jaundice cases?
2. Describe the specific action you take when you suspect a newborn has NNJ and how you communicate with the parents?
3. Have you ever engaged in other practices other than the hospital management for a child with jaundice? How effective or ineffective was it?

Is there anything else you may want to share with me?

Appendix IV: Focus Group Discussion Guide **ID: ….**

The purpose of this interview is to explore the attitude, subjective norms, the behavioral intentions and behaviors of midwives and parents in early identification of neonatal jaundice. I therefore request humbly that you share your experiences in the identification of this condition.

SECTION A

Demographics of participants

1. Age: …….
2. Rank: ……
3. Unit/ Department……
4. Years of experience: …….
5. Religion: Christian: [ ] Islam [ ] Traditional [ ] Other (please specify) ……
6. Marital Status: ……

SECTION B

Attitudes of midwives in early identification and management of NNJ

1. Can you discuss your experiences with early identification of NNJ and its importance? Are there any hindrances if any how do you overcame them?
2. How do you address concerns and understanding of mothers who are hesitant concerning NNJ admission, what approach have you found effective.

SECTION C

Subjective norms affecting midwives' early identification and management of NNJ

1. What guides and influences your practice concerning NNJ identification and management?
2. How do supervisors/families and colleagues influence your decision and management of NNJ?

SECTION D.

Behavioral intentions of midwives in early identification and management of NNJ

1. Can you describe an experience that changed your approach to early identification and NNJ management?
2. What strategies will you use to ensure timely screening, especially during peak workloads?

SECTION E

Behaviors of midwives in early identification and management of NNJ

1. How do you coordinate with other healthcare professionals to ensure continuity of care for these babies?

2. Have you identified a baby at risk for NNJ and treated it promptly? What prompted your prompt action?

Is there anything else you may want to share with me?

Appendix V: Ethical Clearance

CHRISTIAN HEALTH ASSOCIATION OF GHANA (CHAG)
RESEARCH DEPARTMENT - INSTITUTIONAL REVIEW BOARD (IRB)
21 JUBILEE WELL STREET, LABONE, ACCRA. TELEPHONE: 0202904777. EMAIL chagirb@chag.org.gh

4th September 2024

ETHICAL CLEARANCE

CHAG IRB PIN: CHAG-IRB05042024

On **4th September 2024,** the Christian Health Association of Ghana (CHAG) Institutional Review Board (IRB) reviewed and approved your protocol detailed as follows,

TITLE OF PROTOCOL: **Midwives' Experiences of Early Identification and Management of Neonatal Jaundice in the Offinso Municipality.**

PRINCIPAL INVESTIGATOR: **Gloria Asamoah**

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

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

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

This certificate is valid till **30th September 2025.** You are to submit annual reports for continuing review.

Signed by: .....

THE ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
CHRISTIAN HEALTH ASSOCIATION OF GH.

Mrs. Sarah Sackey Matei-Olletey
CHAG IRB Administrator
(for CHAG IRB Chairman)

INTEGRI PROCEDAMUS

https://sites.google.com/view/chag-research/institutional-review-board

Appendix VI: Introductory Letter

UNIVERSITY OF GHANA

SCHOOL OF NURSING AND MIDWIFERY
COLLEGE OF HEALTH SCIENCES

Ref: 11366893

8th July, 2024.

The Chairperson

Chag Institutional Review Board

Chag Secretariat

21 Jubilee Street

Labone, Accra

Dear Sir/Madam,

LETTER OF INTRODUCTION – ETHICAL CLEARANCE

I write to introduce to you Gloria Asamoah, an MPhil Paediatric Nursing student in the Department of Maternal and Child Health at the School of Nursing and Midwifery, University of Ghana, Legon.

As part of the requirements for the MPhil Paediatric Nursing programme, the student is to undertake a study and she intends to use the St. Patrick's Hospital at Offinso as her study site.

The title of her research is "**Midwives Experiences of Early Identification and Management of Neonatal Jaundice in the Offinso Municipality.**"

I write to seek your permission to enable her undertake this study at the facility.

Thank you.

Yours faithfully,

Mr. Charles A. Klutse
(School Administrator)

INTEGRI PROCEDAMUS

P. O. Box LG 43, Legon, Accra, Ghana I Tel: +233 (0) 303 970 801
Email: nursing@ug.edu.gh I Website: www.nursing.ug.edu.gh

UG

Appendix VII: Principal Supervisor's Letter of Support

UNIVERSITY OF GHANA

DEPARTMENT OF MATERNAL AND CHILD HEALTH
SCHOOL OF NURSING AND MIDWIFERY
COLLEGE OF HEALTH SCIENCES

Ref: 11366893

8th July, 2024.

The Chairperson

Chag Institutional Review Board

Chag Secretariat

21 Jubilee Street

Labone, Accra

Dear Sir/Madam,

LETTER OF SUPPORT – ETHICAL CLEARANCE

I write to support the application for ethical clearance of Gloria Asamoah, an MPhil Paediatric Nursing student in the Department of Maternal and Child Health at the School of Nursing and Midwifery, University of Ghana, Legon.

As part of the requirements for the MPhil Paediatric Nursing programme, the student is to undertake a study and she intends to use the St. Patrick's Hospital at Offinso as her study site.

The title of her research is **"Midwives Experiences of Early Identification and Management of Neonatal Jaundice in the Offinso Municipality."**

I write to seek your permission to enable her undertake this study at the facility.

Thank you.

Yours faithfully,

Dr. Mary Ani-Amponsah
(Research Supervisor)

P. O. Box LG 43, Legon, Accra, Ghana | Tel: +233 (0) 30 251 3250
Email: mchsonm@ug.edu.gh | Website: www.ug.edu.gh

Appendix VIII: Co-Supervisor's Letter of Support

UNIVERSITY OF GHANA

DEPARTMENT OF MATERNAL AND CHILD HEALTH
SCHOOL OF NURSING AND MIDWIFERY
COLLEGE OF HEALTH SCIENCES

Ref: 11366893

8th July, 2024.

The Chairperson

Chag Institutional Review Board

Chag Secretariat

21 Jubilee Street

Labone, Accra

Dear Sir/Madam,

LETTER OF SUPPORT – ETHICAL CLEARANCE

I write to support the application for ethical clearance of Gloria Asamoah, an MPhil Paediatric Nursing student in the Department of Maternal and Child Health at the School of Nursing and Midwifery, University of Ghana, Legon.

As part of the requirements for the MPhil Paediatric Nursing programme, the student is to undertake a study and she intends to use the St. Patrick's Hospital at Offinso as her study site.

The title of her research is "**Midwives Experiences of Early Identification and Management of Neonatal Jaundice in the Offinso Municipality.**"

I write to seek your permission to enable her undertake this study at the facility.

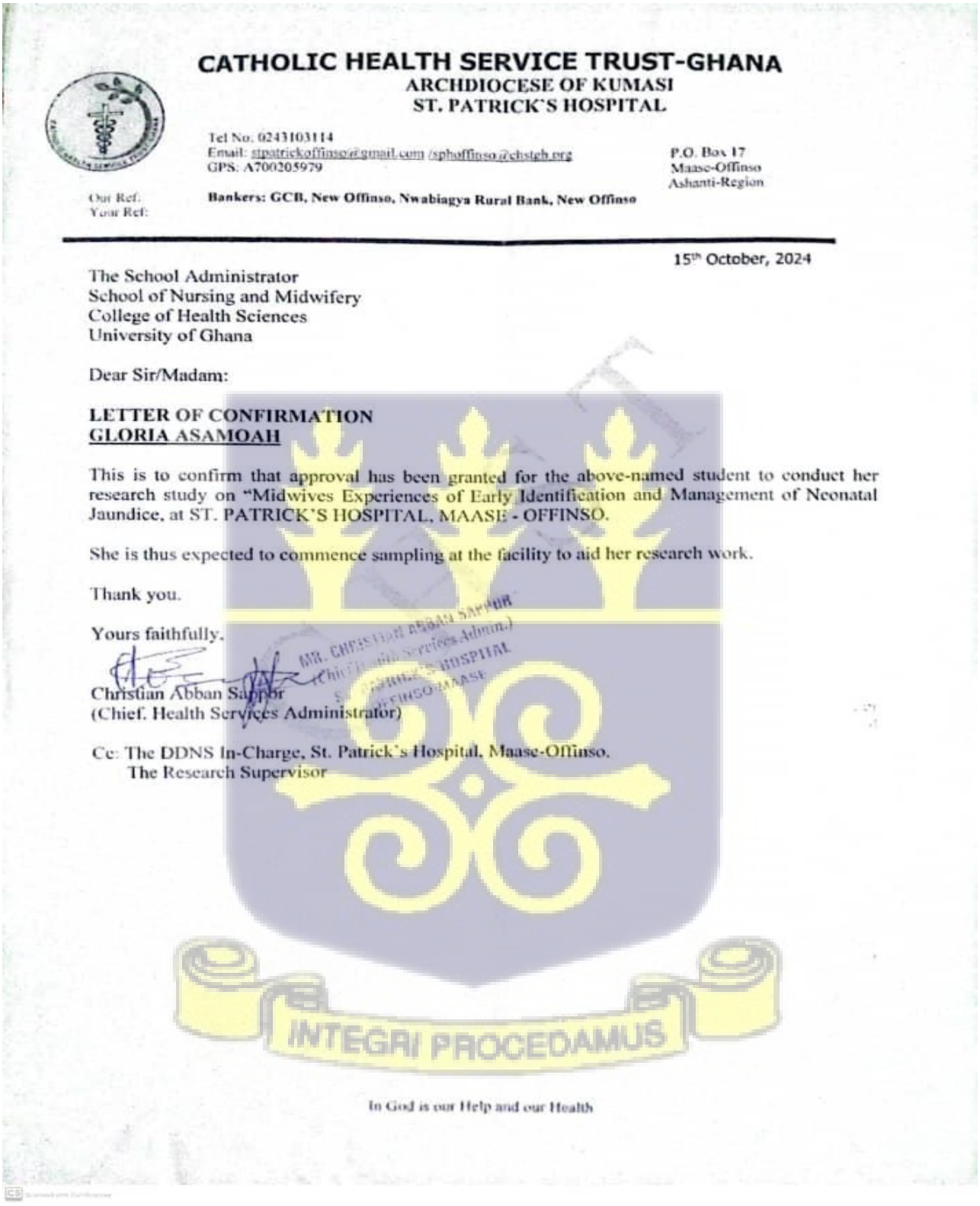
Thank you.

Yours faithfully,

Dr. Caroline Dinam Badzi
(Co-Supervisor)

P. O. Box LG 43, Legon, Accra, Ghana | Tel: +233 (0) 30 251 3250
Email: mchsconm@ug.edu.gh | Website: www.nursing.ug.edu.gh

Appendix IX: Confirmatory Letter



CATHOLIC HEALTH SERVICE TRUST-GHANA
ARCHDIOCESE OF KUMASI
ST. PATRICK'S HOSPITAL

Tel No. 0243103114
Email: stpatrickoffinso@gmail.com /sphoffinso@chstgh.org
GPS. A700205979

P.O. Box 17
Maase-Offinso
Ashanti-Region

Our Ref:
Your Ref:

Bankers: GCB, New Offinso, Nwabiagya Rural Bank, New Offinso

15th October, 2024

The School Administrator
School of Nursing and Midwifery
College of Health Sciences
University of Ghana

Dear Sir/Madam:

LETTER OF CONFIRMATION
GLORIA ASAMOAH

This is to confirm that approval has been granted for the above-named student to conduct her research study on "Midwives Experiences of Early Identification and Management of Neonatal Jaundice, at ST. PATRICK'S HOSPITAL, MAASE - OFFINSO.

She is thus expected to commence sampling at the facility to aid her research work.

Thank you.

Yours faithfully,

Christian Abban Sappor
(Chief. Health Services Administrator)

Cc: The DDNS In-Charge, St. Patrick's Hospital, Maase-Offinso.
The Research Supervisor

INTEGRI PROCEDAMUS

In God is our Help and our Health