UNIVERSITY FOR DEVELOPMENT STUDIES

PREVALENCE OF CAESAREAN SECTION AMONG POSTNATAL MOTHERS AND THE LIVED EXPERIENCES OF MOTHERS WHO HAVE UNDERGONE THE PROCEDURE AT THE TAMALE TEACHING HOSPITAL

SARAH ADU

2024

UNIVERSITY FOR DEVELOPMENT STUDIES

PREVALENCE OF CAESAREAN SECTION AMONG POSTNATAL MOTHERS AND THE LIVED EXPERIENCES OF MOTHERS WHO HAVE UNDERGONE THE PROCEDURE AT THE TAMALE TEACHING HOSPITAL

BY

SARAH ADU
(Bsc. Midwifery)
(UDS/MCH/0002/21)

[A THESIS SUBMITTED TO THE DEPARTMENT OF POPULATION AND REPRODUCTIVE HEALTH, SCHOOL OF PUBLIC HEALTH, UNIVERSITY FOR DEVELOPMENT STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PUBLIC HEALTH DEGREE IN MATERNAL AND CHILD HEALTH]

OCTOBER, 2024

DECLARATION

Candidate's Declaration

I, Sarah Adu, hereby declare that the results of my project work "**prevalence of caesarean section among postnatal mothers and the lived experiences of mothers who have undergone the procedure at the Tamale Teaching Hospital**" is my own work and that no previous submission for a degree has been done on the topic in this University or elsewhere. Additionally, references to the authors of other people's works that provided information have been made in a way that is appropriate.

15-10-24

Candidate's Signature……..…… Date ……

Name: Sarah Adu (UDS/MCH/0002/21)

Supervisor's Declaration

I hereby certify that I oversaw the preparation and presentation of this thesis in compliance with the requirements for thesis supervision established by the University for Development Studies.

15/10/24

Supervisor's Signature: ---------- Date: ----------

Name: Dr. Felix Achana

ABSTRACT

Childbirth is a complex and significant life experience for women, often leaving lasting psychosocial and emotional impacts. Caesarean section (CS) is a vital maternal and reproductive health intervention performed in cases where vaginal delivery poses a threat to life. This study aims to determine the prevalence of caesarean sections and explore the lived experiences of mothers who underwent the procedure at the Tamale Teaching Hospital. A descriptive cross-sectional study was conducted with 312 women who delivered at the Tamale Teaching Hospital between March 1st, 2023, and concluded on March 31st, 2023. Participants were selected using census population and purposive sampling, surveyed with a structured questionnaire and interview guide, and data were analyzed using SPSS V20 and thematic content analysis. Out of 312 respondents, 113 (36.2%) underwent caesarean sections, with 45 (14.4%) classified as elective and 68 (21.8%) as emergency procedures. Mothers reported varied experiences of midwifery care, encompassing both positive and negative aspects. Positive experiences included psychological support and pain management whiles the negative experiences includes payment of the service they received. Maternal age, marital status, parity, ANC attendance, area of residence, and birth weight were found to be independently associated with caesarean section. The study highlights a high prevalence of caesarean sections, with distinct associations to socioeconomic and obstetric factors. The Ministry of Health in Ghana is recommended to investigate and address these factors through community outreach and educational programs to improve maternal and reproductive healthcare.

ACKNOWLEDGEMENTS

First and foremost, a special thank you goes to the ALMIGHTY GOD, the most merciful and gracious father for His guidance and protection throughout my course of study and throughout the execution of this Thesis.

I would want to thank everyone who helped me finish this project. First, I would like to extend a heartfelt thank you to my supervisor, Dr. Felix Achana, for his direction, constructive criticism, and helpful recommendations and remarks during my research effort.

I would also like to express my genuine gratitude to my beloved husband Mr. Williamson Yeboah for his support and pieces of advice throughout my study.

My Friend Shallom Kutsoati who has always been a huge source of support when things would get a little depressing, you deserve special thanks for always being there for me.

To the entire class of 2021 MPH Maternal and Child Health, my gratitude goes to all for the wonderful co-existence and resourcefulness throughout the period.

May the Almighty God bless each and every one who contributed in one way or the other towards the finishing of this thesis.

DEDICATION

This work is dedicated to my beloved husband Mr. Williamson Yeboah for he has been there for me and supported me through every aspect of my work, and to my brother David Kordegu for his immense support and cooperation throughout this course.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FOGURES

LIST OF ABBREVIATIONS

American College of Obstetricians and Gynaecologists (ACOG)

Antenatal care (ANC)

Antepartum haemorrhage (AH)

Association of Obstetrics and Gynaecology (AOG)

Canadian Institute for Health Information (CIHI)

Centre for Disease Control (CDC)

Caesarean section (CS)

Demographic Republic of Congo (DRC)

District health information management system (DHIMS)

Electronic Foetal Monitoring (EFM)

Elective Repeat Caesarean Section (ERCS)

Fisher's exact test (F-test)

Ghana Health Service (GHS)

Ghana Statistical Service (GSS)

Human Immunodeficiency Virus (HIV)

Intensive care unit (ICU)

Intrauterine Growth Restriction (IUGR)

National Health Insurance Scheme (NIHS)

Odds Ratio (OR)

Organization for Economic Co-operation and Development (OECD)

Sub-Saharan Africa (SSA)

Tamale Teaching Hospital (TTH)

Vaginal birth after Caesarean (VBAC)

World Health Organisation **(**W

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 Background

A Caesarean section, also called a Caesarean delivery, is a surgical procedure where the mother's belly and uterus are cut to safely deliver the baby when a vaginal birth is not possible or desirable. It's a critical operation that saves the lives of mothers and babies. There are two types: planned (scheduled) Caesarean sections and those done due to labour complications (emergency or unplanned). Globally, around 830 women die daily due to childbirth and its related issues (Wirsiy et al., 2019). Sadly, nearly all these deaths, around 99%, occur in low-to-middle income countries (LMICs) (World Health Organization, 2016). In many LMICs in Africa and South Asia, childbirth complications are the primary cause of death among women of reproductive age. Conversely, developed countries experience only about 0.2% of maternal mortality due to these causes (Knight et al., 2016).

Shocking statistics reveal that 1 in 39 women face the risk of dying during pregnancy or delivery. Looking at Caesarean section rates, globally, 19% of all births are via CS, with developing countries contributing 6% to 27%, while developed countries range from 6% to 27%. Notably, Latin America and the Caribbean have the highest CS rates at 41%, followed by Northern America at 32%, Oceania at 31%, Europe at 25%, Asia at 19%, and Africa at 7% (Betrán, Ye, Moller, Zhang, Gülmezoglu & Torloni, 2016).

Research has shown significant variability in the prevalence of Caesarean sections (CS) across different regions. Mose and Abebe (2021) observed these differences worldwide, ranging from 13% in Bangladesh to 41% in Latin America and the Caribbean. Factors linked to CS, according to Mose and Abebe (2021), include urban residence, malpresentation, and a history of previous Caesarean sections. While many CS cases are due to medical reasons such as foetal distress or stalled labour, some women opt for the procedure, contributing to the high CS rates. This

overuse is notable in middle-to-high-income countries (Betrán et al., 2016), reaching rates of 26% in China, 32% in Australia and New Zealand, and 46% in Brazil (Gibbons L, Belizan, Lauer, 2012; Betrán et al., 2016). There is an ongoing debate on the unjustifiable excess of medically unnecessary CS deliveries in these countries (Gibbons L, Belizán JM, Lauer, 2010). However, in low-income countries where a majority of global births occur, such as West Africa, the scenario differs substantially. Conversely, developed nations report relatively lower pregnancy-related deaths, estimated at 1 in 4,700 births (World Health Organisation, 2016). Though the issue cannot be eradicated, strategies can be employed to reduce maternal and foetal mortality during pregnancy.

Elective CS, chosen by the mother without medical indication, is influenced by factors like advanced maternal age, higher education, urban living, fear of vaginal birth, concerns for the baby's welfare, and apprehensions about urogenital injuries during vaginal delivery (Maalim et al., 2017). Pregnancy and delivery encompass a natural process, categorised as spontaneous vaginal delivery or assisted delivery which includes CS (Maktha, Ghatam, Padamata, Ravulakol, 2016). Sobhy et al. (2019) highlighted the increased risk of mortality after CS for women in developing countries, which was substantially higher than in developed nations. In Sub-Saharan Africa, the risk is notably higher, with one in a hundred women facing post-CS mortality, 82.5 stillbirths, and 100.4 perinatal deaths per 1000 CS deliveries. Unnecessary CS and inadequate post-surgery care contribute significantly to these statistics (Souza et al., 2010). The World Health Organisation (WHO) recommends limiting CS to medical necessity, as 5% to 10% of CS procedures have not contributed to reducing maternal and neonatal fatalities.

Over the past two decades, many countries, including Ghana, have witnessed a sharp rise in CS deliveries. In Ghana specifically, the prevalence stands at about 8% in the Northern region compared to 24% in the Greater Accra region (GSS&GHS, 2018). While CS remains a crucial procedure in emergency obstetric cases, concerns arise about its excessive use beyond

recommended levels (Betra et al., 2015). James et al.'s (2017) study in Ghana cited failure to progress, foetal macrosomia encompassing babies born larger than average size (Akanmode and Mahdy, 2023) and previouss CS as the primary reasons for CS. Additionally, stalled labour and foetal distress were the top causes for emergency CS, while macrosomia and previous CS were the leading causes for elective CS (Jain et al., 2019).

A significant gap in the understanding of Caesarean section (CS) delivery exists in low- and middle-income countries (LMICs), where there is generally low knowledge and awareness about the procedure. Numerous studies underscore this issue, pointing to a lack of understanding regarding when and why CS is necessary. This problem is often exacerbated by misinformation and cultural beliefs that negatively influence perceptions of CS. Several factors contribute to this knowledge deficit, including limited access to healthcare information, educational disparities, and inadequate counseling during antenatal care.

In LMICs, many women are unaware of the medical indications for CS, which can lead them to perceive the procedure as unnecessary or even dangerous. Fears related to complications, costs, and misconceptions about recovery often cause delays in seeking or accepting CS, even when it is medically necessary. For instance, Maalim et al. (2017) found that fears of vaginal birth, concerns for the baby’s well-being, and a lack of understanding of the risks associated with prolonged labor contribute to the reluctance toward CS.

Midwives play a critical role in disseminating information about childbirth options, including CS. However, disparities in midwifery training and communication skills can hinder effective education about the risks and benefits of the procedure. In some instances, poor communication between healthcare providers and expectant mothers exacerbates the knowledge gap, resulting in reluctance to undergo CS, even when it is the best medical option. Bohren et al. (2015) highlighted how mistreatment and disrespect during maternity care in LMICs further deter

women from seeking hospital-based deliveries or elective CS, particularly if they have had negative experiences during previous pregnancies.

This gap in knowledge also extends to healthcare professionals in LMICs, some of whom may lack adequate training to effectively counsel patients on the risks and benefits of CS. This can lead to the underuse of the procedure when it is medically indicated. To address these issues, the World Health Organization (WHO) has emphasized the need for targeted efforts to raise awareness and understanding of CS in LMICs. Such efforts could help bridge the knowledge gap and ultimately reduce maternal and neonatal mortality (WHO, 2016).

1.2 Problem Statement

The global aim is to reduce Caesarean section (CS) rates to the 10% to 15% range recommended by the World Health Organization (WHO, 2015) to prevent maternal and perinatal complications. Despite this goal, Ghana's CS rate increased from 14.6% in 2015 to 16% in 2016, indicating a gradual rise likely to double in the coming years. Unnecessary CS procedures hinder equitable access to basic health services, posing a challenge to health equity (Gibbons et al., 2010).

TTH being the referral center for Northern Ghana implies that it handles complex cases and serious medical conditions that cannot be managed at smaller healthcare facilities in northern Ghana. To address this, understanding the context of CS deliveries at Tamale Teaching Hospital (TTH) is crucial. In 2016, Ghana's health service data showed a rise in CS deliveries beyond the WHO-recommended range. This increase of 1.4% between 2015 and 2016 suggests a concerning trend, yet the reasons behind this surge remain unclear. Few studies have investigated the causes and impacts of rising CS rates in Ghana's healthcare institutions, mostly

focusing on the southern region and referral hospitals. There's a significant information gap regarding CS deliveries in the northern region, particularly at the major referral center, Tamale Teaching Hospital.

Since 1985, the international healthcare community has advocated for CS rates between 10% and 15% (Robson & De Costa, 2017). However, anecdotal evidence implies that Tamale Teaching Hospital's CS rates exceed the internationally accepted 15% rate. Therefore, this study aims to examine the prevalence of CS, associated factors, and the firsthand experiences of mothers undergoing the procedure at Tamale Teaching Hospital. The findings could be used to inform policy relevant decisions about the provision of this life-saving procedure to underprivileged and women from vulnerable communities in Ghana.

1.3 Research questions

1. What is the prevalence of Caesarean Section (CS) in the Tamale Teaching Hospital (TTH)?
2. What is the level of knowledge about CS among postnatal mothers at TTH?
3. Which factors are linked to cases of CS at TTH?
4. What are the lived-experiences of postnatal mothers who have undergone CS at TTH?

1. 4 Objectives

1.4.1Main objective

The ultimate purpose of this thesis is to determine the frequency of occurrence (also known as prevalence) of caesarean section and the lived experiences of mothers who have undergone the procedure at the Tamale Teaching Hospital.

1.4.2 Specific objectives

1. To determine the prevalence of caesarean section among postnatal mothers in the TTH.
2. To assess the knowledge level of caesarean section among the postnatal mothers in the TTH.

3. To determine the predictors of caesarean section among postnatal mothers in the TTH.
4. To explore the experiences of postnatal mothers who undergo the caesarean section in Tamale Teaching Hopital.

1.5 Significance of the study

This research aligns with the Ghana Health Service's objective of reducing maternal and child mortality through Ceaseran Sections (CS)(Mireku-Gyimah, 2021). CS has emerged as vital measure of progress in emergency obstetric care, aiding in averting complications during labour and delivery (Miller et al., 2016). According to the WHO (2015), a CS rate below 5% sugget a luck of sufficient emergency obstetric care in a country. Conversely, the current WHO statement suggests that population-based CS rates exceeding 10% do not correlate with reduced maternal and neonatal mortality rates. Where does Ghana stand in relation to these statements? This thesis seeks to determine the prevalence of CS at Tamale Teaching Hospital and shed light on CS indicators, associated socio-demographic characteristics and lived experiences. These insights aim to guide policymakers and program planners in evaluating their contributions to enhancing maternal and child health.

1.6 Conceptual Framework of the study

The study's conceptual framework was built upon various factors and constructs from healthcare utilisation models (Figure 1). It involved utilising predisposing or modifying factors such as demographic elements (age, sex), social structures (education, ethnicity, occupation), and health belief models (attitudes, values, and knowledge about health and services impacting people's perception and use of health services). Additionally, the framework encompassed attitudes, knowledge, socio-cultural aspects (including social and subjective norms), and

medical and obstetric factors necessitating a Caesarean section (Anderson, 1995; Rosenstock et al., 1988).

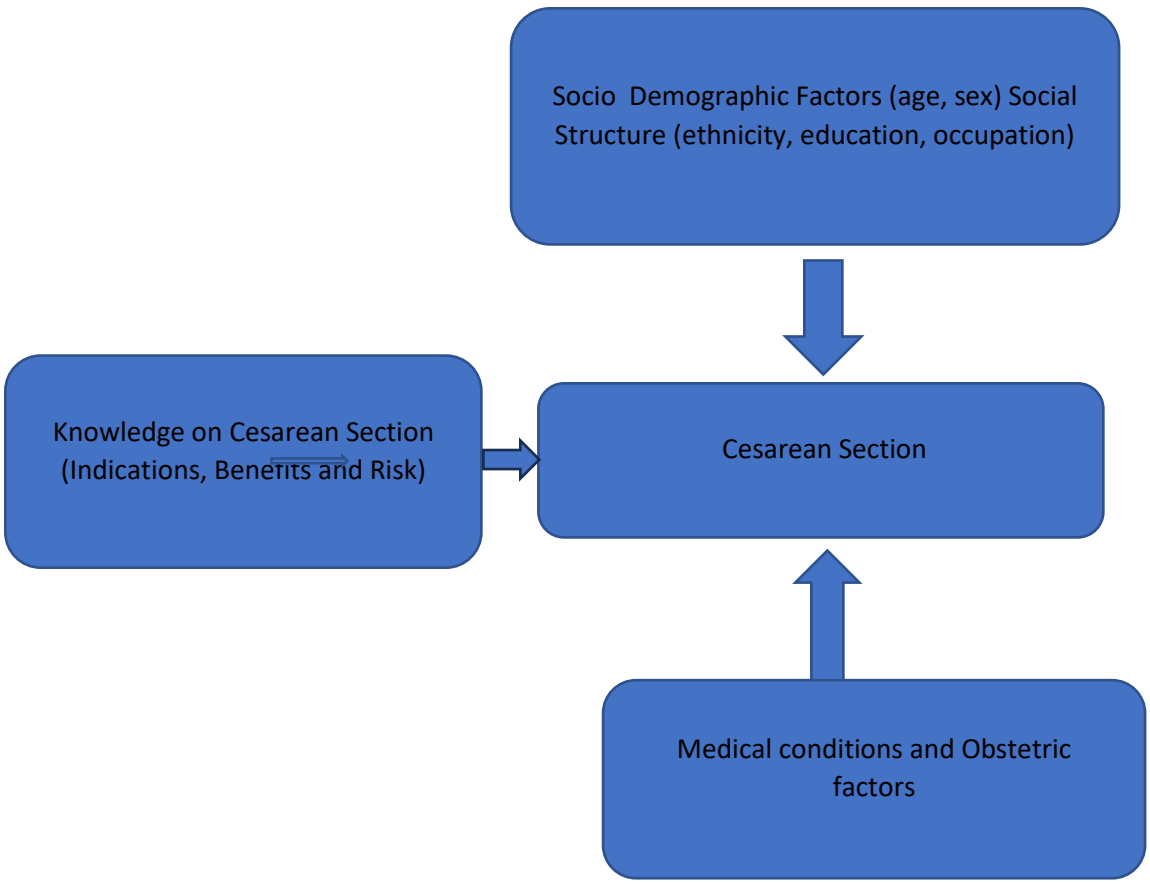


Figure 1.1: Conceptual Framework Adaped from Anderson, 1995; Glanz & Rimer, 2005; Rosenstock et al., 1988.

1.7 Organization of the study

The study is structured into six main chapters. Chapter one serves as the initial section, encompassing an introduction to the study including background information, the problem statement, research objectives, research questions, and the study's relevance. In chapter two, an

analysis and review of relevant literature related to the study subject is presented. The third chapter provides a comprehensive description of the methodology, specifying the research design, research population, sampling design, and data collection and analysis methods. Chapters four and five present and discuss the study results, respectively. Finally, the sixth chapter summarizes the findings, draws conclusions, and offers recommendations based on the study's outcomes.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The literature review chapter aims to explore and synthesize existing knowledge pertinent to the research topic. It involves examining relevant literature to gain a comprehensive understanding of the subject under investigation, focusing on areas directly related to the research problem. Specifically, in this study on Ceaserean Sections, various peer-reviewed studies concerning CS in both low and high resource countries were retrieved and analysed across databases such as CINHL, Medline, PubMed, Biomed, books, and grey literature on Caesarean sections. The review is structured under distinct sections covering the overview, incidence, and causes of Caesarean sections, along with aspects like prevalence, experiences of postnatal mothers undergoing the procedure, and identified risk factors associated with Caesarean sections.

2.1 Global caesarean section rates

Worldwide awareness of the rising prevalence of caesarean deliveries has encouraged numerous studies to look into the justifications for these deliveries (Soto-Vega et al., 2015). In many industrialized countries, the issue is even more pervasive (OECD, 2017). The rates of caesarean section deliveries have been rising over time in almost all OECD nations in 2015, according to data from the Organization for Economic Cooperation and Development (OECD), albeit in a few of them this trend has ended. There were several reasons given for this, including the long-standing increase in first pregnancies among older women as a result of assisted reproduction, concerns about being held liable for careless decisions, the ease of delivery for patients and physicians, and the growing preference of some mothers for cesarean sections. Between 2000 and 2015, the majority of OECD nations had a significant shift in the percentage of cesarean deliveries, which went from the usual 20% to 28%. Some of the countries with the

highest rates currently, together with Poland, the Slovak Republic, and the Czech Republic, which had relatively low rates lately, have had exceptionally fast rate growth (OECD, 2017). Similar to the OECD, CNN (2018) reported on October 28, 2018, citing research findings from a distribution in the Lancet magazine, that the number of caesarean section deliveries had nearly doubled globally since 2000. According to the article, the number of births brought on by CS is rising, reaching a peak of 29.7 million (21.1%, all things considered) in 2015, up from roughly 16 million (12.1%, all things being equal) in 2000.

According to Joyce & Martin (2019), the United States' rate of cesarean deliveries fell slightly from the year before (2017), when it was recorded at 32.0%, to 31.9% in 2018. National Center for Health Statistics, which supports these findings, reports caesarean delivery rates of 31.9% in 2018; 32.0% in 2017; 31.9% in 2016; 32.0% in 2015; and 32.2% in 2014 (CDC, 2019). According to a mix of clinical and nonclinical indications, the overall caesarean section rate in mainland China was 54.90% (Liu et al., 2014). The use of cesarean sections is a complicated issue in developing nations, in contrast to wealthy ones, with rates at extremes partly due to lack of access to these procedures (Buekens P, 2003). Buekens et al. (2003) carried out a demographic and health assessment inquiry in eight sub-Saharan African nations (Burkina Faso, Cameroon, Ghana, Kenya, Madagascar, Niger, Tanzania, and Zambia). They discovered that all of the nations had rates of cesarean sections less than 5%, with rates of less than 2% in Burkina Faso, Madagascar, Niger, and Zambia.

The Canadian Institute for Health Information (CIHI, 2018) reports that inpatient surgical operations (IOPs) accounted for over 103,000 surgical procedures in Canadian hospitals in 2017; this placed Canada at the center of the OECD's member countries at 28%. Separate research by CTVNEWS (2018) revealed that the Northwest Territories had the lowest CS rates, at 18.5%, while British Columbia had the highest rates, nearly twice as high at 35.3%.

Sanni, (2018) used secondary data analysis of women from thirty-four (34) SSA countries between 2008 and 2016 to investigate the prevalence and determinants related to caesarean section in SSA countries and to describe differences in the pace of caesarean section across countries. As of 2019, 2.9% of all live births in Sierra Leone resulted in a cesarean section, up 0.8% from 2.1% in 2012. This data was provided by Hampus et al. An earlier 5-year demographic and health study done in Nigeria found that the country's overall cesarean delivery rate was 2.1%. In Nigeria in 2019, Adewuyi et al. similarly reported a similar rate of 2.1% for cesarean procedures. While there is sufficient data to support the assumption that some emerging nations have low rates of cesarean sections, other developing nations, like Brazil, have experienced the opposite. For example, according to the (BBC, 2015) study, "Brazil has the most notable rate of Caesarean section on the planet," with a rate of 80.0% for private hospitals and a rate of 45% for public hospitals. In Bangladesh, less than 60% of births occur in clinics, and about 65% of those births involve Caesarean sections (Doucleff, 2018). He said that in some clinics, these rates can be abnormally high. In a meta-analysis done in Brazil, Laiane et al. (2018) found that the regional prevalence of cesarean sections was 53.0%.

2.2 Disparity in Caesarean section delivery rates

In a systematic audit of 26 studies on caesarean segment delivery extents in Sub-Saharan Africa, Dikete et al., (2019) established that variation exists in caesarean section delivery rates, which went from 14% to 24%. An average of 37.6% difference was found in the rates among 12 district hospitals in Benin (Mongbo et al., 2016). It has been shown to vary according to the demographic and the availability of safe prenatal care (Mongbo et al., 2016). Mongbo et al. (2016) report that access to cesarean section services remains challenging in Benin, with lengthy wait times and a high proportion of diagnostic errors, all of which would logically lead to decreased rates. Long et al. (2015) found significant disparities in the characteristics of the women and the area. In Mozambique, they noted lower rates of cesarean section deliveries.

2.3 Indications for caesarean section

There are many factors that might lead to a caesarean section delivery, but four key indications account for around 70% of all caesarean sections, according to Cunningham (2014). These include dystocia, previous cesarean sections, improper presentation, and even acute fetal impairment. Other documented signs that are regarded as being less frequent include multiple pregnancies, placenta praevia, placenta abruptio, and maternal and foetal illnesses (Cunningham, 2014). There is no complete list of symptoms, but the main rule is that a caesarean section should be scheduled if the risk to the woman or fetus from vaginal delivery outweighs the risk of a caesarean delivery. There are extremely few pregnancies that require a caesarean section delivery, the signs are frequently situational, and sometimes a caesarean delivery is the best option for one woman but not another.

The study examined variations in the rates of caesarean section births in Sweden, Norway, the United States, and Scotland between 1985 and 1990 revealed that, in each of the four countries they looked at, the rates of public cesarean sections significantly decreased between the years 1980 to 1985 and 1985 to 1990; in Sweden, the rate of cesarean sections decreased. In three of these countries, greater caesarean section rates were found to be strongly influenced by previous cesarean sections and fetal pain from 1980 to 1985; however, from 1985 to 1990, this support for caesarean growth sharply decreased. Comparative rates of CS were adopted by all four nations for breech, fetal distress, and other indications; the rates varied from 11% in Sweden to 24% in the United States. The research concluded that dystocia and previous cesarean sections accounted for the much-increased cesarean section rate in the United States (Notzon et al., 1994).

An investigation on caesarean sections conducted in multiple countries, including the Democratic Republic of the Congo, Burundi, and Sierra Leone, revealed that the most common

cause was obstructed labor (39%), which was followed by poor presentation (18%), a prior caesarean section (14%), foetal distress (10%), uterine rupture (9%) and antepartum hemorrhage (8%) (Chu, 2012). Preeclampsia/eclampsia (10.7%) and delayed or obstructed labor (25.7%) were reported to be the most common indications among pregnant women in western Nigeria, while malpresentation and breach at term (respectively) were the least common. The most frequent reason for elective caesarean section was found to be previous caesarean birth (39.8%), followed by breach presentation (17.6%), and placenta praevia (2.8%).

Adam et al. (2018) conducted a cross-sectional analysis of the signs for caesarean delivery at the Chris Baragwana Academic Hospital in South Africa to evaluate the appropriateness of the caesarean section decisions. This involved two researchers who had the necessary postgraduate training in obstetrics. According to the report, dystocia (928.5%) and foetal discomfort (49.7%) are the most frequent causes of caesarean sections. The reviewers unanimously agreed on the following indications: placenta praevia, multiple pregnancies, retained second twin, atypical presentation, severe intrauterine growth restriction, antepartum hemorrhage (APH) of unclear origin, eclampsia, and two prior cesarean procedures. They showed absolute agreement of 73.85% and 90.24% when the indications were fetal distress, dystocia, second-stage cesarean section, or previous cesarean section.

The aforementioned findings are consistent with studies carried out at Ghana's Korle Bu Teaching Hospital. The aim of the Accra study was to determine the signs of cesarean sections and the features of women undergoing them in the city. 70% of the 548 Caesarean sections that were covered were emergency procedures, and 30% were elective procedures. The three main reasons for caesarean procedures were found to be prior cesarean sections (37.6%), fetal discomfort (9.1%), and foetal malpresentation (Afrifa, 2017). Like the previous caesarean section, the primary indicator was determined by (Zweigenthal, Daniels, and Reagan, 2017) to

be failure in progress, foetal distress, malpresentation, preeclampsia, and eclampsia, antepartum hemorrhage, failed induction, poor obstetric history, prior myomectomy, and maternal request.

2.4 Knowledge level of caesarean section among mothers.

The term "pregnant women's knowledge of CS" describes the facts and comprehension that expectant mothers possess on CS (Afaya et al., 2018). It is believed that information about a commodity is extremely important since it provides insight and directs one in making decisions about the commodity (Mboho, 2013). Mungrue et al. (2010) and Mboho (2013) note that a lack of exposure to CS information can also result in a high degree of ignorance, which can influence decision-making and endanger the unborn child as well as the mother. Research on pregnant women's comprehension of computerized sex (CS) has been done in Nigeria and other countries. 200 pregnant women participated in the study, which found that as people became more aware of the hazards, fewer procedures involving the operation were performed (Yousefi Al-2013). According to a 2017 study by Anyasor and Adetuga with 104 pregnant women, pregnant women are unable to take CS since they do not have enough knowledge about it.

Additionally, a study in India that evaluated the CS knowledge of 200 respondents revealed that pregnant women had limited CS understanding. Eighty-three percent (83%) of study participants were unaware of the anesthesia provided, and seventy percent (70%) did not recognize that anesthesia was necessary in CS. In CS, blood transfusions may be necessary, however 59% of respondents were unaware of this. One participant was aware of the risks associated with blood transfusions (Nathani et al., 2011). Most of the women in different research with 247 participants were aware of CS. According to Soaji et al. (2011), 17.4% had no knowledge of C/S, whereas 8.7% had excellent knowledge, 26.2% had adequate knowledge, and 47.7% had low knowledge. Of 100 participants in a study, CS was thought to be linked to

more serious maternal problems (67%), lengthened hospital stay (86%), and 50% reduced pain. Although, 63% of the respondents said they got their information from friends and relatives (Varghese, Singh, Kour, & Dhar, 2016) whiles 8% receives information from health facilities.

In a separate survey carried out in South West Nigeria, 203 respondents reported CS knowledge levels that ranged from 17.2% having strong knowledge to 46.8% having low knowledge (Faremi, Ibitoye, Olatubi, Koledoye & Ogbeyes, 2014). Furthermore, according to a survey done in Nigeria with 284 participants, just 14% of them possessed solid knowledge of CS (Owonikoko, Bello-Ajao, Atanda & Adeniji, 2014). In addition, a survey conducted in Nigeria with 400 participants found that 59% of the individuals knew something about computer science whereas 41% did not (Jerimiah, Nonye-Enyidah, & Fiebai, 2017). Aziken, et al., (2016) found that respondents (413) had good understanding of CS in another study looking at pregnant women's perceptions of CS. Additionally, according to a survey with 325 participants, 62.42% of the participants had strong knowledge of C/S, 20.47% had fair knowledge, and 17.11% had inadequate knowledge (Robinso-Bassey & Uchegbu, 2016).

In addition, a research done in a teaching hospital in Ghana found that 317 respondents, or 96% of them, had heard of the procedure (Afaya et al., 2018). Thirteen point five percent (13.5%) of them could give specific reasons for it (cervix not opening, large baby, baby not lying well, and mother too unwell). 77% of individuals who have heard about the operation heard it from several sources, compared to 23% who heard about it from only one source. According to Adageba et al. (2018), the sources were family members (26.5%), media (20.8%), and health professionals (34.4%). Additionally, a study conducted in Cape Coast with 412 pregnant women revealed that every respondent was aware of CS. But just 39.6% of people have any knowledge of C/S (Prah et al., 2013).

2.5 Lived experiences of women before and after caesarean section

The care and support of women during pregnancy, labour, and delivery is the responsibility of midwives. A happy or poor birthing experience is influenced by the standard and style of midwifery care given during the delivery process (Dzomeku et al., 2018). At this crucial time in a woman's life, the role and responsibilities of midwives may result in a variety of outcomes, from life to death and from health to physical injuries, with substantial consequences on the mental and emotional well-being of the mother and child (Sehhatie et al.,2014). Mistreatment during childbirth, such as abusive, negligent, or disrespectful care, can affect maternity care in low- and middle-income nations. Studies have shown that even if the provider (midwife) is adept in treating difficulties before and after delivery, women may decline to seek maternity care if they have previously experienced disrespect and may dissuade other women from getting maternity care (Bohren et al., 2015).

According to a study conducted by Agani et al. (2020) in Ghana, which aimed to explore the experiences of mothers receiving midwifery care before and after cesarean births, participants shared diverse birth stories reflecting their encounters with midwifery care. The study highlighted that a mother's satisfaction with the entire birthing process significantly hinges on the availability of both physical and emotional support during delivery. In instances, especially during cesarean births, where this aspect of care is overlooked, expectant mothers might undergo heightened anxiety. Conversely, adequate care during this period could potentially enhance the outcome of the surgery.

The majority of participants in Agani et al.'s study expressed contentment with the psychological and emotional support provided by midwives. However, this contrasts with findings from a study in South Africa's Limpopo province, which revealed limited emotional support from midwives during childbirth (Maputle et al., 2018). The South African study

pointed to insufficient midwife staffing during shifts as a potential explanation for this disparity. Agani et al.'s findings are aligned with a study in Jordan, demonstrating that certain women received better support in terms of physical activity from female relatives during labor and delivery than they did from midwives (Khresheh et al., 2018).

Agani et al., (2020) found that midwives treated laboring women with respect and kindness. This contradicts the outcomes of a qualitative research conducted in Tanzania by Shimoda et al., (2018) where many mothers reported that midwives treated them disrespectfully and abusively when they were having their babies. One of the most important strategies for increasing the use of and the caliber of maternal care is widely acknowledged as encouraging respectful maternity care (Shakibazadeh et al., 2018). Therefore, as study participants noted, women expect respect while obtaining maternity care (Srivastava et al., 2015). Also, one of the main factors influencing the use of professional maternity care is the behavior and attitudes of the healthcare providers (Srivastava et al., 2015). Therefore, midwives are advised to step up their efforts to promote respectful maternity care.

According to Agani et al., (2020), women who participated in their study gave various instances of how the midwives effectively interacted with them. They emphasized the need of midwives demonstrating concern for their well-being and offering concise explanations of operations. This was in consistent with other research, in which women expressed satisfaction with the information they received from midwives and suggested that excellent interpersonal and communication skills of healthcare professionals are important drivers of women's trust in care providers (Afaya et al., 2017 and Goberna-Tricas et al., 2011). To ensure effective and cooperative maternity care, midwives need to be more proactive in providing information and explanations to procedures. This is because some participants, especially those who underwent emergency CS, were upset by the lack of adequate information provided about the surgical procedure.

2.6 Factors Associated with Caesarean Section

2.6.1 Socio-demographic factors associated with caesarean section

The most important segment marker when examining the factors associated with caesarean sections is maternal age. At the population level, caesarean birth rates are higher among older women between the ages of 30 and 34. However, compared to women under 20, women aged 34 or older will be more than three times as likely to undergo a caesarean section (Manyeh, et al, 2018). A case control study by Kaur et al. (2013) at the Pujan Institute of Medical Sciences revealed that the majority of mothers who underwent cesarean deliveries were between the ages of 21 and 30, accounting for as much as 78.46% of the caesarean group.

Mia et al. (2019) found a high caesarean section rate of 26% with a significant association to mother's biosocial characteristics. The analysis revealed, among other things, that mothers who had male children were more likely to deliver by caesarean section, followed by mothers with advanced education, lower gestational age, and residing in families with excellent financial standing, as opposed to mothers who had female children, who were more likely to have lower training, higher gestational age, and residing in families with poor financial standing. What is not made obvious in the literature is whether, given the choice, low-income women would choose a caesarean delivery over a vaginal delivery. Therefore, more research will be needed to address this significant demographic phenomenon. The current study will effectively show whether women with low socioeconomic status have a natural affinity for spontaneous delivery or if it is because of financial constraints that leave them with no choice, which is an interesting fact about Ghana's public health facilities. Nilsen (2014) identified the following demographic characteristics in Tanzania that increased the likelihood of a caesarean section: referral from a different hospital for delivery, mother's age greater than 25, husband's lack of education or poor level of education, domicile, and ethnicity. After accounting for age, Klemetti R, et al. (2010)

discovered that women in Eastern China who had higher levels of education and household income had a higher likelihood of giving birth via caesarean section.

Level of education, parity, occupation, marital status, and socioeconomic status are other crucial demographic characteristics. According to Azene et al, (2019), caesarean section rates have also been favorably correlated with prior birth interval, wealthier households, and rural domicile. The research of the traits of women influencing the rise in Caesarean rates in India produced similar findings. However, it also stated that women who live in rural areas are more likely to undergo a caesarean section than those who live in urban areas, and that the rate of caesarean sections rises with higher levels of education, with the illiterate class accounting for as few as 5.85% of cases (Jain, Shivkumar, & Jain 2019). According to Kaur et al. (2013), women with low socioeconomic status were less likely to undergo a caesarean section, whereas women with high socioeconomic status had a higher likelihood of doing so. Women with high financial status undergo elective cesarean sections at a rate that is generally greater than women with low financial status (Afrifa et al., 2017).

2.6.2 Obstetric factors

One of the most significant indications for caesarean section has consistently been identified as a prior cesarean section. This possibly stems from the tenet that "Once a Caesarean, always a Caesarean" was long considered to be true. According to Aaron (2018), these statements, which were uttered in 1916 to the Association of Obstetricians and Gynecologists (AOG) in New York, had a significant impact on how previous caesarean deliveries were handled in the United States for the next 50 to 60 years. One out of every three caesarean sections performed is a repeat caesarean section (CS), which is the main cause of the high caesarean section rate (Sanjivani, 2014). The risk of uterine rupture associated with the trial of vaginal birth after caesarean section (TOLAC), also known as the trial of labor after caesarean section (TOLAC), is known to range from 0.5 to 1%. However, under the correct circumstances, TOLAC can be

a desirable choice for patients and has a high success rate. Additionally, according to Place, Kruit, Tekay, Heinonen, and Rahkonen (2019), women who have never given birth vaginally, have diabetes, or are suspected of having foetal macrosomia are at a higher risk of TOLAC. The alternate repeat cesarean section is not without risk, either. Patients are at a significant risk of uterine rupture before to the start of labor, in addition to the inherent risk that caesarean birth carries above normal delivery. On the other hand,Vaginal Birth after Caesearean (VBAC) and Elective Recurrent Caesarean Section (ERCS) deliveries are linked to more complications than when the lady has never had a caesarean delivery before, according to Seffah & Adu-Bonsaffoh's (2014) explanation. Vaginal delivery may be successful for women attempting a regular delivery, or they may experience complications.

The argument is made that compared to elective recurrent caesarean segment (ERCS), trial of vaginal birth after caesarean section has a higher number of entanglements. Caesarean section delivery is more common for women who have previously had a section compared to women who have not (Hong-Tao et al., 2018). It is also associated with serious negative or severe birth outcomes.

According to Bangal et al. (2013), 85% of vaginal births following previous cesarean sections were successful, but 15% required an emergency repeat cesarean procedure. According to this study's findings, women who have previously given birth vaginally had a 90% higher likelihood of having a successful vaginal delivery than their counterparts who have never given birth vaginally (Bangal, Giri, Shinde & Gavhane, 2013). Frass and Al Harazi (2011) also reported that 12.0% of VBACs had indications for repeat caesarean sections, with the majority of these reasons being intrapartum foetal distress. Elnahas (2018) reported a 67.3% success rate for VBAC and a 32.7% success rate for ERCS. In this study, having a previous successful vaginal delivery, a BMI between 25 and 30, and the baby's birth weight all had an impact on getting a

VBAC. Women who underwent a primary caesarean section during their first birth had a lower success rate, and the main reason for emergency caesarean sections was slow progress.

2.6.2.1 Dystocia

In cases of dystocia, the shoulder of the fetus is not released once the head has emerged from the mother's introitus during a typical vaginal delivery (Allen, 2016). Dystocia results when the foetus's head pushes back against the perineum, spontaneous restitution does not take place, and delivery fails despite exerting effort and using the standard maneuvers (ALARM International, 2006). According to the unit, it is recognized when the pace of cervical dilatation is relaxed below the mean, median, or slowest 10th centile (Penn & Ghaem-Maghami, 2001). According to Sandström, et al., (2012), women who had previously indicated dystocia are more likely to experience recurrent dystocia and need a caesarean section to deliver the baby. Despite what has been said above, Place et al. (2019) found that women who have previously experienced dystocia have a viable alternative for trying labor after cesarean section (TOLAC). According to Djuri, et al. (2012), dystocia is a primary cause of caesarean sections. They also shown that caesarean sections caused by dystocia take longer to complete than other deliveries that weren't affected by it. According to Poole's estimation in 2005, dystocia is the most frequent cause of caesarean delivery. Dystocia does not always indicate that a caesarean delivery is necessary. However, according to Tita (2012), it occurs in between 40% and 50% of caesarean section deliveries. Therefore, in order to lower the rates of caesarean deliveries, sufficient attention must be paid to the potential effects of dystocia.

2.6.2.2 Malpresentation

Up to 4% of term births are malpresented, with earlier gestations having a higher prevalence (Baker & Kenny 2011). It is just the baby's presentation, which differs from the standard cephalic presentation. The most frequent mispresentation, known as breech, occurs when the buttocks are close to the cervix and the foetal longitudinal lying is parallel to the long axis of

the uterus (Fischer, 2020). Three different types of breech presentations have been identified: frank breech, which occurs most frequently, complete breech, which occurs less frequently, and footling, which occurs least frequently (Baker & Kenny 2011). Fibroids, congenital uterine abnormalities, and uterine surgery are among the maternal risk factors for breach, whereas multiple gestations, placenta praevia, preterm, oligohydromnios, and polyhydromnios are among the foeto-placental risk factors.

Additionally, Noli et al. (2019) discovered that a previous cesarean section was substantially linked to a subsequent breech birth. One of the most important predictors of caesarean sections, according to numerous research, is breech presentation. Breech presentation was listed as one of the causes of caesarean sections by Singh, Hashimi, and Swain (2018) in a district-level household survey. According to Gardberg, Leonova, and Laakkonen (2011), malpresentation is a contributing factor to dystocia, which frequently necessitates obstetric intervention and raises the caesarean section rate. By demonstrating that a second twin breach can be delivered vaginally without an increased risk in maternal or neonatal morbidity or mortality, Hehir, McHugh, and Carrol (2015) report a contrary discovery. Moodley et al., (2010) revealed that 2.4% of breech-indicated caesarean procedures occurred in South Africa. Similar to this, the percentage of caesarean section deliveries for term breach singleton births increased in 2007 from 81% in 1998 to 96% in 2007 (Laws, 2009) and (Nassar N, 2001).

2.6.3 Foetal factors

2.6.3.1 Intrauterine growth restriction (IUGR)

The causes or risk factors for IUGR have been found to include chronic hypertension, pregnancy-induced hypertension, cyanotic heart disease, higher-class diabetes, hemoglobinopathies, autoimmune diseases, protein-calorie malnutrition, smoking, substance abuse, uterine malformations, thrombophilia, and prolonged high-altitude exposure. Other placental or umbilical cord causes of intrauterine growth restriction (IUGR) include twin-to-

twin transfusion syndrome, placental abnormalities, chronic abruption, placenta praevia, inappropriate cord insertion, cord deformities, and multiple gestations (Ross, 2020,) The aforementioned reasons of IUGR also include other signs that a caesarean surgery is necessary, including placenta praevia, cord anomalies, and multiple gestations, making IUGR a clear indicator that a caesarean section is necessary. Although elective caesarean sections are most frequently performed on women with IUGR, Perrotin, Simon, Potin, and Laffon (2013) contend that there is little evidence to justify routine caesarean section deliveries, particularly when the woman is in labor.

2.6.3.2 Multiple gestation

Cunningham (2014) asserts that twin fetuses more frequently develop from a single fertilized ovum that divides than from the fertilization of two distinct eggs. Due to regional variances in dizygotic twin rates, the epidemiological prevalence of twin gestations varies from nation to nation. Worldwide, monozygotic twinning frequencies are rather common (Heard, 2020). According to Nylander (2020), the rate of twin deliveries in Nigeria has reached 49 per 1000, while it is just 1.3 per 1000 in Japan (Soma et al.). Additionally, Nylander (2020) discovered that twining rates fluctuate with growing mother age and remain steady with parity. In Australia, the number of multiple births increased in 2007 (Laws, 2009). Other than preterm labor, twin pregnancy is more likely to result in a number of difficulties. In addition, twin gestation is linked to a higher risk of placenta praevia, placental abruption, atypical foetal presentation, uterine contractile malfunction, emergency surgical delivery, and postpartum hemorrhage (Cunningham, 2014). As previously discussed, even in singleton pregnancies, several of these issues are independently offered as a reason for a caesarean section (Cunningham, et al., 2014). In Australia in 2007, a caesarean section was used in two thirds of all twin births (Laws, 2009).

2.6.3.3 Macrosomia

Foetal macrosomia is the medical term for when a baby is delivered with too much weight. Before the baby is born, doctors are unable to diagnose the condition with certainty. It is determined by measuring the neonate after birth in order to certify the condition retroactively (Baur, 2017). A baby's birth weight of more than 4000–4500g or more than 90% of gestational age is one way that macrosomia has been characterized (ACOG, 2016). Obstetricians and midwives frequently experience anxiety from having to deal with mothers' worries about the size of the fetus.

Obstetricians and birth professionals frequently experience anxiety due to maternal concern over the size of the fetus (Baker, 2011). Despite the evidence that suggests birth weights are increasing in affluent nations, according to Baker, the total (30 g over 12 years) is likely to have little natural relevance. Unfortunately, measurements of fetal size made by both clinical and ultrasonography are prone to error (especially in large-for-term newborns), leading to unnecessary labor inductions and Caesarean deliveries (Baker, 2011). The risk of atypical labor, birth trauma, dystocia, and irreversible harm to the newborn increases with birth weight, according to the American College of Obstetricians and Gynecologists (ACOG, 2016). According to Kim et al. (2014), gestational diabetes mellitus, overweight, and gestational weight gains are all linked to fetal macrosomia. However, gaining weight during pregnancy may lessen the chance of a macrosomian fetus.

According to Mohammadbeigi et al. (2013), prenatal fetal macrosomia at delivery is a predictor of macrosomia in addition to pregnancy-induced hyperglycemia. The effects of maternal obesity on macrosomia, which often requires a cesarean delivery, were discovered by Fuchs et al. (2017) in their prospective comparative cohort study of singleton deliveries in Canada and France.

2.7 Other factors that may contribute to an increase in the rates of Caesarean section

Several factors have been suggested as the reason behind the reported increase in deliveries via cesarean section. According to Dodd et al. (2011), the factors include advanced maternal age, breech delivery, especially with a first child, unknown birth weight, and patient status at a private hospital. Other contributing elements that affect the caesarean section rate include organizational issues, women's decisions for labor, and preferences for health care (Thomas, 2001). Inaccurate pregnancy date, fetal monitoring, macrosomia, maternal request, and other factors have also been recognized by Baker (2011) as contributing to the rise in caesarean delivery rates.

2.7.1 Foetal monitoring

An interaction between a number of independent variables, including placenta praevia, transverse lying, or insufficient pelvis, and electrofetal monitoring (EFM), was found in the multiple regression model used by McCusker, Harris, and Hosmer (1988) to examine the relationship between EFM and caesarean section. They found that when a pregnancy is complicated by a transverse lie, an inadequate pelvis, or a placenta previa, caesarean procedures are often performed. The use of electronic fetal monitoring, they did stress, significantly reduced the odds ratio associated with these issues. It was determined that only in pregnancies without the aforementioned difficulties was EFM positively linked with an increased caesarean section rate. It has also been proposed that the greater engagement in pregnancy and childbirth, including monitoring the intrapartum fetal heart rate and initiating labor, may have a significant impact on the rising frequency of cesarean sections. Cardiotocograph use during labor and subsequent birth outcomes were researched by Alfirevic, Devane, and Gyte (2006) who showed that there was an increased chance of caesarean section and instrumental birth in addition to no reduction in neonatal death or cerebral palsy.

2.7.2 Inaccurate dating of the pregnancy

Practitioners frequently combine information from an ultrasound scan with information from a carefully collected medical history, especially when it's impossible to determine the exact date of the last menstrual cycle. The use of ultrasound improves pregnancy dating accuracy, which lessens women's concern when their pregnancies extend past the projected due date and, as a result, lowers maternal demands for an early induction of labor**.** Facilities that do not use ultrasonography to scan for pregnancy before 20 weeks of gestation may miss an opportunity for accurate dating of pregnancy. Facilities that offer induction of labor to women who are at or over 41weeks of gestation may find this to be extremely helpful.

2.8 Types of caesarean section

2.8.1 Elective caesarean section and emergency caesarean section

Traditionally, caesarean surgeries have only been performed under situations that are indicated by common clinical signs. In any event, it is becoming increasingly common for mothers to choose elective cs even when there are no strong clinical signs. Studies investigating the relationship between maternal request and caesarean section rate have produced conflicting results (Baker, 2011). One of the main causes of the global increase in the caesarean delivery rate across regions, countries, and even at the facility level has been elective caesarean sections. In Germany, caesarean sections accounted for 15% of deliveries in 1991; by 2012, that percentage had risen to 31.7%, with as few as 10% of all cases being medically necessary (Mylonas & Friese, 2015).

Wealthier nations tend to have a higher prevalence of elective cesarean sections, which are usually performed for non-medical reasons. In England, between 2000 and 2009, 145,492 elective cesarean sections (or 33% of all elective cesarean deliveries) were performed on singleton women, while 18% of women gave birth at 34 weeks gestation (Gurol-urganci et al., 2011). According to research by Lei and Walker (2003), non-medical factors accounted for

7.5% of China's elective cesarean births. These situations were more prevalent in rural populations, where the pregnant women's insurance status, individual circumstances, and societal expectations were the main contributing factors. Maternal request played a significant role on the caesarean delivery rate in mainland China (Liu et al., 2014). Due to their anxiety about giving birth naturally, lack of social support, or poor mental health, some women decide to give birth via caesarean section (Strksen, et al,.2015).

Some people elect to undergo a caesarean section on the advice of their friends, while others do so because they believe it to be a safe option for both them and their unborn child (Konlan, et al, 2019). A prospective cohort research on women admitted for elective caesarean sections in Kampala, Uganda, by Nakimuli et al. (2015) revealed that this practice was responsible for 15.0% of the 22.0% total caesarean sections performed there, clearly having a significant influence in the rise in the caesarean section delivery rate.

2.9.2 Emergency CS

It has long been believed that Ghanaian women prefer natural birth over caesarean sections. Danso et al. (2009) looked at this perspective in two teaching hospitals, Korle-Bu and Konfo Anorkye teaching hospital, and discovered that about 55% of Ghanaian women chose vaginal delivery over caesarean section. However, despite their reported preference for vaginal delivery, they typically have positive opinions regarding caesarean section delivery (Danso, et al., 2009). More than 90% of Ghanaian women who attended antenatal clinics preferred vaginal dlivery over elective caesarean section, according to Adageba et al. (2008).

When a vaginal delivery attempt fails and a caesarean section referral is made, emergency caesarean sections frequently result. By itself, this occurrence carries an increased risk for caesarean birth. Emergency caesarean sections are more likely to result in a poorer maternal outcome than elective ones (Suja et al., 2014).According to Agbozo et al. (2019), severe

preeclampsia, protracted or obstructed labor, and unsuccessful induction are all indications for an emergency caesarean section.

2.9 Robson classification

Determining the ideal rate of cesarean sections at any level has long been challenging due to the lack of a universally recognized classification system that would produce standardized data to enable the comparison of data on cesarean sections across populations and provide a means of examining the rising trend (WHO, 2015). However, the Robson classification often known as the 10-group classification, was created by Dr. Michael Robson and is now widely used in many nations (Robson, 2001). In order to compare caesarean section rates with fewer confounding variables, the Robson categorization system stratifies women according to their obstetric features (WHO, 2015). Obstetric history, gestation, and parturition course provide the data needed in the characterisation. The relevant variables include previous cesarean section, parity, gestational age, labor onset, number of foetuses (single or multiple gestations), and foetal appearance, which are routinely gathered health records in patient folders (Triep, 2019). In order to evaluate, track, and compare caesarean section rates inside healthcare institutions over time and between facilities, the Robson categorization system was proposed as the global standard by a panel that was constituted in 2014 (WHO, 2017). It stressed how straightforward, reliable, repeatable, clinically applicable, and prospective this system of classification is. This makes it possible to compare and contrast the rates of cesarean sections among and between different groups of women. Vogel et al. (2015) state that it has become widely accepted in many nations, including the UK, Ireland, Scandinavia, Canada, and others.

CHAPTER THREE

METHODOLOGY OF THE STUDY

3.1Introduction

This chapter describes how the study was conducted considering the study design, population, and data sources, sampling techniques, sample size determination, data collection instruments and techniques and pre-testing. Also included is ethical considerations and the data analysis plan.

3.2 Study Setting

The study was conducted at the Tamale Teaching Hospital in Tamale, located in the south-eastern part of the Tamale Metropolis of the Northern Region of Ghana. It was established in 1974 formerly called the Tamale Regional Hospital shares boundaries with Tamale Nursing and Midwifery College and also houses a satellite campus for the UDS Medical School. It is the only Tertiary and Teaching Hospital within the Northern sector of Ghana and serving some parts of the Bono East Region. It is coupled as a referral hospital providing specialist healthcare services for the Northern sector and some parts of the middle belt (Bono East and Oti Regions). Some of the services it provides includes Child Health Care, Public Health, Pharmacy, Obstetrics and Gynaecology, OPD, Mental Health and Psychotherapy, Anaesthesia; Accidents and Emergency; ICU, Imaging, ART/HIV/TB, Physiotherapy, Laboratory, Paediatric and Adolescent Medicine, Orthopaedics, Surgery, Medical, Pathology, Dialysis, Diet-therapy, Nursing and Administration, etc. The Tamale metropolis shares boundaries with the East and North East Gonja Districts to the south, Central Gonja District to the south-west, Mion District to the east and Sagnarigu District to the west. It is a highly mobile resource settlement, with most of the residents lacking access to clean water and adequate sanitation.

3.3 Study Design

This study adopted a prospective cross-sectional survey design. As noted by Udimal et al. (2019), cross-sectional research designs afford researchers ample opportunities to engage with the study population. Observational in nature, as explained by Connelly (2016), this type of study captures a singular moment, akin to a snapshot, providing insight into what the researcher seeks to comprehend or learn about. Surveys, as highlighted by Polit and Beck (2014), offer adaptability, enabling their application across diverse settings and populations. The study commenced on March 1st, 2023, and concluded on March 31st, 2023.The study utilized both quantitative and qualitative methods (convergent). This mixed approached allowed exploration of reserach question from multiple angles, adapting their approach as new insights emerges during the study.This enables better interpretation of the results , as the qualitative insights can explain the why behind the quantitative trends.

Research Philosiophy

Research philosophy is a fundamental aspect of any study, guiding the assumptions, beliefs, and methodologies that shape the research process. It serves as the framework for framing questions, collecting data, and interpreting results (Saunders, 2019). By defining how knowledge is developed and understood, research philosophy ensures that data on variables are gathered, analyzed, and interpreted systematically, leading to meaningful conclusions (Mitchell, 2018).

In the context of examining the prevalence of Caesarean section (CS) among postnatal mothers and exploring their lived experiences at Tamale Teaching Hospital, a mixed-methods approach that integrates both positivist and interpretivist research philosophies was appropriate. This combination enables a comprehensive understanding of the prevalence of CS and the personal experiences of mothers who have undergone the procedure (Bryman, 2016).

The positivist philosophy was focused on collecting quantitative data regarding the prevalence of CS at the hospital. Through structured surveys and hospital records, data on the number of CS deliveries, demographic factors, and associated medical conditions will be gathered. This objective analysis will offer measurable insights into the frequency and reasons for CS procedures, identifying trends and correlations across the population of postnatal mothers.

Simultaneously, an interpretivist approach was used to explore the subjective experiences of mothers who have undergone CS. Through in-depth interviews, the research will capture personal narratives, emotional responses, and cultural influences that shape their perceptions of CS. This qualitative data will provide a nuanced understanding of how mothers experience the procedure and its impact on their postnatal journey, allowing the researcher to interpret the meanings behind these experiences.

In summary, the mixed-methods approach, blending positivism and interpretivism, enabled a comprehensive investigation of both the prevalence of CS and the lived experiences of mothers at Tamale Teaching Hospital. This philosophical framework allows for objective data collection while also appreciating the subjective, personal elements of maternal healthcare, contributing to a deeper understanding of the phenomenon.

3.4 Study Population

According to Burns (2000), a population is made up of all items (people, things, and events) that satisfy the requirements for inclusion in a sample. As a result, it is said to as including all potential components because they have the shared characteristics required for such assessment. This research focused on postnatal mothers (i.e. all women who gave birth at TTH between 1st March, 2023 and 31st March, 2023).

3.5 Inclusion criterion

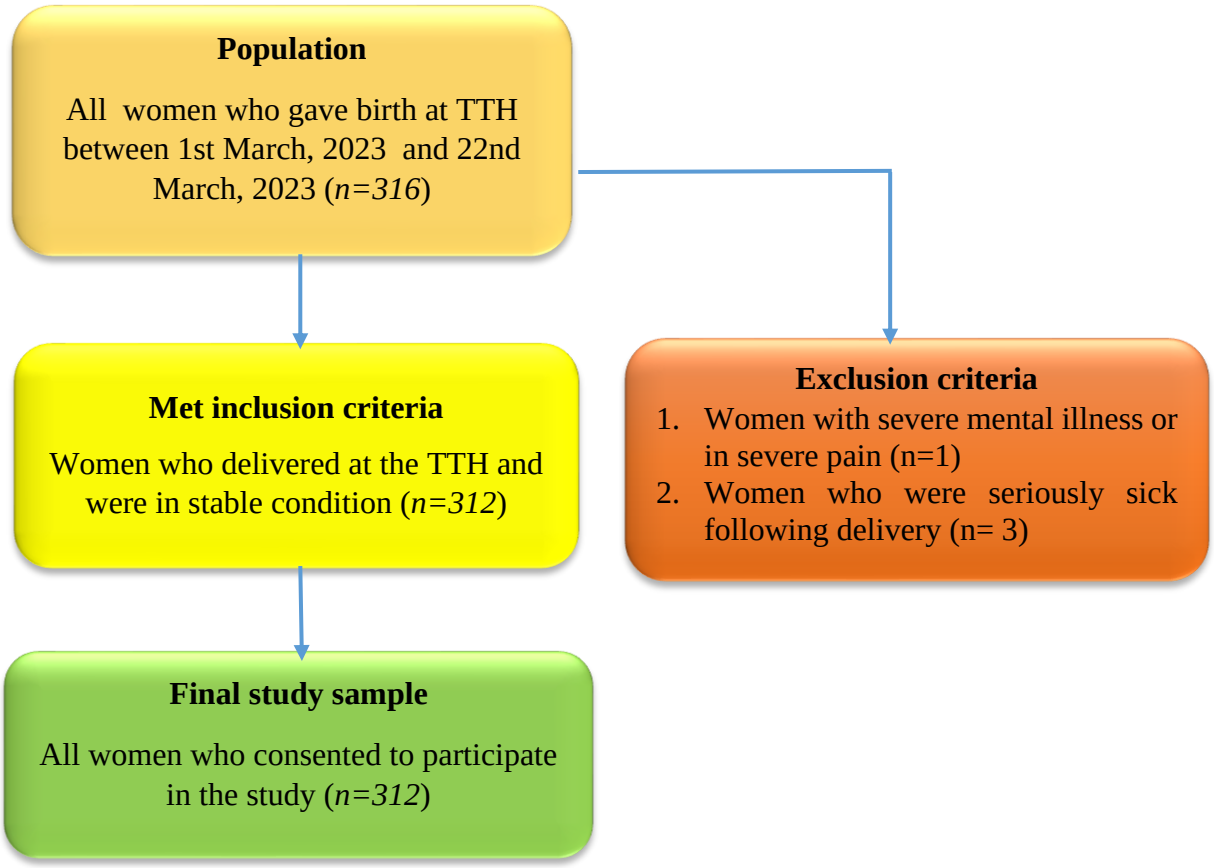
Women who delivered at the Tamale Teaching Hospital within the period set for data collection.

3.6 Exclusion criteria

(1) Patients with missing files or insufficiency records.

(2) Women with severe mental illness, seriously ill or in severe pain that impairs thier ability to understand sufficiently to give informed consent.

(3) Women who delivered at a different facility but refered to TTH for further management.



3.7 Sample size Determination

Israel (2012) suggests that various approaches such as utilizing published tables, mimicking sample sizes from related studies, and reaching consensus, especially for small populations, can aid in determining or estimating the sample size required for a study. Multiple formulas are available for calculating sample sizes (Singh and Masuku, 2014). Some prominent examples include the Kish formula (Kish, 1965), the Cochran formula (Cochran, 1963, 1975), the Yamane formula (Yamane, 1967), and the Krejcie and Morgan formula (Krejcie and Morgan, 1970). For this study, the Hawkin (1989) formula was employed to calculate the sample size "for a point estimate sample. "N= $\frac{z^2 p(1-p)}{M.E^2}$ (Hawkins, 1989) where N is the sample size; z^2 Is the abscissa of the normal curve that cut-off an area at the tail (1-equals the desired confidence level, 95%) which is the critical value of 1.96"; P is the estimated proportion of caeserean section from similar study with a prevalence of 23.5% (Yussif Gunu Buhari, 2020); M.E is the desired level of precision (5%=0.05)

$n_0 = \frac{(1.96)2x0.2350x0.765}{0.05^2}$

n_0 = 0.6906/0.0025

n_0 = 276.2

Thus, the calculated sample size will be approximately 276. Using 10% as non-response rate, the sample size for this study would be 312 postpartum mothers.

3.8 Sampling Procedure

A two-stage sampling technique was used in sampling respondents. First, a census method was employed to select respondents for the quantitative aspect of study. All 312 women who delivered at the Tamale Teaching Hospital between March 1st, 2023, and March 31st, 2023,

were included in the study. Since every delivery during this period was considered, no sampling technique was required. The researcher and research assistants visited the maternity and labour wards daily throughout the study period to ensure that all eligible women were approached and included in the study. This approach allowed for comprehensive data collection from the entire population of women who delivered at the facility during the specified timeframe. For the qualitative aspect of the study, ten participants were purposively selected to reach data saturation. This sampling technique was adopted to allow women who were stable and knowledgeable after the caeserean section and ready to express their experiences which addressed the objective. All women who gave birth at the Tamale Teaching Hospital during the study period were qualified for the study.

3.9 Study variables

Socio-demographic characteristic such as education, marital status, age, religion, occupation, ethnicity and obstetric characteristics were considered as the independent variables while caeserean section (Yes/No) was considered the dependepent variable.

3.10 Data collection tools and procedures

Data were collected from participants using a structured questionnaire and was administered by the research team. The administration of questionnaires were a face-to-face interview. In order to maintain the quality of data collected, interviewers (research team) were trained, supervision was provided during data collection by the project work supervisor, and interviews were done in both English and local languages. Administered questionnaires were checked daily for completeness and accuracy and also medical records of participants were obtained and reviewed to ascertain the number of CS as a proportion of all deliveries and associated factors of caesarean section. For qualitative data, an interview guide was used for data collection. This was done through purposive sampling.

3.11 Data processing and analysis

The data collected were checked for completeness and accuracy with the interviewee after it is filled, collected and kept in a safe place. The data were then entered in a pre-designed template in a Statistical Package for Social Sciences (SPSS) software version 20. The entered data were validated with the hard copies to ensure accuracy and consistency in response, and to eliminate data entry errors. The data was then analyzed with the SPSS using descriptive statistics and results presented in tables. The relationship between predictor and outcome variables were assessed by means of bivariate (Chi-square test and fisher exact test) analysis to determining potential predictors of caesarean section at p-values less than 0.05. Adjusted odds ratio (AOR) which is a statistical measure used in logistic regression analysis were reported to assess the strength and direction of the relationship between a dependent binary outcome (CS status) variable and the independent variables, while controlling for the effects of other variables. P-values less than 0.05 were deemed statistically significant at 95% confidence level. Ten (10) questions were used to assess respondents' knowledge level on Caesarean Section (C/S). Each question was positively awarded. A respondent who got a question right was awarded one (1) point. However, a respondent who got a question wrong was given zero (0) point. Those above the mean score were classified as respondents with high knowledge and those below the mean score were categorised as respondents with low knowledge. binary logistic regression analysis. For the qualitative data, to become familiar with the data that would be analyzed, the researchers first listened to the recorded interview at least thrice and checked that the transcripts matched the audio recording. This was done to get a good understanding of the data and perhaps generate some preliminary ideas or interests for analysis. Reading the material and making some preliminary notes were also part of the familiarization process. First codes were produced and indicated. This was accomplished by determining and clearly labeling responses to the research questions. Additionally, intriguing and pertinent data related to the study question were coded. All of the data that was retrieved was given equal weight during the coding process, and the

important information that served as the foundation for the themes was labeled appropriately. Quotations that were related to similar codes were grouped to create prospective themes. After that, we went over the themes again and arranged them. The themes that were found were compared to the research questions, goals, and details found in the literature about the difficulties faced by mothers. We used the phenomenon of bracketing, which is an attempt by researchers to put aside any aspects of themselves (e.g., knowledge of prior theories, personal views, etc.) that might influence their study, to achieve reflexivity in data collection and analysis (Neubauer et al.,2019).

3.12 Validity and Reliability Test

Validity is the accuracy and significance of inferences, which are typically based on the results of research (Mugenda and Mugenda, 1999). Validity refers to how well a test measures what it claims to measure, allowing for an accurate interpretation of the results. The study tools were pre-tested and their validity was determined by expert reviews. Reliability testing ensures that the survey tool yields the same result across measures, whether they are conducted on the same population or a similar population. The questionnaire was pre-tested in the maternity and labour ward of the Tamale Teaching Hospital, where ten (10) questionnaires were distributed, accounting for 10% of the total sample size. To ensure that the respondents gave the proper responses, research assistants were hired and educated on the study tools. Based on the issues found before the actual data collection, the study instruments were reorganised and corrected. This was done to guarantee that the tools' questions provided accurate responses to the research objectives.

3.13 Ethical Consideration

The introductory letter obtained from the university's Department of Population and Reproductive Health and the permission sought from the Tamale Teaching Hospital are

available in Appendix I, which accompanies this thesis. Ethical clearance was obtained from the KNUST Committee on Human Research, Publication, and Ethics, as detailed in Appendix II (Ref :CHRPE/AP/017/24). Additionally, a consent form was administered, where participants were asked to consent to their involvement in the research. They were assured of the confidentiality of the information they provided.

Those who consented became the study participants. Participants were encouraged to engage in the study to the extent they felt comfortable, with the understanding that their involvement was voluntary, and they could withdraw at any point if needed. No compensation was provided to participants for their involvement in the study. Lastly, all respondents were informed that the survey results would be publicly shared after appropriate anonymisation.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the results derived from the data collection. The results are presented according to the specific objectives of the study.

4.1 Study participants

During the study period, the maternity and labour ward recorded a total delivery of 316. Out of this number, 312 (98.7%) were in stable condition and consented to participate in the study, The remaining 4 (1.3%) mothers were excluded from the study, three due to serious illness following delivery and were admitted in the Maternal Intensive Care Unit (MICU) and the fourth mother had post partum depression. After the data collection, a total response rate recorded was 100% (sample size of 312).

4.2 Characteristics of study participants

Table 4.1 as shown below shows the Socio demographic characteristics of the respondents. A total of 312 women were included in the study, Of these, 65.5% were less than 30 years and had undergone CS, whiles 34.5% were above 30 years and had undergone CS. Out of the 199 cases of normal delivery,59.8% were less than 30 years old.

On the level of education, 27.9% of the respondents had tertiary education, 21.2% had Senior High School (SHS), Vocational or Technical training, 9.0% basic education and 27.2% had no formal education. Among the 312 study participants, 32.1% were traders, 15.1% were employed as public servants and 16.7% were unemployed. Furthermore, 186 of the respondents representing 59.6% were Dagombas, 27.2% of the respondents being Akans and 8.3% as Gonjas. Also, on level of income, 24.7% earned between GHS1,000 to GHS2,000 in a month on the average and 58.7% earned less than GHS1000 per month on average. Out of the total number of respondents, 56.4% reside in urban settlement in the study area and 28.5% of them

resides in the rural areas of the study setting. All but 1.9% of the respondents were married. The Muslims were 80.1% out of the 312 respondents whereas the Christians who participated in this study were 19.6%.

Table 4.1: Socio demographic characteristics of the respondents

Variables	Response Category	Ceaserian Deliveries (n=113)	Normal Deliveries (n=199)	All deliveries (n=312)
Age of mothers	≤ 30 yrs	74 (65.5%)	119 (59.8%)	193 (61.9%).
	Above 30 yrs	39 (34.5%)	80 (40.2%)	119 (38.1%)
Religion	Christianity	17 (15.0%)	44 (22.1%)	61 (19.6%)
	Islam	95 (84.1%)	155 (77.9%)	250 (80.1%)
	ATR	1 (0.9%)	0 (0.0%)	1 (0.3%)
Marital status	Married	112 (99.1%)	194 (97.5%)	306 (98.1%)
	Single	1 (0.9%)	5 (2.5%)	6 (1.9%)
Ethnicity of respondent	Akan	33 (29.2%)	52 (26.1%)	85 (27.2%)
	Dagomba	64 (56.6%)	122 (61.3%)	186 (59.6%)
	Gonja	9 (8.0%)	17 (8.5%)	26 (8.3%)
	Others	7 (6.2%)	8 (4.0%)	15 (4.8%)
Educational Level	JSS/Middle	18 (15.9%)	28 (14.1%)	46 (14.7%)
	No Education	37 (32.7%)	48 (24.1%)	85 (27.2%)
	Primary	9 (8.0%)	19 (9.5%)	28 (9.0%)
	SHS/Vocation	19 (16.8%)	47 (23.6%)	66 (21.2%)
	Tertiary	30 (26.5%)	57 (28.6%)	87 (27.9%)
Area of residence	Peri urban	24 (21.2%)	23 (11.6%)	47 (15.1%)
	Rural	32 (28.3%)	155 (77.9%)	89 (28.5%)
	Urban	57 (50.4%)	119 (59.8%)	176 (56.4%)
Aside from your own household work, what do you do to earn Income?	Agriculture worker (e.g. farming)	12 (10.6%)	19 (9.5%)	31 (9.9%)
	Unemployed	19 (16.8%)	33 (16.6%)	52 (16.7%)
	Public servant	16 (14.2%)	31 (15.6%)	47 (15.1%)
	Others	31 (27.4%)	51 (25.6%)	82 (26.3%)
	Trader/Vendor	35 (31.0%)	65 (32.7%)	100 (32.1%)
Monthly income level	Above 2000gh	18 (15.9%)	34 (17.1%)	52 (16.7%)

Between 1000-2000	28 (24.8%)	49 (24.6%)	77 (24.7%)
Less than 1000	67 (59.3%)	116 (58.3%)	183 (58.7%)

4.3 Obstetric characteristics of the respondents

Out of the 312 respondents, 61.5% had three or more pregnancies, 21.5% had two pregnancies and 17.0% were having their first pregnant. Also, 49.3% had three or more children, 27.9% had two children whiles 22.8% were having one child. Almost all the study participants 99.4% attended antenatal care (ANC) during their last pregnancy. Among those who attended the antenatal care (ANC), 6.9% had attended at least eight times whiles 63.1% had attended less than eight times. Also, among the respondents who attended ANC, about 50.3% started ANC visits only in first trimester of their pregnancy,41.0% started in second trimester and 8.7% started their ANC visits in the third trimester. Out of the total number of participants, 15.4% delivered before 37 weeks of the pregnancy (preterm), 80.4% delivered between 37-40weeks of their pregnancy (term) whiles 4.2% delivered after 40 weeks of their pregnancy (post term). Table 4.2 shows the Obstetric characteristics of the respondents. One hundred and seventy-two (55.1%) out of the 316 total number of study participants had male child as outcome of their pregnancy whiles 44.9% had female. On the birthweight of their child, participants representing 82.7% had the birth weight of their child falling within the normal range, 51(16.3%) had Low Birth Weight and 1.0% had macrosomia. Also, 26.6% of the respondents' babies experienced some complication after delivering with 27.6% having an underlying health issue before or during last pregnancy.

Table 4.2 Obstetric Characteristics of the Respondents

Variable	Normal Deliveries (n = 199)	Caesarean Deliveries (n = 113)	All Deliveries (n = 312)
How many pregnancies have you had?			
Primigravida	32 (16.1%)	21 (18.6%)	53 (17.0%)
Secondi gravida	48 (24.1%)	19 (16.8%)	67 (21.5%)
Multigravida	119 (59.8%)	73 (64.6%)	192 (61.5%)
How many children do you have?			
Primiparous	48 (24.2%)	23 (20.4%)	71 (22.8%)
Secundiparous	58 (29.1%)	29 (25.6%)	87 (27.9%)
Multiparous	93 (46.7%)	61 (54.0%)	154 (49.3%)
Did you attend antenatal care (ANC) during your last pregnancy?			
Yes	198 (99.5%)	112 (99.1%)	310 (99.4%)
No	1 (0.5%)	1 (0.9%)	2 (0.6%)
If yes, how many times?			
<8	129 (64.8%)	68 (60.2%)	197 (63.1%)
≥8	69 (35.2%)	44 (39.9%)	113 (36.9%)
How many months old was your pregnancy when you first attended ANC services?			
≤3 (First Trimester)	91 (46.0%)	65 (58.0%)	156 (50.3%)
4–6 (Second Trimester)	87 (44.0%)	40 (35.7%)	127 (41.0%)
7+ (Third Trimester)	20 (10.0%)	7 (6.3%)	27 (8.7%)
At what gestational age did the mother deliver the index child?			
<37 (Preterm)	30 (15.1%)	18 (15.9%)	48 (15.4%)
37–40 (Term)	160 (80.4%)	91 (80.5%)	251 (80.4%)
40+ (Post-term)	9 (4.5%)	4 (3.5%)	13 (4.2%)
What is the sex of the child?			
Female	92 (46.3%)	48 (42.5%)	140 (44.9%)
Male	107 (53.7%)	65 (57.5%)	172 (55.1%)
What was the birth weight of your last child?			
Low birth weight	30 (15.1%)	21 (18.6%)	51 (16.3%)
Normal	168 (84.4%)	90 (79.6%)	258 (82.7%)
Macrosomia	1 (0.5%)	2 (1.8%)	3 (1.0%)
Did your baby experience any complications after delivery?			

Variable	Normal Deliveries (n = 199)	Caesarean Deliveries (n = 113)	All Deliveries (n = 312)
Yes	38 (19.1%)	45 (39.8%)	83 (26.6%)
No	161 (80.9%)	68 (60.2%)	229 (73.4%)
Were you having any underlying health issues before or during your last pregnancy?			
Yes	57 (28.6%)	29 (25.7%)	86 (27.6%)
No	142 (71.4%)	84 (74.3%)	226 (72.4%)
Did you experience any complications during delivery?			
Yes	54 (27.1%)	22 (19.5%)	76 (24.4%)
No	145 (72.9%)	91 (80.5%)	236 (75.6%)

4.4 Prevalence of Caesarean Section

In this study, 199 out of the 312 respondents representing 63.8% had delivered through Spontaneous vaginal delivery and 36.2% had delivered through caesarean section (Figure 4.1). The prevalance of CS in this population was therefore estimated at 36.2%.

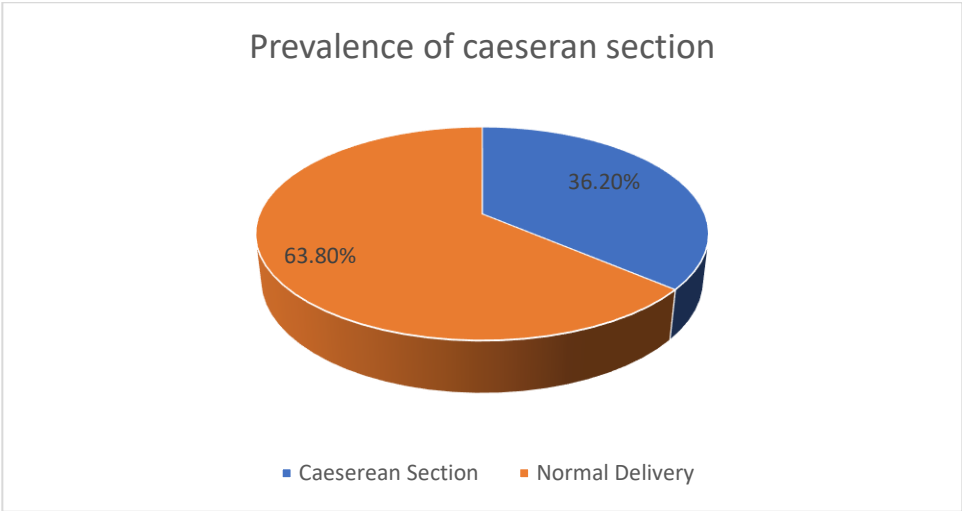


Figure 4.1 Prevalence of Caesarean Section

4.4.1 Types of caesarean section

Among the 113 (36.2%) of the caesarean section reported, 45 (14.4%) were elective caesarean sections whiles 68 (21.8%) were emergency caesarean sections (Figure 4.2).

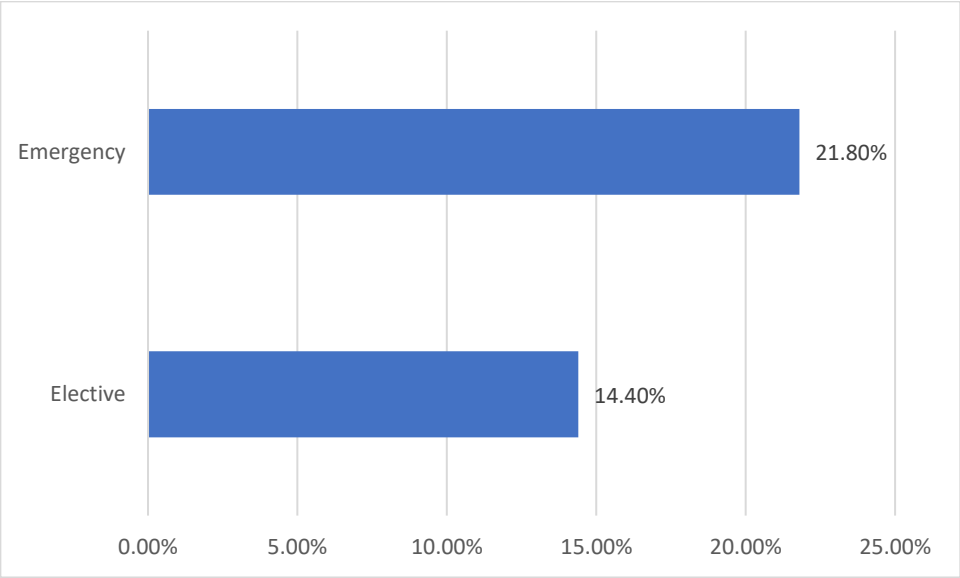


Figure 4.2 Types of caesarean section

4.5 Indications of Caesarean Section (Emergency and Elective)

The most common indication of CS in the study was previous CS (35.4%), followed by hypertension (HPT) (15%), fetal distress (9.7%), placenta abruptio (8.8%), prolong labour (6.2%), placenta previa (4.4%), bad obtetric history (BOH) (4.4%), malpresentation (4.4%) and others (11.4%) as shown in Figure 4.3

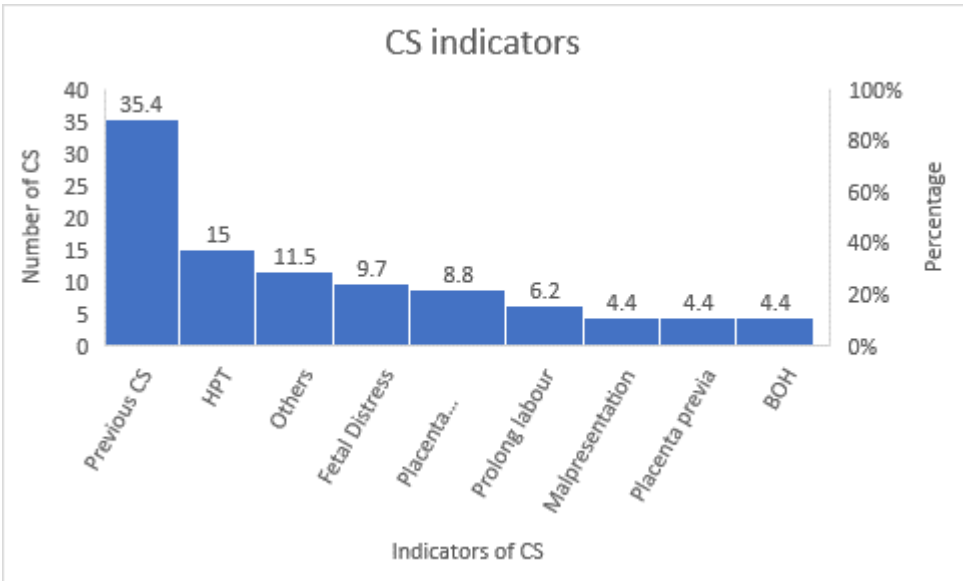


Figure 4.3 Indicators of CS

4.6 Knowledge of respondents on caesarean section

Results from the study revealed that 72.4% of the respondents indicated that cesarean section (CS) is performed for a woman in labour for an extended period. Additionally, approximately 17.9% disagreed with the notion that CS might be conducted when a woman is carrying twins. Moreover, 68.3% concurred that CS may be performed for a woman carrying a large baby, while 39.4% rejected the assertion that vaginal delivery is not possible after a CS. Regarding the duration of stay after delivery, 90.4% believed that CS requires a longer hospital stay than spontaneous vaginal delivery (SVD). In terms of the need for anesthesia before CS, 10.3% expressed the belief that anesthesia is unnecessary for CS. Similarly, 10.3% thought that CS does not require the woman's consent. Furthermore, a significant majority of the 97.6% stated that CS saves the life of the mother. The detailed results are presented in Table 4.3 below.

Table 4.3: Knowledge of respondents on caesarean section

Variable	Category	Frequency	Percentage
CS is done for a woman who is in labour for a long time			
	Yes	226	72.4
	No	34	10.9
	I don't know	52	16.7
CS may be done when the woman is carrying twins			
	Yes	208	66.7
	No	55	17.6
	I don't know	49	15.7
CS may be done for a woman who is carrying a big baby			
	Yes	213	68.3
	No	50	16.0
	I don't know	49	15.7
Vaginal delivery is not possible after a CS			
	Yes	83	26.6
	No	123	39.4
	I don't know	106	34.0
CS may require blood transfusion			
	Yes	177	56.7
	No	58	18.6
	I don't know	77	24.7
CS requires longer maternal hospital stay after delivery (2-4 days)			
	Yes	282	90.4
	No	6	1.9
	I don't know	24	7.7
CS does not require medicine (anaesthesia) before it is done			
	Yes	32	10.3
	No	231	74.0
	I don't know	49	15.7
CS does not require the consent of the woman before it is done			
	Yes	32	10.3
	No	244	78.2
	I don't know	32	11.5
CS saves the life of the mother			
	Yes	303	97.1
	No	1	0.3
	I don't know	8	2.6
CS saves the life of the baby			
	Yes	305	97.8
	No	0	0
	I don't know	7	2.2

4.7 Overall knowledge of respondents on caesarean section

The study used ten (10) questions to assess respondents' knowledge level on Caesarean Section (C/S). Each question was positively awarded. A respondent who got a question right was

awarded one (1) point. However, a respondent who got a question wrong was given zero (0) point. Those above the mean score was classified as respondents with high knowledge and those below the mean score was categorised as respondents with low knowledge. The result revealed that 63.5% of the respondents had high knowledge on C/S whiles 36.5% of the respondents had low knowledge on C/S. Detailed information is provided the pie chart below (Figure 4.3).

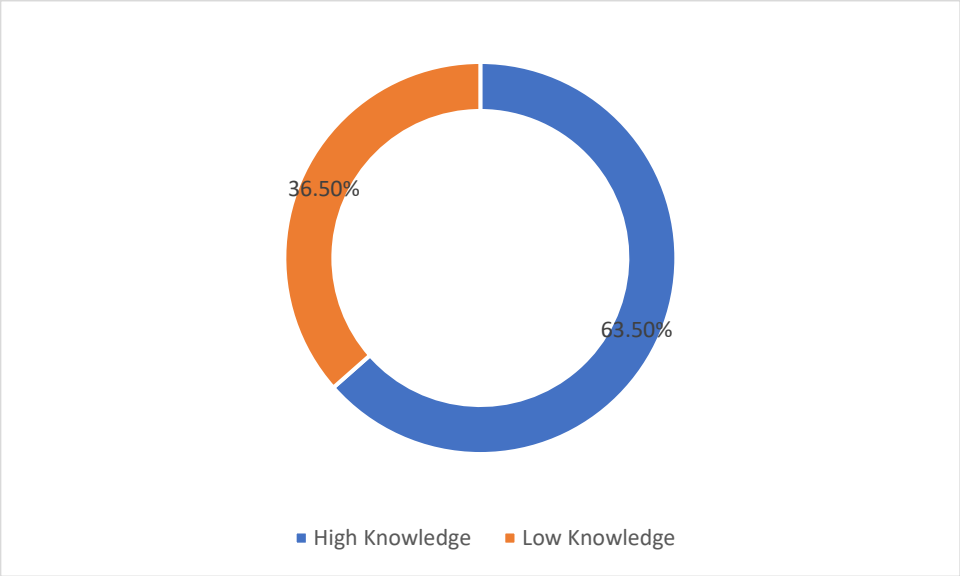


Figure 4.4 Overall knowledge of respondents on caesarean section

Table *4.2*; Themes from Data

Main Themes	Sub Theme
Lived experiences of women before and after caesarean section	• pain management • provision of information or education prior to surgery procedures • payment for the services they received

4.8 Lived experiences of women before and after caesarean section

The findings of this study with regards to the experiences participants had in this hospital concerning the care rendered by the health professionals in terms of pain management indicates

that most of the mother's felt midwives were able to manage their pain effectively after the surgery. They expressed that midwives were prompt to their call and were present to assure them of pain relief.

"...I felt intense abdominal pain after I recovered from the sedation…immediatelly I complained it was managed with painkillers by a Midwife. ...she did everything possible to relieve me of the pain" (participant 4)

However, few participants indicated that their pain was still severe despite the administered pain management

"..... For me the para doesn't work for my pain but that was what they gave me so I had to be struggling with the pain" I will take it like that because the caesarean section itself is painful" (participant 9).

Also, provision of information or education prior to surgery procedures carried out on a client is essential for the understanding and cooperation of patients.

According to Majority of the participants, the midwives explained the procedures to be performed during the preparation for the surgery.

"..... they are really doing well, all what I went through was explained to me before I was taken to the theatre" (participant 2)

However, few of the participants who had CS expressed dissatisfaction with the way in which information about the surgical procedure was provided. They were more afraid of the surgery's results because midwives did not provide them with enough information. They expected the midwives to reassure them that the procedure would have been successful in order to reduce their fear, however this expectation was not fulfiled. This is what one of the participants said"……*Mmmm it wasn't much though, they told me not to eat and also that I should come*

and lie down here a day before the surgery that was the only information I had" so I was a bit scared of the outcome.(participant6)

Prior to using the hospital for delivery services, mothers had negative opinions of midwives and thought they were cold and cruel. Contrary to popular belief, most mothers claimed to have had favorable interactions with midwives. Mother narated her story;

"*……Ohh it wasn't bad, I met people I already know but those that I don't even know they have related well with me" (participant 10,).*

Furthermore, almost all the participants shared a negative experience on payment for the services they received. These are what some of the participants said,

"……In fact, the way they made us pay money, sister they should do something about it, is too much "aba" the funny thing is that, this is where I come for my weighing and nobody told me we will buy theatre pack ₵450 cedis, and drugs too so it means that I will have to borrow money before I can settle my bills. We have paid more than thousand three hundred (1300) cedis and we are still paying see' they just said we should buy this from outside, that the hospital don't have, plus another bill on their sstem, at least they should have informed us to prepare" (participant 5)

"…….Wooi madam, pay this pay that is too much, that's why we've been running away from TTH to the small clinics, personally, I avoided here just that later I was referred to come here if not I will never have chosen to come to TTH, they should do something about it"(participant4).

4.9 Association between Demographic Factors and Caesarean Section

Table 4.3 shows the results of the test of association between the socio-demographic characteristics of respondents and their caesarean section status at a 5% significance level. The

test showed no statistically significant association between social demographic characteristics (religion of respondent, ethnicity of respondents, occupation of respondents, last education of respondent) and caesarean section status of the respondents. The prevalence of caesarean section was smaller among respondents without no formal education (43.5%) than those with tertiary and primary education background, though statistically insignificant.

A statistically significant association was observed between household income, age of respondents, marital status, area of residence and caesarean section status of the respondents. Caesarean section was higher among respondents who earned less than GHS 1000 (36.6%) than those earned above GHS 2000.00 (p= 0.032). Caesarean section was higher among respondents aged twenty years and less than those above thirty years (p = 0.001). Also, caesarean section was higher among married respondents than single respondents (p = 0.023).

Table 4.4 Association between Demographic Factors and Caesarean Section among Participants

Variables	Response Category	Caesarean Section Status		Test Statistics
		No	Yes	
Age	≤ 30 yrs.	119 (61.7%)	74 (38.3%)	X^2=1.022, p=0.001
	Above 30 yrs.	80 (67.2%)	39 (32.8%)	
Religion	Christianity	44 (72.1%)	17 (27.9%)	
	Islam	155 (62.0%)	95 (38.0%)	Fisher Exact test=4.77., p= 0.221
	ATR	0 (0%)	1 (100%)	
Marital Status	Married	194 (63.4%)	112 (36.6%)	Fisher Exact test=1.012., p= 0.023
	Single	5 (83.3%)	1 (16.7%)	
Ethnicity of Respondent	Mamprusi	8 (53.3%)	7 (46.7%)	

	Dagomba	122 (65.6%)	64 (34.4%)	X^2=1.251, p=0.741
	Gonja	17 (65.4%)	9 (34.6%)	
	Others	52 (61.2%)	33 (38.8%)	
Educational Level	Non-formal education	49 (56.5%)	37 (43.5%)	X^2=4.028, p=0.402
	Primary	19 (67.9%)	9 (32.1%)	
	JSS/Middle	28 (60.9%)	18 (39.1%)	
	SHS/Vocational	47 (71.2%)	19 (28.8%)	
	Tertiary	57 (65.5%)	30 (34.5%)	
Area of Residence	Peri-urban	23 (48.9%)	24 (51.1%)	X^2=5.605, p=0.002
	Rural	57 (64.0%)	32 (36.0%)	
	Urban	119 (67.6%)	57 (32.4%)	
Aside from Your Own Household Work	Agriculture Worker (e.g. farming)	19 (61.3%)	12 (38.7%)	X^2=0.336, p=0.987
	Unemployed	33 (63.5%)	19 (36.5%)	
	Public Servant	31 (66.0%)	16 (34.0%)	
	Others	51 (62.2%)	16 (34.0%)	
	Trader/Vendor	65 (65.0%)	35 (35.0%)	
Monthly Income Level	Above 2000gh	34 (65.4%)	18 (34.6%)	
	Between 1000-2000	49 (63.6%)	28 (36.4%)	X^2=0.071, p=0.032
	Less than 1000	116 (63.4%)	67 (36.6%)	

4.10 Association between Obstetric and Medical history and Caesarean Section among Participants.

Results of bivariate analysis of obstetric and medical history (number of pregnancies, antenatal care visits, number of ANC visits, duration of pregnancy before first ANC visits, gestation age of index child and birth weight of child) showed statistical significance with caesarean section status of the respondents (Table 4.5). The prevalence of caesarean section among respondents

who had their first child were higher (39.8%) compared to those of two or more children. Caesarean section was higher among respondents who had not attended ANC (50%) than those who had attended (p= 0.048). Caesarean section was higher among respondents who had delivered macrosomia babies (66.7%) compared to those who delivered normal birth weight babies (0.031).

Though no other statistically significant association was observed, results show that respondents whose babies experienced complications after birth had a higher incidence of caesarean section than those with no complications. Also, respondents who delivered male child recorded more caesarean section than those with female child.

Table 4.5 Association between Obstetric and Medical History and Caesarean Section among Participants

Variable	Caesarean Section Status		Test Statistics
	No	Yes	
How many pregnancies have you had?			
Primigravida	32 (60.4%)	21 (39.6%)	X^2=2.328, p=0.0312
Second gravida	48 (71.6%)	19 (28.4%)	
Multigravida	119 (62.0%)	73 (38.0%)	
How many children do you have?			
Primiparous	48 (67.6%)	23 (32.4%)	X^2=1.530, p=0.465
Secundiparous	58 (66.7%)	29 (33.3%)	
Multiparous	93 (60.4%)	61 (39.6%)	
Did you attend antenatal care (ANC) during your last pregnancy?			
Yes	198 (63.9%)	112 (36.1%)	Fisher Exact
No	1 (50.0%)	1 (50.0%)	test=1.66., p= 0.048
If yes, how many times?			
< 8	129 (65.5%)	68 (34.5%)	X^2=0.608, p=0.051
≤ 8	69 (61.1%)	44 (38.9%)	
How many months old was your pregnancy when you first attended ANC services?			
≤ 3 (First Trimester)	91 (58.3%)	65 (41.7%)	X^2=4.472, p=0.0465
4-6 (Second Trimester)	87 (68.5%)	40 (31.5%)	

7 + (Third Trimester)	20 (74.1%)	7 (25.9%)	
At what gestation age did mother deliver the index child?			
< 37 (Preterm)	30 (62.5%)	18 (37.5%)	Fisher Exact
37-40 (Term)	160 (63.7%)	91 (36.3%)	test=0.198., p= 0.004
40 + (Post Term)	9 (69.2%)	4 (30.8%)	
What is the sex of the child?			
Female	92 (65.7%)	48 (34.3%)	X^2=0.410, p=0.522
Male	107 (62.2%)	65 (37.8%)	
What was the birth weight of your last child?			
Low Birth Weight	30 (58.8%)	21 (41.2%)	X^2=1.946, p=0.031
Normal	168 (65.1%)	90 (34.9%)	
Macrosomia	1 (33.3%)	2 (66.7%)	
Did your baby experience any complication after delivery?			
Yes	38 (45.8%)	45 (54.2%)	X^2=15.859, p=0.231
No	161 (70.3%)	68 (29.7%)	
Were you having any underlying health issues before or during your last pregnancy?			
Yes	57 (66.3%)	29 (33.7%)	X^2=0.320, p=0.571
No	142 (62.8%)	84 (37.2%)	
Did you experience any complication during delivery?			
Yes	54 (71.1%)	22 (28.9%)	X^2=2.299, p=0.129
No	145 (61.4%)	91 (38.6%)	

4.11 Sociodemographic Predictors of Caesarean Section

A binary logistic regression analysis showed that, age of respondents, marital status and area of residence were the variables that significantly predict caesarean section. It was observed that respondents who aged above thirty years were 76% less likely [AOR=0.24, 95%CI (0.01-0.98), P=0.047)] to undergone caesarean section compared to those who were thirty years and below. Also, it was observed that respondents who were single were 3.4 times more likely [AOR=3.4,

95%CI (2.01-11.42), P=0.002)] to undergone caesarean section compared to those who were married. Again, respondents who reside in the rural areas were 2.2 times more likely [AOR=2.2, 95%CI (1.02-3.95), P=0.045)] to undergone caesarean section compared to those who residingin the peri urban areas.

Table 4.6 Sociodemographic Predictors of Caesarean Section among the Study Participants

Variables	Category	COR (95% CI)	p-value	AOR (95% CI)	p-value
Age					
	≤ 30 years	Ref*		Ref*	
	Above 30 years	4.93 (1.12–21.71)	p = 0.051	0.24 (0.01–0.98)	p = 0.047
Marital Status					
	Married	Ref*		Ref*	
	Single	2.30 (1.03–8.71)	p = 0.031	3.40 (2.01–11.42)	p = 0.002
Average Monthly Income					
	> GHS 2000	Ref*		Ref*	
	1000–2000	5.10 (0.67–38.92)	p = 0.116	1.74 (0.15–20.17)	p = 0.659
	< GHS 1000	0.70 (0.27–3.92)	p = 0.726	0.40 (0.15–15.17)	p = 0.432
Area of Residence					
	Peri-urban	Ref*		Ref*	
	Rural	0.33 (0.10–1.09)	p = 0.070	2.20 (1.02–3.95)	p = 0.045
	Urban	0.43 (0.10–1.09)	p = 0.070	0.62 (0.02–1.95)	p = 0.034

4.12 Obstetric Predictors of Caesarean Section among the Study Participants

A binary logistic regression analysis showed that, number of pregnancies, attendance to ANC, number of visits times to ANC and birth weight of child were the obstetric variables that significantly predict caesarean section. It was observed that respondents who were multigravida were 66% less likely [AOR=0.34, 95%CI (0.02-0.85), P=0.001)] to undergo caesarean section compared to those who were primigravida. Also, it was observed that respondents who were not ANC attendant were 6.6 times more likely [AOR=6.6, 95%CI (3.35-45.14), P=0.002)] to undergo caesarean section compared to those who had attended ANC. Again, respondents who visited ANC eight times or more were 45% less likely [AOR=0.55, 95%CI (0.15-0.97), P=0.05)] to undergo caesarean section compared to those who had visited the ANC less than eight times. Also, respondents who had delivered macrosomia child were 5.3 times more likely [AOR=5.3,95%CI (2.28-11.43) P=0.016)] to undergo caesarean section compared to those who delivered low birth weight.

Table 4.7 ***Obstetric Predictors of Caesarean Section among the Study Participants***

Variables	Category	COR (95% CI)	p-value	AOR (95% CI)	p-value
How many pregnancies have you had?					
	Primigravida	Ref*		Ref*	
	Secondigravida	4.93 (1.12–21.71)	p = 0.035	2.60 (0.45–7.42)	p = 0.894
	Multigravida	0.53 (0.10–1.09)	p = 0.083	0.34 (0.02–0.85)	p = 0.001
Did you attend antenatal care (ANC) during your last pregnancy?					
	Yes	Ref*		Ref*	

Variables	Category	COR (95% CI)	p-value	AOR (95% CI)	p-value
	No	10.02 (2.28–44.08)	p = 0.002	6.57 (3.35–45.14)	p = 0.002
If yes, how many times?					
	< 8	Ref*		Ref*	
	≤ 8	1.10 (0.67–3.92)	p = 0.116	0.55 (0.15–0.97)	p = 0.050
How many months old was your pregnancy when you first attended ANC services					
	≤ 3 (First Trimester)	Ref*		Ref*	
	4–6 (Second Trimester)	2.40 (0.10–12.9)	p = 0.210	4.30 (0.02–8.95)	p = 0.650
	7+ (Third Trimester)	0.43 (0.10–1.98)	p = 0.083	0.74 (0.32–1.95)	p = 0.055
At what gestation age did mother deliver the index child?					
	< 37 (Preterm)	Ref*		Ref*	
	37–40 (Term)	2.16 (0.78–5.94)	p = 0.135	1.34 (0.28–6.43)	p = 0.716
	40+ (Post term)	3.60 (0.58–29.93)	p = 0.175	4.30 (0.88–16.32)	p = 0.519
What was the birth weight of your last child?					
	Low Birth Weight	Ref*		Ref*	
	Normal	5.16 (0.88–12.94)	p = 0.144	4.54 (0.62–8.45)	p = 0.546
	Macrosomia	2.16 (1.82–9.94)	p = 0.005	5.30 (2.28–11.43)	p = 0.016

CHAPTER FIVE

DISCUSSIONS OF THE FINDINGS

5.0 Introduction

This chapter aims to provide objective and observational explanations for the results obtained in the current study. The discussion is organized thematically based on the study objectives. The key findings are also compared to those of related or similar studies in Ghana, the Sub-Saharan Africa regions, and globally, highlighting consistencies and differences. Additionally, this section endeavors to offer possible alternative explanations for certain results, emphasizing their relevance to the field of practice with support from scientific evidence. Moreover, the chapter intends to convey essential messages derived from the study results for the benefit of health providers, policymakers, scientists, and other stakeholders involved in decision and policymaking, both in the short and long term. The primary reference source is linked to the literature reviewed in chapters two and four.

5.1 Prevalence of Caesarean section

Increasing caesarean section delivery rates is a matter of public knowledge worldwide, prompting many researchers to investigate the indications for caesarean section deliveries (Soto-Vega et al., 2015). The results of this recent study conducted in the Tamale Teaching Hospital in northern Ghana contradict perceptions that caesarean section rates are low in developing and resource-poor regions of sub-Saharan Africa by demonstrating high caesarean section delivery rate among the participants of the study. According to a 1985 WHO report, the ideal population range for cesarean section rates is between 5% and 15% (Ronsmans et al.,2014). When compared to this study, where the CS rate was 36.2%, this reference range is incredibly low. The overall C-section rate of 36.2% found by the current study is higher than the national rate of 13% reported in 2014 by GHDS (GDHS, 2015). The prevalence of cesarean

sections in this study was reasonably consistent with the value of 35.1% in Argentina out of 354participants, 29.3% in Brazil out of 450 participants, and 30.7% in Sri Lanka out of 320 participants when compared to other hospital-based studies in medium and low-income countries (Souza et al.,2010). The high rate of cesarean section in this study could be attributed the fact that the study setting is well positioned which allowed easy accessibility for health care service and also due to the high cases of previous CS, HPT, fetal distress, placenta abruptio, prolong labour, placenta previa, BOH, and malpresentation among the study participants. This implies that participants attending the Tamale teaching hospital in seeking maternal and labour care will experience increased healthcare cost since C-sections are generally more expensive than vaginal deliveries due to longer hospital stays, surgical procedures, and post-operative care. A high C-section rate can strain healthcare budgets and also maternal complications. Although C-sections can be safe, they carry a higher risk of complications compared to vaginal deliveries, such as infection, blood clots, and complications in future pregnancies. A high C-section rate can lead to more mothers experiencing these risks.

5.2 Knowledge of respondents on caesarean section.

In the Tamale Teaching Hospital, the study discovered that mothers had high levels of knowledge. This implies that, Tamale Teaching Hospital expectant mothers are exposed to CS information. They either obtain education about the indications, advantages, and risks of CS at the clinic, through the media, or perhaps through friends and family. Their understanding of CS may be impacting their decisions on CS, as knowledge influences decisions made on a commodity (Mboho, 2013). The results of the study were in line with those of a survey carried out in Nigeria, where 59% of the respondents had a high level of CS knowledge (Jerimiah et al., 2011). The majority (98.5%) of the respondents in the study by Jerimiah et al. had both tertiary and secondary education, which could be the cause of the agreement. Additionally, the

study involved 400 prenatal patients who were treated in a hospital setting. The respondents' ages ranged from 20 to 42 years, and the sample size for the study was the same (384).

These findings were also in line with a 2016 survey by Robinson-Bassey and Uchegbu (2016) in Nigeria, in which 62.42% of the respondents had a high level of knowledge on C/S. The countries where the studies were done may be responsible for the consistency. Despite the fact that the studies were carried out in different countries, all of the African nations studied are similar in terms of their levels of basic, secondary, and higher education. Mothers who were attending a prenatal clinic in a hospital made up the respondents. Additionally, the majority of respondents (69%) in Robinson and Uchegbu's study had completed secondary and/or tertiary education, therefore they were able to gather information because of their educational background.

However, the study contradicts a survey carried out in Nigeria by Naeimi et al. (2015), in which 46.8% of the respondents shown a lack of knowledge with CS. This can be as a result of inadequate information on the knowledge of CS. The findings disagreed with a study by Faremi et al. (2014) in which 203 respondents represented 46.5% of those with low knowledge of CS. The discrepancy may be due to variations in the geographical area where the study was carried out. In addition, 31% of respondents had only received primary education as opposed to the current survey. On the other side, the discrepancy with previous research may be caused by the fact that the mothers received little to no information on CS in the antenatal clinic or if their information sources were unreliable and inaccurate regarding CS. It could also indicate that respondents did not support CS and did not want to know anything about it. Furthermore, the majority of the research under consideration were carried out in Nigeria, and as a result, they differ from the study carried out in the Tamale Teaching Hospital in terms of cultural background, population sample characteristics, and geographic location. Additionally, the

studies evaluated indicated that CS is frowned upon and that there are numerous misconceptions about it in Nigerian culture.

5.3 Predictors of caesarean section

The analysis of data from 312 research participants revealed that respondents who were aged above thirty years were less likely to undergone caesarean section compared to the participants of aged thirty years and below. However, this finding disagrees to the findings of Manyeh, et al, (2018) in their population level study in Ethiopia where caesarean birth rates are higher among older women between the ages of 30 and 34 where women aged 34 or older were more than three times as likely to undergo a caesarean section compared to women under 30 years of age. Also, a case control study by Kaur et al. (2013) at the Pujan Institute of Medical Sciences revealed that the majority of mothers who underwent cesarean deliveries were between the ages of 21 and 30, accounting for as much as 78.46% of the caesarean group. This difference could be attributed to difference in the geographical areas. Furthermore, the findings of this study contrast the results of GHDS 2014 in southern Ghana which suggested that CS delivery is associated with advanced maternal age (GDHS, 2015). This current finding could be ascribed to the fact that younger mothers, especially teenagers, may have smaller pelvises that are not fully developed. A smaller pelvis can make it more difficult for the baby to pass through the birth canal, increasing the likelihood of a CS and also, they often have less experience with pregnancy and childbirth, which can lead to a higher likelihood of medical interventions, including caesarean-sections. They may be less prepared for the challenges of labor and more likely to request or be recommended a caesarean -section.

Again, respondents who reside in the rural areas were more likely to undergo caesarean section compared to those who residing in the peri urban areas. However, the findings of the study of Azene et al., (2019) contrast the findings of this study where mothers from rural residence had

less likely to deliver by CS. Also, there was a contrasting finding from studies conducted in Bangladesh and Nigeria by Adewuyi et al., (2019) and Kamal et al., (2018) respectively. They explained in their study the possible reason could be because mothers from rural residence having less chance to access hospitals. In addition to this, most women from a rural residence were poor, both economically and information. The current study findings accord to the findings of a study conducted at the Felege Hiwot referral hospital (Adebe et al., 2015). The current findings could be attributed to the fact that, in rural areas, delays in diagnosing complications during pregnancy and labor and referring mothers to higher-level facilities can contribute to a higher rate of caesarean-sections. Early identification and intervention can sometimes prevent the need for surgical delivery and also, mothers in rural areas may face socioeconomic challenges, such as lower income levels, less access to education, and limited awareness of maternal health practices. These factors can result in poorer overall health and may contribute to a higher risk of complications during pregnancy and childbirth, necessitating caesarean-sections.

Furthermore, it was observed that respondents who were multigravida were less likely to undergo caesarean section compared to those who were primigravida. This finding is consistent to the findings of a study conducted by Azene et al., (2019) in Ethiopia where mothers having two up to five pregnancies were less likely undergoing CS as compared to primary birth. This finding also supported the findings of study conducted in Egypt and Southwest Ethiopia (Al Rifai et al., 2017 & Akki JS, et al., 2016). A possible reason could be related with experience of a uterus and labour of a woman also a woman's previous obstetric history, including any complications during previous pregnancies or deliveries, can influence the mode of delivery in subsequent pregnancies. If a woman with multigravida has a history of complications like breech presentation, placenta previa, or other issues, she may be more likely to have a caesarean-section in subsequent pregnancies.

Another factor associated with caesarean section was number attendance to Antennal Care Visits (ANC). It was observed that respondents who had attended ANC at least eight times or more were less likely to undergo caesarean section compared to those who had attendant of ANC less than eight times. In a study by Apanga et al., (2018) to assess the predictors of caesarean section in northern Ghana. They reported that, pregnant women who attended ANC 8 or more times were found to be more likely to have a CS. This their finding is contrasting the current findings. Apanga et al., (2018) explained that their findings may be due to pregnant women who were booked for elective CS as they are more likely to have their mode of delivery planned during ANC. However, the finding is in agreement to findings of Tebeu et al in Cameroon who found no association between ANC attendance and CS (Tebeu et., 2017). This finding in the current study may be due to the fact that regular ANC visits provide an opportunity for healthcare providers to monitor the progress of pregnancy, detect complications, and address them in a timely manner. Mothers with less ANC attendance are at a higher risk of not having potential issues identified early, which may lead to a caesarean-section later in the pregnancy or during labor. Also, ANC visits often include measurements of fetal growth, which can help identify issues such as fetal growth restriction. When fetal growth problems go undetected due to infrequent ANC attendance, there is a higher likelihood of caesarean-sections being performed for concerns about the baby's well-being.

Lastly, respondents who had delivered macrosomia child were more likely to undergone caesarean section compared to those who delivered low birth weight child. This was in congruent to the findings of Fuches et al., (2017) where caesarean section was conducted for mothers with children whose birthweight was more than 4500g in Canada. This could be ascribed to the fact that Macrosomic infants are at a higher risk of shoulder dystocia, a complication during vaginal delivery where the baby's head passes through the birth canal, but the shoulders become stuck behind the mother's pelvic bone. This can lead to serious birth injuries for both the mother and the baby. To reduce the risk of shoulder dystocia, healthcare providers may recommend a caesarean-section for macrosomic infants and also macrosomic

infants can experience fetal distress during labor due to prolonged or difficult vaginal delivery, which may necessitate a caesarean-section to ensure the baby's safety.

5.4 To assess the experiences of postnatal mothers who undergo the caesarean section in Tamale Teaching Hospital

This section investigated lived experiences of women before and after caesarean section deliveries of health professionals at the Tamale Teaching Hospital. Participants shared their birth narratives of midwifery care using a variety of birth experiences. The availability of how pains were managed, education prior to surgery, nursing care in terms of selfcare and relation, other experiences they would like to share and whether they would recommend the facility to a friend or family.

Majority of the women who participated in the current study gave various instances of how the midwives effectively interacted with them. They emphasized how the midwives demonstrating concern for their well-being and offering concise explanations of operations. This is consistent with other research, in which women expressed satisfaction with the information they received from midwives (Afaya et al., 2017 & Gobema et al., 2011). These implies that excellent interpersonal and communication skills of healthcare professionals are important drivers of women's trust in care providers.

The study also found that midwives treated maternity women with respect and kindness (Nursing care, in terms of self-care and relation). This findings contradicts the results of a qualitative research conducted in Tanzania (Shimoda et al., 2018), in which women claimed that midwives had treated them disrespectfully and violently while they were giving birth. Respectful maternity care promotion is widely acknowledged as one of the most important strategies for raising utilization and the standard of maternal care (Shakibazabeh et al., 2018).

Therefore, as study participants noted, women expect respect while obtaining maternity care. Therefore, one of the main factors influencing the use of professional maternity care is the behavior and attitudes of the healthcare providers (Shakibazabeh et al., 2018). A respectful and supportive birth environment contributes to a positive birth experience, even if the birth did not go as planned. A positive experience can have long-lasting effects on a mother's mental and emotional well-being.

The majority of study participants indicated satisfaction with the pain management provided by midwives. The current study findings runs opposed to the study done in the South African province of Limpopo, where it was found that midwives provided little pain management to women who gave birth through caesarean section (Maputol, 2018). The South African study found that there were not enough midwives available during a shift, which may have explained the difference. However, the current study finding is in line with a study conducted in Jordan, where it was found that women recieved enough assisance in pain management from midwives after caesarean delivery. (Krehesh et al., 2018).

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.0 Introduction

This chapter contains a summary of the entire study based on results and discussions. This chapter also outlines some recommendations and study limitations.

6.1 Summary of the findings

The findings revealed that a majority of the respondents delivered through spontaneous vaginal delivery, while a significant portion underwent Caesarean section (CS). Of those who had CS, a larger proportion had emergency CS compared to elective CS. The most common reason for undergoing CS was a previous CS, followed by conditions such as hypertension, fetal distress, and prolonged labor, among others.

In terms of knowledge about CS, most respondents demonstrated a high level of awareness regarding the procedure, with the majority understanding that prolonged labor could necessitate a CS. However, a smaller percentage incorrectly believed that CS might not be needed in the case of twin pregnancies or after a previous CS. Most respondents correctly identified that CS typically requires a longer hospital stay than vaginal delivery.

In terms of post-operative care, most mothers felt that midwives effectively managed their pain and were attentive to their needs. Information about the procedure was generally well communicated, though a few participants expressed dissatisfaction. While most respondents reported a positive attitude from midwives, some felt the staff could have been more patient and pleasant. Nevertheless, the majority indicated they would recommend the hospital to others.

The study identified several predictors of CS. Women over 30 years old were significantly less likely to undergo CS compared to younger women. Single women were more likely to have a CS than married women, and those living in rural areas were also more likely to have the procedure than those in peri-urban areas. Multigravida women (those who have had multiple

pregnancies) were less likely to undergo CS compared to primigravida women (first-time mothers). Additionally, frequent antenatal care visits (eight or more) reduced the likelihood of a CS, while delivering a baby with macrosomia (large birth weight) increased the likelihood of undergoing the procedure.

6.2 Conclusion

Prevalence of cesarean section in the Tamale Teaching Hospital is high compared to WHO data with more emergency caesarean section than elective caesarean section. The rates of CS, especially in teaching hospitals, are influenced by the untimely referral of cases from primary healthcare facilities. Pregnant women in the Tamale Teaching Hospital have high knowledge of CS. This suggests that pregnant women in the Tamale Teaching Hospital are aware of CS and that this knowledge may affect their choices regarding CS. Mothers shared diverse experiences of midwifery care including both positive and negative ones. Pain management, education prior to surgery nursing care, in terms of self-care and relation and other experiences were positive experiences. A number of challenges were experienced by mothers which were related to the provision of information, privacy, and physical support. Midwives may need to use more caution when giving out personal information and performing procedures prior to CS. To ensure high-quality care and subsequent use of the facility's services, midwives may need to give these areas more attention. For mothers undergoing emergency CS, supportive and compassionate midwifery care is strongly advised. Maternal age, marital status, gravida, ANC attendance, area of residence and birth weight were independently associated with caesarean section

6.3 Recommendations

In line with the study objectives and the findings of this study, the following recommendations were made:

1. Authorities of Tamale Teaching Hospital should expand antenatal education programs to improve knowledge on the indications for CS, particularly addressing misconceptions about CS for twin pregnancies and after a previous CS.
2. The Management of Tamale Teaching Hospital especially the human resource directorate should ensure that the facility is well-equipped and adequately staffed to handle emergency CS cases. This will improve response times and outcomes for mothers facing complications during labor.
3. Doctors and midwives should intensify campaigns to promote the importance of attending eight or more antenatal care visits, especially targeting rural areas, to reduce the likelihood of complications leading to CS.
4. The management of Tamale Teaching Hospital should provide ongoing training for midwives to enhance post-operative care, focusing on improving patient communication, pain management, and addressing concerns about staff attitudes.

6.4 Suggestion for Further Study

Further studies are required in other teaching hospitals in different regions in Ghana as well to expound the contemporary study's conclusions. To better understand the attitudes toward CS and the factors that contribute for pregnant women in the Tamale Teaching Hospital unwillingness to embrace CS, further research utilizing a qualitative approach should be carried out.

6.5 Limitations of the study

The cross-sectional design nature of this study has limitations, making causal inference and ascertainment of the temporal order of exposure and outcome difficult to identify. Also, funding and time was another challenge in carrying out this, which could have impacted how they felt about the care they received. After a successful CS birth, the mother might not be able to criticize the same midwife who sped up her successful CS delivery because the midwives will act with extreme professionalism in emergency situations to save the woman's life. Furthermore, considering that the majority of the women in this study sample received emergency CS, we accept that there may have been some prejudice. It's probable that mothers who underwent emergency CS delivery have completely different expectations and viewpoints from those who underwent elective CS.

REFERENCES

1. Aaron B Caughey. (2018, 05 11). Vaginal Birth After Cesarean Delivery. Retrieved from www.medscape.com.
2. Adam, Y. M. (2018). An evaluation of the indications for caesarean sections at Chris Hani Baragwanath academic Hospital. South African Journal of Obstetrics and Gynaecology, .
3. Afaya A, Yakong VN, Afaya RA, Salia SM, Adatara P, Kuug AK, Nyande FK. A qualitative study on Women's experiences of Intrapartum nursing Care at Tamale Teaching Hospital (TTH), Ghana. J Caring Sci. 2017;6(4):303.
4. Afaya, A., Dzomeku, V. M., Baku, E. A., Afaya, R. A., Ofori, M., Agyeibi, S., ... & Mwini Nyaledzigbor, P. P. (2020). Women's experiences of midwifery care immediately before and after caesarean section deliveries at a public Hospital in the Western Region of Ghana. *BMC pregnancy and childbirth*, *20*(1), 1-9.
5. Afrifa. A., A. M. (2017). Caesarean section in a primaryhealth facility in Ghana: Clinical indications and feto-maternal outcomes. Jounal of public health in Africa.
6. ALARM International . (2006). Chapter 13 shoulder dystocia. Retrieved from www.glowm.com:https://www.glowm.com/pdf/AIP%20Chap13%20Shoulder%20Dystocia.pdf
7. Allen, R. H. (2016, August 22). Shoulder Dystocia. Retrieved from www.medscape.com: https://www.emedicine.medscape.com/article/1602970-overview#A1
8. Azene, A. G. (2019). Multilevel modelling of factors associated with caesarean section in Ethiopia: Community based cross sectional study. BMC Research Notes.
9. Baker, P. N. (2011). Obstetrics by Ten Teachers. London : Hodder & Stoughton Ltd.

10. Bangal, V. B. (2013). Vaginal birth after cesarean section. North American Journal of Medical Sciences, 5(2), 140–144. https://doi.org/10.4103/1947-2714.107537.
11. Baur, A. R. (2017, 02 03). Macrosomia. Retrieved from https://emedicine.medscape.com/article/262679-overview.
12. BBC. (2015, October 11). Brazil Caesareans: Battle for natural childbirth. Retrieved from bbc.com.
13. Betrán, A. P.- T. (2016). WHO statement on caesarean section rates. BJOG: An International Journal of Obstetrics & Gynaecology, 123(5), 667-670.
14. Bohren MA, Vogel JP, Hunter EC, Lutsiv O, Makh SK, Souza JP, Aguiar C, Coneglian FS, Diniz AL, Tunçalp Ö, Javadi D. The mistreatment of women during childbirth in health facilities globally: a mixed-methods systematic review. PLoS Med. 2015;12(6):e1001847.
15. Buekens P, C. S. (2003). Demographic and Health Surveys: caesarean section rates in sub-Saharan Africa. https://www.measureevaluation.org/resources/publications/ja-03-31.
16. CDC. (2019, December 19). Cesarean Delivery Rate by State. Retrieved from https://www.cdc.gov/nchs/pressroom/sosmap/cesarean_births/cesareans.htm.
17. Chu, K. C. (2012). Cesarean Section Rates and Indications in Sub-Saharan Africa: A Multi-Country Study from Medecins sans Frontieres. PLoS ONE, 7(9), https://doi.org/10.1371/journal.pone, 5–10.
18. CIHI. (2018, April 19). C-section rates continue to increase while birth rates decline. Retrieved from https://www.cihi.ca/en/c-section-rates-continue-to-increasewhile-birth-rates-declin

19. CTVNEWS. (2018 , April 19). While Canada's birth rate drops, C-section rates rise: report. Retrieved from https://www.ctvnews.ca/health/while-canada-s-birthrate-drops-c-section-rates-rise-report-1.3891951.
20. Cunningham, F. G. (2014). Williams Obstetrics. New York: McGraw-Hill Education.
21. Dikete, M. C. (2019). Variation of caesarean section rates in Sub-Saharan Africa: A literature review. J Gynecol Res Obstet, 5(2), 042-047.
22. Djurić, J. A. (2012). Distocija kao uzrok nepravovremenog carskog reza. Vojnosanitetski Pregled, 69(7), 589–593. https://doi.org/10.2298/VSP110210005D.
23. Dodd, R. M. (2011). Short- and Long-term Outcomes after Cesarean Section. Retrieved from medscape.com.
24. Doucleff, M. (2018, October 12). Rate Of C-Sections Is Rising At An 'Alarming' Rate, Report Says. Retrieved from www.npr.org.
25. Dzomeku VM, Knight L, van Wyk BE, Lori JR. Exploration of mothers' expectations of care during childbirth in public health centres in Kumasi,Ghana. Africa J Nurs Midwifery. 2018;20(1):1–4.
26. Elnahas, A. (2018.). Factors Associated with Success Rate of Vaginal Birth After Single Caesarean Section in Khartoum Maternity Hospital. Interventions in Gynaecology and Women's Healthcare, 2(3). https://doi.org/10.32474/igwhc.2018.02.000140.
27. Fischer, R. (2020, 3 26). Breech Extraction Delivery: Overview, Indications, Contraindications. (n.d.). . Retrieved from https://emedicine.medscape.com: Retrieved March 26, 2020, from https://emedicine.medscape.com/article/83040-overview#showall
28. Frass, K. A. (2011). Outcome of vaginal birth after caesarean section in women with one previous section and spontaneous onset of labour. Eastern Mediterranean Health Journal, 17(08), 646–650. https://doi.org/10.26719/2011.17.8.646.

29. Fuchs, F. S. (2017). Impact of maternal obesity on the incidence of pregnancy complications in France and Canada. . Scientific Reports, 7(1), 1–9. https://doi.org/10.1038/s41598-017-.

30. Gardberg, M. L. (2011). Malpresentations - Impact on mode of delivery. Acta Obstetricia et Gynecologica Scandinavica, 90(5), 540–542. https://doi.org/10.1111/j.1600-0412.2011.01105.x.

31. Goberna-Tricas J, Banús-Giménez MR, Palacio-Tauste A, Linares-Sancho S. Satisfaction with pregnancy and birth services: the quality of maternity care services as experienced by women. Midwifery. 2011; 27(6):e231–7.

32. Hampus Holmer, M. M. (2019). The rate and perioperative mortality of caesarean section in SierraLeone. BMJ Global Health.

33. Heard, A. J. (2020, 4 12). Multifetal Pregnancy: Background, Pathophysiology, Etiology. Retrieved from emedicine.medscape.com: https://emedicine.medscape.com/article/1618038-overview#a6

34. Hehir, M. M. (2015). Breech presentation of the 2nd twin: does it influence outcomes at vaginal delivery? American Journal of Obstetrics and Gynecology, 212(1), S187. https://doi.org/10.1016/j.ajog.2014.10.402.

35. Hong-Tao, X. J.-J.-T.-Z.-M.-F. (2018). Association between first caesareandelivery and adverse outcomes insubsequent pregnancy: a retrospectivecohort study. BMC pregnancy and childbirth.

36. Jain, S. M. (2019). Study of sociodemographic factors of women undergoing caesarean section in tertiary care centre of rural area of central India. International Journal of Reproduction, Contraception, Obstetrics and Gynaecology.

37. Joyce A. Martin, B. E. (2019, November 27). National VitalStatistics Reports. Births: Final Data for 2018, p. 6.

38. Kaur, J. S. (2013). Current Trend of Caesarean Sections and Vaginal Births. . Advances in Applied Science Research, 4(4), 196–202.

39. Khresheh R. Support in the first stage of labour from a female relative: the first step in improving the quality of maternity services. Midwifery. 2010;26(6):e21–4.

40. Kim SY., S. A. (2014). Association of maternal body mass index, excessive weight gain, and gestational diabetes mellitus with large-for-gestational-age births. Retrieved from https://reference.medscape.com/medline/abstract/24785599.

41. Kirkeby Hansen, A. W. (2007). Elective caesarean section and respiratory morbidity in the term and near-term neonate. Acta obstetricia et gynecologica Scandinavica, 86(4), 389-394.

42. Klemetti R, C. X. (2010). Cesarean section delivery among primiparous women in rural China: an emerging epidemic. Am J Obstet Gynecol. 2010;202(1):65.e1- 65.e656. doi:10.1016/j.ajog.2009.08.032.

43. Laiane Santos Eufrásio, D. E. (18). Brazilian regional differences and factors associated with the prevalence of cesarean sections. Fisioter Mov. 2.

44. Laws, P. &. (2009). Australia's mothers and babies 2007. Sydney, Australia: National Perinatal Statistics Unit.

45. Liu, Y. L. (2014). A descriptive analysis of the indications for caesarean section in mainland China. . BMC Pregnancy and Childbirth,.

46. Long, Q. K. (2015). Caesarean section rates in Mozambique. BMC Pregnancy and Childbirth, 15(1), 1–9. https://doi.org/10.1186/s12884-015-0686-x.

47. Manyeh, A. K. (2018). Socioeconomic and demographic factors associated with caesarean section delivery in Southern Ghana: Evidence from INDEPTH Network member site. BMC Pregnancy and Childbirth, 18(1).

48. Maputle MS. Support provided by midwives to women during labour in a public hospital, Limpopo Province, South Africa: a participant observation study. BMC Pregnancy Childbirth. 2018;18(1):210.

49. Mashamba, T. J. (2021). Caesarean Section. *Current Topics in Caesarean Section*, 67.

50. Mia, M. N. (2019). Socio-demographic, health and institutional determinants of caesarean section among the poorest segment of the urban population: Evidence from selected slums in Dhaka, Bangladesh. . SSM Popul Health. 2019;8:100415. Published 2019 Jun 2. doi:10.1016/j.ssmph.2019.100415.

51. Mitchell, A. (2018). "A Review of Mixed Methods, Pragmatism and Abduction Techniques." *The Electronic Journal of Business Research Methods* 16(3):103–16.

52. Mohammadbeigi, A. F. (2013). Fetal macrosomia: risk factors, maternal, and perinatal outcome. Annals of medical and health sciences research, 3(4), 546–550. https://doi.org/10.41.

53. Mongbo, V. O. (2016). Quality of caesarean delivery: A cross-sectional study in 12 hospitals in Benin. Revue d'epidemiologie et de sante publique, 64(4), 281-293.

54. Moodley, J. K. (2010). Breech presentation at a district level hospital in South Africa. African Joinals online. DOI: 10.1080/20786204.2010.10873938 .

55. Mose, A., & Abebe, H. (2021). Magnitude and associated factors of caesarean section deliveries among women who gave birth in Southwest Ethiopia: institutional-based cross-sectional study. *Archives of Public Health*, *79*(1), 1-9.

56. Nakimuli, A. N. (2015). Incidence and determinants of neonatal morbidity after elective caesarean section at the national referral hospital in Kampala, Uganda. BMC Research note.

57. Nassar N, &. S. (2001). Australia's mothers and babies 1999. Sydney, Australia (2001).: Perinatal Statistics Series no. 11. AIHW National Perinatal Statistics Unit, .

58. Nilsen, C. (2014). Trends in and socio-demographic factors associated with caesarean section at a large Tanzanian hospital , 2000 to 2013. Int J Equity Health doi: 10.1186/s12939-014-0087-1.

59. Noli, S. A. (2019). Preterm Birth, Low Gestational Age, Low Birth Weight, Parity, and Other Determinants of Breech Presentation: Results from a Large Retrospective Population-Based Study. BioMed Research International, 2019. https://doi.org/10.1155/2019/9581439 S.

60. Notzon FC, C. S. (1994). Cesarean section delivery in the 1980s: international comparison by indication. Aamerican Jonurnal of Obstetrics and Gynecology.

61. OECD. (2017). "Caesarean Section" in health at glance. Retrieved from https://doi.org/10.1787/health_glance-2017-66-en.

62. Penn, Z. &.-M. (2001). Indications for caesarean section. . Best Practice and Research: Clinical Obstetrics and Gynaecology, 15(1), 1–15. https://doi.org/10.1053/beog.2000.0146.

63. Place, K. K. (2019). Success of trial of labor in women with a history of previous cesarean section for failed labor induction or labor dystocia: a retrospective cohort study. BMC Pregnancy and Childbirth.

64. Ross, M. G. (2020, 4 2). Fetal Growth Restriction: Practice Essentials, Causes of Intrauterine Growth Restriction, Perinatal Implications. Retrieved from emedicine.medscape.com: https://emedicine.medscape.com/article/261226-overview#a2

65. Sandström, A. C. (2012). Labour dystocia-risk of recurrence and instrumental delivery in following labour-a population-based cohort study . BJOG: An International Journal of Obstetrics and Gynaecology, 119.

66. Saunders, M.(2019). *Research Methods for Business Students*. Eighth edition.

67. Sanjivani, A. (2014). Rising caesarean section rate: a matter of concern? Int J Reprod Contracept Obstet Gynecol. DOI: 10.5455/2320-1770.ijrcog20140979.

68. Sanni Yaya, O. A. (2018). Disparities in caesarean section prevalenceand determinants across sub-Saharan Africacountries. Global HealthResearch and Policy.

69. Seffah, J. D.-B. (2014). Current Trend in Vaginal Birth After Caesarean Section (Vbac) in Accra. . Journal of the West African College of Surgeons, 4(2), x–xi.

70. Seffah, J. D.-B. (2015). Vaginal Birth After A Previous Caesarean Section: Current Trends And Outlook In Ghana. Journal of the West African College of surgeons, 1-15.

71. Sehhatie F, Najjarzadeh M, Zamanzadeh V, Seyyedrasooli A. The effect of midwifery continuing care on childbirth outcomes. Iran J Nurs Midwifery Res. 2014;19(3):233.

72. Shakibazadeh E, Namadian M, Bohren MA, Vogel JP, Rashidian A, Nogueira Pileggi V, et al. Respectful care during childbirth in health facilities globally: a qualitative evidence synthesis. BJOG Int J Obstet Gynaecol. 2018;125(8):932–42.

73. Shimoda K, Horiuchi S, Leshabari S, Shimpuku Y. Midwives' respect and disrespect of women during facility-based childbirth in urban Tanzania: aqualitative study. Reprod Health. 2018;15(1):8.

74. Singh, P. H. (2018). High prevalence of cesarean section births in private sector health facilities- analysis of district level household survey-4 (DLHS-4) of India. . BMC Public Health, 18(1), 1–10. https://doi.org/10.1186/s12889-0.

75. Sobhy, S., Arroyo-Manzano, D., Murugesu, N., Karthikeyan, G., Kumar, V., Kaur, I., & Thangaratinam, S. (2019). Maternal and perinatal mortality and complications associated with caesarean section in low-income and middle-income countries: a systematic review and meta-analysis. *The Lancet*, *393*(10184), 1973-1982.

76. Soto-Vega, E. C.-H.-F. (2015). Rising trends of cesarean section worldwide: a systematic review . Obstet Gynecol Int J, 3(2), 00073.

77. Souza, J. P., Gülmezoglu, A. M., Lumbiganon, P., Laopaiboon, M., Carroli, G., Fawole, B., & Ruyan, P. (2010). Caesarean section without medical indications is associated with an increased risk of adverse short-term maternal outcomes: the 2004-2008 WHO Global Survey on Maternal and Perinatal Health. *BMC medicine*, *8*(1), 1-10.

78. Srivastava A, Avan BI, Rajbangshi P, Bhattacharyya S. Determinants of women's satisfaction with maternal health care: a review of literature from developing countries. BMC Pregnancy Childbirth. 2015;15(1):97.

79. Thomas, J. (2001). National Sentinel Caesarean Section Audit Report. Clinical Effectiveness Support Unit, RCoG, RCOG Press.

80. Tita, A. T. (2012). When Is Primary Cesarean Appropriate: Maternal and Obstetrical Indications. . Seminars in Perinatology, 36(5), 324–327. https://doi.org/10.1053/j.semperi.2012.04.014.

81. Ugwa, E. A. (2015). Caesarean section and perinatal outcomes in a sub-urban tertiary hospital in North-West Nigeria. Nigerian medical journal: journal of the Nigeria Medical Association, 56(3), 180.

82. United Nation Population Fund: *Giving Birth Should Not Be A Matter Of Life And Death*. UNFPA; 2012.

83. Volpe, F. M. (2011). Correlation of Cesarean rates to maternal and infant mortality rates: an ecologic study of official international data. Revista panamericana de salud pública, 29, 303-308.

84. Wirsiy, F. S., Nsagha, D. S., Njajou, O. T., & Besong, J. B. (2019). Prevalence and associated risk factors of HIV among pregnant adolescents and adolescent Mothers in the Kumbo west health District of Cameroon. *Journal of Infectious Diseases and Epidemiology*, *5*(10).

85. World Health Organisation (2016). *Maternal mortality: fact sheet*. In. Switzerland: WHO.

86. World Health Organization. (2016). WHO recommendations: Intrapartum care for a positive childbirth experience.

87. Zanardo, V. S. (2004). Neonatal respiratory morbidity risk and mode of delivery at term: influence of timing of elective caesarean delivery. Acta pædiatrica, 93(5), 643-647.

88. Zweigenthal, V. D. (2017). Assessing the impact of a waiting time survey on reducing waiting times in urban. . Journal of Public Health in Africa, 8(639), 98–102. https://doi.org/10.4081/jphia.2017.

APPENDIX I: QUESTIONNAIRE

UNIVERSITY FOR DEVELOPMENT STUDIES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF POPULATION AND REPRODUCTIVE HEALTH

Informed Consent Form

Introduction

Hello. My name is Sara Adu, a student from the university for development studies. I am studying for a master's degree at the University (UDS). As part of my studies, I am carrying out research on caesarean sections at the TTH. The study is in partial fulfilment of my academic requirements. By participating in the study, you will provide vital information that can be used to improve the care of women who give birth at the hospital.

It is for this purpose that I am kindly requesting for your participation by answering a few questions related to the study which may take about **30 minutes** of your time. In case you choose to participate, your name or identity will not be revealed to anyone. In addition, your participation in this study will not attract any financial rewards but will be on **voluntary** basis, you can choose not to answer any of the question(s). Just like those who may choose not to participate in answering any of these questions, their decision will be respected. Be assured that the information you give will only be used for purposes of this academic study.

Signature:

I have read/been read to the above consent statement and understood that my decision to participate or not to participate in the study is voluntary and that I will not get financial benefits by participating in this study.

Please, fill the following sub-section **(If YES, proceed to Q1, if No, terminate session by thanking the person):**

YES, I have agreed to participate:

Signature/Right thumb Print _____ ***DATE:*** _____

NO, I have refused to participate

Signature/Right thumb Print _____ ***DATE:*** _____

Person Administering Consent:
I, _____, confirms that the above consent was read and signed in my presence: _____

Questionnaire

BACKGROUND INFORMATON	
Name of Interviewer	
Date of Interview	
Respondent ID	
ANC card number	

Q#	**Question**	**Responds**	**code**
	Section A: Socio-demographics		
1	What is your age (in years)?	…….	
2	What is the highest level of education of attended?	1. No education 2. Primary 3. Junior High School 4. Senior High School 5. Tertiary 6. Informal education	
3	What is your marital status?	1. Single 2. Married 3. cohabitation 4. Divorced/separated	
4	What is your ethnicity?	1. Dagomba 2. Mamprusi 3. Gonja	

		4. Others specify ……	
5	What is your occupation?	1. Farmer 2. Trader 3. Unemployed 4. Public servant 5.Others specify …….	
6	What is your monthly income?	GHS…….	
7	What is your area of residence?	1. Rural 2. Urban 3. Peri urban	
8	How many people lives in your household?	…….	
9	What is your religion?	1. Christian 2. Islam 3. Traditional African Religion 4. Others……	
	Section B: Obstetric History		

10	How many pregnancies have you had?	……..	
11	How many children do you have?	…….	
12	Did you attend antenatal care (ANC) during your last pregnancy?	1. Yes 2. No	
13	If yes how many times? (**Verify from ANC book**)	……..	
14	What influenced you to attend that number of ANC?		
15	How many weeks/months was your pregnancy when you first attended ANC?	…… ……	
16	What influenced your booking of ANC?	……	
17	If no to question 12 why?	…… …… …… …… …… …… …… …… …… …… .	
18	When was your last ANC visit? **[Verify from ANC book]**	……	
20	What was your mode of delivery?	1. Spontaneous vaginal delivery 2. Elective caesarean section	

		3. Emergency caesarean section	
21	What is your date of delivery of your last baby? **[Verify from ANC book]**	……	
22	How many weeks or months was your last pregnancy when you gave birth?**[Verify from ANC book]**	……	
23	What was the birth weight of your last child? **[Verify from ANC book]**	……	
24	What is the sex of the child?	1. Male 2. Female	
25	Did your baby experienced any complication after deliver	1. Yes 2. No	
26	If yes what was it?	…… …… …… …… ……..	
27	Were you having any underlying health issues before or during your last pregnancy?	1. Yes 2. No	
28	Did you experience any complication during delivery? **[Verify from ANC book]**	1. Yes 2. No	
29	If yes what was it?	…… …… …… …… ……..	

Section C: Knowledge level of postnatal mothers on caesarean section

Instructions: This section assesses postnatal mothers' knowledge on caesarean section. Please respond to the statements by ticking (√) either "Yes", "No" or "Don't know" in the space provided.

No.	Statement	Yes	No	Don't know
30	CS is done for a woman who is in labour for a long time			
31	CS may be done when the woman is carrying twins			
32	CS may be done for a woman who is carrying a big baby			
33	Vaginal delivery is not possible after a CS			
34	CS may require blood transfusion			
35	CS requires longer maternal hospital stay after delivery (2-4 days)			
36	CS distort sexual libido after delivery			
37	CS does not require medicine (anaesthesia) before it is done			
38	CS does not require the consent of the woman before it is done			
39	CS saves the life of the mother			
40	CS saves the life of the baby			

(Adopted from Ansah, 2018)

Section D: Lived experiences of women before and after caesarean section

Could you kindly share with me the experiences you had in this hospital concerning the care rendered by the health professionals in terms of these areas?

41. Pain management……

42. Education prior to surgery……

43. Nursing care, in terms of relation

……

44. Other experience you would like to share……

45. Would you recommend this hospital to your friend or family relative? If yes why…….

	Section F (i): Indicators of caesarean section		
46	Have you had a CS before?	1. Yes 2. No	
47	If yes, how many times?	…….	
48	If yes, what was the indication	…… …… …… …….....	

		…… …… …… …… ……	

Section F (ii): This section is for those who underwent CS as mode of delivery.

49. Which of the following was/were the reason(s) why you underwent this CS? **[Tick all that apply]**

i. Prolong labour

iii.Eclampsia

ii. Breech

iii. Small pelvis

iv. Failed Induction

v. Multiple Gestation

vi. Ante Partum Hemorrhage (APH)

vii. Fetal distress

viii. Oligohydramnios

ix. Bad obstetric history

x. Cord around neck

xi. Don't know.

xii. Others specify

Thank you for your time

APPENDIX II: ETHICAL CLEARANCE

Kwame Nkrumah
University of Science
and Technology, Kumasi

College of Health Sciences
SCHOOL OF MEDICINE AND DENTISTRY

COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS

Our Ref: CHRPE/AP/047/24 15th January 2024

Ms. Sarah Adu
Department of Population and Reproductive Health
University for Development Studies.
TAMALE

Dear Madam,

LETTER OF APPROVAL

Protocol Title: ***"Prevalence of Caesarean Section among Postnatal Mothers and the Lived Experiences of Mothers Who Have Undergone the Procedure at the Tamale Teaching Hospital."***

Proposed Site: ***Tamale Teaching Hospital.***

Sponsor: ***Self-Sponsored.***

Your submission to the Committee on Human Research, Publications, and Ethics on the above-named protocol refer

The Committee reviewed the following documents:

- A notification letter of 21st December, 2023 from the Tamale Teaching Hospital (study site) indicating approval for the conduct of the study at the Hospital.
- A Completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Protocol.
- Questionnaire.

The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, beginning **15th January 2024** to **14th January 2025** renewable thereafter. The Committee may, however, suspend or withdraw ethical approval at any time if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you for your application.

Yours faithfully,

Rev. Prof. John Appiah-Poku.
Honorary Secretary
FOR: CHAIRMAN

Room 7, Block L, School of Medicine and Dentistry, KNUST, University Post Office, Kumasi, Ghana
Tel: +233 (0) 3220 63248 **Mobile:** +233 (0)20 9453785 **Email:** chrpe.knust.kath@gmail.com/chrpe@knust.edu.gh