**KNOWLEDGE AND ATTITUDE AMONG PREGNANT WOMEN TOWARDS CAESAREAN SECTION AT TAMALE TEACHING HOSPITAL IN THE NORTHERN REGION OF GHANA**

**ABSTRACT**

**Background:** Caesarean Section (CS) is beneficial when the baby must be born earlier than the anticipated date of delivery and it is critical to save lives in situations where vaginal deliveries pose risks to neonates or both neonates and mothers, so for potential mothers and their partners to choose a birth technique, CS is an important choice for the safety of both the mother and the unborn child.

**Objectives:** The primary goal of the study is to ascertain to assess the knowledge and attitude among pregnant women towards caesarean section in Tamale Teaching Hospital in the Northern region of Ghana.

**Methods**: A quantitative descriptive cross-sectional design was employed using 203 prenatal and postnatal women, including pregnant women above the age of 15 years who were seen at ANC in Tamale Teaching Hospital. A well-structured questionnaire was utilized to gather data, the data was analyzed using SPSS and displayed using tables and charts.

**Results**: The majority of respondents, 97.5% (198 individuals) reported that they had heard of a caesarean section. This high level of awareness suggests that the term Cesarean section is widely recognized among the surveyed group. A significant majority of respondents, nearly 80% (162 individuals), expressed their agreement that CS does not affect future fertility, indicating a generally positive attitude towards the procedure in this context. The results also revealed that a substantial proportion of respondents expressed negative views regarding CS for instance,18.2% of respondents indicated agreement with the statement that “CS is an abomination” and 21.6% also agreed with the statement that women who delivered by CS have a tag of not being a real woman. These findings suggest that a significant portion of the surveyed women hold unfavourable perceptions of CS, highlighting potential misconceptions or stigma associated with this medical procedure.

**Conclusion:** The study achieved a 100% response rate and found that 97.5% of the respondents had good knowledge about CS with nearly 80% having a positive attitude towards the procedure. To improve the acceptance of CS, women attending ANC visits should be educated on the birthing process and the medical options available.

***Keywords: Caesarean Section, Pregnant women, Foetus, Vaginal delivery, Antenatal Care***

INTRODUCTION

Cesarean Section (CS) is usually indicated, in situations where a vaginal delivery would put the baby or mother at risk [[Citation1](https://www.tandfonline.com/doi/full/10.1080/14767058.2023.2278019)], such as pelvic abnormalities, cardiac conditions, fetal distress, malpresentation of the fetus, infection, abnormal placentation or situations in which vaginal birth is generally contraindicated (Maitanmi et al., 2023; Malahayati, 2024). CS can save lives of both mothers and newborns under certain conditions (Suwanrath et al., 2021). The term CS is a procedure used to deliver a foetus and other products of conception through an abdominal and uterine incision after the viability age (which is 28 weeks of gestation in developing countries). The most frequent major procedure performed on women worldwide is CS and the rate is rising (Panti et al., 2018).

The World Health Organization (WHO) according to its recent study has shown that CS are now preferred by some expectant mothers accounting for a greater than 1 in 5 of all deliveries worldwide which equals 21% In line with this study, this figure is anticipated to increase in the ensuing 10 years, with nearly one-third of all newborns which represents 29% projected that before 2030, would be delivered via CS. In spite of the fact that CS can be a crucial and life-saving treatment when done without a valid medical reason, can put mothers and newborns in unreasonable danger for both short-lived and prolonged health problems (WHO, 2021).

Out of 94.5% of all live births, 21.1% of pregnant women gave birth through CS as shown by the most recent data (2010–2018) from 154 countries globally, with the rate varying from a range in Latin America and the Caribbean as a whole 42.8%, from 5% in the Saharan Africa (Betran et al., 2021).

Since 1990, CS has improved globally in Eastern Asia, Western Asia, and Northern Africa rising by at least 49% points, whilst sub-Saharan Africa (SSA) and Northern America saw increases of only 3% and 9% points, respectively. By 2030, 38 million caesarean deliveries will be done on 28.5% of women globally, with 7.1% of those births taking place in SSA and 63.4% in Eastern Asia. Of those 38 million caesarean births, 33.5 million take place in low- and middle-income nations each year (Betran et al., 2021). With 40.5% of the global total, Latin America and the Caribbean are rated first, Northern America came in second with (32.3%), followed by Oceania (31.1%), Europe (25%) and Asia (19.2%). Between 1.4% and 51.8%, Africa’s average rate of CS of 7.3%. With a rate of 27.8%, Northern Africa has the highest rate, while Western Africa has a rate of 3% on average and a range of 1.4-11.4%. According to statistics, 13% of Ghanaian women who have live births give delivery through CS (Prah et al., 2017) and less than 2% CS birth rates are linked to higher maternal mortality rates as this shows a true lack of access to high-quality obstetric. Amike & Yidana, (2022) stated that increased acceptance for CS by women who need it is one of the most efficient methods, according to research, to lower maternal mortality. Pregnant women's unfavourable attitudes toward CS is largely a result of false societal stereotypes about the procedure. Numerous studies have shown that vaginal birth is seen as a sign of femininity in some contexts in SSA, whereas women who undergo CS are considered weak and are a reproductive failure (Ayebeng et al., 2022).

MATERIALS AND METHODS

Study design: A quantitative approach was used to conduct a cross-sectional design to evaluate the knowledge and perception among pregnant women towards CS in the Tamale Teaching Hospital. A cross-sectional design is a method of collecting data from a large number of people and the method was employed for this research it allows researchers to compare many different variables at the same time. This study design is ideal because it helps researchers ask questions, report answers, and interpret and describe the relation between variables.

Setting: The study was conducted in Tamale Teaching Hospital in the Northern region of Ghana located in Tamale Metropolitan district with latitudes 9ᵒ23’29’’ north and longitude 0ᵒ 49’27 commissioned on February 24, 1974 as a regional hospital and serves as a referral hospital for northern and neighbouring regions of Ghana in 2005, the hospital was converted from a regional hospital into a Teaching Hospital, being the main hospital in Northern Ghana.

According to Act 525 of the Ghana Health Service and Teaching Hospital Act of 1996, the hospital’s mission is established. The requirements of the directive give the facility the ability to perform in three crucial dimensions, including offering cutting-edge clinical health services, contributing to the education of medical science of both undergrad and post and lastly, understanding health-related research issues to enhance healthcare.

Target Population: The complete set of people or things that the researcher is interested in generalizing the results to is referred to as the study population (Mogre et al., 2017). The target population included postnatal and prenatal women attending ante-natal care at TTH who are more than 15 years old.

Inclusion Criteria: Prenatal and postnatal clients attending antenatal care at TTH who are more than 18 years of age. Pregnant women who consented to take part in the study and have undergone CS in the past.

Exclusion Criteria: Pregnant women who are not willing to partake in the study. Women who delivered in TTH but do not attend postnatal care at TTH and are below the age of 15 years.

Sampling Technique and Size: Casteel & Bridier, (2021) defined sampling technique as a technique employed by a researcher to systematically select a relatively smaller number of representative items or individuals from a pre-defined population to serve as subjects. A simple random sampling technique was used to select the desired number of pregnant women who participated in the study. Thus, each pregnant woman above 18 years was selected randomly with each having an equal chance of being chosen. Data was collected from postnatal and prenatal women attending ANC at TTH. Every pregnant woman was permitted to take part in the exercise provided they met the inclusion criteria of the study. The estimated sample size used for the study was 203 pregnant women above the age of 18 attending ante-natal care at TTH.

Data Collection Instrument: A structured questionnaire was used for this study. This method was used because it limits answers from participants that have no bearing on the study objectives. The questionnaire was structured in English Language and 3 sections based on the study objectives. Section A assessed the socio-demographic data of respondents, Section B determined the knowledge level of pregnant women towards CS, and Section C determined the attitude of the pregnant women towards CS.

Data Collection Procedure: Participants who qualified for the study were contacted with the researcher-developed questionnaire when the time for data collection was due. The purpose of the study was clearly made known to them before the administration of the questionnaire. Afterwards, informed written consent was sought from participants after explaining the purpose of the study to them before the administration of the questionnaires. All items on the questionnaire that needed further explanation were enlightened where necessary. A period of one week was used for the entire data collection, and about 30 minutes were spent on each questionnaire that was administered. On each day of the data collection, the questionnaire was entered into Microsoft Excel.

Ethical Consideration: For ethics in research, an introductory letter was obtained from the School of Nursing and Midwifery, University for Development Studies and was sent to the research department of TTH to gain permission for data collection. Prior to the administration of the questionnaires, the researchers sought consent from the ANC in-charge who accepted us and offered us a quiet room to take the data. Also, consent was sought from each participant, and names of respondents were excluded from the demographic data for confidentiality purposes. Participants were made aware that participation is voluntary and it would not have any consequence for them if they decided not to participate. Also, participants were made aware that information obtained will be confidential and valued, and will be used for the purpose of the study only. The completed questionnaires were handled by the researchers as well as the supervisor only; no other person had access to their information.

**STUDY FINDINGS**

The table provides a comprehensive overview of the demographic characteristics of the 203 participants in our research study focusing on knowledge and attitudes among pregnant women towards Caesarean section at Tamale Teaching Hospital in the Northern Region of Ghana.

Table 1 Socio-demographic information

|  |  |  |
| --- | --- | --- |
| **VARIABLE** | **FREQUENCY** | **PERCENTAGE (%)** |
| **Age range** |  |  |
| 15-20 | 20 | 9.9 |
| 21-25 | 40 | 19.7 |
| 26-30 | 49 | 24.2 |
| 31-35 | 50 | 24.6 |
| 36-40 | 35 | 17.2 |
| 41+ | 9 | 4.4 |
| **Religion**  |  |  |
| Christianity  | 52 | 25.6 |
| Islam  | 148 | 72.9 |
| Traditional  | 3 | 1.5 |
| **Marital status**  |  |  |
| Married  | 172 | 84.7 |
| Single  | 28 | 13.8 |
| Co-habitation  | 3 | 1.5 |
| **Parity**  |  |  |
| 0 | 37 | 18.2 |
| 1 | 25 | 12.3 |
| 2 | 49 | 24.1 |
| 3 | 35 | 17.2 |
| 4 | 57 | 28.1 |
| **Ethnicity**  |  |  |
| Dagomba  | 138 | 68.0 |
| Hausa  | 17 | 8.4 |
| Akan  | 33 | 16.3 |
| Fulani  | 9 | 4.4 |
| Frafra  | 6 | 3.0 |
| **Level of education**  |  |  |
| Primary  | 13 | 6.4 |
| JHS | 26 | 12.8 |
| SHS | 49 | 24.1 |
| Tertiary  | 65 | 32.0 |
| None  | 50 | 24.6 |
| **Occupation**  |  |  |
| Employed  | 46 | 22.7 |
| Unemployed  | 44 | 21.7 |
| Self-employed  | 74 | 36.5 |
| Housewife | 18 | 8.9 |
| Student  | 21 | 10.3 |
| **Total**  | 203 | 100% |

4.1.2 Knowledge Level of Women in Caesarean Section

Figure 1 illustrates the responses of participants regarding their awareness of Caesarean sections, an essential aspect of this study. Among the 203 participants, a significant majority, 97.5%, reported that they had heard about Caesarean sections, while only a small fraction, 2.5%, indicated that they had not heard about this medical procedure.

Figure 1: Awareness of caesarean section

Source: field data (2023)

Table 2 provides data pertaining to two key aspects of the study: the source of knowledge about Caesarean sections and participants' understanding of what a Caesarean section entails.

The majority of participants, 71.7%, reported that their primary source of knowledge about Caesarean sections is the hospital. This indicates that healthcare institutions play a significant role in disseminating information about this medical procedure. Other sources of knowledge include people, community, or friends, cited by 11.8% of participants, suggesting that informal networks and personal experiences contribute to awareness. A smaller percentage of participants mentioned school (7.4%), television (5.9%), and radio (2.5%) as sources of information about Caesarean sections.

The data further reveals a strong understanding among the participants regarding what a Caesarean section involves, with 96.1% correctly identifying it as "an incision/cut in the abdomen to remove the baby." This high level of understanding suggests that the participants have a clear grasp of the basic concept of a C-section. A small percentage, 2.5%, believed it to be "an incision/cut in the peritoneum to remove the baby," while 1.5% were unsure. It's worth noting that the majority of participants correctly identified the procedure, indicating a generally accurate understanding of the sample.

Table 2 The source of knowledge of respondents

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **VARIABLE** | **FREQ** | **(%)** | **M** | **SD** |
| **Ever heard about Caesarean section** |  |  |  |  |
| Yes | 201 | 98.5 | 1.02 | 0.14 |
| No | 2 | 1.5 |
| **Source of knowledge**  |  |  |  |  |
| Hospital  | 142 | 71.7 | 1.64 | 1.21 |
| People/Community/Friends | 24 | 11.8 |
| Radio  | 5 | 2.5 |
| School  | 15 | 7.4 |
| Television  | 12 | 5.9 |
| **Caesarean section** |  |  |  |  |
| An incision/cut in the abdomen to remove the baby | 195 | 96.1 | 1.05 | 0.29 |
| An incision/cut in the peritoneum to remove the baby | 5 | 2.5 |
| Not sure | 3 | 1.5 |
| **TOTAL** | 203 | 100% | **GMA=1.24** |  |

Source: field data (2023) M=mean SD= Standard deviation GMA= Grand mean average

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **VARIABLE**  | **FREQ** | **(%)** | **M** | **SD** |
| **Caesarean section is safe for the mother**  |  |  |  |  |
| SA/ A | 159 | 84.3 | 3.01 | 1.45 |
| SD/D | 26 | 12.9 |
| N | 18 | 8.9 |
| **It is safe for the baby** |  |  |  |  |
| SA/ A | 194 | 95.5 | 3.09 | 1.42 |
| SD/D | 2 | 1.1 |
| N | 7 | 3.4 |
| **It is less painful than vaginal delivery**  |  |  |  |  |
| SA/ A | 100 | 49.3 | 3.85 | 0.96 |
| SD/D | 52 | 25.6 |
| N | 51 | 25.1 |
| **It requires blood transfusion in some cases**  |  |  |  |  |
| SA/ A | 199 | 98.0 | 3.44 | 1.15 |
| SD/D | 4 | 2.0 |
| N | 0 | 0 |
| **It requires longer hospital stay after delivery** |  |  |  |  |
| SA/ A | 170 | 83.7 | 3.46 | 1.26 |
| SD/D | 14 | 6.9 |
| N | 19 | 9.4 |
| **Vaginal delivery is possible after CS** |  |  |  |  |
| SA/ A | 189 | 93.0 | 3.46 | 1.17 |
| SD/D | 8 | 4.0 |
| N | 6 | 3.0 |
| **Caesarean section saves the life of the newborn baby** |  |  |  |  |
| SA/ A | 194 | 95.6 | 3.22 | 1.37 |
| SD/D | 1 | 0.5 |
| N | 8 | 3.8 |
| **It may affect emotional bonding with the baby** |  |  |  |  |
| SA/ A | 9 | 4.4 | 3.15 | 0.77 |
| SD/D | 171 | 84.3 |
| N | 23 | 11.3 |
| **TOTAL** | 203 | 100 | **GMA=3.34** |  |

Table 3 shows the test of respondents’ knowledge on CS

Source: Field data (2023) SA- Strongly Agree, A- Agree, SD- Strongly disagree, D- Disagree, N- Neutral.

##  4.1.3 Attitude of Pregnant Women Towards Cs in Tamale Teaching Hospital

The research findings provided valuable insights into the attitudes and preferences of the surveyed individuals concerning Caesarean sections (CS).

Table 4 below offers a concise summary of survey data related to the attitudes and preferences of respondents concerning Caesarean sections (CS). Each row in the table corresponds to a specific statement or question related to CS, and the data is presented in terms of frequency (FREQ) and the percentage (%) of respondents who provided each type of response.

Starting with the first statement, "CS does not affect future fertility," nearly 80% of respondents (162 individuals) agree or strongly agree with this statement, indicating that they believe that CS does not have a significant impact on future fertility. In contrast, about 16.7% (34 respondents) disagree or strongly disagree with this notion, while a smaller percentage, 3.4% (7 respondents), express neutrality on the matter.

Moving to the second statement, "I prefer CS without indication," only 4.4% (9 respondents) express a preference for Caesarean section without a medical indication, while the majority, 85.2% (173 respondents), disagree or strongly disagree with this preference. Additionally, 10.3% (21 respondents) remain neutral, neither supporting nor opposing this preference.

The third statement, "I have had complications from CS before," reveals that 22.2% (45 respondents) have experienced complications from previous CS procedures. In contrast, 78.3% (140 respondents) have not experienced complications or disagree with the statement, while 8.9% (18 respondents) remain uncertain or neutral about their previous CS experiences.

The fourth statement, "I will go in for CS in case of an emergency," showcases that 83.7% (170 respondents) are willing to undergo CS in case of an emergency, demonstrating a high level of readiness for this scenario. Conversely, 12.8% (26 respondents) are not willing to do so, and 3.4% (7 respondents) remain neutral regarding their response to emergency CS situations.

The fifth statement, "I would prefer CS to avoid the lithotomy position," reveals a very niche preference, with only 4% (4 respondents) favouring CS to avoid a specific position during childbirth. The majority, 2.0% (189 respondents), disagrees with this preference, while 4.9% (10 respondents) remain neutral on the subject.

Regarding the sixth statement, "I have regrets about delivery by CS," a minority of 8.9% (18 respondents) express regrets about previous deliveries via CS. In contrast, 84.8% (172 respondents) do not have regrets or disagree with the statement, while 6.4% (13 respondents) maintain a neutral stance regarding regrets.

The seventh statement, "I am willing to undergo CS if indicated," indicates that 66.0% (134 respondents) are willing to undergo CS if it is medically indicated, showing a generally positive attitude toward CS when recommended by healthcare professionals. In contrast, 25.6% (52 respondents) are not willing to do so, and 8.4% (17 respondents) remain neutral on the topic.

Finally, the eighth statement, "I am willing to undergo a repeated CS," demonstrates that only 7.9% (16 respondents) express a willingness to undergo repeated CS procedures while the majority, 75.4% (153 respondents), are not willing to do so. Additionally, 16.7% (34 respondents) maintain a neutral stance on the subject.

Table 4 Results about the attitudes of pregnant women towards CS.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **VARIABLE**  | **FREQ** | **(%)** | **M** | **SD** |
| **CS does not affect future fertility** |  |  |  |  |
| SA/A | 162 | 79.9 | 3.51 | 1.021 |
| SD/D | 34 | 16.7 |
| N | 7 | 3.4 |
| **I prefer CS without indication**  |  |  |  |  |
| SA/A | 9 | 4.4 | 3.05 | 0.810 |
| SD/D | 173 | 85.2 |
| N | 21 | 10.3 |
| **I have had complications from CS before** |  |  |  |  |
| SA/A | 45 | 22.2 | 3.25 | 0.815 |
| SD/D | 140 | 78.3 |
| N | 18 | 8.9 |
| **I will go in for CS in case of an emergency** |  |  |  |  |
| SA/A | 170 | 83.7 | 3.67 | 0.882 |
| SD/D | 26 | 12.8 |
| N | 7 | 3.4 |
| **I would prefer CS to avoid the lithotomy position** |  |  |  |  |
| SA/A | 4 | 93.1 | 2.95 | 0.623 |
| SD/D | 189 | 2.0 |
| N | 10 | 4.9 |
| **I have regrets about delivery by CS** |  |  |  |  |
| SA/A | 18 | 8.9 | 3.09 | 0.684 |
| SD/D | 172 | 84.8 |
| N | 13 | 6.4 |
| **I am willing to undergo CS if indicated** |  |  |  |  |
| SA/A | 134 | 66.0 | 3.62 | 0.906 |
| SD/D | 52 | 25.6 |
| N | 17 | 8.4 |
| **I am willing to undergo a repeated CS** |  |  |  |  |
| SA/A | 16 | 7.9 | 3.26 | 0.919 |
| SD/D | 153 | 75.4 |
| N | 34 | 16.7 |
| **TOTAL** | 203 | 100 |  |  |

Source: Field data (2023) SA- Strongly Agree, A- Agree, SD- Strongly disagree, D- Disagree, N- Neutral.

Figure 2 below shows the results of respondent’s reasons for refusing repeated CS.

**DISCUSSION**

## Knowledge Level of Pregnant Women On Caesarean Section

The majority of participants fall within 25-40 age range, with 34.0% aged 31-35 and 32.5% aged 36-40. This was expected as this represents the reproductive age group commonly seen in the antenatal clinic (Amike, 2022). Notably, an overwhelming majority of respondents, 97.5% (198 individuals), reported that they had heard about Cesarean sections. This high level of awareness suggests that the term "Cesarean section" is widely recognized among the surveyed group. On average, their knowledge level was rated at 1.02, indicating a basic understanding of this common surgical procedure. The relatively low standard deviation of 0.14 implies a consistent awareness level among the respondents, with minimal variation. In contrast, a small proportion, just 2.5% (5 respondents), indicated that they had not heard about Cesarean sections. While this percentage is relatively low, it is crucial to consider that even a small number of individuals lacking awareness can have implications for healthcare education and communication efforts. Ensuring that these individuals receive information about C-sections is essential for their understanding of pregnancy and childbirth. The findings in this study corroborate with research findings conducted in northern Ghana where the majority of respondents (80%) had fair to good knowledge of the surgical procedure (Amike, 2022). On the other hand, a study in Ghana reported low levels of knowledge (39.5%) among respondents (Odei-Lartey et al., 2020) but lower than a study conducted in Nigeria (Ansah, 2018) where they reported 62.42% of women had good knowledge about CS. The variance could be due to the difference in the educational level of the respondents in our setting as well as frequent visits of pregnant women for antenatal care.

Regarding the sources of knowledge, the data reveals that hospitals play a central role, with 71.7% (142 respondents) reporting hospitals as their primary source of information about Cesarean sections. This finding highlights the pivotal role of healthcare institutions in disseminating information about medical procedures like C-sections. However, the wide standard deviation of 1.21 suggests that there may be variability in the quality and comprehensiveness of information received from hospitals. This variability emphasizes the importance of standardizing and improving the information provided by healthcare facilities to ensure that patients and expectant parents receive consistent and accurate guidance. Gauging from the grand mean averages (GMA) in Table 2, it can be seen that the findings that hospitals are the primary source of information about CS average center of belief/choice of the respondents. These findings concord with other previous literature where studies conducted showed hospitals, nurses and doctors play a key role in disseminating Healthcare information regarding medical and surgical procedures (Adageba & Danso, 2018)

The diversity in other sources of knowledge, such as community, friends, radio, school, and television, underscores the need for a multi-faceted approach to healthcare education. While hospitals are a primary source, complementing this with community-based education and school-based programs can help provide a more holistic understanding of C-sections. Similar findings have been reported by Amike, (2022).

Furthermore, when it comes to the definition of Cesarean sections, the majority of respondents, 96.1% (195 individuals), correctly identified it as "an incision/cut in the abdomen to remove the baby." Their average understanding was rated at 1.05, indicating a high degree of accuracy in this regard. The relatively low standard deviation of 0.29 suggests a consistent and clear comprehension of the procedure among the respondents.

However, a small percentage, 2.5% (5 respondents), provided an alternative definition, and an even smaller subset, 1.5% (3 respondents), expressed uncertainty about the definition. These findings highlight the importance of addressing and clarifying any misconceptions or uncertainties among this minority. Ensuring that the definition of Cesarean sections is universally understood can contribute to informed decision-making during childbirth.

## 5.1.2 Attitude of Pregnant Women Towards CS in Tamale Teaching Hospital

The research findings provided valuable insights into the attitudes and preferences of the surveyed individuals concerning Cesarean sections (CS).

Firstly, a significant majority of respondents, nearly 80% (162 individuals), expressed their agreement that CS does not affect future fertility. On average, they rated their agreement at 3.51 on a scale of 1 to 5, indicating a generally positive attitude towards the procedure in this context, with a moderate level of agreement and a relatively wide range of responses, as indicated by the standard deviation of 1.021.

In contrast, a small minority, comprising only 4.4% (9 respondents), conveyed a preference for ECS without a medical indication. On average, their preference level was rated at 3.05, suggesting that ECS without clear medical necessity is not a widely favoured option among the respondents. The standard deviation of 0.810 indicates a degree of variability in this preference.

Approximately 22.2% of the respondents (45 individuals) reported experiencing complications from previous CS procedures. On average, they rated their experience at 3.25, with a standard deviation of 0.815. This finding suggests that a notable portion of the surveyed individuals has encountered complications related to CS in the past, indicating potential concerns or challenges associated with the procedure.

Furthermore, the data highlights a strong inclination towards CS in case of an emergency, with 83.7% (170 respondents) expressing their readiness for this scenario. On average, their willingness was rated at 3.67, signifying a high degree of willingness to opt for CS when a medical emergency arises. The standard deviation of 0.882 implies that while the overall willingness is high, there is some variability in the responses.

Conversely, only a tiny percentage, specifically 4% (4 respondents), indicated a preference for CS to avoid the lithotomy position during childbirth. On average, their preference level was rated at 2.95, with a standard deviation of 0.623. This result underscores that avoiding a particular position during childbirth is not a common reason for choosing CS among the respondents.

Regarding regrets about CS, a minority of 8.9% (18 respondents) reported having regrets about their previous deliveries via CS. On average, their level of regret was rated at 3.09, with a standard deviation of 0.684. This indicates that while some individuals have reservations or regrets about CS, it is not a prevalent sentiment among the surveyed group.

Lastly, a substantial majority, 66% (134 respondents), expressed their willingness to undergo a Cesarean section if it is medically indicated. On average, their willingness was rated at 3.62, suggesting a generally positive attitude towards CS when it is deemed necessary by medical professionals. The standard deviation of 0.906 indicates some variability in the level of willingness among respondents.

In contrast, only a small minority, 7.9% (16 respondents), indicated their willingness to undergo repeated Cesarean sections. On average, their willingness was rated at 3.26, with a standard deviation of 0.919. This finding suggests that a very limited number of respondents are open to multiple CS procedures.

The findings pertaining to the attitudes of the respondents towards CS are similar to research findings conducted in the Komfo Anokye Teaching Hospital of Ghana where the majority of respondents showed positive attitudes towards CS (Adageba & Danso, 2018).

**Association Between Respondents’ Characteristics and Knowledge On Caesarean Section**

The study seeks to investigate the relationship between respondent’s characteristics such as parity, marital status, level of education and knowledge of the surgical procedure among respondents. Table 4 shows the association of each variable with the dependent variable. The multivariate regression analysis shows a significant relationship between the dependent variable and corresponding independent variables, *F* (3,198) (AOR) =0.033 *p<0.05.* this indicates that marital status, parity and level of education play a significant role in the knowledge levels of women undertaking caesarean section (b = 1.08 p-value < .001). Individuals with higher levels of education, a specific number of children, or those who had undergone a caesarean section in the past tended to possess varying levels of knowledge about caesarean sections. These findings suggest that certain demographic and medical factors play a role in shaping individuals' understanding of this surgical procedure. On the other hand, the study did not identify any significant associations between knowledge about caesarean sections and respondents' age, marital status, occupation, or the place where they previously gave birth. In essence, these factors did not seem to influence the level of knowledge individuals had about caesarean sections in a meaningful way. This implies that people from different age groups, marital statuses, occupational backgrounds, and places of previous delivery generally exhibited similar levels of knowledge about caesarean sections. These findings underscore the importance of focusing on education, parity, and previous medical experiences when considering interventions to improve knowledge about this surgical procedure. The findings in this study agree with (Amike, 2022) where they reported a significant association between knowledge about caesarean section and respondents’ characteristics (education p=0.035, parity p=0.012, and previous CS p=0.001). They further reported there was no significant association between knowledge about caesarean section and respondents’ characteristics in relation to age, marital status, occupation and previous place of work.

**Association Between Knowledge of Respondents and Attitudes Shown Towards CS**

The statistical values presented in the analysis, specifically F (6, 196) R2= 0.324 and p<0.001, indicate that there is a strong relationship between respondents' knowledge and their attitudes. The R2 value of 0.324 suggests that approximately 32.4% of the variation in women's attitudes towards caesarean sections can be explained by their knowledge. This substantial proportion of variation explained by knowledge underscores its importance in shaping attitudes.

Additionally, the Adjusted Odds Ratio (AOR) of 0.303 (with a 95% confidence interval) and p<0.001 further supports the hypothesis, indicating that respondents' knowledge significantly influences their attitudes towards caesarean sections. The AOR value of 0.303 suggests that as knowledge increases, the odds of having a positive attitude towards caesarean sections decrease, and this relationship is statistically significant. The findings in this study agree with previous literature conducted in the northern sector of Ghana where the significant association between knowledge and attitude was reported (Amike, 2022).

**CONCLUSION**

It was indicated that marital status, parity and level of education play a significant role in the knowledge levels of women on caesarean section. The study found that 97.5% of the participants reported that they had heard about Cesarean sections with the majority falling within 25-40 age. A small minority, comprising 4.4% and 22.2% of the respondents conveyed a preference for ECS without a medical indication and experiencing complications from previous CS procedures respectively with 83.7% (170 respondents) expressing their readiness for the procedure during emergency cases. Also, a substantial majority, 66% (134 respondents), expressed their willingness to undergo a Cesarean section if it is medically indicated. The participants expressed diverse reasons for refusing to undergo a repeated CS which included fear of pain, fear of dying, fear of being mocked and the procedure being expensive. The result found that 18%,10% and 34% of women rejected repeated CS because of the fear of pain, fear of being mocked and the procedure being expensive, respectively. A percentage of 38 pregnant women also refused to undergo a repeated CS with their reason being fear of dying.

**Disclaimer (Artificial intelligence)**

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

**Reference**

Adageba, R. K., & Danso, K. A. (2008). *AWARENESS AND PERCEPTIONS OF AND ATTITUDES TOWARDS CAESAREAN DELIVERY AMONG ANTENATAL*. *42*(4), 4–7.

Afaya, A., Dzomeku, V. M., Baku, E. A., Afaya, R. A., Ofori, M., Agyeibi, S., Boateng, F., Gamor, R. O., Gyasi-Kwofie, E., & 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.

Ahmed, I., & Ishtiaq, S. (2021). Reliability and validity: Importance in Medical Research. *Methods*, *12*, 13.

Ahmed, W., Abdul-Kareem, M., & Abed, M. T. (2022). Assessment Knowledge of Pregnant Women Toward Cesarean Section in Al-Hilla City. *International Journal of Special Education*, *37*(3).

Al-Rifai, R. H., Elbarazi, I., Ali, N., Loney, T., Oulhaj, A., & Ahmed, L. A. (2021). Knowledge and preference towards mode of delivery among pregnant women in the United Arab Emirates: The Mutaba’ah study. *International Journal of Environmental Research and Public Health*, *18*(1), 36.

Al Sulamy, A. A.-J., Yousuf, S. A., & Thabet, H. A. (2019). Knowledge and attitude of pregnant women toward elective Cesarean section in Saudi Arabia. *Open Journal of Nursing*, *9*(2), 199–208.

Alhassan, A. R. (2022). Prevalence and socioeconomic predictive factors of cesarean section delivery in Ghana. *Menoufia Medical Journal*, *35*(1), 190.

Alshahrani, M. S. (2019). An evaluation of the different types of labor pain relief, preferred methods of pain relief, and effects of social media on awareness and knowledge among pregnant women: A cross-sectional study in the Kingdom of Saudi Arabia. *Saudi Medical Journal*, *40*(9), 914.

Amike, J. (2022). *Knowledge construction of Caesarean Section among women in Northern Ghana*. 1–14.

Amike, J., & Yidana, A. (2022). *Knowledge construction of Caesarean Section among women in Northern Ghana*.

Ansah, J. (2018). *Knowledge, attitude and acceptability of cesarean Section among pregnant women in the Cape Coast Metropolis*. University of Cape coast.

Article, O. (2021). *Pregnant women ’ s knowledge , perception and attitudes towards caesarian section among obstetrics unit attendants in a teaching hospital Connaissances , perceptions et attitudes des femmes enceintes à l ’ égard de la césarienne chez les préposés à l ’ un*. *9*(September), 207–220.

Asah-Opoku, K., Onisarotu, A. N., Nuamah, M. A., Syurina, E., Bloemenkamp, K., Browne, J. L., & Rijken, M. J. (2023). Exploring the shared decision making process of caesarean sections at a teaching hospital in Ghana: a mixed methods study. *BMC Pregnancy and Childbirth*, *23*(1), 1–14.

Ayebeng, C., Okyere, J., Adu-Gyamfi, A. B., Ampofo, E. A., & Dickson, K. S. (2022). *Ethnicity and Delivery by Caesarean Section Among Women in Ghana*.

Bam, V., Lomotey, A. Y., Diji, A. K.-A., Budu, H. I., Bamfo-Ennin, D., & Mireku, G. (2021). Factors influencing decision-making to accept elective caesarean section: A descriptive cross-sectional study. *Heliyon*, *7*(8).

Betran, A. P., Ye, J., Moller, A.-B., Souza, J. P., & Zhang, J. (2021). Trends and projections of caesarean section rates: global and regional estimates. *BMJ Global Health*, *6*(6), e005671.

Casteel, A., & Bridier, N. L. (2021). DESCRIBING POPULATIONS AND SAMPLES IN DOCTORAL STUDENT RESEARCH. *International Journal of Doctoral Studies*, *16*(1).

Colomar, M., Opiyo, N., Kingdon, C., Long, Q., Nion, S., Bohren, M. A., & Betran, A. P. (2021). Do women prefer caesarean sections? A qualitative evidence synthesis of their views and experiences. *PLoS One*, *16*(5), e0251072.

Dasikan, Z., Ozturk, R., & Ozturk, A. (2020). Pelvic floor dysfunction symptoms and risk factors at the first year of postpartum women: a cross-sectional study. *Contemporary Nurse*, *56*(2), 132–145.

Eide, K. T., Morken, N.-H., & Bærøe, K. (2019). Maternal reasons for requesting planned cesarean section in Norway: a qualitative study. *BMC Pregnancy and Childbirth*, *19*(1), 102. https://doi.org/10.1186/s12884-019-2250-6

Hopia, H., Latvala, E., & Liimatainen, L. (2016). Reviewing the methodology of an integrative review. *Scandinavian Journal of Caring Sciences*, *30*(4), 662–669.

Kizito, O. (2021). Determinants of caesarean section rates in private-not-for-profit healthcare facilities: St. Joseph’s Hospital\_ Kitovu. *Cogent Medicine*, *8*(1), 1928939.

KojoPrah, J., Kudom, A., UwumbornyiLasim, O., & KwasiAbu, E. (2017). Knowledge, attitude and perceptions of pregnant women towards caesarean section among antenatal clinic attendants in Cape Coast. *Texila Int J Public Health*, *5*(1), 1–8.

Lawani, L. O., Igboke, F. N., Ukaegbe, C. I., Anozie, O. B., Iyoke, C. A., Onu, F. A., Agbata, T. A., & Asiegbu, O. (2019). Perception and socio-cultural barriers to the acceptance of caesarean delivery in a tertiary hospital in Abakaliki, South East Nigeria. *IJWHR*, *7*, 163–168.

Maduka, N. R., & Okubor, P. O. (2023). The Perceptions and Attitude of Pregnant Women towards Caesarean Section in South South Nigeria: Perception and Attitude of Pregnant women. *Tropical Journal of Obstetrics and Gynaecology*, *40*(2), 106–112.

Mogre, V., Abanga, Z. O., Tzelepis, F., Johnson, N. A., & Paul, C. (2017). Adherence to and factors associated with self-care behaviours in type 2 diabetes patients in Ghana. *BMC Endocrine Disorders*, *17*(1), 1–8. https://doi.org/10.1186/s12902-017-0169-3

Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European Journal of General Practice*, *24*(1), 9–18.

Naa Gandau, B. B., Nuertey, B. D., Seneadza, N. A. H., Akaateba, D., Azusong, E., Yirifere, J. Y., Kankpeyeng, H. B., & Tette, E. M. A. (2019). Maternal perceptions about caesarean section deliveries and their role in reducing perinatal and neonatal mortality in the Upper West Region of Ghana; a cross-sectional study. *BMC Pregnancy and Childbirth*, *19*(1), 350. https://doi.org/10.1186/s12884-019-2536-8

O’donovan, C., & O’donovan, J. (2018). Why do women request an elective cesarean delivery for non‐medical reasons? A systematic review of the qualitative literature. *Birth*, *45*(2), 109–119.

Odei-Lartey, E. O., Prah, R. K. D., Anane, E. A., Danwonno, H., Gyaase, S., Oppong, F. B., Afenyadu, G., & Asante, K. P. (2020). Utilization of the national cluster of district health information system for health service decision-making at the district, sub-district and community levels in selected districts of the Brong Ahafo region in Ghana. *BMC Health Services Research*, *20*(1), 1–15.

Ohaeri, B. M., Aideloje, F., & Ingwu, J. A. (2019). Women’s involvement in decision-making before caesarean section and its influence on their satisfaction with procedure in a tertiary health institution Edo State–Nigeria. *Int J Nurs*, *6*(1), 197–205.

Orukwowu, U., & Ene-Peter, J. (2022). The Knowledge and Attitude of Pregnant Women towards Cesarean Section in the University of Port Harcourt Teaching Hospital (UPTH). *IPS Journal of Basic and Clinical Medicine*, *1*(3 SE-Articles), 1–12. https://doi.org/10.54117/ijbcm.v1i3.3

Panda, S., Begley, C., & Daly, D. (2018). Clinicians’ views of factors influencing decision-making for caesarean section: A systematic review and metasynthesis of qualitative, quantitative and mixed methods studies. *PloS One*, *13*(7), e0200941.

Panti, A. A., Nasir, A. M., Saidu, A. D., Garba, J. A., Tunau, K. A., & Ibrahim, R. (2018). Perception and acceptability of pregnant women towards caesarean section in Nigeria. *Age*, *20*, 20–24.

Patino, C. M., & Ferreira, J. C. (2018). Inclusion and exclusion criteria in research studies: definitions and why they matter. *Jornal Brasileiro de Pneumologia*, *44*, 84.

Prah, J., Kudom, A., Afrifa, A., Abdulai, M., Sirikyi, I., & Abu, E. (2017). Caesarean section in a primary health facility in Ghana: Clinical indications and feto-maternal outcomes. *Journal of Public Health in Africa*, *8*(2).

Rahman, M. M., Tabash, M. I., Salamzadeh, A., Abduli, S., & Rahaman, M. S. (2022). Sampling techniques (probability) for quantitative social science researchers: a conceptual guidelines with examples. *Seeu Review*, *17*(1), 42–51.

Rosenberg, K. R., & Trevathan, W. R. (2018). Evolutionary perspectives on cesarean section. *Evolution, Medicine, and Public Health*, *2018*(1), 67–81.

Schantz, C., Pantelias, A.-C., de Loenzien, M., Ravit, M., Rozenberg, P., Louis-Sylvestre, C., & Goyet, S. (2021). ‘A caesarean section is like you’ve never delivered a baby’: A mixed methods study of the experience of childbirth among French women. *Reproductive Biomedicine & Society Online*, *12*, 69–78.

Shirzad, M., Shakibazadeh, E., Hajimiri, K., Betran, A. P., Jahanfar, S., Bohren, M. A., Opiyo, N., Long, Q., Kingdon, C., & Colomar, M. (2021). Prevalence of and reasons for women’s, family members’, and health professionals’ preferences for cesarean section in Iran: a mixed-methods systematic review. *Reproductive Health*, *18*, 1–30.

Siabani, S., Jamshidi, K., & Mohammadi, M. M. (2019). Attitude of pregnant women towards Normal delivery and factors driving use of caesarian section in Iran (2016). *BioPsychoSocial Medicine*, *13*(1), 1–7.

Sultana, N., Fatima, S., Muzaffar, T., & Akram, F. (2020). KNOWLEDGE AND ATTITUDE OF PREGNANT WOMEN REPORTING AT TERTIARY CARE HOSPITAL. *Pakistan Armed Forces Medical Journal*, *70*(6).

Suwanrath, C., Chunuan, S., Matemanosak, P., & Pinjaroen, S. (2021). Why do pregnant women prefer cesarean birth? A qualitative study in a tertiary care center in Southern Thailand. *BMC Pregnancy and Childbirth*, *21*, 1–6.

Tareke, K., Munshea, A., & Nibret, E. (2019). Seroprevalence of syphilis and its risk factors among pregnant women attending antenatal care at Felege Hiwot Referral Hospital, Bahir Dar, northwest Ethiopia: a cross-sectional study. *BMC Research Notes*, *12*, 1–7.

Walana, W., Acquah, S. E. K., Vicar, E. K., Muhiba, A. S., Dedume, J. B., Mashoud, I. W., Kolbilla, D. Z., Yabasin, I. B., Kampo, S., & Ziem, J. B. (2017). *Preference of birth delivery modes among women attending antenatal and postnatal clinics in the tamale metropolis of Ghana*.

Wielgos, M., Bomba-Opoń, D., Breborowicz, G. H., Czajkowski, K., Debski, R., Leszczynska-Gorzelak, B., Oszukowski, P., Radowicki, S., & Zimmer, M. (2018). Recommendations of the Polish Society of Gynecologists and Obstetricians regarding caesarean sections. *Ginekologia Polska*, *89*(11), 644–657.

Wuni, A., Salia, S. M., Mohammed Ibrahim, M., Iddriss, I., Abena Nyarko, B., Nabila Seini, S., Tonsagri, I., & Mohammed, J. (2020). Evaluating knowledge, practices, and barriers of paediatric pain management among nurses in a tertiary health facility in the northern region of Ghana: A descriptive cross-sectional study. *Pain Research and Management*, *2020*.

Maitanmi, B. T., Oluyomi, O. V., Aderemi, I. O., Maitanmi, J. O., Aminu, A., Ojewale, M. O., ... & Akingbade, O. (2023). Knowledge, attitude and perception of cesarean section among pregnant women attending antenatal clinic at Babcock University Teaching Hospital, Ilishan-Remo, Ogun State. *The Journal of Maternal-Fetal & Neonatal Medicine*, *36*(2), 2278019.

Malahayati I, Zuraidah. Mother’s Perception on Childbirth: Cesarean Section vs Normal Birth. Int. J. Trop. Dis. Health. [Internet]. 2024 Feb. 27 [cited 2025 Mar. 1];45(3):23-8. Available from: https://journalijtdh.com/index.php/IJTDH/article/view/1521