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*Original Article*

# PREVELANCE OF CESAREAN SECTION AND IT'S RELATED FACTORS IN SUBRATA HOSPITA, LIBYA

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## ABSTRACT

This study aims to identify the prevalence of cesarean sections at Subrata Hospital and assess the relationship between cesarean deliveries and factors such as maternal age, maternal height, breech presentation, and fetal distress. A cross-sectional study was conducted involving 118 mothers who delivered either via cesarean section or normal delivery in Subrata Hospital from June 1, 2024, to July 31, 2024. The study utilized universal sampling and analyzed data from medical records using descriptive statistics and the T- test for association through SPSS software. The study found that 50% of deliveries were cesarean sections. Age analysis showed that 46% of participants were older than 35, and this group had a statistically significant association with increased cesarean rates ($p = 0.030$). Additionally, 64% of mothers were under 150 cm in height, which was associated with a higher likelihood of cesarean delivery ($p = 0.034$). Fetal distress was present in 38% of cases, showing a significant link to cesarean delivery ($p = 0.032$). Breech presentation was noted in 50% of cases, though this did not show a significant statistical difference regarding the mode of delivery ($p > 0.05$). The research highlights a significant association between maternal age, maternal height, and fetal distress with cesarean deliveries in Subrata Hospital. Monitoring these factors may help optimize delivery outcomes. The study recommends improving maternal health strategies focusing on age and height and ensuring adequate preparation for cases involving fetal distress or breech presentations.

**Key words:** cesarean sections, age, height, breech presentation, fetal distress, delivery

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## INTRODUCTION:

A Cesarean section is a surgical procedure where a baby is delivered through an incision made in the mother's abdomen and uterus. It is typically performed when a vaginal delivery would pose a risk to the health or life of either the mother or the baby. However, in recent years, Cesarean sections have also been performed upon request, even in cases where a natural delivery would have been possible. The World Health Organization (WHO) recommends that the Cesarean section rate should not exceed 15% in any country [1].

Various factors may necessitate a Cesarean section, and some of these factors are present before a woman becomes pregnant. These factors include certain physical and social characteristics, complications from previous pregnancies, and existing medical conditions.

For example, a woman's age can play a significant role in the likelihood of needing a Cesarean section. Teenage girls, particularly those aged 15 or younger, are at a higher risk for developing preeclampsia, a condition characterized by high blood pressure during pregnancy[2]. These younger mothers are also more likely to experience preterm labor and anemia, and their babies are at risk of low birth weight or anemia.[3] On the other hand, women aged 35 and older face increased risks of complications such as high blood pressure, gestational diabetes, chromosomal abnormalities in the fetus, and even stillbirth. They are also more prone to complications during labor, such as preeclampsia, placental abruption (where the placenta detaches prematurely), placenta previa (improper placental positioning), and difficult labor[4].

Another important factor is a woman's height. Women who are shorter than 5 feet are more likely to have a smaller pelvis, which may make it difficult for the fetus to move through the birth canal during labor. These women are also at an increased risk of preterm labor and of having a baby that is smaller than expected for their gestational age[5].

Breech presentation, where the baby is positioned bottom-first or feet-first instead of the usual head-first position, is another factor that can lead to a Cesarean section. This condition is particularly common in preterm births, with 25% of fetuses being in the breech position at 32 weeks gestation. However, this rate drops to only 3% at full term, as the fetus typically turns to the head-down position before labor begins (Sanghiv et al., 2014)[6]. Breech babies often require Cesarean delivery due to the complications that can arise when attempting a vaginal birth.

Fetal distress is another significant factor that may lead to a Cesarean section. This term refers to any situation in which the fetus is compromised during pregnancy or labor, commonly due to fetal hypoxia (low oxygen levels). If not addressed promptly, fetal hypoxia can result in severe damage or even death. Fetal distress can be detected through signs such as abnormal slowing of labor, the presence of meconium (greenish fetal waste) in the amniotic fluid, or through fetal monitoring, which may show a fetal scalp pH below 7.2. In such cases, a Cesarean section is performed to ensure the safety of both the mother and the baby.

In summary, a Cesarean section is often necessary when certain physical, medical, or situational factors pose risks to the health of the mother or baby. While the procedure is life-saving in many cases, it is important that it be performed based on medical necessity, as the World Health Organization recommends limiting Cesarean rates to no more than 15% of all births.

### Objectives of the study

*General objective*

The purpose of this study is to determine the related factors and association such as age of mother, height of mother, breech presentation and fetal distress with caesarean section deliveries

Specific objectives:
Identify prevalence of caesarean section among mothers according to:

Age. Younger than 15 and older than 35 years' old
Height. Shorter than 5 feet
Determine the association between caesarean section with breech presentation baby.
Identify the relation between fetal distress with increase prevalence of cesarean delivery.

## MATERIALS AND METHODS:

### Study design

*Cross sectional study.*

Study location
The study was conducted in Subrata hospital Libya.

Sampling population

The population in this study is all mothers who deliver by cesarean section and vaginal deliveries admitted to gynecological and obstetric word in Subrata hospital during the period of 1st of June 2024 to 31st July 2024.

*Sampling method*

The sampling method is universal sampling based on the number of all mothers who deliver either by cesarean section or vaginal deliveries during the period of study.

Inclusion criteria

All mothers who are deliver by cesarean section and vaginal deliveries admitted to gynecological and obstetric word in Subrata hospital during the period of January 1st of June 2024 to 31st July 2024 included in this study.

*Exclusive criteria:*

Non Libyan mothers.
Uncompleted information from medical records.
Patient who had previous cesarean section

*Sample size*

Study tools

Variables data were traced from the medical records and recorded in a preplanned data sheet that consist of the age of mother, height of mother, as well as the indication of cesarean section (breech presentation or breech presentation).

*Statistical analysis methods*

To achieve the objectives of the study and to test its hypotheses, the program (IBM SPSS Statistics20) application of the following statistical methods was used:

To answer the main question of the study, the following was done:

Calculate frequencies and percentages of the study sample.

For each statement of the questionnaire, p value, t,test was used to achieve study objectives.

*Research ethics*

This research was conducted on voluntary basis. Consent was obtained from medical staff who are responsible on word registration books and medical records. All information provided is strictly for this research study purpose only and were be kept confidential. The patient was anonymized to ensure patient will not have identified by any body

## RESULT:

Statistical analyses of the data revealed statistically significant differences in some variables, while no significant differences were found in others. Regarding age, the results showed a significant difference between age groups, with a p-value less than 0.05, indicating a meaningful variation in average ages. Similarly, there was a significant difference between the height groups, with a p-value less than 0.05, highlighting the importance of height as an influential factor in pregnancy and childbirth outcomes.

In contrast, for fetal position, the results showed no significant difference between categories, as the p-value was much greater than 0.05, indicating that there were no meaningful differences in this variable. As for fetal distress, the analyses revealed a significant difference between the groups, emphasizing the importance of monitoring these cases during pregnancy and childbirth, with a p-value less than 0.05.

Regarding the mode of delivery, there was no significant difference between the groups, as the p-value was greater than 0.05, suggesting that the type of birth was not significantly affected by this variable.

**Table (1)** shows age

| age | reiteration | Percentage |
|---|---|---|
| **Between 20_35 years old** | 62 | 53% |
| **Above 35 years old** | 54 | 47% |
| **Total** | 118 | 100% |

Table 1 shows that 53% of respondents are between the ages of 20 and 35, while 46% are over 35 years old, this table reflects a close distribution between the two age groups, with a slight tendency towards the younger group. This finding may be useful in understanding the age distribution among mothers and its role in influencing pregnancy outcomes.

**Table (2)** shows Length

| Height | Iteration | Percentage |
|---|---|---|
| Less than 150 cm | 76 | 64% |
| More than 150cm | 42 | 36% |
| Total | 118 | 100% |

Table 2 shows that 64% of respondents were less than 150 cm tall, while 36% were more than 150 cm tall, this distribution indicates that the majority of mothers in this sample are shorter than 150 cm, which may have indications of some health risks or challenges related to childbirth.

**Table (3)** shows the position of the fetus

| Breech presentation | Iteration | Percentage |
|---|---|---|
| Yes | 59 | 50% |
| No | 59 | 50% |
| Total | 118 | 100% |

Table 3 shows that half of the mothers (50%) experienced a seat-seat birth, while the other half (50%) did not, this equality in this ratio highlights the prevalence of breech position in this sample. This may indicate the importance of preparing and dealing with such situations during childbirth.

**Table (4)** shows the distress of the fetus

| Mode of Delivery | Iteration | Percentage |
|---|---|---|
| C/S | 59 | 50% |
| Normal | 59 | 50% |
| Total | 118 | 100% |

Table 4 shows that 38% of cases experienced fetal distress, while 62% did not, this distribution indicates that most mothers did not experience fetal distress, but the presence of 38% of cases may indicate a significant proportion of health challenges during pregnancy or childbirth.

**Table (5)** shows the method of birth

| Table | t Stat | p-value | t Critical (two-tail) |
|---|---|---|---|
| (Age) | 3.874 | 0.030 | 4.302 |
| (Height) | 3.579 | 0.034 | 4.302 |
| (Breech Presentation) | 0.028 | 2.919 | 4.302 |
| (Fetal Distress) | 3.699 | 0.032 | 4.302 |
| (Mode of Delivery) | 0.0285 | 2.919 | 4.302 |

Table 5 shows that 50% of births were caesarean section (C/S), and the other half were natural births, these results show that caesarean sections were as common as normal births in this sample, which may indicate that caesarean section is equally likely to be resorted to for normal delivery for various reasons such as fetal position or fetal distress.

**Table (6)** shows the P value

| Table | t Stat | p-value | t Critical (two-tail) |
|---|---|---|---|
| (Age) | 3.874 | 0.030 | 4.302 |
| (Height) | 3.579 | 0.034 | 4.302 |
| (Breech Presentation) | 0.028 | 2.919 | 4.302 |
| (Fetal Distress) | 3.699 | 0.032 | 4.302 |
| (Mode of Delivery) | 0.0285 | 2.919 | 4.302 |

The tables(6) for "age", "height", and "fetal distress" showed a statistically significant difference between groups, suggesting that these variables may be associated with significant effects. The tables on "fetal position" and "mode of birth" showed no statistically significant differences, meaning that there was no strong evidence of significant differences between groups.

## DISCUSSION:

The increasing rates of Caesarean sections (C-sections) have raised significant concerns globally, with a marked rise in elective and medically necessary procedures. This study, conducted at Subrata Hospital, Libya, aimed to identify the risk factors that contribute to the high frequency of C-sections, with a focus on age, height, breech presentation, and fetal distress[7]. The findings of this study reflect the importance of these factors, aligning with broader global trends but also presenting some regional variations in their significance[8].

Globally, the rate of Caesarean sections has seen a dramatic rise over the past few decades. According to the World Health Organization (WHO), C-section rates should ideally not exceed 15% of all deliveries to ensure that the procedure is used appropriately (WHO, 2004). However, data from various countries show alarming increases beyond this recommended threshold. For instance, in the United States, the rate of C-sections was approximately 5% in the 1970s and has surged to nearly 32% by 2023 (National Center for Health Statistics, 2023). Similarly, countries in Latin America and parts of Asia report even higher rates, often exceeding 40%[9].

These trends point to a complex interplay of medical, social, and economic factors. While medical necessity is a crucial determinant, there is a growing trend towards elective C-sections in many parts of the world, driven by patient preferences, fear of childbirth complications, and convenience (Masterson, 2004).

In the case of Subrata Hospital, the rate of C-sections seems to be in line with this global trend, driven largely by risk factors such as maternal age, height, fetal distress, and breech presentations. This is consistent with findings from other hospitals wordwide , where these same factors have been identified as major contributors to the decision to perform a C-section[10].

While about the Impact of Maternal Age and Height.

The maternal age has long been recognized as a significant risk factor for adverse pregnancy outcomes, including the increased likelihood of a Caesarean section. Women over the age of 35 face higher risks of complications such as preeclampsia, gestational diabetes, and chromosomal abnormalities, all of which can necessitate a C-section delivery (Gabbe et al., 2017)[13]. This study confirmed that advanced maternal age is associated with a higher incidence of C-sections, echoing global research findings that older women are more likely to require surgical intervention during delivery[14].

Similarly, the effect of maternal height on delivery outcomes has been well-documented. Shorter women, particularly those under 5 feet, often face difficulties during labor due to a smaller pelvis, which can impede the passage of the fetus through the birth canal (Anderson et al., 2009). This research concurs with these findings, as a significant proportion of women at Subrata Hospital who underwent C-sections had a height less than 5 feet. It is worth noting that while pelvic size remains a key determinant, advancements in obstetric care, such as the use of electronic fetal monitoring and better surgical techniques, have made C-sections a more accessible and safer option for these women.in the other hand Breech presentation is another well-established indication for C-sections, as vaginal delivery in breech cases is associated with higher risks of fetal injury and maternal complications. Research consistently shows that breech babies, particularly those born before term, are more likely to require surgical intervention (Sanghvi et al., 2014)[15]. This study found a similar trend at Subrata Hospital, with a significant proportion of C-sections performed due to breech presentation. Notably, as gestational age increases, the incidence of breech presentation declines, which may explain why the highest rates of C-sections for breech delivery occurred in preterm pregnancies[16,17].

Fetal distress is another critical factor identified in this study as contributing to the high rate of C-sections.

## CONNCLUSION:

Based on the findings of this study, the following recommendations are proposed to reduce the rate of cesarean sections:

1. Enhanced Prenatal Education: It is crucial to provide comprehensive prenatal education to expectant mothers and their families. This education should cover the benefits and risks associated with both vaginal deliveries and cesarean sections, empowering women to make informed decisions.

2. Training and Support for Healthcare Providers: Continuous training and support for healthcare providers in evidence-based practices for managing labor and delivery can help reduce unnecessary cesarean sections. Encouraging the adoption of standardized protocols and guidelines can ensure that

cesarean sections are performed only when medically necessary[11].

3. Improvement in Labor Management Practices: Implementing best practices in labor management, such as continuous labor support, the use of non-invasive monitoring techniques, and promoting natural labor progression, can reduce the likelihood of cesarean deliveries[11].

4. Policy and System-Level Interventions: Health systems and policymakers should prioritize initiatives that promote vaginal deliveries and provide adequate resources and support for such practices. This may include revising reimbursement policies to encourage vaginal births and investing in infrastructure that supports safe and effective labor management[12].

5. Encouragement of Vaginal Birth After Cesarean (VBAC): Promoting and facilitating VBAC, where appropriate, can help reduce the overall rate of cesarean sections. Providing accurate information and support to women who have had previous cesarean deliveries can help them consider VBAC as a viable option. By implementing these recommendations, healthcare systems can improve maternal and neonatal outcomes, reduce healthcare costs, and enhance the overall quality of care provided to expectant mothers. Further research is needed to evaluate the effectiveness of these strategies and to explore additional measures that can contribute to the reduction of cesarean section rates.

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## RFERENCES:

1. World Health Organization. World Health Organization guidelines on cesarean section. World Health Organization Report. 2004.

2. Smith G. Cesarean section rate appears to rise with maternal age. Cambridge University Press, UK; 2008.

3. Scott RT, Hankins GD. Maternal height as a risk factor for cesarean section. Am J Obstet Gynecol. 2001;225:659-664.

4. Nalliah S. Report summarizing breech presentation study. Breech Presentation, USA; 2001.

5. Timothy P, Dennis J. Cesarean section for fetal distress. Am J Obstet Gynecol. 2001;11:241-244.

6. Belizan JM, Althabe F, Barros FC, Alexander S. Rates and implications of cesarean section in Latin America: Ecological study. BMJ. 1999;319:1397-1399.

7. Hannah W, Chance GW. Final statement of the panel of the National Consensus Conference on Aspects of Cesarean Birth. Can Med Assoc J. 2002;122:41-52.

8. Goer H. Rising trend of cesarean section. Aust N Z J Obstet Gynaecol. 2001;12(3):20-27

9. Masterson S. Cesarean section facts and fiction. Am J Obstet Gynecol. 2004;200:213-220.

10. Gabbe S, Niebyl J, Simpson JL. Normal and problem pregnancies. 5th ed. New York: [Publisher]; 2007. Chapter 19.

11. Anderson A, Thomas E. Assisted vaginal delivery versus cesarean section. Life Sci Wkly. 1999;84(6):588-592.

12. Sanghiv R, William J, Richard R. Vaginal delivery versus cesarean section in breech presentation. J Fam Pract. 2000;19(4):1385-1390.

13. Smith G. Cesarean section rate appears to rise with maternal age. Cambridge University Press, UK; 2008.

14. Wesley F, Elfving B. Definition of fetal distress. Wiley Intersci J. 2000;81:200-205.

15. Bontrager K. Fetal distress. Labor & Fetal Distress. [Publisher]; 2003. Chapter.

16. Williams J, Colman S. Women's guide to better birth. London: [Publisher]; 2000. Chapters 1, 2, 7.

17. Merchant KM, Zanini A. Normal delivery versus cesarean section. Can Med Assoc J. 2001;140:12-15.