Journal of Obstetrics, Gynecology and Cancer Research | ISSN: 2476-5848

# Factors Contributing to Cesarean Sections Among Mothers and Their Short-Term Effects on Postpartum Outcomes: A Case-Control Study

**Hanan Khudheir Hussein[1*], Banan Natiq Turkey[1], Hadeel Abdulameer Shamkhi Alshlah[2]**

1. *Department of Gynecology and Obstetrics, College of Medicine, University of Babylon, Babylon, Iraq*
2. *Department of Gynecology and Obstetrics, College of Medicine, University of Al-Ameed, Babylon Iraq*

**Article Info**

10.24200/jogcr.10.10.763

**Received:** 2025/03/03
**Accepted:** 2025/04/05
**Published Online:** 01 Sep. 2025

**Corresponding Information:**
**Hanan Khudheir Hussein,**
Department of Gynecology and Obstetrics, College of Medicine, University of Babylon, Babylon, Iraq

**Email:** hanan.alkadhim@uobabylon.edu.iq

**ABSTRACT**

**Background & Objective:** Cesarean sections are common worldwide, often influenced by multiple socio-demographic, obstetric, and clinical factors. This study was conducted with aim to identify the factors contributing to cesarean deliveries and assess their short-term effects on postpartum outcomes.

**Materials & Methods:** This case-control study was conducted in Babylon Governorate hospitals, Iraq. The study population included 300 participants: 150 women who delivered by cesarean section (cases) and 150 who delivered vaginally (controls). Participants were matched for demographic characteristics. Data was collected using structured questionnaires and medical records. Data were analyzed using SPSS software (version 25) and descriptive statistics, chi-square test, odds ratio, and logistic regression analysis. P<0.05 was considered statistically significant.

**Results:** Key predictors of cesarean delivery included a history of previous CS (OR=14.58; P<0.001), prolonged labor (>12 hours) (OR=6.08; P<0.001), pregnancy complications (OR=6.12; P<0.001), non-cephalic fetal presentation (OR=5.09; P<0.001), and primiparity (OR=5.33; P<0.001). Overweight maternal BMI and labor induction further increased CS likelihood (OR=4.13 and OR=4.50, respectively; P<0.001). Short-term postpartum effects included higher rates of surgical complications, delayed breastfeeding initiation, and increased hospital readmissions among women who had cesarean deliveries.

**Conclusion:** Caesarean section is associated with significant risk factors and adverse postpartum outcomes. Strategies to reduce unnecessary cesarean sections include promoting education about early pregnancy, optimal birth management, and addressing modifiable risk factors such as maternal body mass index. Future research should explore long-term postpartum effects and interventional strategies to reduce the rates of cesarean section.

**Keywords:** Cesarean section, Postpartum outcomes, Risk factors, Maternal health

Copyright © 2025, This is an original open-access article distributed under the terms of the Creative Commons Attribution-noncommercial 4.0 International License which permits copy and redistribution of the material just in noncommercial usages with proper citation.

## 1. Introduction

Given their impact on mother and child health outcomes, the rising frequency of Caesarean Sections (CS) has grown to be a cause of significant worry **(1)**. Studies show that several elements including medical reasons, socioeconomic traits, and fitness gadget practices help to explain this increasing demand **(2)**. Many studies have shown how sociodemographic variables affect caesarean shipping probability. Studies reveal that mother's age is important; women thirty years of age and beyond are much more likely to have a caesarean section than younger women **(3)**. Furthermore, the degree of education seems to be predictive; females with poorer academic education are more likely to have caesarean births than those with higher education **(4)**. On employment status and socioeconomic reputation, studies show contradicting relationships with cesarean shipping costs **(5,6)**.

Clinical characteristics are still among the most important factors affecting cesarean delivery. The history of prior cesarean birth is usually seen as the strongest predictor since studies showing women who have a history of cesarean delivery are more likely to repeat cesarean delivery **(7)**. Non-cephalic fetal position **(8)**, prolonged labor, and mother weight are other crucial medical factors. Moreover, women with induced cesarean birth or experienced pregnancy complications had a considerably increased probability of cesarean delivery **(9)**. Use of assisted reproductive technology has also been linked to a higher likelihood of cesarean birth **(10)**. Studies on the immediate effects

of cesarean birth on mothers and newborns are significant. Unlike vaginal deliveries, cesarean deliveries raise the risk of postpartum hemorrhage, surgical site infections, and mother readmission within 30 days **(11)**. Research also suggests that cesarean birth prolongs mother recovery and delays the start of breastfeeding **(12,13)**. But newborn outcomes such as admission to the newborn intensive care unit no longer consistently differ between surgical and vaginal deliveries **(14)**. Cesarean delivery is influenced by a complex combination of social, demographic, and therapeutic aspects. Clinical advice designed to improve mother and infant health outcomes as well as policy development depends on the awareness of these elements and helps to reduce unnecessary cesarean deliveries. Thus, the present study was conducted with aim to identify the factors generating the increasing incidence of cesarean sections as well as to assess their impact on mother health outcomes.

## 2. Materials and Methods

This research used a case-control study approach to find the factors affecting cesarean birth and assess the short-term consequences of cesarean deliveries on postnatal outcomes. Investigating the possible risk factors and outcomes using case-control research lets to compare women who delivered vaginally (controls) with those who underwent caesarean section (cases). The design is cross-sectional; hence data will be gathered just once at a particular moment in time. The study was carried out in hospitals of Babil Governorate, Iraq, obtaining a representative sample of women from different local medical establishments. These hospitals guarantee a broad and thorough research basis by serving varied populations. The study population included 300 women divided into two groups:

150 women with cesarean section births as cases and 150 who delivered vaginally as controls.

Calculating the sample size allowed one to consider any confounding elements and guarantee enough power for statistical analysis. To lower bias, cases and controls were matched according to important demographic factors including age, education, and position. Inclusion criteria were women aged ≥ 18 years, giving birth at one of Babylon Governorate's designated hospitals, delivered either vaginally or by cesarean section, and having consent to participate in the study. Exclusion criterion were women who had past cesarean sections and vaginal birth problems that could have effects on the outcomes, experiencing serious pregnancy issues, such preeclampsia, which could need for specific treatment, and women with cognitive or language problems.

Data were gathered using a standardized questionnaire on socio-demographic elements (age, education, employment, socioeconomic level), factors related to pregnancy and childbirth (maternal age, parity, pregnancy complications, delivery of the fetus, use of assisted reproductive technology, etc.), and postpartum outcomes (postpartum hemorrhage, surgical complications, initiation of breastfeeding, readmission, etc.). Medical records were also checked to provide correct information about delivery techniques, labor length, and problems. Pre-testing the data collecting instrument on a small group of women helped to guarantee dependability and clarity of the tool. Medical records' reviews and interviews helped to gather the data. Face-to-face interviews with the mothers during their hospital stay were carried out by trained research assistants guaranteeing a private and supportive setting. To suit the local community, Arabic language was used for interviews; before data collecting, each participant received informed consent. Medical records were examined under previous authorization to verify the clinical information. Six months of data collecting gave enough time to register participants from several Babylon Governorate hospitals.

Data was analyzed by SPSS software (version 25.0). Participant sociodemographic and clinical features were compiled using descriptive statistics including means, standard deviations, and percentages. Case and control categorical variables were compared using the chi-square test. To assess the degree of relationship between variables and cesarean delivery, Odd's Ratios (OR) with 95% Confidence Intervals (CI) were computed. Independent predictors of cesarean section and short-term postpartum outcomes were found by logistic regression. $P<0.05$ was considered statistically significant.

## 3. Results

A total of 300 women, divided into two equal groups: 150 women who gave birth by cesarean section (cases) and 150 women who had a vaginal delivery (controls), included in this study. Age distribution was comparable between the two groups, with the majority aged 20-29 years (cases 43.3%; controls 46.7%). No statistically significant differences were observed between the two groups in age distribution ($P>0.05$). However, a significant difference was found between the two groups in education level, particularly among women with primary education (cases 13.3%; controls 6.7%; $P=0.02$). Employment status was evenly distributed between employed and unemployed women, with no significant difference ($P>0.05$). Socioeconomic status also showed no significant differences between cases and controls (Table 1).

**Factors Contributing to Cesarean Section:** Several factors were found to significantly increase the likelihood of cesarean delivery. The highest risk was observed in women with a previous cesarean section (OR=14.58; $P<0.001$). Other significant contributors included prolonged labor (>12 hours, OR=6.08; $P<0.001$), pregnancy complications (OR=6.12; $P<0.001$), non-cephalic fetal presentation (OR=5.09;

P<0.001), and primiparity (OR=5.33; P<0.001) (Table 2).

**Short-Term Effects of Cesarean Section on Postpartum Outcomes:** Cesarean section was associated with a significantly higher risk of postpartum complications. Women who underwent cesarean delivery were more likely to experience postpartum hemorrhage (OR=2.33; P=0.02), post-surgical wound complications (OR=4.80; P=0.001), and maternal readmission within 30 days (OR=5.50; P=0.001). Early breastfeeding initiation was less likely among cesarean deliveries (OR=0.34; P=0.004), and delayed postpartum recovery was more common (OR=0.42; P=0.02). Neonatal health outcomes, including NICU admission, were not significantly affected (OR=0.56; P=0.32) (Table 3).

**Table 1. Socio-demographic characteristics of the research units in case and control groups**

| Variable | Classification | Cases (n=150) | Controls (n=150) | P-value |
|---|---|---|---|---|
| Age (years) | <20 | 10(6.7%) | 5(3.3%) | 0.28 |
| | 20-29 | 65(43.3%) | 70(46.7%) | 0.24 |
| | 30-39 | 55(36.7%) | 65(43.3%) | 0.18 |
| | ≥40 | 20(13.3%) | 15(10%) | 0.56 |
| Education level | Informal | 5(3.3%) | 5(3.3%) | 1.00 |
| | Primary | 20(13.3%) | 10(6.7%) | 0.02 |
| | Secondary | 60(40%) | 70(46.7%) | 0.24 |
| | Higher education | 65(43.3%) | 65(43.3%) | 1.00 |
| Employment status | Employed | 75(50%) | 85(56.7%) | 0.18 |
| | Unemployed | 75(50%) | 65(43.3%) | 0.14 |
| Socioeconomic status | Low | 35(23.3%) | 30(20%) | 0.56 |
| | Moderate | 85(56.7%) | 90(60%) | 0.24 |
| | High | 30(20%) | 30(20%) | 1.00 |

**Table 2. Factors contributing to cesarean section**

| Factor | Classification | Cases (n=150) | Controls (n=150) | OR (95% CI) | P-value |
|---|---|---|---|---|---|
| Maternal age (years) | <20 | 40(26.7%) | 25(16.7%) | 2.13 (1.22-3.71) | 0.008 |
| | >20 | 110(73.3%) | 125(83.3%) | Ref. | |
| Parity | Primiparous | 100(66.7%) | 45(30%) | 5.33 (3.25-8.73) | <0.001 |
| | Multiparous | 50(33.3%) | 105(70%) | Ref. | |
| Pregnancy complications | Present | 85(56.7%) | 20(13.3%) | 6.12 (3.56-10.51) | <0.001 |
| | Absent | 65(43.3%) | 130(86.7%) | Ref. | |
| Fetal presentation | Cephalic | 110(73.3%) | 140(93.3%) | Ref. | <0.001 |
| | Non-cephalic | 40(26.7%) | 10(6.7%) | 5.09 (2.41-10.77) | |
| Labor induction | Induced | 90(60%) | 30(20%) | 4.50 (2.68-7.56) | <0.001 |
| Previous cesarean section | Yes | 70(46.7%) | 10(6.7%) | 14.58 (6.77-31.40) | <0.001 |
| Maternal BMI | Overweight | 90(60%) | 40(26.7%) | 4.13 (2.49-6.86) | <0.001 |

**Table 3. Short-Term effects of cesarean section on postpartum outcomes**

| Outcome | Cases (n=150) | Controls (n=150) | OR (95% CI) | P-value |
|---|---|---|---|---|
| Postpartum hemorrhage | 30(20%) | 15(10%) | 2.33(1.17-4.64) | 0.02 |
| Post-surgical complications | 40(26.7%) | 10(6.7%) | 4.80(2.18-10.58) | 0.001 |
| Breastfeeding initiation (Early) | 100(66.7%) | 130(86.7%) | 0.34 (0.16-0.72) | 0.004 |
| Maternal readmission | 25(16.7%) | 5(3.3%) | 5.50(1.98-15.35) | 0.001 |
| Postpartum recovery (Normal) | 120(80%) | 140(93.3%) | 0.42(0.21-0.85) | 0.02 |

## 4. Discussion

Rising questions about their impact on mother and baby health, cesarean section rates have surged sharply globally. Medical indications, mother choices, and practices of the healthcare system all help to determine whether a cesarean section is performed. Although a cesarean section can save a life, it also entails hazards and possible short-term consequences on postpartum outcomes including more recovery time and problems. The purpose of this case-control study was to determine the primary causes of caesarean section and assess their effects on postpartum health, therefore offering a better knowledge of the possible repercussions postpartum for mothers. Consistent with the obstetric literature, the results show that women who had a history of previous cesarean sections had an increased risk of cesarean section. Scar tissue produced following previous cesarean births may cause uterine rupture during next vaginal deliveries. Many times, this danger drives doctors to advise repeated cesarean

procedures as a precaution **(15,16)**. Further contributing to this tendency is studies showing women who have past cesarean deliveries often opt or are recommended to have elective cesarean deliveries instead of attempting Vaginal Birth After Cesarean (VBAC). This result emphasizes the need of tailored treatment and counseling for women with a history of cesarean section to investigate VBAC were safe and feasible.

An elevated risk of cesarean delivery was clearly linked to a protracted labor process longer than twelve hours. Often indicating dystocia or inability to progress, a protracted labor process could compromise the health of the mother and fetus. Under such circumstances, cesarean section is sometimes done to reduce these risks **(17)**. This link has been proven, and caesarean surgery has been a safer replacement because evidence proving a prolonged birth process increases the likelihood of foetal discomfort, mother exhaustion, and utero problems **(18)**. This underlines the significance of labour monitoring and prompt response to reduce the occurrence of unnecessary difficulties generating a caesarean section. Preeclampsia, gestational diabetes mellitus, and placental problems among other pregnancy problems were obviously connected to caesarean delivery. Many times, these issues demand immediate delivery to prevent poor consequences for the mother and neonate. Preeclampsia can damage organs and create severe hypertension; hence caesarean surgery is advised to ensure quick delivery **(19)**. Similarly, gestational hyperglycemia increases the possibility of foetal macrosomia, which results in stalled labour and caesarean surgery **(20)**. The organisation stresses the need of prenatal care in early on identification and management of issues to improve birth results.

Following current obstetric guidelines, a non-cephalic foetal position increases the caesarean delivery risk by more than five-fold. Non-cephalic births including breech or transverse position **(21)** are connected to higher risk of birth complications including umbilical cord prolapse and foetal injury during vaginal delivery. Current guidelines often advise caesarean procedures in such cases to ensure the safety of the mother and the unborn child. These findings underline the necessity of prenatal ultrasound in early diagnosis of foetal position and appropriate birth planning. Women who had delivered once showed a substantially greater chance of caesarean delivery than those who had delivered more than once. This outcome is consistent with studies demonstrating that primiparous mothers usually have longer labour, increased rates of labour induction, and larger probability of foetal malposition all of which assist to explain growing rates of caesarean section **(22)**. The results also reveal a cautious approach by medical personnel to primiparous mothers due of unknown factors connected to labour progress and delivery outcomes.

In addition, overweight women were more likely to have caesarean sections. High BMI is a well-documented risk factor for caesarean delivery **(23)** because of its relationship with obstetric issues including dystocia, length of labour, and increased foetal size. Moreover, mother's additional weight may lead to inadequate uterine contraction and increased rate of foetal discomfort, which justifies caesarean birth. These findings stress the significance of mother weight control and preconception counselling in improving delivery outcomes. Induction of labour greatly enhanced the caesarean delivery risk. Induction often veers from the expected path of labour, leading to less than optimum cervical dilatation and higher need for caesarean intervention **(24)**. This result is in line with data demonstrating that induction of labor is linked to increased rates of failure to progress and non-reassuring fetal heart rates, hence guiding cesarean section. Additionally, assisted reproductive technologies are linked to a higher risk of cesarean delivery. Higher frequency of multiple pregnancies, placental defects, and maternal problems in pregnancies achieved with assisted reproductive technologies are sometimes considered as high-risk **(10)**. Moreover, increased worries about the health of mother and fetus in pregnancies using assisted reproductive technology often result in planned cesarean sections to lower the related risks. These results highlight the need for thorough prenatal surveillance and obstetric preparation for pregnancies accomplished with assisted reproduction technologies.

While newborn outcomes seemed unaltered by mode of delivery, the results of this study confirm the major influence of cesarean section on mother postpartum outcomes. Consistent with other studies implying that cesarean deliveries generally provide a higher risk of excessive bleeding due to surgical intervention and loosening **(25)**, women who delivered by cesarean section were considerably more likely to have postpartum hemorrhage. Findings from other studies have shown that cesarean deliveries are linked with increased postoperative morbidity, including infection, wound dehiscence, and thrombotic events **(26)** are consistent with the higher risk of postoperative wound complications and mother readmission to hospital within 30 days. Furthermore, among cesarean section patients, the reduced chance of early nursing initiation indicates the physical and psychological difficulties these mothers encounter during the immediate postpartum period. Research indicates that postoperative discomfort and delayed mother-infant attachment represent major obstacles to nursing **(12)**. Delayed postpartum recovery also emphasizes the increased physical and emotional demands placed on women who undergo cesarean sections compared to those who delivered vaginally, so supporting previous research that has found cesarean delivery as a factor contributing to prolonged recovery times and reduced mother function **(13)**. Fascinatingly, mode of delivery had no appreciable impact on newborn outcomes

including NICU admission. This result is compatible with research implying that although cesarean deliveries could affect mother health outcomes, improvements in neonatal care and surgical methods have lessened their effects on neonatal health **(27)**. This absence of correlation with newborn outcomes emphasizes the need of giving mother's care top priority to lower problems and improve recovery following cesarean procedures.

The limitations of the present study include its cross-sectional design, which restricts the ability to demonstrate causal relationships. In addition, the sample size may not fully represent all demographics, limiting the generalizability of the results. Recalling bias can also affect the accuracy of self-reported data, and the study's reliance on a single hospital setting may not capture differences in practice across different healthcare settings. Finally, other potential interfering factors, such as socioeconomic status and access to health care, were not fully controlled.

## 5. Conclusion

Caesarean sections are greatly influenced by factors such as maternal age, number of deliveries, pregnancy complications, fetal position, duration of labor, and previous cesarean section. In addition, cesarean delivery is associated with increased postpartum complications, including hemorrhage, surgical complications, delayed initiation of breastfeeding, and longer recovery periods. However, newborn outcomes were not significantly different between the two groups of cesarean section and vaginal delivery. Health care providers should focus on identifying and treating risk factors for cesarean sections to reduce unnecessary procedures. Improving post-cesarean care, including timely breastfeeding support and monitoring for complications, is essential to improve postpartum outcomes. In addition, promoting vaginal delivery when appropriate, especially in women who had no previous cesarean section, can help reduce cesarean rates and associated complications.

## 6. Declarations


### Acknowledgments

The authors would like to extend their sincere thanks to the women participating in this study, the medical staff in Babil Governorate for their support during data collection, and our consultants for their valuable guidance.


### Ethical Considerations

The study adhered to the ethical principles of respect for persons, benevolence, and justice. Informed consent was obtained from all participants, ensuring that they understood the purpose of the study, their right to confidentiality, and the voluntary participation. Ethical approval was obtained from the institutional review board of the selected hospitals in Babylon Governorate.

### Authors' Contributions

1st author contributed to the study design and data collection; 2nd and 3rd author performed the statistical analysis; All authors reviewed and approved the final version.

### Conflict of Interest

There are no conflicts of interest.


### Fund or Financial Support

None.


## References


1. Madhubala M, Shukul M, Kasthuri C. Caesarean Myomectomy to Prevent Immediate or Interval Myomectomy, Hysterectomy and Postpartum Hemorrhage. J Obstet Gynecol Cancer Res. 2021;6(4):167-73. [DOI:10.30699/jogcr.6.4.167]
2. Yassaee F, Habibi S, Shekarriz Foumani R, Motiei Langroudi SM, Ghotbi E. Factors Affecting Post-Cesarean Pain Intensity in Patients at Taleghani Hospital in 2021. J Obstet Gynecol Cancer Res. 2023;8(5):457-63. [DOI:10.30699/jogcr.8.5.457]
3. Deep WY, Oleiwi SS. Socio-demographic-related Factors Associated with Types of Cesarean Sections among Mothers. Cent Asian J Med Sci. 2024;5(3):589-98.
4. Islam MA, Sathi NJ, Hossain MT, Jabbar A, Renzaho AM, Islam SM. Caesarean delivery and its association with educational attainment, wealth index, and place of residence in Sub-Saharan Africa: a meta-analysis. Sci Rep. 2022;12(1):5554. [DOI:10.1038/s41598-022-09567-1]
5. Hassan MM, Ameeq M, Fatima L, Naz S, Sikandar SM, Kargbo A, Abbas S. Assessing

socio-ecological factors on caesarean section and vaginal delivery: an extended perspective among women of South-Punjab, Pakistan. J Psychosom Obstet Gynaecol. 2023;44(1):2252983. [DOI:10.1080/0167482x.2023.2252983]

6. Elywy GJ, Radhi MM, Tuama AM. Determination the Causes of Neonatal Mortality during the Last 3 Years Ago in Al-Kut City. Prof.(Dr) RK Sharma. 2020;20(3):195.
7. Antoine C, Young BK. Cesarean section one hundred years 1920–2020: the Good, the Bad and the Ugly. J Perinat Med. 2021;49(1):5-16. [DOI:10.1515/jpm-2020-0305]
8. Lauth C, Huet J, Dolley P, Thibon P, Dreyfus M. Maternal obesity in prolonged pregnancy: Labor, mode of delivery, maternal and fetal outcomes. J Gynecol Obstet Hum Reprod. 2021;50(1):101909. [DOI:10.1016/j.jogoh.2020.101909]
9. Kamel RA, Negm SM, Youssef A, Bianchini L, Brunelli E, Pilu G, Soliman M, Nicolaides KH. Predicting cesarean delivery for failure to progress as an outcome of labor induction in term singleton pregnancy. Am J Obstet Gynecol. 2021;224(6):609.e1-609.e11. [DOI:10.1016/j.ajog.2020.12.1212]
10. Wu P, Sharma GV, Mehta LS, Chew-Graham CA, Lundberg GP, Nerenberg KA, et al. In-hospital complications in pregnancies conceived by assisted reproductive technology. J Am Heart Assoc. 2022;11(5):e022658. [DOI:10.1161/jaha.121.022658]
11. Burke C, Allen R. Complications of cesarean birth: clinical recommendations for prevention and management. MCN Am J Matern Child Nurs. 2020;45(2):92-9. [DOI:10.1097/nmc.0000000000000598]
12. Teigen NC, Sahasrabudhe N, Doulaveris G, Xie X, Negassa A, Bernstein J, Bernstein PS. Enhanced recovery after surgery at cesarean delivery to reduce postoperative length of stay: a randomized controlled trial. Am J Obstet Gynecol. 2020;222(4):372.e1-372.e10. [DOI:10.1016/j.ajog.2019.10.009]
13. Hu XL, Wang YP, Wu LP, Shi XF, Yu LH, Zhang AH, et al. Impact of varied feeding protocols on gastrointestinal function recovery in the early postoperative period following repeat cesarean section: a randomized controlled trial. BMC Pregnancy Childbirth. 2024;24(1):768. [DOI:10.1186/s12884-024-06983-1]
14. Negrini R, da Silva Ferreira RD, Guimarães DZ. Value-based care in obstetrics: comparison between vaginal birth and caesarean section. BMC Pregnancy Childbirth. 2021;21(1):333. [DOI:10.1186/s12884-021-03798-2]
15. Childs C, Sandy-Hodgetts K, Broad C, Cooper R, Manresa M, Verdú-Soriano J. Birth-related wounds: risk, prevention and management of complications after vaginal and caesarean section birth. J Wound Care. 2020;29(Sup11a):S1-S48. [DOI:10.12968/jowc.2020.29.sup11a.s1]
16. Romanis EC. Addressing rising cesarean rates: maternal Request Cesareans, defensive practice, and the power of choice in childbirth. IJFAB: International Journal of Feminist Approaches to Bioethics. 2020;13(1):1-26. [DOI:10.3138/ijfab.13.1.01]
17. Hanson L, Malloy E, Simkin P, editors. Simkin's Labor Progress Handbook: Early Interventions to Prevent and Treat Dystocia. 5th ed. John Wiley & Sons; 2024.
18. Metwali NY, Ahmed RA, Timraz JH, Irfan H, Makarfi SM, Metwali MY, et al. Evidence-Based Strategies to Minimize Unnecessary Primary Cesarean Sections: A Comprehensive Review. Cureus. 2024;16(11):e74729. [DOI:10.7759/cureus.74729]
19. Chang KJ, Seow KM, Chen KH. Preeclampsia: Recent advances in predicting, preventing, and managing the maternal and fetal life-threatening condition. International Int J Environ Res Public Health. 2023;20(4):2994. [DOI:10.3390/ijerph20042994]
20. Al-Eqabi QA, Niazy SM, Radhi MM. Effectiveness of Digital Health Interventions in Managing Glycated Haemoglobin: A Randomized Controlled Trial. Nat J Commun Med. 2024;15(09):747-53. [DOI:10.55489/njcm.150920244442]
21. JP NA, Watanabe T, Eitoku M, Yamasaki K, Mitsuda N, Maeda N, et al. Association of a low chest-to-head circumference ratio with breech or transverse lie: the Japan Environment and Children's Study. J Matern Fetal Neonat Med. 2024;37(1):2305678. [DOI:10.1080/14767058.2024.2305678]
22. Johansson C, Finnbogadóttir H. First-time mothers' satisfaction with their birth experience–a cross-sectional study. Midwifery. 2019;79:102540. [DOI:10.1016/j.midw.2019.102540]

23. Dominguez JE, Taylor CR, Girard T. Morbid Obesity: Optimizing Neuraxial Analgesia and Cesarean Delivery Outcomes. Best Pract Res Clin Anaesthesiol. 2024;38(3):275-66. [DOI:10.1016/j.bpa.2024.11.002]
24. Kissler K, Hurt KJ. The pathophysiology of labor dystocia: theme with variations. Reprod Sci. 2023;30(3):729-42. [DOI:10.1007/s43032-022-01018-6]
25. Nieto-Calvache AJ, Ramasauskaite D, Palacios-Jaraquemada JM, Hussein AM, Jauniaux E, Ubom AE, et al. Complex cesarean section: Surgical approach to reduce the risks of intraoperative complications and postpartum hemorrhage. Int J Gynecol Obstet. 2025;168(3):987-98. [DOI:10.1002/ijgo.16094]
26. Chawanpaiboon S, Sompagdee N, Kaewsrinual S, Srikrisanapol K, Jitmuang A, Matrakool P, et al. Severe Complications of Uterine Dehiscence Post-Lower Segment Cesarean Section: A Case Report Emphasizing the Importance of Timely Diagnosis and Intervention. Am J Case Rep. 2024;25:e943027. [DOI:10.12659/ajcr.943027]
27. Inchingolo F, Inchingolo AD, Palumbo I, Trilli I, Guglielmo M, Mancini A, Palermo A, Inchingolo AM, Dipalma G. The Impact of Cesarean Section Delivery on Intestinal Microbiota: Mechanisms, Consequences, and Perspectives—A Systematic Review. Int J Mol Sci. 2024;25(2):1055. [DOI:10.3390/ijms25021055]

**How to Cite This Article:**

Hussein, H.K., Turkey, B.N., Shamkhi Alshlah, H.A. Factors Contributing to Cesarean Sections among Mothers and their Short-term Effects on Postpartum Outcomes: A Case-Control Study. J Obstet Gynecol Cancer Res. 2025;10(10):763-9.

**Download citation:** RIS | EndNote | Mendeley | BibTeX |