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Early Complications of Caesarian Sections among Women Delivered in Three Hospitals in Kerbala, 2024

A thesis

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بسم الله الرحمن الرحيم

"يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ وَاللَّهُ بِمَا تَعْمَلُونَ خَبِيرٌ"

صدق الله العلي العظيم

«سورة المجادلة: الايه 11»

Supervisor Certification

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Dedication

To my parents, for teaching me core life principles of diligence and determination, I am grateful; to my siblings, from whom I have received camaraderie and support all through my life, my appreciation; to my husband, for patience and tolerance while the research was being written, I am grateful.

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Abstract

Background: C/S is a lifesaving procedure but carries significant maternal and neonatal risks. Rising rates, often driven by non-medical factors, contribute to complications like hemorrhage, infection, and future pregnancy issues. Careful indication assessment, adherence to clinical guidelines, and improved postoperative care are essential to reduce unnecessary cesareans and associated complications.

Objective: To investigate the socio-demographic and obstetrical characteristics of women undergoing C/S deliveries, as well as the complications encountered during and after the procedure.

Patients and Methods: A total of 335 pregnant women who underwent caesarean sections were selected using a consecutive sampling approach to ensure a representative sample of post-operative patients. The data collected through structured questionnaire-based interview interviews. Socio-demographic factors, obstetrical and surgical history and complications were collected, categorized and analysed.

Results: The mean age of 26.7 ± 7.0 years and mean BMI of 28.0 ± 6.1 kg/m². Emergency C/S accounted for 55.8% and elective for 44.2%, with public hospitals performing more emergencies (61.4%) and private hospitals more electives (68.3%, $p < 0.001$). Medical complications occurred in 51.3%

of emergencies and 42.6% of electives, with anemia the most frequent (47.5%). Surgical complications were more common in elective C/S (36.5% vs. 19.8%), mainly postpartum hemorrhage (16.1%) and wound infection (13.7%). Anesthetic complications affected 36.7%, chiefly headache (18.8%), without significant difference between groups. Fetal complications were noted in 38.8% and primarily respiratory distress (26.6%), with higher rates of respiratory distress in emergencies (31.6% vs. 20.3%).

Conclusion: Cesarean section remains associated with considerable maternal and neonatal risks, particularly higher fetal complications with emergency procedures and greater surgical complications with elective ones. These findings underscore the need for preventive strategies and improved obstetric care, especially in public hospitals.

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List of Abbreviations

Abbreviation	Definition
ACOG	American College of Obstetricians and Gynecologists
APGAR	Appearance, pulse, grimace, activity and respiration
BMI	Body mass index
CPD	Cephalopelvic Disproportion
C/S	Caesarean section
DVT	Deep vein thrombosis
EMM	Endomyometritis
GDM	Gestational diabetes mellitus
GOTH	Gynecology and Obstetrics Teaching Hospital
HPG	Hypoglycemia
IDA	Iron deficiency anaemia
IUGR	Intrauterine growth restriction
IVF	In vitro fertilization
NICU	Neonatal intensive care unit
PPH	Postpartum hemorrhage
PPROM	Preterm premature rupture of the membranes
RDS	Respiratory distress syndrome
TBE	Thromboembolism
TTN	Transient tachypnea of the newborn
UTIs	Urinary tract infections
VBAC	Vaginal birth after cesarean
VD	Vaginal delivery
VTE	Venous Thrombotic Embolism
WHO	World Health Organization

Chapter One: Introduction

1.1. Cesarean section overview

Cesarean section (C/S) is a major surgical procedure increasingly used worldwide to protect mothers and newborns. While life-saving and essential in reducing maternal and perinatal deaths, its rising rates have raised concerns. The World Health Organization recommends a population rate of 10–15%, as higher levels show no additional mortality benefit. C/S carries risks, with early complications affecting recovery and the birth experience. Factors such as maternal preference, improved hospital access, and private sector growth have contributed to rising rates. Evidence-based guidelines stress case-by-case evaluation, with best practice focusing on comprehensive perioperative care and enhanced recovery to optimize outcomes (Burke & Allen, 2020; Jenabi et al., 2020; Singh et al., 2020; Van Wicklin, 2010).

1.2. Indications of cesarean section

Cesarean delivery is vital when maternal or fetal health is at risk. Key indications include obstructed labor from cephalopelvic disproportion, malpresentation, or uterine abnormalities. Poorly controlled maternal diabetes may also lead to macrosomia, raising the risk of complications during vaginal delivery (Dhakal-Rai et al., 2021; George et al., 2022; Veerabathiran, 2023; Yeshitila et al., 2022). Indications for cesarean delivery include fetal distress from abruption, growth restriction, or cord compression; maternal conditions

such as preeclampsia and gestational hypertension; and risks in women with prior cesareans, especially after classical incisions or multiple surgeries. Multiple pregnancies, particularly with non-vertex presentation, and placental disorders like previa or accreta also warrant cesarean delivery to safeguard mother and child (Asaye et al., 2023; Brennan, 2019; Ramos Filho & Antunes, 2020).

1.3. Elective vs. Emergency Cesarean Deliveries

Cesarean sections are either elective, scheduled in advance, or emergency, performed when immediate delivery is required. Distinguishing between them is vital, as each has different implications for maternal and neonatal outcomes (Dhaka-rai et al., 2022; Nahar et al., 2022). Elective cesareans are often chosen due to maternal preference, prior C/S, or medical conditions such as diabetes, hypertension, or uterine abnormalities. These factors guide the safest mode of delivery (Antoine & Young, 2020; Casella et al., 2020). Planned cesareans offer predictability, allow better preparation, and help avoid risks such as prolonged labor or sudden fetal distress, improving safety for mother and baby (Jenabi et al., 2020).

Although convenient, elective cesarean is major surgery with risks of bleeding, infection, thromboembolism, and anesthesia-related complications. The uterine scar may also increase future risks such as placenta previa,

accreta, uterine rupture, and the need for repeat surgery, which must be weighed against its benefits (Wallis & Roberts, 2023). Emergency cesareans are urgent procedures done to protect mother or baby, often due to fetal distress, obstructed labor, or sudden maternal crises like hemorrhage or severe hypertension. Performed with little preparation, they carry higher risks of bleeding and infection but are often life-saving (Kitaw et al., 2021; Wallis & Roberts, 2023).

1.4. Socioeconomic Factors Influencing Cesarean Rates

Rising global cesarean rates are strongly influenced by socioeconomic factors, which affect both decision-making and quality of care. The next section outlines the main pressures driving this trend (M. M. Hassan et al., 2023; Słabuszewska-Jóźwiak et al., 2020). Maternal education strongly influences delivery choices. Women with higher education are better informed, engage more in shared decision-making, and are more likely to choose elective cesareans. (Colomar et al., 2021; Deng et al., 2021; Meier et al., 2024) Areas with more skilled obstetricians tend to have lower cesarean rates, as experienced clinicians can manage high-risk cases and safely support vaginal delivery (Munyuzangabo et al., 2021).

Cultural norms strongly influence cesarean rates societies viewing C/S as safer see more elective cases, while those valuing natural birth record

fewer. Such beliefs shape care-seeking, delivery choices, and health outcomes (Buser et al., 2020; Colomar et al., 2021). Limited access to prenatal care in rural areas increases labor complications and emergency cesareans, underscoring the need for equitable maternal services to ensure safer outcomes (Adatara et al., 2021). In Iraq, the CS rate is significantly higher than the recommended rate of 10–15%. A previous study showed that the prevalence of CS increased from 18% in 2008 to 24.4% in 2012 increased to 33.2% in 2018 (Shabila, 2022).

1.5. Complications of Cesarean Section

1.5.1 Early complications

Cesarean delivery can save lives but its overuse increases risks. Compared with vaginal birth, C/S is linked to higher maternal and neonatal morbidity and mortality, including anesthesia complications, hemorrhage, infection, thromboembolism, and cardiac arrest. Non-medical C/S carries a threefold higher risk of maternal death, greater costs, and complications such as endometritis. ACOG reports mortality of 35.9 per 100,000 after C/S versus 9.2 after VD, with major risks including massive bleeding, transfusion, hysterectomy, sepsis, and pulmonary complications. Uterine scars raise the likelihood of rupture, placenta previa, and accreta in future pregnancies, while wound problems (3–15%) may delay recovery and impair maternal–infant

bonding (S. O. Hassan et al., 2023; Lupu et al., 2023; Melaku, 2022; Negese & Belachew, 2023)

Severe postpartum hemorrhage is a leading complication of cesarean, particularly repeat procedures, with risks of thromboembolism, massive bleeding (~7%), organ injury, postoperative pain (4–42%), and incisional hernia. Rising C/S rates have also increased rare but serious outcomes like uterine rupture and placenta previa. Short-term effects include hemorrhage, infection, pain, and longer hospital stays (3–5 days), while the physical and emotional burden of surgery may heighten postpartum anxiety and depression, highlighting the need for comprehensive maternal care (Ali et al., 2020; Engel et al., 2022; Fitzpatrick et al., 2019; Guo et al., 2022; Liu et al., 2021; Rydahl et al., 2019; Ueda et al., 2022; Wallace & Araji, 2020).

1.5.2 Late complications

Some women experience long-term problems after a cesarean, most notably chronic pain and scar-tissue adhesions that can tether organs and cause lasting discomfort. A cesarean scar can also weaken pelvic-floor support over time, increasing the risk of incontinence or pelvic-organ prolapse. These possibilities underscore the need for ongoing follow-up and support to spot and treat any late-emerging issues after surgery (Bailey, 2015; Xiao et al., 2025).

Unplanned cesareans can negatively affect maternal emotional well-being, leading to feelings of loss of control or dissatisfaction, underscoring the importance of postnatal support and counseling. Some studies also suggest a possible long-term link between cesarean delivery and higher risks of metabolic or cardiovascular disease, though evidence remains preliminary (Barca et al., 2021; Galin et al., 2022).

Aim of the study:

1) To assess the different types of complications of C/S in patients admitted in hospitals in Karbala city.
2) To find the association between the pretense of complications to demographics, characteristics of study participants.

Chapter Two: Patients and Methods

2.1 Study Design

A Cross sectional study.

2.2 Study Setting and Time

A hospital-based study was conducted on post-operative women who underwent C/S between November 2023 and December 2024 in Karbala City, Iraq. Data were collected from three main hospitals: two governmental (Gynecology and Obstetrics Teaching Hospital in Karbala, and Al-Hindiyah Teaching Hospital) and one private (Imam Al-Hujjah Hospital). Two other hospitals in Karbala (Ain Al-Tamur Hospital and Al-Hussainiyah Hospital) were also considered; however, we faced challenges in selecting the most suitable sites. Gynecology and Obstetrics Teaching Hospital was a strong candidate due to its size and central role, while Al-Tuwaireej Hospital was attractive because of its accessibility and my prior work experience there. The data collection period extended over 13 months, as I was only able to attend the study sites two days per week.

2.3 Sampling Method

A total of 335 women who underwent C/S were selected using a consecutive sampling approach to ensure representativeness of post-operative patients. Only inpatients were recruited, and each woman was contacted again

10 days after suture removal to follow up on her condition. To minimize technical issues, we ensured that phone numbers were collected for follow-up, and participants were also asked about the health status of their newborns.

2.4 Examination of Sample Size

To determine the appropriate sample size for the study, a prevalence rate of 32.1%, is used as reported in a survey conducted in Iraq including Karbala city in 2018. The same sample size formula is employed for cross-sectional studies (Daniel, 1995):

$$n = \frac{Z^2 \cdot p \cdot (1-p)}{E^2}$$

Where:

n = required sample size

Z = Z-value (for a 95% confidence level, $Z \approx 1.96$ $Z \approx 1.96$)

p = estimated prevalence (in this case, 0.321)

E = margin of error (commonly set at 0.05)

Plugging in the values:

Z-value: 1.96

Prevalence (p): 0.321

Margin of error (E): 0.05

The required sample size is approximately 335 participants. This calculation indicates that to achieve a reliable study with a prevalence of 32.1% at a 95% confidence level and a 5% margin of error, a sample size of at least 335 women post-cesarean section would be necessary.

2.5 Inclusion Criteria

The study included all women who underwent a C/S with a viable fetus, whether elective or emergency, and regardless of gestational age (full-term or preterm). Patients with concurrent medical or surgical conditions were also included. Furthermore, only women who responded to follow-up phone calls 10 days after surgery were considered eligible. Postoperative complications were classified as early if they occurred within 48 hours of the procedure.

2.6 Exclusion criteria

(1) cases of intrauterine fetal death, (2) women who declined participation, and (3) women who did not respond to the follow-up phone call. A total of 20 women were excluded, giving a drop-out rate of 6.0% from the original 335 participants.

2.7 Ethical consideration

- The study protocol was approved by the Ethical Committee at the University of Karbala, College of Medicine.

- Verbal consent was obtained from the participants prior to interviewing them, after explaining the objectives of the study. The questionnaire was administered to each patient in a private environment to ensure their privacy. Patients were informed that the information provided would be used solely for research purposes, and that their data would be treated confidentially, with full protection of their privacy and anonymity.

2.8 Pilot study

A pilot study was conducted involving 15 women to test the feasibility and clarity of the study procedures and questionnaire. This preliminary phase aimed to identify any potential issues in the study design, including the effectiveness of the questions in capturing the desired information and the overall flow of the data collection process. Participants in the pilot study were selected using the same criteria as those in the main study. Feedback was gathered from these individuals regarding their understanding of the questions and their comfort level during the interview process.

No adjustments were made to the questionnaire or procedures following the pilot study, as the initial results indicated that the tool were effective and suitable for the target population. This step ensured that the main

study could be conducted smoothly without any modifications. The fifteen individuals were included in the study.

2.9 Questionare form

A structured questionnaire (Appendix) was developed for the purpose of this study after a thorough review of previous researches. The questionnaire was evaluated by a panel of experts, including Dr. Shahrazad S. Al Jobori, a specialist in community medicine, and Dr. Azdihar Sahmi Hamoodi. This collaborative evaluation ensured that the questionnaire was both comprehensive and relevant to the objectives of the study.

The questionnaire utilized in this study was meticulously designed to collect comprehensive data on the demographic, medical, and obstetric history of post-operative women who underwent C/Ss. It was structured into several key sections, each targeting specific areas of interest to facilitate thorough analysis.

The first section focused on demographic characteristics, gathering information such as age, occupation, education level, and residence, along with details about whether the participants lived in rural or urban settings. Furthermore, smoking status and physical measurements, including weight and height, were recorded to assess potential health impacts.

The second section addressed gynecology and obstetrics history, where participants provided information about their obstetric background, including gravidity, parity, and the number of previous vaginal and cesarean births. This section also explored the nature of the current pregnancy, including whether it was natural or achieved through assisted reproductive technologies, and any complications experienced during the pregnancy.

The third section is for medical history section, the questionnaire inquired about existing medical conditions, such as diabetes, hypertension, and other relevant health issues that might influence the participants' overall health status. This was followed by a section on past surgical history, where respondents listed any previous surgeries, they had undergone, which could potentially affect their current cesarean experience. Besides, the questionnaire contained a detailed section on the cesarean section and delivery, focusing on specifics such as whether the procedure was elective or emergency, the type of anesthesia used, and the indications for the surgery.

The last, a section on maternal and fetal complications assessed any surgical or medical complications experienced by the mother during or after the cesarean delivery, as well as any fetal complications that occurred.

2.10 Data Collection

A total of 335 women with C/S were covered in the study. A detailed pro forma was completed regarding the relevant information about registered or unregistered, elective or emergency C/Ss. This study identified all women who delivered during the study period and meticulously documented their demographic and obstetric characteristics, including gestational age, fetal number, and indication for C/S.

2.11 Statistical Analysis

The data analysis for this study was conducted using the licensed Statistical Package for Social Sciences (SPSS Inc., Chicago, Illinois, USA) version 26.0 software. To present the study results, a descriptive summary was used, which involved the use of frequencies, percentages, graphs, and cross tabs. To test statistical significance at the 5% level of significance, probability (P) was calculated by using Chi-square method.

Chapter Three: Results

3.1. Socio-Demographical Characteristics of the Study Participants.

As shown in table 3.1 a total of 335 women who underwent C/S were included in the study. The mean age of participants was 26.74 ± 7.04 years, with an average body weight of 69.84 ± 12.98 kg, and height of 157.73 ± 10.27 cm. The mean body mass index (BMI) was 28.01 ± 6.06 kg/m², indicating that the average participant fell into the overweight category. Regarding smoking status, half of our sample were non-smokers (50.1%), followed by passive smokers (38.5%), while current smokers and ex-smokers constituted 10.7% and 0.6%, respectively. In terms of occupational status, 81.2% of participants were housewives, 17.6% were employed, and 1.2% were students. Educational level varied: 12.8 were illiterate, 31.1% could read and write, 26.3% had completed primary education, 17.3% had secondary education, and 12.5% had attained higher education. Most participants were residents of Karbala Governorate (91.6%), with a smaller proportion from Babylon (7.2%) and Baghdad (1.2%). Regarding their place of residence, 58.5% lived in urban areas, while 41.5% resided in rural areas.

Table 3.1: Socio-demography of the participants. (n = 335)

Variables	**Subjects** *(n = 335)*
Age, years (Mean±Sd)	26.74±7.04
Weight, Kg (Mean±Sd)	69.84±12.98
Height, cm (Mean±Sd)	157.73±10.27
BMI, Kg/m^2 (Mean±Sd)	28.01±6.06
Smoking Status no (%)	
Non-smokers	168 (50.1)
Passive smokers	129 (38.5)
Current Smokers	36 (10.7)
Ex-smokers	2 (0.6)
Occupation no (%)	
Housewife	272 (81.2)
Employed	59 (17.6)
Student	4 (1.2)
Education status no (%)	
Illiterate	43 (12.8)
Read and write	104 (31.1)
Primary education	88 (26.3)
Secondary education	58 (17.3)
Higher Education	42 (12.5)
Government no (%)	
Karbala	307 (91.6)
Babylon	24 (7.2)
Baghdad	4 (1.2)
Settlement Type no (%)	
Rural	139 (41.5)
Urban	196 (58.5)

In table 3.2 the majority of the study population belonged to the 20–24-year age group, comprising 108 individuals (32.2%). This was followed by participants aged 25–29 years, who accounted for 84 individuals (25.1%). The remaining age groups were distributed as follows: 30–34 years (19.4%), less than 20 years (12.8%), 40 years and above (5.4%), and 35–39 years (5.1%).

Table 3.2: The Distribution of Study Population According to the Age Groups and BMI Categories. (N = 335)

Variables		Frequency	Percentage
Age groups no (%)	Less than 20 yrs.	43	12.8%
	20 – 24 yrs.	108	32.2%
	25 – 29 yrs.	84	25.1%
	30 – 34 yrs.	19.4	19.4%
	35 – 39 yrs.	17	5.1%
	40 yrs. and more	18	5.4%

Figure 3.1 illustrates the distribution of participants according to BMI categories. The majority of the study population were either overweight or obese. Specifically, 117 participants (34.9%) were classified as overweight and 115 (34.3%) as obese. Individuals with normal weight comprised 29.3% (n = 98) of the sample. Only 5 participants (1.5%) were categorized as underweight, representing the smallest proportion among the BMI groups.

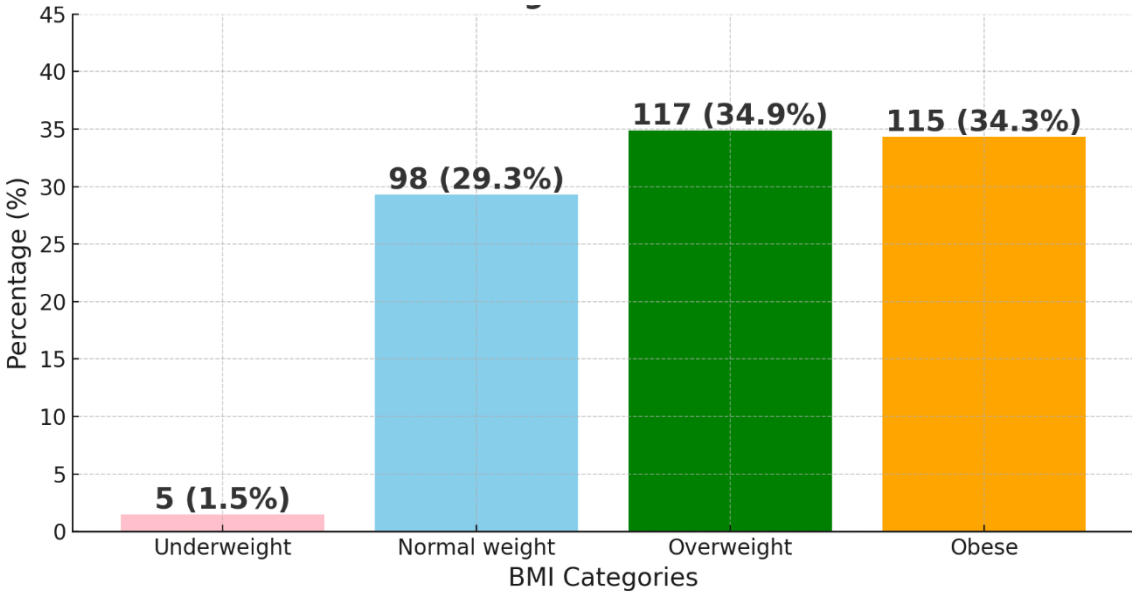

Figure 3.1 Percentage Distribution of Study Participants by BMI Categories

Figure 3.2 offers the number of study participants recruited from each hospital. The highest number was from GOTH, Karbala, with 152 participants (45.4%), followed by Al-Hindiyah General Hospital with 120 participants (35.8%). The Imam Al-Hujjah Hospital contributed 63 participants, accounting for 18.8% of the total study population.

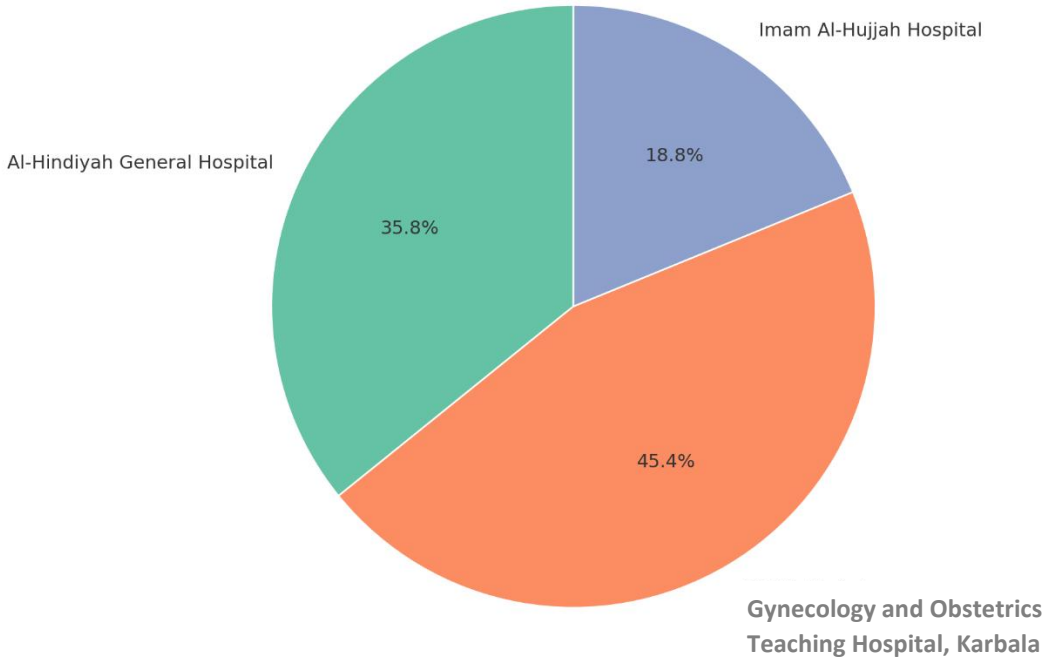

Figure 3.2: Distribution of Participants Across Hospitals (N = 335)

3.2. Obstetrical Characteristics of the Study Participants.

A total of 69.6% (n = 233) of women reported no history of abortion, while 30.4% (n = 102) had experienced at least one abortion. Most had not delivered vaginally (78.8%, n = 264), whereas 21.2% (n = 71) had a history of VD. Previous C/S was reported by 54.6% (n = 183), compared to 45.4% (n

= 152) without. Regarding birth outcomes, 92.8% (n = 311) were full-term and 12.2% (n = 41) pre-term. PPROM occurred in 22.4% (n = 75), while 77.6% (n = 260) did not experience it. Most pregnancies were natural (83.3%, n = 279); others included artificial insemination (1.5%, n = 5), ovulation induction (13.1%, n = 44), and IVF (2.1%, n = 7).

The participants reported various previous surgeries, predominantly C/S (45.4%, n = 152), followed by appendectomies in 15.8% (n = 53) of cases, Additionally, 6.6% (n = 22) underwent other types of surgeries while 41.5% reported no prior surgical interventions. For participants currently experiencing a caesarean delivery, 55.8% (n = 187) were classified as having an emergency C/S, while 44.2% (n = 148) were designated as elective C/S. This data is summarized in Table 3.3 below.

Table 3.3: Obstetric and Surgical History of the Study Participants. (N = 335)

Variables	Participants (n = 335)
History of Abortion, n (%)	
Yes	102 (30.4)
No	233 (69.6)
History of Vaginal Delivery, n (%)	
Yes	71 (21.2)
No	264 (78.8)
Previous C/S, n (%)	
Yes	183 (54.6)
No	152 (45.4)
Birth Term History, n (%)	
Full term	294 (87.8)
Pre-term	41 (12.2)
Preterm premature rupture of the membranes (PPROM), n (%)	
Yes	75 (22.4)
No	260 (77.6)
Type of Pregnancy, n (%)	
Natural	279 (83.3)
Artificial insemination	5 (1.5)
Ovulation induction	44 (13.1)
Invitro fertilization	7 (2.1)
Previous Surgeries, n (%)	
C/S	152 (45.4)
Appendectomy	53 (15.8)
Others	22 (6.6)
No	139 (41.5)
Type of current C/S, n (%)	
Emergency	187 (55.8)
Elective	148 (44.2)

Among the 335 women studied, the majority of cesarean sections (C/S) performed in public hospitals were emergency procedures, accounting for 167 (61.4%), compared to 20 (31.7%) in private hospitals. Conversely, elective C/S was more frequent in private hospitals 43 (68.3%) than in public hospitals 105 (38.6%). Overall, 55.8% (n = 187) of the procedures were emergencies, while 44.2% (n = 148) were elective. The difference in the type of C/S between public and private hospitals was statistically significant ($p < 0.001$).

Table 3.4: Distribution of Emergency and Elective Cesarean Sections Between Public and Private Hospitals.

Variables	**Public Hospital No (%)**	**Private hospital No (%)**	**p value**
Type of current C/S, n (%)			
Emergency	167 (61.4)	20 (31.7)	< 0.001
Elective	105 (38.6)	43 (68.3)	
Total	272 (100)	63 (100)	

3.3. Complications of Cesarean Section

The different complications encountered by the study participants prior to, during and following their C/S surgeries were categorised into seven groups. These are Obstetric complications, medical conditions, surgical complications, anaesthetic complications, and fetal complications.

3.3.1.Obstetric Complications During Pregnancy

Figure 3.3 illustrates the distribution of obstetric complications among the 335 participants. A total of 141 women (42.1%) had no complications during pregnancy. The most commonly reported complication was premature rupture of membranes (PPROM), observed in 74 participants (22.1%). Antepartum hemorrhage (APH) occurred in 36 cases (10.7%), followed by gestational diabetes mellitus in 32 participants (9.6%). Preeclampsia and eclampsia were reported in 27 (8.1%) and 22 (6.6%) participants, respectively. HELLP syndrome was the least frequent complication, affecting only 3 participants (0.9%).

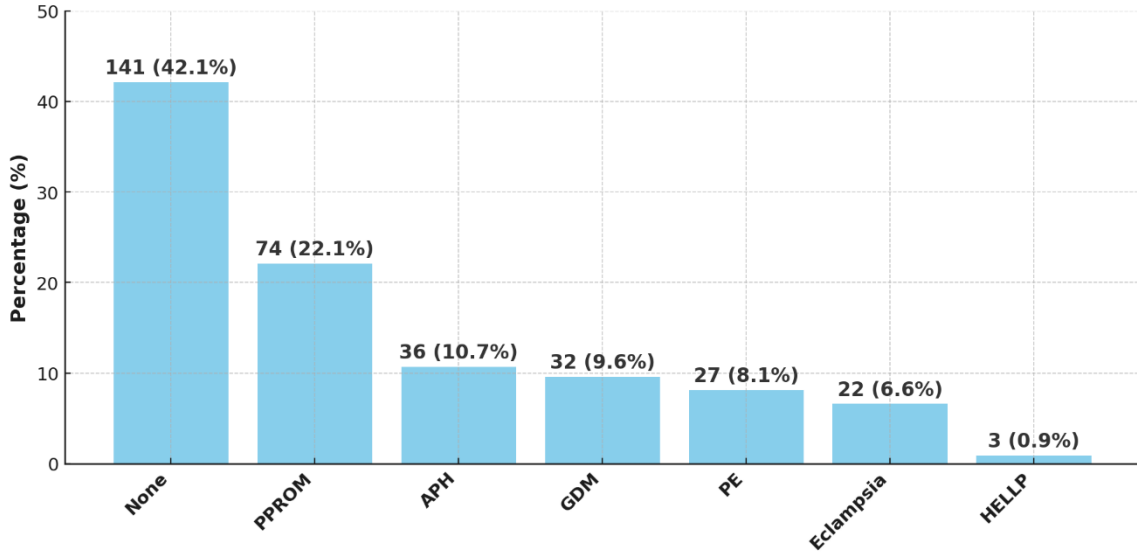

Figure 3.3 Distribution of Obstetric Complications. (n = 335)

3.3.2.Medical Complications

Figure 3.4 offers the distribution of medical conditions observed following C/S. The most common condition was anemia, affecting 159

participants (47.5%). Urinary tract infections (UTIs) were reported in 73 cases (21.8%). Both Endomyometritis and venous thromboembolism (VTE) occurred in 14 participants each, representing 4.2% of the population. A total of 74 participants (22.1%) reported no medical complications following surgery.

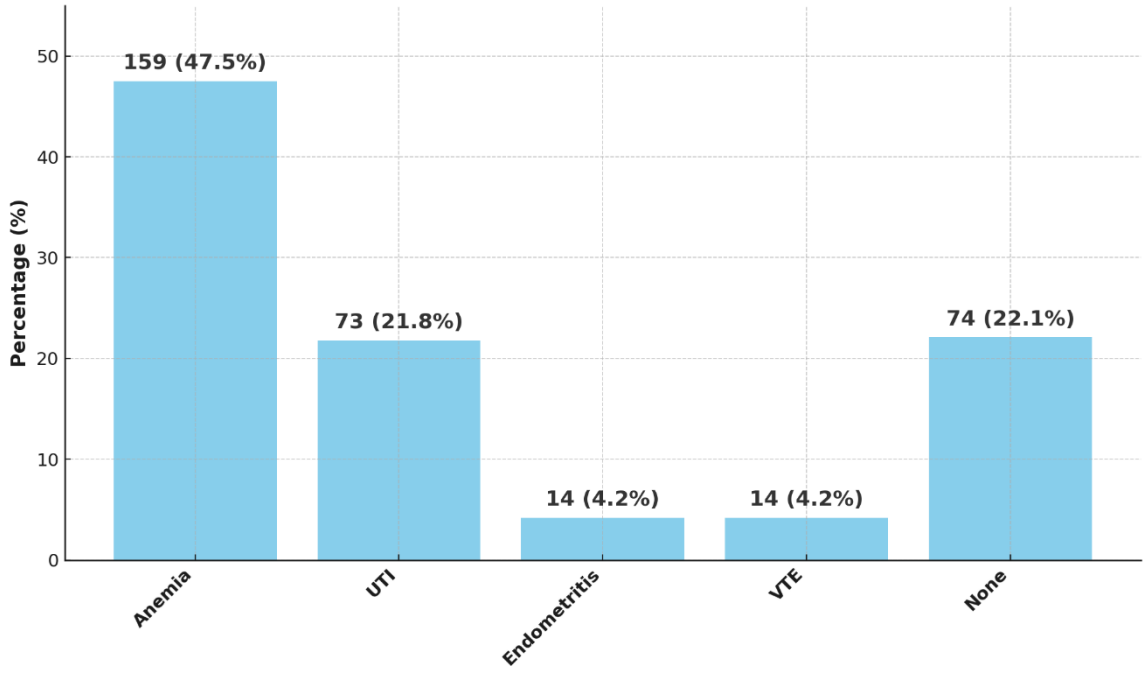

Figure 3.4: Percentage Distribution of Medical Conditions Following C/S (n = 335)

3.3.3.Surgical Complications

Table 3.5 displays the distribution of surgical complications among women who underwent C/S. The majority of participants (207; 61.8%) did not experience any surgical complications. The most frequently reported

complication was postpartum hemorrhage, occurring in 54 cases (16.1%), followed by wound infection in 46 participants (13.7%). Other less common complications included wound hematoma (13 cases; 3.9%), bladder injury (6 cases; 1.8%), and paralytic ileus (5 cases; 1.5%). Rare complications observed were hysterectomy (2 cases; 0.6%), wound dehiscence (1 case; 0.3%), and pelvic hematoma (1 case; 0.3%).

Table 3.5: Distribution of the Participants with Respect to Surgical Complications. (N = 335)

Surgical Complications	Number of participants	Percentage (%)
PPH	54	16.1
Wound infection	46	13.7
Wound hematoma	13	3.9
Bladder injury	6	1.8
Paralytic ileus	5	1.5
Hysterectomy	2	0.6
Pelvic hematoma	1	0.3
Wound dehiscence	1	0.3
None	207	61.8

3.3.4.Anaesthetic Complications

Table 3.6 presents the distribution of anaesthetic complications experienced by the participants. The majority of women (212; 63.3%) reported no anaesthetic-related complications. Among those who did, the most common complaint was headache, affecting 63 participants (18.8%). This was followed by back pain in 16 women (4.8%) and hypoxia in 13 cases

(3.9%). Other reported complications included sore throat (12 cases; 3.6%), prolonged recovery from anesthesia (11 cases; 3.3%), and difficulty with urination (8 cases; 2.4%).

Table 3.6: Distribution of the Participants with Respect to Anaesthetic Complications. (N = 335)

Anaesthetic Complications	Number of participants	Percentage (%)
Headache	63	18.8
Back pain	16	4.8
Hypoxia	13	3.9
Sore throat	12	3.6
Prolonged recovery	11	3.3
Difficult urination	8	2.4
None	212	63.3

Figure 3.5 illustrates the distribution of anesthesia types used during C/Ss among the study participants. Spinal anesthesia was the most commonly administered technique, used in 193 cases (57.6%). General anesthesia was used in 142 participants, accounting for 42.4% of all procedures.

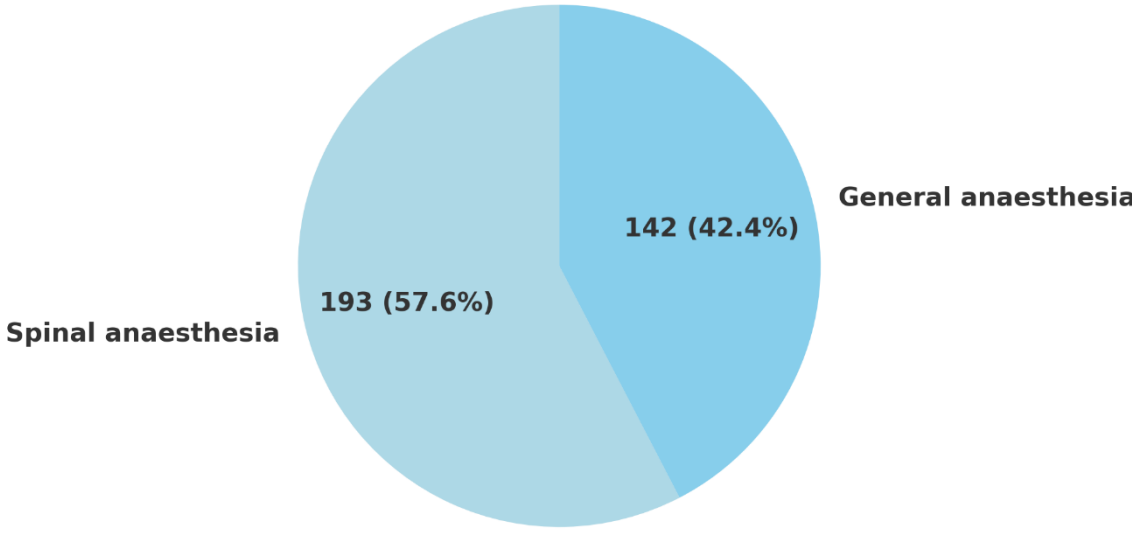

Figure 3.5: Distribution of Type of Anesthesia Used During C/S (N = 335)

3.3.5.Fetal complications

Table 3.7 introduces the distribution of fetal complications among the 335 newborns delivered by C/S. Out of 335 newborns delivered by cesarean section, 89 (26.6%) developed respiratory distress, while 41 (12.2%) had transient tachypnea of the newborn (TTN). The majority, 205 (61.2%), did not experience any fetal complications.

Table 3.7: Distribution of the Study Participants with Respect to Fetal Complications (N = 335)

Fetal Complications	Number of participants	Percentage (%)
Respiratory distress	89	26.6
Transient tachypnea of the newborn (TTN)	41	12.2
None	205	61.2

Among 335 women, medical complications were more frequent in emergency C/S, with anemia the most common (51.3% vs. 42.6%). UTIs were slightly higher in elective C/S (24.3% vs. 19.8%). Surgical complications were significantly more common in elective procedures (p = 0.011), with higher rates of PPH (36.5% vs. 19.8%) and wound infection (31.1% vs. 13.9%). Anesthetic complications showed no significant difference (p = 0.935); headache was the most frequent in both groups (19.3% vs. 18.2%). Fetal complications did not differ significantly (p = 0.066); respiratory distress was more common in emergencies (31.6% vs. 20.3%), while TTN occurred at similar rates (11.8% vs. 12.8%).

Table 3.9: General Complications and Medical Condition Based on Hospital Attended (N = 335).

Variables	Emergency n (187)	Elective n (148)	p-value
Medical complications			
Anemia	96 (51.3%)	63 (42.6%)	0.290
UTI	37 (19.8%)	36 (24.3%)	
Endomyometritis	7 (3.7%)	7 (4.7%)	
VTE	10 (5.3%)	4 (2.7%)	
No	37 (19.8%)	38 (25.7%)	
Surgical complications			
PPH	37 (19.8%)	54 (36.5%)	0.011
Wound infection	26 (13.9%)	46 (31.1%)	
Wound hematoma	8 (4.3%)	13 (8.8%)	
Paralytic ileus	0 (0.0%)	5 (3.4%)	
Hysterectomy	2 (1.1%)	2 (1.4%)	
Pelvic hematoma	1 (0.5%)	1 (0.7%)	
Wound dehiscence	0 (0.0%)	1 (0.7%)	
Bladder injury	6 (3.2%)	6 (4.1%)	
No	107 (57.2%)	100 (67.6%)	
Anesthetic complication			
Back pain	9 (4.8%)	7 (4.7%)	0.935
Headache	36 (19.3%)	27 (18.2%)	
Hypoxia	8 (4.3%)	5 (3.4%)	
Prolonged recovery	5 (2.7%)	6 (4.1%)	
Sore throat	5 (2.7%)	7 (4.7%)	
Difficult urination	5 (2.7%)	3 (2.0%)	
No	119 (63.6%)	93 (62.8%)	
Fetal complication			
Respiratory distress	59 (31.6%)	30 (20.3%)	0.066
TTN	22 (11.8%)	19 (12.8%)	
No	106 (56.7%)	99 (66.9%)	

Chapter Four: Discussion

4.1. Socio-Demographic Characteristics of the Study Participants

The demographic profile of the 335 women undergoing C/S in this study provides important insight into both clinical risk patterns and the social determinants of maternal health outcomes in the region. The mean age of participants was 26.74 ± 7.04 years, which aligns with national and regional fertility trends, where the peak childbearing age lies between 20 and 30 years (de la Calle et al., 2021; Solmi et al., 2022). This mirrors findings from studies in neighboring Middle Eastern populations, such as Saudi Arabia, where cesarean delivery is most common among women aged 25–29 years (Alshammari et al., 2023).

The one third of participants (32.2%) belonged to the 20–24-year age group, followed by 25.1% aged 25–29 years, suggesting that C/S was most commonly performed among women in their early to mid-reproductive years. This pattern is consistent with national and regional fertility data, where peak birth rates typically occur between ages 20 and 30 (Ning et al., 2022). In comparable research from Egypt and Iran, the majority of cesarean deliveries also occurred in women aged 20–29 years (Elnakib et al., 2019; Mohammadi et al., 2022).

The average BMI of 28.01 kg/m² classifies the majority of participants as overweight. This is consistent with global trends indicating increasing

maternal BMI as a significant public health concern (Baghlaf et al., 2023; Driscoll & Gregory, 2020). Elevated maternal BMI is strongly associated with increased risk of cesarean delivery due to labor dystocia, fetal macrosomia, and poor wound healing (Class, 2022; Pavlidou et al., 2023). Notably, a 2022 cohort study found out that women with BMI ≥25 had a 1.5–2.0 times higher likelihood of requiring C/S (Bjorklund et al., 2022; Class, 2022).

Geographically, 91.6% of participants were residents of Karbala Governorate, with a majority living in urban areas (58.5%), and the rest from rural areas (41.5%). Urban residency is typically linked with with better access to obstetric services, higher likelihood of institutional deliveries, and availability of specialized care—all of which may increase the rate of C/Ss. This result goes in line with a study done in Diwaniyah Maternity and Pediatric Hospital/Iraq which also shows that most of C/S delivers were done in urban side (Ghufran Fadhil Abo-Khuwait & Najmah Mahmood Meran, 2021). However, this advantage may be offset by higher elective cesarean demand or provider preference in urban hospitals. Conversely, rural populations may face delays in seeking care, which could increase the incidence of emergency cesareans and obstetric complications (Decker & Weaver, 2024).

4.2. Obstetrical Characteristics of the Study Participants

A significant proportion of women (69.6%) reported no prior history of abortion, while 30.4% had experienced at least one. This aligns with findings from regional studies where induced and spontaneous abortion rates are affected by access to reproductive health services, contraceptive use, and sociocultural factors (Sesay et al., 2023). The relationship between previous abortions and subsequent pregnancy complications has been documented in literature, suggesting that such histories may predispose women to higher risks during future pregnancies (Hughes et al., 2020).

Regarding delivery history, only 21.2% of participants had experienced a VD, while 78.8% had not. This may indicate a strong shift toward primary cesarean delivery, which has implications for future birth planning (Antoine & Young, 2020). More strikingly, 54.6% of participants had a history of prior C/S. This is a crucial observation, as previous cesarean is one of the strongest predictors of repeat cesarean, contributing to the global rise in C/S rates (Antoine & Young, 2020).

In terms of gestational age outcomes, 92.8% of participants delivered at full term, with preterm birth reported in 12.2% of cases. This preterm birth rate is slightly higher than the global estimate of 9.9% (Ohuma et al., 2023), suggesting the need for enhanced antenatal surveillance and interventions to reduce preterm labor triggers.

PPROM occurred in 22.4% of participants, raising concern due to its link with increased maternal and neonatal morbidity (Graham et al., 2023). Most pregnancies were naturally conceived (83.3%), reflecting cultural norms, while Assisted Reproductive Technologies () contributed a smaller share: ovulation induction (13.1%), IVF (2.1%), and artificial insemination (1.5%). Despite their low proportion, ART cases are notable as they carry higher obstetric risk and are often associated with elective cesarean delivery (Galanti et al., 2024; Lin et al., 2021)

A review of previous surgical history revealed that 45.4% had a prior C/S, with appendectomy (15.8%) and other surgeries (6.6%) also reported. Surgical history may affect future obstetric decisions, especially in cases of intra-abdominal adhesions or uterine scarring, which can influence the choice for repeat cesarean and surgical difficulty (Ghobrial et al., 2023).

Finally, the distribution of current cesarean types showed that 55.8% were emergency procedures, while 44.2% were elective. This pattern reflects the broader global trend in developing countries, where emergency cesareans are more prevalent due to delayed labor interventions or limited access to timely monitoring (Betran et al., 2021; Beyene et al., 2021). Emergency C/S are typically associated with higher maternal and neonatal risk, underscoring the importance of improving triage systems and antenatal surveillance to

facilitate elective planning when appropriate (Garg & Jaiswal, 2023). Comparatively, recent hospital-based data from Iraq often show a different pattern. Several studies (for example in Kirkuk (Khalaf & Al-Kaseer, 2024) and Baghdad (Hussein & Nasir, 2025)) report that elective CS outnumber emergency CS, with elective procedures frequently accounting for over 60% of cesareans. These findings suggest that in some regions of Iraq, antenatal surveillance, scheduling of planned cesareans, and earlier interventions may be more established, lowering the relative burden of emergencies. Regionally in the Middle East, the overall cesarean section rates are quite high, but breakdowns into emergency vs elective are less consistently reported. Nevertheless, the rise in CS rates across countries (e.g., in Turkey, Iran, Egypt) has been driven in part by elective (planned) CS whether for previous CS, maternal request, or medical scheduling (Jadoon et al., 2019; McCall et al., 2021; Umar & Haque, 2022). In Europe, where antenatal care, monitoring, and infrastructure are generally stronger, many countries show a lower overall CS rate compared to some Middle Eastern countries, and a higher proportion of CS are elective rather than emergency. For example, in Scotland in 2019-20, among live singleton births delivered by CS, about 16.7% were elective, and 17.8% emergency (Scottish Government, 2021). Overall, the obstetrical history of the study participants suggests a population with a high prevalence

of prior cesarean deliveries, elevated PPROM rates, and a substantial proportion of emergency surgeries.

4.3. Complications of Cesarean Section

Cesarean section, while often a life-saving procedure, is associated with a broad range of complications that affect maternal and neonatal outcomes. This study classified complications into five main categories: obstetric, medical, surgical, anesthetic, and fetal. The findings provide a comprehensive overview of the perioperative risks encountered by women undergoing cesarean delivery and offer points of comparison with regional and global literature.

Obstetric Complications During Pregnancy

Among the study population, 42.1% reported no obstetric complications during pregnancy, which suggests that a considerable proportion underwent C/S for non-complication-related indications. Nevertheless, premature rupture of membranes (PPROM) was the most common obstetric issue, affecting 22.1% of participants. This high rate may denote challenges in infection screening, antenatal care access, or premature cervical changes, especially in lower-resource settings (Telayneh et al., 2023; Tiruye et al., 2021).

Antepartum hemorrhage (10.7%), gestational diabetes (9.6%), preeclampsia (8.1%), and eclampsia (6.6%) were also prominent. These figures are in line with data from the Middle East and South Asia, where the burden of hypertensive and metabolic pregnancy disorders remains high (Fu et al., 2023; Jiang et al., 2022; Wang et al., 2021). The low prevalence of HELLP syndrome (0.9%), while expected given its rarity, emphasizes the importance of early diagnosis and high-dependency care, which are often limited in government facilities.

In the Middle East overall, pooled estimates for gestational diabetes mellitus reach approximately 13.0%, substantially higher than typical European rates (2-6%) in many countries (Al-Rifai et al., 2021). In Europe, a meta-analysis of 24 countries found a weighted GDM prevalence of about 10.9% (95% CI: 10.0–11.8) with higher rates in Eastern Europe (~31.5%) and lower in Northern Europe (~8.9%) (Paulo et al., 2021). The preeclampsia prevalence in Middle East studies ranges from about 0.17% to 5%, depending on country and study design (Hegazy et al., 2024).

Medical Conditions Post-Cesarean

Anemia was the most frequently reported medical condition in our cohort, affecting 47.5% of participants. This is substantially higher than the World Bank and local data for Iraq, where anemia among pregnant women is

reported at about 32-33% in recent years (Al-Rudaini et al., 2025; Haseeb Shakir et al., 2025). Globally, postpartum anemia rates are often reported around 20-30% in well-resourced settings, making our finding substantially elevated. Urinary tract infections (UTIs) affected 21.8% of our sample, far higher than reported in studies from high-income countries: in Denmark for example, 2.8% of women after caesarean section acquired UTI vs ~1.5% after vaginal birth (Leth et al., 2009). "Less common" complications such as endometritis were observed in global literature at rates of ~ 2-16% following cesarean section (Lazzaro et al., 2025). The elevated prevalence of anemia, UTIs, and infection (e.g. endometritis) in our cohort compared to many regional and global reports emphasizes the urgent need to improve perioperative care, infection prevention (including aseptic technique and catheter management), nutritional support (especially iron supplementation), and risk stratification for thromboprophylaxis in high-risk obstetric populations. The elevated prevalence of anemia, UTIs, and infection (e.g. endometritis) in our cohort compared to many regional and global reports emphasizes the urgent need to improve perioperative care, infection prevention (including aseptic technique and catheter management), nutritional support (especially iron supplementation), and risk stratification for thromboprophylaxis in high-risk obstetric populations.

Surgical Complications

Surgical complications were reported in 38.2% of our participants, with postpartum hemorrhage (PPH) (16.1%) and wound infection (13.7%) being the most frequent. The observed PPH rate of ~15-18% is consistent with findings in Arab populations: a recent study of intrapartum caesarean sections found elevated severe PPH (≥ 1500 ml loss) in Arab women, with ~2-fold higher odds compared to non-Arab women (Waheed et al., 2024). In contrast, some settings in Saudi Arabia show somewhat lower rates; for example, a Jazan-region study among repeat CS patients reported postoperative infections and blood transfusions frequently, but intraoperative PPH specifically was reported around 10% in some Saudi hospital studies (Al-Kadri et al., 2015; Murtada et al., 2023). Wound or surgical site infection (SSI) figures in our cohort (13.7%) are at the higher end of regional and global reports. In an Egyptian tertiary hospital, SSI post-CS was ≈ 5.34% (Gomaa et al., 2021). In Europe, depending on hospital setting and duration of follow-up (including after discharge), SSI rates after caesarean section vary substantially from about 1.5% up to 20% in some studies. For example, in Norway, postoperative infection rates (before discharge) are reported around 0.1–3.7%, and when including after discharge surveillance, rising to ~ 8% (Blom et al., 2008).

Anesthetic Complications

Anesthetic complications were reported in 36.7% of cases in our study, with headache (18.8%) being the most frequent. This is consistent with global estimates of post-dural puncture headache (PDPH), which in meta-analyses and prospective studies range from approximately 20-25% for patients undergoing spinal anesthesia for CS, depending heavily on needle type, insertion technique, and practitioner skill (Chekol et al., 2021; Girma et al., 2022). Less common complications in our sample included back pain (4.8%), hypoxia (3.9%), and sore throat (3.6%) the last being more common among those who received general anesthesia. The proportion of general anesthesia in our cohort was 42.4%, which is notably higher than in many settings; for example, in the WHO Global and Multi-Country Surveys, spinal anesthesia accounted for ~48.9% to 57.1% of cases, with general anesthesia being used much less frequently when regional methods are feasible (Lumbiganon et al., 2020).

Fetal Complications

Comparing our findings (respiratory distress in 26.6% and TTN in 12.2% of neonates delivered by C/S, with 61.2% having no fetal complications) with regional and global data underscores how elevated our rates are. For example, in a comparable study in Baghdad examining elective

C/S, the rate of neonatal respiratory distress was about 7.7% among neonates delivered by CS. In the Misan Hospital study in Iraq, respiratory distress comprised 84.8% of neonatal admissions, but TTN among those with respiratory distress was ~ 33.1% (Musa Aljawadi & Al-Muhsen Ali, 2019). In contrast, studies from Europe and settings with strong neonatal care show much lower TTN rates in C/S deliveries, especially when the CS occurs after 39 completed weeks of gestation: for example, in Iranian studies TTN was ~1.5% in those born between 38-39 weeks, and ~0.5% after 39 weeks (Pirjani et al., 2018). Our relatively higher rates of both RD and TTN suggest possible earlier timing of C/S.

Limitations

1) We tried hard to obtain approval to collect samples from other hospitals but these hospitals refuse to cooperate with us.
2) The possibility of postpartum weight gain, which may result from fluid retention and delayed return of the body to its pre-pregnancy size.
3) Early discharge of the patients with limited follow-up period.

Chapter Five: Conclusion and Recommendations

5.1 Conclusion

1) Among 335 women, emergency cesarean sections (C/S) accounted for 55.8%, while elective C/S represented 44.2%.
2) Public hospitals performed significantly more emergency procedures (61.4%), whereas private hospitals conducted more elective cases (68.3%, $p < 0.001$).
3) Medical complications were common, with anemia in 159 women (47.5%) and urinary tract infections (UTIs) in 73 (21.8%).
4) Most common surgical complications included postpartum hemorrhage (16.1%) and wound infection (13.7%).
5) Anesthetic complications occurred in 123 women (36.7%), with headache being the most frequent (18.8%).
6) Fetal complications were observed in 130 newborns (38.8%), mainly respiratory distress (26.6%) and transient tachypnea of the newborn (TTN, 12.2%).
7) Emergency C/S was associated with higher fetal complication rates (31.6%), while elective C/S showed more surgical complications (36.5% vs. 19.8%, $p = 0.011$).

5.2 Recommendations

The following recommendations are made for future research studies towards improving the findings of this study.

1) Future research should focus on longitudinal studies that track the outcomes of C/Ss in relation to socio-demographic factors, particularly in low-resource settings. Additionally, exploring the impact of educational interventions on health literacy and subsequent pregnancy outcomes could provide valuable insights.
2) Develop and enforce national guidelines to limit unnecessary elective C/S, aligning with WHO's recommended rate of 10–15%.
3) Educate women and families about risks of repeated and elective C/S, encouraging safe vaginal delivery when possible.
4) More extensive studies examining the effects of environmental factors, such as passive smoking, on pregnancy complications are warranted to inform public health strategies aimed at reducing risks associated with C/S deliveries.
5) Investigating interventions specifically targeting preterm deliveries could provide valuable insights into improving maternal and neonatal health outcomes.

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Appendix

استبيان حول المضاعفات المبكرة للعمليات القيصرية لدى النساء اللواتي اخضعن للزلاده القيصريه في ثلاثه مستشفيات في كربلاء لعام 2023

عزيزتي المشاركة، نقوم بإجراء بحث على النساء اللاتي أجرين عملية قيصرية من أجل تقييم المضاعفات المبكرة للعملية القيصرية. سيساعدنا هذا البحث على تحسين حياة النساء بعد العمليات القيصرية في المستقبل. سيتم استخدام المعلومات للأغراض العلمية فقط وستظل سرية، ولن يتم كتابة اسمك في هذا النموذج. نحن نقدر بشدة مساعدتكم في الرد على هذا الاستبيان.

البيانات الديموغرافية:

1) العمر (سنوات):

2) المهنة: ☐ موظف خاص ☐ موظف حكومي ☐ عاطل عن العمل ☐ طالب ☐ اخرى

3) المستوى التعليمي: ☐ أمي ☐ القراءة والكتابة ☐ المرحلة الابتدائية ☐ المرحلة الثانوية ☐ الدراسات العليا

4) السكن: ☐ كربلاء ☐ أخرى:

5) ريفي أو حضري: ☐ ريفي ☐ حضري

6) التدخين: ☐ مدخنة ☐ غير مدخنة ☐ مدخنة ولكن توقفت عن التدخين خلال هذا الحمل ☐ مدخنة سابقة ☐ مدخنة سلبية

7) الوزن: الطول: مؤشر كتلة الجسم:

8) هذه العينة مأخوذة من:

☐ مستشفى الامام الحجة

☐ مستشفى النساء والتوليد التعليمي – كربلاء

☐ مستشفى الهندية العام

التاريخ المرضي الخاص بالحمل والولادة:

9) عدد مرات الحمل: الحمل (G): الانجاب (P): الإجهاض (A):

10) عدد الولادات الطبيعية والقيصرية السابقة:

الطبيعية: العملية القيصرية (C/S):

11) عدد مرات الحمل الكامل والحمل المبكر: الحمل الكامل: الحمل المبكر:

12) الحمل المتعدد في الحمل الحالي: ☐ لا ☐ نعم: ☐ ثلاثي ☐ رباعي

13) نوع الحمل: ☐ طبيعي ☐ تحفيز الإباضة ☐ التخصيب خارج الرحم (IVF)

☐ التلقيح الاصطناعي

14) ☐ تمزق الأغشية المبكر (PPROM)

مضاعفات الحمل خلال هذا الحمل:

15) ☐ داء سكري الحمل ☐ تسمم الحمل ☐ الارتعاجُ

☐ متلازمة انحلال الدم وارتفاع إنزيمات الكبد وانخفاض الصفائح الدموية (HEELP) ☐ اخرى

16) ☐ نزيف ما قبل الولادة: ☐ المشيمة المنخفضة ☐ المشيمة المنزاحة

☐ التصاق المشيمة . ☐ تمزق الرحم . ☐ أخرى

التاريخ الطبي السابق:

17) ☐ اعتلال الهيموجلوبين ☐ قصور الغدة الدرقية ☐ فرط نشاط الغدة الدرقية

☐ الربو ☐ مرض السكري ☐ ارتفاع ضغط الدم

☐ فقر الدم بسبب نقص الحديد. ☐ أمراض النسيج الضام. ☐ أمراض القلب

☐ أخرى

التاريخ الجراحي السابق:

18) ☐ استئصال المرارة ☐ ازاله الفتق ☐ استئصال الزائدة الدودية ☐ استئصال الأورام الليفية الرحمية

☐ العملية القيصرية ☐ استئصال المبيض ☐ أخرى

العملية القيصرية والولادة:

19) نوع العملية القيصرية (C/S): ☐ اختيارية ☐ طارئة

20) تمت العملية اثناء الشفت النهاري او الليلي: ☐ الشفت النهاري ☐ الشفت الليلي

21) فترة تمزق الغشاء بالساعات:

22) سبب الولادة القيصرية (C/S):

☐ وضعية الجنين الغير طبيعية:

☐ هيئة مجيء الجنين:

☐ تعسر الولادة . ☐ التهاب المشيمية والسلى . ☐ تدخل القابلة

☐ الحمل المتعدد . ☐ الوفاة داخل الرحم (IUD)

☐ ارتفاع ضغط الدم: ☐ ارتفاع ضغط الدم الشديد الغير مستجيب للعلاج ☐ الارتعاجُ

☐ متلازمة انحلال الدم وارتفاع إنزيمات الكبد وانخفاض الصفائح الدموية (HEELP).

☐ التشوهات الخلقية للجنين. ☐ فشل التحريض

☐ عدم التناسب الرأسي الحوضي (CPD) ☐ توقف المرحلة الثانية من الولادة ☐ ندبة سابقة

☐ ضائقة الجنين . ☐ طلب الأم . ☐ اخرى

23) نوع التخدير في العملية القيصرية الحالية (C/S): ☐ التخدير النصفي ☐ التخدير العام

المضاعفات الجراحية للأم

24) ☐ نزيف ما بعد الولادة ☐ ورم دموي بالجرح ☐ عدوى الجرح

☐ إصابة المثانة ☐ إصابة الحالب ☐ إصابة الجهاز الهضمي ☐ امتداد الجرح

☐ ورم دموي في الحوض ☐ شلل الأمعاء ☐ ربط الشريان الحرقفي الداخلي ☐ استئصال الرحم

المضاعفات الطبية للأم

25) ☐ فقد الدم ☐ الإصابة التخثر الوريدي ☐ الجلطات الدموية ☐ التهاب بطانة الرحم

☐ التهاب المسالك البولية.

مضاعفات تخدير الأم

27) ☐ نقص الاوكسجين ☐ الالتهاب الرئوي الشفطيّ ☐ إطالة فترة الافاقة ☐ أخرى

مضاعفات الجنين

28) ☐ الدخول الطفل الى العناية المركزة لحديثي الولادة ☐ درجة ومِقياسُ أبغار منخفض

☐ ضائقة الجنين ☐ ازرقاق الجنين ☐ نقص السكر في الدم

☐ متلازمة الضائقة التنفسية (RDS)

☐ تسرع النفس العابر عند الوليد (TTN)

University of Kerbala.

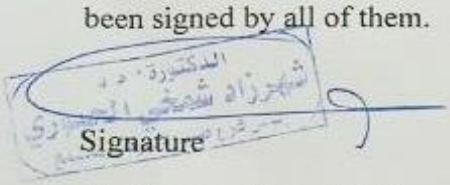
Faculty of Medicine.....

Department of Family and community medicine

Ethical approval

To whom it may concern

The present study entitled (Early complications of caesarian sections among women delivered in three hospital in Kerbala, 2024). Which is conducted by authors ((Zainab Faaeq Yaseen) was approved by the local Department of Family and community medicine committee. All the patients were informed about the aim of the present work and the possibility of publication of the results of the outcome of the study. All the patients were willingly agreed to participate and a written consent to indicate their willing to participate have been signed by all of them.



Signature

Head your Department

Dr. Shahrazad S. Al- Joubori

Ministry of health
Karbala Health Directorate
Training and Human Development Center
Research & Knowledge Management Division

جمهورية العراق

وزارة الصحـــة
دائرة صحة كربلاء المقدسة
مركز التدريب والتنمية البشرية
شعبة ادارة البحوث والمعرفة

العـــدد: ٤٢٨
التاريخ: ١ / ٢ /٢٠٢٤

الى/ جامعة كربلاء / كلية الطب

م/ تسهيـــل مهمـــة

تحيـــة طيبـــة....

نود إعلامكم بأنه لا مانع لدينا من تسهيل مهمة طالبة الدراسلا العليا / دبلوم عالي / طب الاسرة (**زينب فائق ياسين**) لإنجاز بحثها الموسوم:

Early complications of caesarian sections among women delivered in four hospitals in four hospitals in Kerbala 2023

في مؤسستنا الصحية / مستشفى النسائية والتوليد التعليمي وبأشراف الدكتور

(محمد ابراهيم الوكيل) على ان لا تتحمل دائرتنا اي نفقات مادية مع الاحترام ٠

الدكتورة
تقوى خضر عبد الكريم
مدير مركز التدريب والتنمية البشرية
١ / ٢ /٢٠٢٤

نسخة منه الى:
مستشفى النسائية والتوليد التعليمي/لإجراء اللازم مع الاحترام .
مستشفى الهندية العام /لإجراء اللازم مع الاحترام .
مركز التدريب والتنمية البشرية /شعبة ادارة البحوث والمعرفة / مع الاوليات .

جمهورية العراق

وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية الطب
معاون العميد للشؤون العلمية
شعبة شؤون الدراسات العليا

العدد: د/16/ 483

التاريخ: 25/1/2024

أمر إداري

م/اقرار مشروع بحوث طلبة الدراسات عليا/دبلوم عالي/طب اسرة

إشارة الى ما جاء في محضر مجلس الكلية بالجلسة الرابعة المنعقدة بتاريخ (2023/12/5) والمصادق عليها من قبل رئاسة جامعة كربلاء /أمانة مجلس الجامعة بكتابهم المرقم (ج/1938 في 2023/12/24) واستناداً للصلاحيات المخولة لنا تقرر:

- اعتماد خطط ومشاريع بحوث طلبة الدراسات العليا/دبلوم عالي/طب الاسرة وأسماء السادة التدريسيين المشرفين على خطط مشاريع البحوث حسب الجدول ادناه واعتباراً من تاريخ كتاب مصادقة أمانة مجلس الجامعة على محضر مجلس الكلية.

يعمم

أ.د.علي عبدالرضا كاظم ابوطحين
معاون العميد للشؤون العلمية
2024/1/25

الدكتورة
شهرزاد شمخي الجبوري
رئيس فرع طب الاسرة والمجتمع
2024/1/21

نسخة منه:
- مكتب السيد العميد المحترم للتفضل بالاطلاع مع التقدير.
- مكتب معاون العميد للشؤون العلمية المحترم للتفضل بالاطلاع مع التقدير.
- فرع طب الاسرة والمجتمع. للتفضل بالاطلاع لتبليغ السادة المعنيين.
- الحسابات..للتفضل بالاطلاع ...واتخاذ ما يلزم.
- شعبة الدراسات العليا/اضابير الطلبة.
- الصادرة.

جمهورية العراق

وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية الطب
معاون العميد للشؤون العلمية
شعبة شؤون الدراسات العليا

العدد: د ط/ 483

التاريخ: 25 / 1 /2024

جامعة كربلاء كلية الطب

الصادر

ت	اسم الطالب	عنوان البحث	اسم المشرف
1	حازم محمد خليل	Vitamin D deficiency among female's students in university of kerbala and its association with obesity	أ.د. علي عبدالرضا كاظم أبوطحين بورد / طب اسرة جامعة كربلاء/كلية الطب م.د. أحمد هاشم مطلوب دكتوراه / ادوية جامعة كربلاء/كلية الطب
2	لبا مرتضى عبد	Knowledge, attitude and practices about acne vulgaris among secondary school female students in kerbala city center ,2024	أ.م.د.بشير عقيل مسلم العلي بورد / طب مجتمع جامعة كربلاء/كلية الطب م.د. مريم باسم رحيم بورد / جلدية جامعة كربلاء/كلية الطب
3	زينة علي حسين	Assessment of emotional distresses among women with recent miscarriage in kerbala 2024	أ.م.د.بشير عقيل مسلم العلي بورد / طب مجتمع جامعة كربلاء/كلية الطب أ.م.د. لورا صباح رسول بورد / نسائية وتوليد جامعة كربلاء/كلية الطب
4	ورود نعمان هادي	The impact of kangaroo mother care on newborn health of preterm infants at al-zahraa teaching hospital in AL-Najaf Aal-ashraf city, 2024	أ.د. علي عبدالرضا كاظم أبوطحين بورد / طب اسرة جامعة كربلاء/كلية الطب أ.د. علاء جمعة النصراوي بورد / أطفال جامعة الكوفة / كلية الطب
5	زينب فائق ياسين	Early complications of caesarian sections among women delivered in four hospitals in kerbala ,2023	أ.م.د. شهرزاد شمخي طائل بورد / طب مجتمع جامعة كربلاء/كلية الطب م.د. أزهار سهمي حمود بورد / نسائية وتوليد جامعة كربلاء/كلية الطب

الخلاصة

الخلفية: تعد العملية القيصرية إجراءً جراحيًا مُنقذًا للحياة، إلا أنه يرتبط بمخاطر كبيرة على صحة الأم والوليد. وتشير الزيادة المتصاعدة في معدلات الولادة القيصرية، غالبًا بسبب عوامل غير طبية، إلى ارتفاع احتمالية حدوث مضاعفات مثل النزيف، والعدوى، ومشاكل في الحمل المستقبلي. ومن الضروري إجراء تقييم دقيق لمبررات العملية، والالتزام بالإرشادات السريرية، وتحسين الرعاية بعد الجراحة لتقليل العمليات القيصرية غير الضرورية والمضاعفات المرتبطة بها.

هدف البحث: تهدف هذه الدراسة إلى استقصاء الخصائص الاجتماعية والديموغرافية والتوليدية للنساء اللاتي خضعن لعمليات الولادة القيصرية، بالإضافة إلى تحديد المضاعفات التي تم التعرض لها خلال العملية أو بعدها.

طرق البحث: تم اختيار عينة مكونة من ٣٣٥ امرأة حامل خضعن لعمليات ولادة قيصرية، باستخدام أسلوب العينة العشوائية لضمان تمثيل مناسب للنساء بعد الجراحة. تم جمع البيانات من خلال مقابلات منظمة استنادًا إلى استبيان، إلى جانب مراجعة السجلات الطبية. وشملت البيانات الخصائص الديموغرافية، والسوابق التوليدية والجراحية، والمضاعفات التي تم تصنيفها وتحليلها لاحقًا.

النتائج: من بين ٣٣٥ امرأة، شكّلت العمليات القيصرية الطارئة ٥٥,٨٪، في حين كانت القيصرية الاختيارية ٤٤,٢٪، حيث نفذت المستشفيات الحكومية نسبة أعلى من العمليات الطارئة (٦١,٤٪)، بينما أجرت المستشفيات الخاصة نسبة أكبر من العمليات الاختيارية (٦٨,٣٪، $p<0.001$). كانت المضاعفات الطبية شائعة، إذ ظهر فقر الدم لدى ١٥٩ امرأة (٤٧,٥٪) والتهابات المسالك البولية لدى ٧٣ (٢١,٨٪). أما المضاعفات الجراحية فتضمنت نزف ما بعد الولادة في ٥٤ حالة (١٦,١٪) والتهاب الجرح في ٤٦ حالة (١٣,٧٪). وبلغت نسبة المضاعفات التخديرية ٣٦,٧٪ (١٢٣ امرأة)، وكان الصداع الأكثر شيوعاً (١٨,٨٪). أما المضاعفات الجنينية فقد سُجلت لدى ١٣٠ مولوداً (٣٨,٨٪)، شملت الضائقة التنفسية في ٨٩ حالة (٢٦,٦٪) وتسرع التنفس العابر (TTN) في ٤١ حالة (١٢,٢٪). أظهرت القيصرية الطارئة معدلات أعلى من المضاعفات الجنينية (٣١,٦٪ مقابل ٢٠,٣٪)، في حين ارتبطت القيصرية الاختيارية بمضاعفات جراحية أكثر (٣٦,٥٪ مقابل ١٩,٨٪، $p=0.011$).

الأستنتاج: تؤكد هذه النتائج أن العملية القيصرية، رغم أهميتها كإجراء منقذ للحياة، ما تزال مقترنة بمخاطر كبيرة على الأم والجنين، الأمر الذي يستدعي تعزيز التدابير الوقائية وتحسين جودة الرعاية التوليدية.

وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية الطب
فرع طب الأسرة والمجتمع

المضاعفات المبكرة للعمليات القيصرية بين النساء اللاتي أُخضعن للولادة في ثلاثة مستشفيات في كربلاء، ٢٠٢٤

رسالة مقدمة إلى مجلس كلية الطب – جامعة كربلاء كجزء من متطلبات الحصول على شهادة دبلوم عالٍ (سنتين تقويميتين) في طب الأسرة.

اعداد:

زينب فائق ياسين

بكاليوس الطب والجراحة العامة

المشرفين على الدراسة

م.د. أزدهار سهمي حمودي
اختصاص النسائية والتوليد
في كلية الطب / جامعة كربلاء

أ.م.د. شهرزاد شمخي الجبوري
زميل المجلس العراقي للاختصاصات الطبية / طب المجتمع
كلية الطب / جامعة كربلاء

٢٠٢٥ ١٤٤٧