

PREFERENCE OF PATIENT TO GENERAL OR SPINAL ANESTHESIA DURING  
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## ABSTRACT

**Background:** Anesthesia selection for an elective cesarean section should be determined by a careful evaluation of the potential benefits and risks, taking into account the expectant woman's personal choices, concerns, and the knowledge of medical professionals. **Aim of study:** To assess patient's perception about their preference to general anesthesia or spinal anesthesia during caesarian section and factors associated with their choice. **Patients and methods:** This is an analytic cross sectional study that was conducted at Medical City and Al-Yarmouk Teaching Hospital in Baghdad, Iraq during the period from the 1<sup>st</sup> June 2022 to 1<sup>st</sup> October 2023. A total number of 200 pregnant women were included. A questionnaire-based interview was chosen as a method for data collection. The questionnaire consisted of basic sociodemographic and obstetric information, the method of choice (spinal vs. general anesthesia), and the reasons for preferring a method over the other. **Results:** Regarding the choice of anesthesia; 145 (72.5%) preferred general anesthesia, while 55 (27.5%) preferred spinal anesthesia. A statistically significant association was detected between the choice of anesthesia and previous mode of deliveries, as women who had previous caesarian sections were more likely to prefer general anesthesia. **Conclusion:** Among pregnant women opting for elective caesarian section, there is a predominance to prefer general anesthesia. Fear of surgical environment was the most common reason to prefer general anesthesia, while the fear of not waking up was the most common reason to prefer spinal anesthesia. Undergoing previous caesarian section was significantly associated with choosing general anesthesia.

**KEYWORDS:** *Caesarian section, spinal anesthesia, general anesthesia, patient prefer.*

## INTRODUCTION

A Caesarian section (CS) is a surgical intervention conducted to enable the birth of a neonate via an incision in the maternal abdomen. It is appropriate in circumstances where standard vaginal delivery may endanger the mother, the infant, or both.<sup>[1]</sup> These circumstances encompass protracted or obstructed labor, fetal distress, increased blood pressure or glucose levels, multiple gestations, and aberrant fetal presentation or positioning, among others.<sup>[2]</sup> This surgical technique has been performed for many years, either on a planned or emergency basis, due to its shown benefits. Caesarean section dramatically decreases maternal and newborn morbidity and death when conducted under appropriate circumstances; conversely, it can pose risks to both the mother and the child when performed inappropriately.<sup>[3]</sup>

Caesarean section is the paramount procedure in obstetrics, and its prevalence is increasing globally. This is one of the most often conducted major procedures in obstetric treatment, aimed at preserving the lives of both mother and child, hence decreasing maternal and perinatal death rates. The rising global incidence of caesarean sections has emerged as a very contentious issue in maternity care, given its worrisome escalation in recent years<sup>[2]</sup>. The World Health Organisation (WHO) has advised that the population-based caesarean section rate should range from 5% to 15% for best efficacy. Despite a global increase in caesarean section rates over the previous decade, latest data from both developed and developing nations indicate an average rate of 27% for caesarean sections in 2013. The WHO asserts that there are no further health benefits linked to caesarean sections

when the rate exceeds 10%–15%. The desire of the mother has now emerged as a new criterion for caesarean sections.<sup>[4]</sup>

Clinical guidelines recommend neuraxial anesthesia as the first choice unless specific contraindications exist.<sup>[5]</sup> The desire for neuraxial anaesthesia arises from the heightened dangers linked to general anaesthesia, including airway difficulties, aspiration risk, higher blood loss, and the possibility of intraoperative consciousness.<sup>[6]</sup> General anaesthesia may be a viable alternative when spinal anaesthesia is contraindicated or in instances of severe fetal bradycardia, uterine rupture, substantial hemorrhage, and placental abruption.<sup>[5]</sup> A primary reason for selecting general anaesthesia is the patient's desire. A minority of individuals categorically refuse regional anaesthesia, despite varying preferences for general anaesthesia. The administration of general anaesthesia for CD correlates with a heightened risk of anesthesia-related complications, surgical site infections, and venous thromboembolism.<sup>[7]</sup> Therefore, the needless application of general anesthesia should be reduced. A comprehensive comprehension of the determinants affecting patients' anesthetic choices may diminish superfluous general anesthesia by enhancing the use of neuraxial anesthesia among expectant women. The application of several strategies for achieving analgesia or anesthesia is essential in caesarean delivery, and the choice of anesthetic type, contingent upon maternal and fetal conditions, carries significant consequences.<sup>[8]</sup> In certain instances (such as elective caesarian section), the type of anesthesia may also depend upon the patient's choice.<sup>[9]</sup>

This study was conducted aiming to assess patient's perception about their preference to general anesthesia (GA) or spinal anesthesia (SA) during C/S and factors associated with their choice.

## PATIENTS AND METHODS

A cross sectional study was carried out on 200 patients in Al-Yarmouk teaching hospital/ anaesthesia department & in Baghdad teaching hospital/ anaesthesia department between the period from 1<sup>st</sup> June 2022 to 1<sup>st</sup> October 2023.

The study proposal was approved by the Iraqi scientific council of anesthetic and intensive care in Iraqi board.

After taking the verbal approval of the patient to take part in the study.

### Inclusion criteria

- Age 18-45 year old.
- ASA II,III.
- Pregnant women.
- Elective caesarian.

### Exclusion criteria

- Patient is not cooperative.
- She refuse to take part in the study.

The patient scheduled for C/S and full hx. Taken and then asking her specific. Questions according to the data collection sheet which included.

Demographic data (name, age, weight, address, educational state), past medical history, past surgical history., previous history. Of anaesthesia and which type of it, her previous history of c/s and which type of anesthesia, and in the current pregnancy which type of anesthesia she prefers and asked about the cause.

### Data entry and analysis

Data entry was done using Microsoft Excel 2019. Data was recorded into different quantitative and qualitative variables for the purpose of analysis.

Analysis was done using statistical package for social sciences (SPSS version 26).

Data was summarized using measures of frequency (mean), dispersion (standard deviation), tables and graphs. A two-tailed p value of less than or equal to 0.05 was assigned as a criterion for declaring statistical significance.

## RESULTS

### Basic sociodemographic characteristics

A total number of 200 patients were included in the study sample. The age distribution of the studied sample ranged from 18 - 43 years with a mean of  $29.09 \pm 6.7$  SD. Regarding age group distribution; 61.0% were <30 years and 39.0% were  $\geq 30$  years. Concerning educational level; 102 (51.0%) had primary school certifications, 67(33.5%) had secondary school certifications, and 31 (15.5%) were college students or graduates; as shown in table (1).

**Table 1: Basic sociodemographic characteristics.**

Variable	Frequency	Percentage (%)
Age		
<30 years	122	61.0
$\geq 30$ years	78	39.0
Total	200	100.0
Educational level		
Primary school	102	51.0
Secondary school	67	33.5
College	31	15.5
Total	200	100.0

### Obstetric history of the studied sample

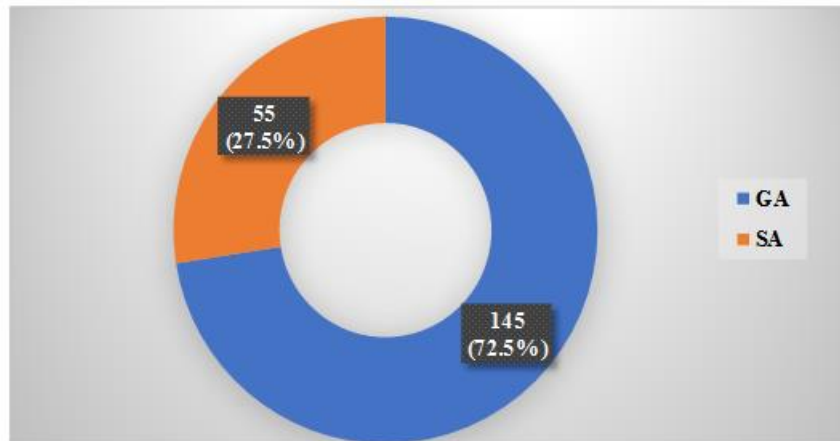
Regarding parity, the majority of the studied samples (71.5%) were multiparous. As for the mode of previous deliveries among 143 parous women; 9.8% delivered by NVD only, 80.4% delivered by C/S, and 9.8% by both; as shown in table (2).

**Table (2): Obstetric history of the studied sample.**

Variable	Frequency	Percentage
<b>Parity (N=200)</b>		
Primiparous	57	28.5
Multiparous	143	71.5
Total	200	100.0
<b>Mode of previous deliveries</b>		
NVD	14	9.8
C/S	115	80.4
Both	14	9.8
Total	143	100.0

**Preferred choice of Anesthesia**

Regarding the choice of anesthesia; 145 (72.5%) preferred GA, while 55 (27.5%) preferred SA; as shown in figure (1).



**Figure (1): Preferred choice of anesthesia.**

**Association between preference and other study parameters**

A statistically significant association was detected between the choice of anesthesia and previous mode of

deliveries, as women who had previous caesarian sections were more likely to prefer GA. No significant association was detected between preference and each of: age, educational level, and parity; as shown in table (3).

**Table (3): Association between preference and other study parameters.**

Variable	Preference		Total	P value
	General anesthesia	Spinal anesthesia		
<b>Age</b>				
<30 years	89	33	122	0.872
	61.4%	60.0%	61.0%	
≥30 years	56	22	78	
	38.6%	40.0%	39.0%	
Total	145	55	200	
	100.0%	100.0%	100.0%	
<b>Educational level</b>				
Primary school	76	26	102	0.057
	52.4%	47.3%	51.0%	
Secondary school	52	15	67	
	35.9%	27.3%	33.5%	
College	17	14	31	
	11.7%	25.5%	15.5%	
Total	145	55	200	
	100.0%	100.0%	100.0%	
<b>Parity</b>				
Primiparous	37	20	57	0.160
	25.5%	36.4%	28.5%	
Multiparous	108	35	143	
	74.5%	63.6%	71.5%	
Total	145	55	200	
	100.0%	100.0%	100.0%	

	100.0%	100.0%	100.0%	
<b>Mode of previous deliveries</b>				
NVD	6	8	14	<b>0.017</b>
	5.6%	22.9%	9.8%	
C/S	91	24	115	
	84.3%	68.6%	80.4%	
Both	11	3	14	
	10.2%	8.6%	9.8%	
Total	108	35	143	
	100.0%	100.0%	100.0%	

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**Table (4): Association between preference and other study parameters.**

Variable	Odds ratio	95% CI		P value
		Lower	Upper	
<b>Age</b>				
<30 years	Ref.	Ref.	Ref.	Ref.
≥30 years	0.821	0.346	1.945	0.653
<b>Educational status</b>				
Primary school	Ref.	Ref.	Ref.	Ref.
Secondary school	1.864	0.729	4.768	0.194
College	1.226	0.351	4.285	0.750
<b>Parity</b>				
Primiparous	Ref.	Ref.	Ref.	Ref.
Multiparous	2.221	0.874	5.644	0.094
<b>Mode of previous deliveries</b>				
NVD	Ref.	Ref.	Ref.	Ref.
C/S	4.685	1.409	15.580	0.012
Both	3.320	0.598	18.445	0.170

**Justifications for preferring one method over the other**

**Justifications for preferring GA over SA**

When asked about reasons that might them consider using GA over SA, 102 (70.3%) participants mentioned

“Fear of being awake during the surgery”, 10 (6.9%) mentioned “the fear of environment of surgery”, 15 (10.3%) mentioned “having no idea about Spinal anesthesia”, 7 (4.8%) mentioned fearing of puncture; as shown in table (5).

**Table (5): Justifications for preferring GA over SA.**

Justification	Frequency	Percentage
Fear of being awake during the surgery	102	70.3
Fear of environment of surgery	10	6.9
Fearing of spinal cord injury, nerve injury, paralysis	2	1.4
Fearing of puncture	7	4.8
Fearing of back pain	1	0.7
Having no idea about Spinal anesthesia	15	10.3
Fearing of headache	1	0.7
Have previous experience not satisfied with spinal anesthesia	1	0.7
Others	6	4.1
<b>Total</b>	<b>145</b>	<b>100.0</b>

**Justifications for preferring SA over GA**

When asked about reasons that might consider SA over GA; the most common reason was “fear of not waking up” (45.5%), followed by “desire to see the baby at

once” (43.6%), and “others” (10.9%); as illustrated in table (6).

**Table (6): Justifications for preferring SA over GA.**

Justifications for preferring SA over GA	Frequency	Percentage
Fear of not waking up	25	45.5
Desire to see the baby at once	24	43.6
Others	6	10.9
Total	55	100.0

## DISCUSSION

The use of various techniques for inducing analgesia or anesthesia is a crucial component of cesarean birth, and the selection of the anesthetic type based on the maternal and fetal circumstances has major implications.<sup>[8]</sup> In certain instances (such as elective caesarian section), the type of anesthesia may also depend upon the patient's choice.<sup>[9]</sup>

Of the 200 women recruited; 72.5% chose general anesthesia, while 27.5% chose spinal anesthesia. This finding is in concordance with The research by Bukar et al. interviewed 254 pregnant women, of whom 70% chose general anesthesia.<sup>[10]</sup> The study by Emadi et al. included 384 patients and reported that the preference rate for general anesthesia was 60%<sup>[11]</sup>, which is little less than our study.

In discordance to our findings, the study by Foruzeshfard et al. reported that (57.8%) chose spinal anesthesia and (42.2%) chose general anesthesia.<sup>[12]</sup> The study by Tawfeeq et al. also reported that 54% chose spinal anesthesia, while only 22% opted for general anesthesia.<sup>[13]</sup> The study by Sadeghi et al. who assessed 240 pregnant women and reported that 50% chose general anesthesia, while 30% chose spinal anesthesia, and 20% were undecided.<sup>[14]</sup> This discordance can be attributed to the different perceptions of women in different geographical regions.

In the present study, the most common reason for choosing general anesthesia was the fear being awake during surgery (70.3%), followed by the fear of surgical environment (6.9%). Interestingly, only 2 patients reported fear of spinal cord injury, which is surprising given that there is a common misconception among Iraqi patients that spinal puncture may lead to paralysis. This proves that although the procedure of spinal anesthesia can raise patient concern, the offering of clear explanations and calming patients by the anesthesiologist, can alleviate these concerns.

Our findings are in concordance with Bukar et al. who found that fear of being awake was the most common reason for choosing general anesthesia, while there was no mention of fear of lumbar puncture.<sup>[10]</sup> Emadi et al. found that the most common reason for choosing general anesthesia were fear of spinal cord injury, fear of being awake during the surgery, and fear of back pain.<sup>[11]</sup> Tawfeeq et al. reported that reasons for choosing general anesthesia were the following: fear of pain during surgery (21.6%); discomfort from sight and sound during surgery in the operating room (24.2%); 16.6%

said it was fear of back pain (16.6%); fear of spinal puncture (27.9%).<sup>[13]</sup>

As for the reasons to choose spinal anesthesia, the desire to see the baby at once and the fear of not waking up were the most common reasons. This is in concordance with Sadegi et al. who reported that the predominant reasons for choosing spinal anesthesia during caesarian section were the concern of not regaining consciousness and the desire to witness the childbirth.<sup>[14]</sup> Bukar et al. also reported that The primary rationale for selecting regional anesthesia was to see the see childbirth in the operating room.<sup>[10]</sup>

This study found that age, parity, and even educational status were not predictors of the preference for any type of anesthesia; which reflects that the choice was due to personal preference of each woman. This is in concordance with Tawfeeq et al.<sup>[13]</sup> In discordance to our study, Emadi et al. reported a significant association between choosing spinal anesthesia and older age, higher parity, and higher educational level<sup>[11]</sup>, which is understandable given that higher educational level is linked to decreased misconceptions regarding spinal anesthesia.

However, it was found that women who underwent previous caesarian sections were more encouraged to prefer general over spinal anesthesia, which indicates that women who had previous caesarian sections had less fear and stress than women having their first surgical experience.

## CONCLUSION

1. Among pregnant women opting for elective caesarian section, there is a predominance to prefer general anesthesia.
2. Fear of surgical environment was the most common reason to prefer general anesthesia, while the fear of not waking up was the most common reason to prefer spinal anesthesia.
3. Undergoing previous caesarian section was significantly associated with choosing general anesthesia; however, a substantial number of patients who underwent caesarian section under spinal anesthesia actually preferred the method when they reported it was a nice experience.

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