International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 6, 2025
https://theaspd.com/index.php

"Prospective Comparative Study Of The Effects Of General And Spinal Anesthesia On Postoperative Outcomes And Quality Of Life In Women Undergoing Elective Caesarean Section At El-Beyda Medical Center, Libya"

Faiza., A. Muhammad Tahe[1], Ola Mustafa Abdulsadiq Saleh[2], Salha Mustafa Abdulsadiq Saleh[3], Kasem Abdinibi Farag[4]
[1]Department of Midwifery And Neonatology, Higher institute of Science And Technology, El-Beyda, Libya. faiza_alsharif071030@yahoo.com
[2]Department of Obstetrics and Gynecology, faculty of medicine, university of Omar AlMukhtar, Albayda,Libya, ola.mustafa@omu.edu.ly
[3]Department of Pharmacology, faculty of medicine, university of Omar AlMukhtar, Albayda,Libya, Salha.mustafa@omu.edu.ly
[4]Department of Mathematics and statistics, faculty of science university of Omar AlMukhtar, Albayda,Libya, Kasem.abdinibi@omu.edu.ly
Corresponding author: Faiza., A. Muhammad Taher*1, faiza_alsharif071030@yahoo.com, Department of Midwifery And Neonatology, Higher institute of Science And Technology, El-Beyda, Libya.

Abstract
Background and Objectives: *A caesarean section is a surgical intervention for childbirth, involving an abdominal incision (laparotomy) and a uterine incision (hysterostomy), as opposed to a vaginal delivery. The extraordinarily high rates of mortality and morbidity are attributed not only to the surgical procedure but also to the administered anaesthesia. The selection of anaesthetic can significantly affect postoperative recovery, patient satisfaction, and, ultimately, quality of life. The study aimed to investigate the effects of spinal and general anaesthesia on the quality of life of women following caesarean section.*
Method: *This study was a prospective cross-sectional comparative investigation evaluating the effects of general and spinal anaesthesia on the outcomes and quality of life of women undergoing elective caesarean sections at El-Beyda Medical Centre, Libya. Data were collected using a structured questionnaire presented through face-to-face interviews. Quantitative factors were analysed using descriptive statistics, chi-square tests, and independent t-tests.*
Results: *Our findings show that women who had spinal anesthesia had less mobility problems after 24 hours than those who had general anesthesia (6% vs. 2%). They also said that they were better at taking care of themselves (12% vs. 8%) and that their pain levels were moderate (36% vs. 38%, $p<0.05$). The results were better for spinal anesthesia after one week and one month. One week after surgery, women who had spinal anesthesia had better mobility (58% vs. 38%), self-care (42% vs. 34%), regular activities (36% vs. 26%), and pain and discomfort (36% vs. 28%). After one month, the mobility outcomes were 94% versus 86%, self-care was 92% versus 88%, and 82% of women reported no pain difficulties compared to 72%.*
Conclusion: *Our study shows that spinal anesthesia is better than general anesthesia for women's health-related quality of life (HRQoL) after elective caesarean sections. Spinal anesthesia is the preferred technique for caesarean sections because it promotes faster postoperative recovery and more effective pain control.*
Keywords: *General Anesthesia, Spinal Anesthesia, Postoperative Outcomes, Quality of Life, Elective Caesarean Section*

INTRODUCTION

Caesarean section is among the most prevalent surgical procedures in obstetrics and gynaecology which is accountable for approximately 30% of live births. (Betrán et al., 2007). A caesarean section is a surgical delivery method in which the infant is delivered through an incision in the abdomen (laparotomy) and an incision in the uterus (hysterostomy) instead of the vaginal canal. (Sung and Mahdy, 2023). A separate study indicates that a caesarean section (C/S) is a surgical intervention designed to safeguard the well-being of both the mother and the child when vaginal delivery is deemed impractical or when physicians assess that the risks associated with vaginal delivery outweigh the potential dangers to both parties. C-sections are linked to heightened morbidity and mortality rates among pregnant women and newborns, particularly in underdeveloped countries (Gregory et al., 2012). Although the global incidence of

caesarean births is gradually increasing, and they have become safer over time, they remain associated with greater rates of mortality and morbidity in mothers and newborns compared to vaginal deliveries. The elevated rates of death and morbidity are attributable not alone to the surgical process but also to the anaesthesia used (Madkour et al., 2019, Gori et al., 2007). Although vaginal birth is a physiological process, a caesarean section may occasionally be medically required to ensure the safety and health of both the mother and the child. Neglecting to execute a necessary caesarean section may result in heightened mortality and morbidity for both moms and babies. Nonetheless, conducting a caesarean section in the absence of medical necessity yields no advantages and may be detrimental, as well as a misallocation of resources. (Sobhy et al., 2019). The caesarean section rates in Libya have been rising, although a prior study conducted at Omar Al-Mukhtar Hospital in Libya suggested that the caesarean section rate was 29.9% (Taher and Ali). The WHO reported that no region should have a C-section rate exceeding 10-15% (World Health Organization, 1985). A caesarean section necessitates the utilization or administration of anesthetics to alleviate and manage the discomfort associated with the procedure. The primary types of anesthesia employed for caesarean sections are general anesthesia and spinal anesthesia (Ring et al., 2021). Despite advancements in safety, the global rise in C-section births continues to result in elevated maternal and neonatal mortality and morbidity rates, attributable not only to the surgical technique itself but also to the anesthesia employed. (Madkour et al., 2019). General anesthesia (GA) was the preferred method for caesarean sections for numerous years. The administration of anesthetic agents that traverse the placental barrier offers numerous advantages, such as expedited induction, enhanced cardiovascular stability with a reduced occurrence of hypotension, and effective respiratory management; however, it may also lead to neonatal depression (Mancuso et al., 2010). Conversely, in developed nations, regional anesthesia, particularly spinal anesthesia (SA) rather than general anesthesia (GA), has emerged as the preferred anesthetic approach for women undergoing caesarean sections (Mancuso et al., 2010). Furthermore, in affluent countries, spinal anesthesia has emerged as a dependable alternative, especially for emergency caesarean sections (Wadlington et al., 1998).

Conversely, "GA" induces loss of consciousness, rendering the individual asleep and insensible to painful sensations during surgical procedures. This is accomplished through the inhalation or intravenous administration of anesthetics, frequently augmented with muscle relaxants (Shallik et al., 2022). Conversely, "spinal anesthesia," a sort of regional anesthesia, involves the injection of a local anesthetic into the subarachnoid space, resulting in sensory and motor blockage underneath the injection site. This treatment allows the patient to remain conscious throughout the surgical operation without experiencing discomfort (Young-Fadok and Craner, 2020). As caesarean delivery rates rise, it is crucial to comprehend how the selection of anesthesia influences both immediate surgical results and health-related quality of life (HRQoL). This study was designed to examine the influence of spinal and general anesthesia on health-related quality of life (HRQoL) among patients undergoing caesarean section, to determine the effects of general anesthesia on HRQoL, and to compare the outcomes between the two anesthesia types. The primary objective is to furnish evidence-based insights into the impact of anesthesia selections on postoperative well-being and to enhance clinical decision-making in obstetric and delivery care.

MATERIALS AND METHODS

A comparative prospective cross-sectional study was conducted at El-Beyda Medical Centre in Libya to assess the differences in postoperative outcomes and quality of life between general anesthesia and spinal anesthesia in women undergoing elective caesarean births. The study included women aged 19 and older who underwent elective caesarean sections under general or spinal anesthesia, with complete medical records available for examination. Women experiencing emergency caesarean sections, contraindications to any form of anesthesia, or lacking complete medical records were eliminated. From June 1 to December 15, 2024, a convenience sample of 100 eligible participants was assembled. The self-administered EuroQoL-5 Dimensions-3 Levels (EQ-5D-3L) questionnaire was utilized to assess health-related quality of life at three intervals: 24 hours, one week, and one-month post-surgery. Additionally, a structured questionnaire adapted from the EuroQol Group was employed to collect data via individual interviews. The EQ-5D-3L (EuroQol Group, 1990) encompasses five health dimensions: mobility, self-care, routine activities, pain/discomfort, and anxiety/depression. All data were systematically coded and entered into SPSS version 23 for statistical analysis. Descriptive statistics were utilized to encapsulate the data. We utilized Chi-square tests and independent T-tests to assess differences between study groups, establishing a significance threshold of $p < 0.05$. We evaluated instrument dependability by Cronbach's

alpha, achieving a commendable score of 0.81, while initial pilot research facilitated the refinement of our data collection process.

RESULTS

Table (1) Comparison of demographic and clinical characteristics of women undergoing spinal anesthesia versus general anesthesia

Variables	General anesthesia	Spinal anesthesia	P. value
	F (%)	F (%)	
Age			0.466
19-26	20(40%)	23(46%)	
27-34	17(34%)	13(26%)	
35-42	8(16%)	12(24)	
43-50	5(10%)	2(4%)	
	Mean (Std) ± 30.58(7.129)	Mean (Std) ±29.74(7.759)	
Education			
Intermediate school	4(8%)	2(4%)	0.689
High school	7(14%)	8(16%)	
Institute and university	39(78%)	40(80%)	
BMI			
Underweight Below 18.5	2(4%)	0(0%)	0.308
Healthy Weight18.5—24.9	18(36%)	25(50%)	
Overweight25.0—29.9	19(38%)	16(32%)	
Obesity 30.0 and above	11(22%)	9(18%)	

The present study involved 100 eligible pregnant women undergoing caesarean sections, all performed under spinal and general anesthesia. Table (1) presented several demographic characteristics. The predominant age group among participants was 19-26 years, comprising 46% for spinal anesthesia (SA) and 40% for general anesthesia (GA). The subsequent age group, 27-34 years, accounted for 34% for GA and 26% for SA, with mean ± SD values of 30.58 (7.129) for GA and 29.74 (7.759) for SA, respectively. Nonetheless, the difference ($p = 0.466$) is not statistically significant. The data indicated that the highest proportion of participants, 80% in the spinal group and 78% in the general group, possessed an institute or university degree, but this was not statistically significant ($p = 0.689$). The BMI data demonstrate that 50% of participants in the spinal group fell within a healthy weight range. Nonetheless, the predominant proportion of individuals in the general anesthesia cohort comprised 38% who were overweight and 36% who maintained a healthy weight.

Table (2): Spinal and general anesthesia obstetric histories

The Variable	(General anesthesia)	(Spinal anesthesia)	P.value
	F (%)	F (%)	
Gravidity			
Primi-gravida	15(30%)	18(36%)	0.550
Multigravida	32(64%)	27(54%)	
Grand multigravida	3(6%)	5(10%)	
Para (No of children			
1-2	21(42%)	27(54%)	
3-4	18(36%)	11(22%)	0.329
5 and above	11(22%)	11(22%)	

Previous miscarriage				
Non		27(54%)	37(74%)	0.037*
1-3		23(46%)	13(26%)	
The decision to select anesthesia types				
matenal's request		10(20%)	4(8%)	0.074
Physician request		40(80%)	46(92%)	
Gestational age				
37 weeks		15(30%)	10(20%)	
38-39 weeks		32(64%)	35(70%)	0.442
40-42 weeks		3(6%)	5(10%	
Previous spinal anesthesia	Yes	14(28%)	25(50%)	0.024*
	No	36(72%)	25(50%)	
Previous general anesthesia	yes	22(44%)	11(22%)	0.016*
	No	28(56%)	39(78%)	

The obstetric history table (2) indicates that the highest proportions of individuals receiving anesthesia were among those with multiple pregnancies, at 64% and 54%, respectively. Statistical analysis revealed no significant variation in gravidity distribution across the study groups (P=0.550). Moreover, 1-2 Parity was observed in 54% of the spinal group and 42% of the general population, respectively. No statistically significant difference was observed (P=0.329). Concerning abortion, the findings reveal that 74% and 54% of women in both groups had never undergone the procedure. Furthermore, over half of the study group, specifically 64% and 70%, underwent general and spinal anesthesia at 38 and 39 weeks of gestational age, respectively. The data analysis indicated no statistically significant variance concerning gestational age (P=0.442), however there are statistically significant differences in miscarriage rates between the general and spinal anesthesia groups (P=0.037). The Determination of Anesthesia Types: The physician's suggestion is the predominant determinant in determining the kind of anesthesia, influencing 80% of cases for general anesthesia and 92% for spinal anesthesia, whilst the mother's desire has a minimal effect. The data indicates that physicians favor spinal anesthesia over general anesthesia. More than half (72%) of the research groups in general anesthesia had previously experienced spinal anesthesia, revealing a statistically significant difference (P-value = 0.024) among women who had undergone spinal anesthesia before. There exists a statistically significant difference (P-value = 0.016) in the percentage of women who have undergone prior general anesthesia compared to those who have received spinal anesthesia, around 56% and 78%, respectively.

Table (3) compares five parameters of the health of the study sample 24 hours post-surgery (N = 100) under spinal and general anesthesia.

The parameters	**General anesthesia**	**Spinal anesthesia**	**P. value**
	F(%)	F(%)	
Mobility			
I have no problems in walking about.	1(2%)	3(6%)	0.227
I have some problems in walking about.	30(60%)	35(70%)	
I am confined to bed.	19(38%)	12(24%)	
Self-Care			
I have no problems with self-care.	4(8%)	6(12%)	0.131
I have some problems with washing or dressing myself.	19(38%)	27(54%)	

I am unable to wash or dress myself.	27(54%)	17(34%)	
Activities			
I have no problems with performing my usual activities.	1(2%)	2(4%)	0. 354
I have some problems with performing my usual activities.	20(40%)	26(52%)	
I am unable to perform my usual activities.	29(58%)	22(44%)	
Pain / Discomfort			
I have no pain or discomfort.	1(2%)	3(6%)	0.593
I have moderate pain or discomfort	19(38%)	18(36%)	
I have extreme pain or discomfort	30(60%)	29(58%)	
Anxiety / Depression			
I am not anxious or depressed.	26(52%)	31(62%)	0.167
I am moderately anxious or depressed.	16(32%)	8(16%)	
I am extremely anxious or depressed.	8(16%)	11(22%	

Responses are based on the EQ-5D-3L standardized instrument (EuroQol Group, 1990)

Mobility: The results revealed that a greater percentage of patients who underwent spinal anesthesia (70%) reported encountering varying levels of mobility issues during the postoperative period. Conversely, 60% of patients who received general anesthesia reported minimal movement restrictions, underscoring a significant disparity in recovery results between the two anesthesia methods. A greater percentage of women in the general anesthesia group encountered significant bed limitations (38%) compared to those in the spinal anesthesia category (24%). This suggests that spinal anesthesia may have a diminished impact on mobility 24 hours after surgery, however the difference lacks statistical significance (P = 0.227).

Self-care: A significant percentage of patients in both cohorts encountered self-care difficulties, with a larger incidence observed in the general anesthesia group (54%) compared to the spinal anesthesia group (34%). Furthermore, 54% of people who underwent general anesthesia reported an inability to wash or clothe themselves, compared to 34% of those who got spinal anesthesia. This suggests that spinal anesthesia may enhance the patient's capacity for self-care following surgery, however the difference between the groups was not statistically significant (P = 0.131).

Activities: The chart demonstrates that 58% of patients under general anesthesia were unable to engage in their customary activities, although the number was marginally lower for those receiving spinal anesthesia at 44%. This result may suggest the impact of general anesthesia on an individual's ability to participate in routine tasks; yet, a statistically significant difference remains unobserved (P = 0.354).

Pain/Discomfort: The results indicate that individuals in both cohorts experienced considerable discomfort 24 hours post-surgery, with 60% of patients under general anesthesia and 58% of those under spinal anesthesia reporting severe pain. This signifies that there is no significant variation in post-operative discomfort among the various anesthesia regimes (P = 0.593). The data in Table 1 indicate that a higher percentage of individuals in the spinal anesthesia group (62%) exhibited neither anxiety nor depression, compared to the general anesthesia group (52%). It may indicate a favorable psychological effect of spinal anesthesia; however, the changes were not statistically significant (P = 0.167).

Table 4: Shows a comparative analysis of general and spinal anesthesia across five health characteristics for the study participants one week post-surgery (N = 100).

Variables	**General anesthesia**	**Spinal anesthesia**	**P. value**
	F(%)	F(%)	

Mobility			
I have no problems in walking about.	19(38%)	29(58%)	0.197
I have some problems in walking about.	21(42%)	15(30%)	
I am confined to bed.	10(29%)	7(14%)	
Self-Care			
I have no problems with self-care.	17(34%)	21(42%)	0.709
I have some problems with washing or dressing myself.	27(54%)	24(48%)	
I am unable to wash or dress myself.	6(12%)	5(10%)	
Activities			
I have no problems with performing my usual activities.	13(26%)	18(36%)	0.542
I have some problems with performing my usual activities.	28(56%)	25(50%)	
I am unable to perform my usual activities.	9(18%)	7(14%)	
Pain / Discomfort			
I have no pain or discomfort.	14(28%)	18(36%)	0.649
I have moderate pain or discomfort	24(48%)	20(40%)	
I have extreme pain or discomfort	12(24%)	12(24%)	
Anxiety / Depression			
I am not anxious or depressed.	28(56%)	30(60%)	0.917
I am moderately anxious or depressed.	14(28%)	13(26%)	
I am extremely anxious or depressed.	8(16%)	7(14%)	

Responses are based on the EQ-5D-3L standardized instrument (EuroQol Group, 1990)

Mobility: One week post-operatively, over half of the individuals (58%) in the SA group reported no walking difficulties, but just 38% of those in the GA group indicated the same. The P-value (0.197) indicates that the difference between the groups is not statistically significant.

Self-care: The data indicated that the percentage of participants in the SA group who reported no difficulty with self-care was slightly higher (42%) compared to the GA group (34%). This suggests that there is no statistically significant variation in self-care difficulties between the two groups, with comparable percentages in each category. The p-value (0.709) signifies an absence of a meaningful difference. Activates: Thirty-six percent of patients in the spinal anesthesia cohort reported no limitations in their daily activities, in contrast to twenty-six percent in the general anesthesia cohort. This variance was not statistically significant (P = 0.542) .

Pain and discomfort: The analysis of pain and discomfort indicated no significant differences between the groups, as evidenced by comparable category percentages and a non-significant p-value (0.649). Anxiety and depression levels shown no significant variation between the two groups, with comparable percentages in each category. A p-value of 0.917 signifies the absence of a meaningful difference.

Table 5: Comparison between General and Spinal Anesthesia on Five Health Dimensions of the Study Sample One Month Postoperatively (N = 100)

Variables	General anesthesia	Spinal anesthesia	P. value
	F(%)	F(%)	
Mobility			
I have no problems in walking about.	43(86%)	47(94%)	0.159
I have some problems in walking about.	7(14%)	3(6%)	
Self-care			
I have no problems with self-care.	44(88%)	46(92%)	0.370

I have some problems with washing or dressing myself.	6(12%)	4(8%)	
Activities			0.055*
I have no problems with performing my usual activities.	35(70%)	44(88%)	
I have some problems with performing my usual activities.	13(26%)	4(8%)	
I am unable to perform my usual activities.	2(4%)	2(4%)	
Pain and discomfort			
I have no pain or discomfort.	36(72%)	41(82%)	0.293
I have moderate pain or discomfort	13(26%)	7(14%)	
I have extreme pain or discomfort	1(2%)	2(4%)	
Anxiety / Depression			
I am not anxious or depressed	30(60%)	31(62%)	0.824
I am moderately anxious or depressed	13(26%)	14(28)	
I am extremely anxious or depressed.	7(14%)	5(10%	

Responses are based on the EQ-5D-3L standardized instrument (EuroQol Group, 1990)

Mobility: 86% of individuals receiving general anesthesia and 94% of those receiving spinal anesthesia reported no mobility issues. The p-value of 0.159 indicates that there is no statistically significant difference between the two groups.

Self-Care: A predominant 88% of participants in the general anesthesia cohort and 92% in the regional anesthesia cohort reported no difficulties with self-care. Considering that the difference is not statistically significant (P = 0.370), the self-care results for the two types of anesthetics appear to be analogous.

Activities: Patients receiving spinal anesthesia are more likely to experience no difficulties in performing daily chores (88%) compared to those under general anesthesia (70%). One-month post-surgery, spinal anesthesia may have a slight advantage in facilitating patients' resumption of routine activities, as indicated by a P-value of 0.055, suggesting borderline significance .

Pain and discomfort: Overall, a significant majority of patients report no pain or discomfort, with 72% in general anesthesia and 82% in spinal anesthesia. There is no discernible advantage of one anesthetic type over another for pain and discomfort, as indicated by the P-value (0.293), which shows that the difference is not statistically significant. Depression/Anxiety: Anxiety levels, in addition to depression, are comparable in both groups, with the general anesthesia cohort reporting 60% prevalence of these symptoms.

DISCUSSION

The current study demonstrated significant benefits of general anesthesia compared to spinal anesthesia regarding postoperative health-related quality of life after elective caesarean delivery. The initial obstetric and demographic parameters of the women exhibited no significant differences. Variation was noted between the two anesthesia groups in certain statements, with previous spinal anesthesia showing statistical significance (p = 0.024), previous general anesthesia also being significant (p = 0.016), and previous miscarriage demonstrating significance in both anesthesia groups (p = 0.037). In contrast to the study conducted by Ghaffari et al., significant differences were detected between anesthesia groups concerning the number of previous children and prior spinal anesthesia, with p-values of 0.013 and 0.000,

respectively (Ghaffari et al., 2018). The present investigation indicated that spinal anesthesia was linked to superior recovery compared to general anesthesia within 24 hours postoperatively. Women who underwent spinal anesthesia reported less mobility and self-care issues, experienced less pain, and shown improved capacity to engage in routine activities, as well as lower levels of anxiety and depression during the first 24 hours post-operation. Furthermore, prior claims on spinal anesthesia are not statistically significant. Comparable findings were revealed by another study conducted in Erbil, which proved that spinal anesthesia was related with superior overall recovery compared to general anesthesia in the early postoperative period (Salih et al., 2023). This study conducted in Miami revealed that the majority of women who received spinal anesthesia reported "no problem" with mobility, self-care, and routine activities at various intervals shortly following caesarean operation (Ghaffari et al., 2018). The current study indicated that regional anesthesia was associated with superior recovery compared to general anesthesia. Specifically, patients who underwent spinal anesthesia encountered less difficulties in mobility and self-care, and reported diminished pain levels during routine activities, as well as improved psychological well-being one week and one month following the surgical procedure. Both trials, however, found analogous findings about recovery one week and one month postoperatively, with minimal differences between the two anesthesia groups in terms of mobility, activities, pain levels, self-care, and psychological well-being (Ghaffari et al., 2018, Salih et al., 2023). Furthermore, regional anesthesia correlated with a superior EQ-5D general health score 24 hours post-cesarean birth in comparison to general anesthesia. This suggests that spinal anesthesia may yield superior quality of life outcomes for women undergoing caesarean sections (Ghaffari et al., 2018). The current study indicates that women are choosing spinal anaesthesia as their preferred approach. This study documented the mobility, pain levels, self-care, and discomfort experienced by women. Within 24 hours, one week, and one month subsequent to the caesarean delivery. Effective pain management is essential following a caesarean delivery, since inadequate pain relief can profoundly affect the mother's capacity to care for herself and her infant. The outcomes of the current study indicate that women who underwent spinal anaesthesia experienced reduced acute discomfort post-procedure. Moreover, a retrospective study involving 857 individuals who underwent elective caesarean deliveries identified elevated pain levels in the early postoperative period as a major independent risk factor for persistent pain subsequent to caesarean birth (Salih et al., 2023). Effective pain management after caesarean delivery can enhance mother well-being. Effective pain management after caesarean delivery has been shown to enhance quality of life (Roofthooft et al., 2021). This is more commonly achieved with spinal anesthesia than with general anesthesia.

This can be attributed to the analgesic effects of pain medicine, which enable the mother to exhibit greater compassion, vitality, and engagement throughout the assumption of maternal responsibilities (Salih et al., 2023). This study indicates that a greater number of women who had spinal anesthesia during caesarean sections reported the ability to do self-care and everyday activities without difficulty after 24 hours, compared to those who received general anesthesia. Our findings align with a study conducted by Gursoy et al., which shown that neuraxial anesthesia enhances mobility and self-care following caesarean delivery, facilitating a swifter return to daily activities compared to general anesthesia (Gürsoy et al., 2014).

CONCLUSION

In conclusion, our research demonstrates significant differences between spinal and general anesthesia for health-related quality of life (HRQoL) in women who underwent elective caesarean sections. Clinicians consistently favor spinal anesthesia for several significant reasons; it mitigates the dangers associated with general anesthesia, including challenges in airway control and associated complications. Furthermore, women generally exhibit accelerated recovery and enhanced pain alleviation subsequent to this method. These therapeutic advantages significantly improve maternal well-being during the postoperative period.

REFERENCES

1. BETRáN, A. P., MERIALDI, M., LAUER, J. A., BING-SHUN, W., THOMAS, J., VAN LOOK, P. & WAGNER, M. 2007. Rates of caesarean section: analysis of global, regional and national estimates. Paediatric and perinatal epidemiology, 21, 98-113.
2. CYNA, A. M. & DODD, J. 2007. Clinical update: obstetric anaesthesia. The Lancet, 370, 640-642.
3. EuroQol Group. EuroQol--a new facility for the measurement of health-related quality of life. Health Policy. 1990;16(3):199–208. doi:10.1016/0168-8510(90)90421-9.
4. GHAFFARI, S., DEHGHANPISHEH, L., TAVAKKOLI, F. & MAHMOUDI, H. 2018. The effect of spinal versus general anesthesia on quality of life in women undergoing cesarean delivery on maternal request. Cureus, 10.

5. GORI, F., PASQUALUCCI, A., CORRADETTI, F., MILLI, M. & PEDUTO, V. 2007. Maternal and neonatal outcome after cesarean section: the impact of anesthesia. The Journal of Maternal-Fetal & Neonatal Medicine, 20, 53-57.
6. GREGORY, K. D., JACKSON, S., KORST, L. & FRIDMAN, M. 2012. Cesarean versus vaginal delivery: whose risks? Whose benefits? American journal of perinatology, 29, 07-18.
7. GURSOY, C., OK, G., AYDıN, D., ESER, E., ERBUYUN, K., TEKIN, İ., BAYTUR, Y. & UYAR, Y. 2014. Effect of anaesthesia methods for regaining daily life activities in cesarean patients. Turkish journal of anaesthesiology and reanimation, 42, 71.
8. MADKOUR, N. M., IBRAHIM, S. A. & EZZ, G. F. 2019. General versus spinal anesthesia during elective cesarean section in term low-risk pregnancy as regards maternal and neonatal outcomes: a prospective, controlled clinical trial. Research and Opinion in Anesthesia & Intensive Care, 6, 119-124.
9. MANCUSO, A., DE VIVO, A., GIACOBBE, A., PRIOLA, V., SAVASTA, L. M., GUZZO, M., DE VIVO, D. & MANCUSO, A. 2010. General versus spinal anaesthesia for elective caesarean sections: effects on neonatal short-term outcome. A prospective randomised study. The Journal of Maternal-Fetal & Neonatal Medicine, 23, 1114-1118.
10. MCGLENNAN, A. & MUSTAFA, A. 2009. General anaesthesia for caesarean section. Continuing Education in Anaesthesia, Critical Care & Pain, 9, 148-151.
11. RICHEZ, B., OUCHCHANE, L., GUTTMANN, A., MIRAULT, F., BONNIN, M., NOUDEM, Y., COGNET, V., DALMAS, A.-F., BRISEBRAT, L. & ANDANT, N. 2015. The role of psychological factors in persistent pain after cesarean delivery. The Journal of Pain, 16, 1136-1146.
12. RING, L., LANDAU, R. & DELGADO, C. 2021. The current role of general anesthesia for cesarean delivery. Current anesthesiology reports, 11, 18-27.
13. ROOFTHOOFT, E., JOSHI, G., RAWAL, N., VAN DE VELDE, M., ANAESTHESIA, P. W. G. O. T. E. S. O. R., THERAPY, P., ASSOCIATION, S. B. T. O. A., JOSHI, G., POGATZKI-ZAHN, E., VAN DE VELDE, M., SCHUG, S. & KEHLET, H. 2021. PROSPECT guideline for elective caesarean section: updated systematic review and procedure-specific postoperative pain management recommendations. Anaesthesia, 76, 665-680.
14. SALIH, A. M., ABDULLA, S. I. & SAEED, A. A. 2023. Comparison of the Effects of General Anesthesia and Spinal Anesthesia on Quality of Life among Women Undergoing Elective Cesarean Section in Erbil City/Iraq.
15. SHALLIK, N. A., TAWFIK, L., ALHAMMAD, M. F., SHALLIK, N. N. & BOUTABBA, C. 2022. Pharmacology of the most common anesthesia drugs. Improving Anesthesia Technical Staff's Skills. Springer.
16. SOBHY, S., ARROYO-MANZANO, D., MURUGESU, N., KARTHIKEYAN, G., KUMAR, V., KAUR, I., FERNANDEZ, E., GUNDABATTULA, S. R., BETRAN, A. P. & KHAN, K. 2019. Maternal and perinatal mortality and complications associated with caesarean section in low-income and middle-income countries: a systematic review and meta-analysis. The Lancet, 393, 1973-1982.
17. SUNG, S. & MAHDY, H. 2023. Cesarean section. StatPearls [Internet]. StatPearls publishing.
18. TAHER, F. A. M. & ALI, M. S. Analytic Study of Indications and Complications Associated with Cesarean Section in Omar AL-Mukhtar Hospital.
19. WADLINGTON, J., NATALE, M. & CROWLEY, M. 1998. Anesthesia for obstetrics and gynecology. Clinical anesthesia procedures of the Massachusetts General Hospital. Philadelphia, PA: Lippincott Williams & Wilkins, 523-45.
20. WORLD HEALTH ORGANIZATION, W. 1985. Appropriate technology for birth. Lancet, 2, 436-437.
21. YOUNG-FADOK, T. M. & CRANER, R. C. 2020. Regional Anesthesia Techniques for Abdominal Operations. Enhanced Recovery After Surgery: A Complete Guide to Optimizing Outcomes, 149-162.