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Original Research

Perceived Barriers of Spinal Anesthesia among Pregnant Women in Maternity Teaching Hospitals

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Abstract:

Background: In obstetrical and gynecological procedures, spinal anesthesia is frequently utilized since it can produce an ideal analgesic effect and speedy recovery. For cesarean sections, spinal anesthesia is commonly used to reduce the risk of anesthesia exposure for the newborn and complications from general anesthesia for the mother. The study's goal to determine the perceived barriers of spinal anesthesia among pregnant women.

Methodology: A descriptive study was conducted in the two teaching hospitals, Al-Salam and Al-Khansa, located in Mosul city, from April 23, 2024, to December 31, 2024. The study consists of 150 pregnant women with cesarean sections undergoing spinal anesthesia. The questionnaire consists of three parts: part one (socio-demographic characteristics), part two (obstetric and medical history), and part three (maternal perception regarding the barriers to spinal anesthesia after operation). The data were analyzed by using SPSS ver. (22.0).

Results: The majority of the study sample were 28.7% (43) of the sample were between the ages of 25 and 29 years old. 26.0% (39) of the sample was illiterate at the educational level. 91.3% (137) of the sample were housewives by occupation. 51.3% (77) of the sample was addressed in a rural area. As for the barriers to spinal anesthesia, we had generally good responses since most of the studied items had been assessed at high and moderate levels. The highest value was 147 (98.0%) at fear, which can be the main reason for not receiving spinal anesthesia, and the lowest value was 1 (0.7%) at spinal anesthesia, which could cause chronic back pain after cesarean section.

Conclusion: This study determined that mother perceptions of barriers to spinal anesthesia after operation in pregnant women with a history of cesarean section were predominantly favorable, as most evaluated items were rated at high and moderate levels.

Keywords: Perceived Barriers, Spinal Anesthesia, Pregnant Women.

Introduction:

The administration of an anesthetic into the spinal sac, which is situated inside the spinal column, is known as spinal anesthesia or spinal. The level of the lower back (lumbar vertebrae) is typically where a "spinal" is done. The anesthetic alters the spinal cord and the spinal nerves' local conduction once it is administered into the spinal sac. Usually, patients are unable to move or feel the treated areas (Arslantas, 2022) .Due to physiological changes during term pregnancy, spinal anesthesia—the standard method for cesarean delivery—requires a lower dose of intrathecal local anesthetic than that needed for non-pregnant women (Benjhawaleemas et al., 2024). Spinal anesthesia is safer than general anesthesia during cesarean sections, but it still poses a serious risk to the safety of both the mother and the fetus due to its adverse reactions, which primarily include bradycardia, hypotension, nausea and vomiting, and shivering (Klumpner et al., 2018)). Because spinal anesthetic blocks the sympathetic nerve's transmission, it can result in maternal hypotension. A reduction in the placenta's blood flow due to maternal hypotension may result in the fetus experiencing hypoxia and acidosis (Wang et al., 2019). They are also contraindicated in women who have coagulation (clotting) disorders because the insertion of the block may speed up a bleed; they can result in a serious postural puncture headache, though this is now less common with the use of special needles(Kietzmann, 2024); spinal anesthesia is a very reliable method of anesthesia for cesarean section (Parikh & Seetharamaiah, 2018). Absolute contraindications for spinal anesthesia include patient refusal, infection at the injection site, a true allergy to any of the drugs, elevated intracranial pressure, and coagulopathy; relative contraindications include neurological disease, fixed cardiac output states, uncooperativeness, neurological disease, uncooperativeness, and aortic stenosis. Additionally, spinal anesthesia should not be used if the procedure is anticipated to take longer than the block's length or if it may cause blood loss that could lead to the development of severe hypervolemia(Toscano, 2024).

Methodology:

To accomplish the study's goals, a descriptive study was carried out between April 23, 2024, and December 31, 2024. This study was carried out in Mosul's two teaching hospitals, Al-Salam and Al-Khansa. They used purposeful sampling. 150 pregnant women who had cesarean sections and were admitted to the obstetric wards and operating rooms under spinal anesthesia make up the sample. A pretested, self-administered questionnaire was used to gather the data, and it was given to the participants during in-person interviews. The questionnaire is divided into three sections: sociodemographic (part one), medical and obstetric history (part two), and mother perception of the obstacles to spinal anesthesia post-operation (part three). Eight questions measuring information on spinal anesthesia for cesarean delivery were used. Correct answers were coded, with a value of 1 assigned to accurate answers and a value of 0 to incorrect ones. Additionally, there were twelve questions regarding the obstacles that keep women from getting spinal anesthetic. Disagree = 1, neutral =

2, and agree = 3 were the scores assigned to the barrier items. The statistical tool SPSS version 22.0 is used to evaluate and interpret the study's findings through statistical data analysis procedures. descriptive data analysis (percentages, frequencies, arithmetic mean, and standard deviation).

Results:

Table (1): The distribution of the studied sample based on sociodemographic characteristics variables (SDCv.). Observed Frequencies, Percentages, and Significant Comparisons (N=150)

SDCv.	Classes	No.	%	C.S. (*) P-value
Age Groups Yrs.	< 20	6	4.0	χ^2= 55.280 P=0.000 (HS)
	20 _ 24	21	14	
	25 _ 29	43	28.7	
	30 _ 34	41	27.3	
	35 _ 39	33	22.0	
	40 _ 45	6	4.0	Mean ± SD 30.08 ± 5.79
	Total	150	100	
Education Levels	Illiterate	39	26.0	χ^2= 12.160 P=0.033 (S)
	Read and write	26	17.3	
	Primary school	21	14.0	
	Secondary school	16	10.7	
	Diploma	22	14.7	
	Bachelor's degree or higher	26	17.3	
	Total	150	100	
Occupation	House wife	137	91.3	χ^2= 227.320 P=0.000 (HS)
	Student	4	2.7	
	Employee	9	6.0	
	Total	150	100	
Residency	Rural	77	51.3	P=0.806 (NS)
	Urban	73	48.7	
	Total	150	100	

(*) HS: Highly Sig. at P<0.01, S: Sig. at P<0.05; NS: Non Sig. at P>0.05;Testing based on One-Sample Chi-Square test, and Binomial test.

According to Table 1, 43 (28.7%) of the study sample were between the ages of 25 and 29. At the educational level, 39 (26.0%) of the sample were illiterate. Housewives made up 137 (91.3%) of the sample. Rural areas accounted for 77 (51.3%) of the sample.

Table (2): Summary Statistics of Pregnant Women's Responses Toward "Barriers to Spinal Anesthesia" Post Operation Main Domain (N=150)

Barriers to Spinal Anesthesia after Operation	Response	No.	%	MS	SD	RS% Ass.
1. Spinal anesthesia may cause urinary retention after the operation	Disagree	21	14.0	0.57	0.50	57.3 M
	Neutral	43	28.7			
	Agree	86	57.3			
2. Spinal anesthesia makes breastfeeding difficult after the operation	Disagree	118	78.7	0.79	0.41	78.7 H
	Neutral	28	18.7			
	Agree	4	2.7			
3. Spinal anesthesia may cause chronic headache	Disagree	8	5.3	0.82	0.39	82.0 H
	Neutral	19	12.7			
	Agree	123	82.0			
4. Spinal anesthesia could cause chronic back pain after cesarean section	Disagree	1	0.7	0.87	0.34	86.7 H
	Neutral	19	12.7			
	Agree	130	86.7			
5. Spinal anesthesia affects the lower extremities, leading to Paresthesia of the lower extremities and difficulty walking after the operation	Disagree	4	2.7	0.91	0.28	91.3 H
	Neutral	9	6.0			
	Agree	137	91.3			
6. Spinal anesthesia does not completely relieve pain	Disagree	110	73.3	0.73	0.44	73.3 H
	Neutral	26	17.3			
	Agree	14	9.3			
7. Spinal anesthesia injection is very painful	Disagree	59	39.3	0.39	0.49	39.3 M
	Neutral	62	41.3			
	Agree	29	19.3			
8. Spinal anesthesia may cause permanent paralysis	Disagree	37	24.7	0.14	0.35	14.0 L
	Neutral	92	61.3			
	Agree	21	14.0			
9. Spinal anesthesia delays duration of delivery	Disagree	48	32.0	0.32	0.47	32.0 L
	Neutral	82	54.7			
	Agree	20	13.3			
10. Spinal anesthesia may harm the baby	Disagree	94	62.7	0.63	0.49	62.7 M
	Neutral	45	30.0			
	Agree	11	7.3			
11. Fear can be the main reason for not receiving spinal anesthesia	Disagree	1	0.7	0.98	0.14	98.0 H
	Neutral	2	1.3			
	Agree	147	98.0			
12. Spinal anesthesia cannot be given to anyone who has infections or deformities in the area where the needle was injected	Disagree	4	2.7	0.68	0.47	68.0 H
	Neutral	44	29.3			
	Agree	102	68.0			

RS%: Relative Sufficiency Assess by (L: Low; M: Moderate; H: High).

The table (2) shows that most of the sample was answer agree for most of the questions related to maternal perception regarding barriers to spinal anesthesia after operation except the spinal anesthesia makes breastfeeding difficult after the operation that 118 (78.7%) of the sample was answer disagree, also the spinal anesthesia does not completely relieve pain that 110 (73.3%) of the sample was answer disagree, the spinal anesthesia may harm the baby that 94 (62.7%) of the sample was answer also disagree, but the spinal anesthesia injection is very painful that 62 (41.3%) of the sample was answer neutral, the spinal anesthesia may cause permanent paralysis that 92(61.3%) of the sample was answer neutral, the spinal anesthetic delays duration of delivery that 82 (54.7%) of the sample was likewise answer neutral.

Table (3) : Summary Statistics of Percentile Grand/Global Mean of score of an Overall assess domains (N=150)

Studied Domains	No.	Min.	Max.	PGMS	PSD	Assess
General Information	150	12.5	100	40.333	26.074	M
Barriers	150	25	91.7	65.279	14.429	M
Overall Assess	150	45.30	97.23	64.636	10.736	M

PGMS: Percentile Grand/or Global Mean of Score; PSD: Pooled Standard deviation.

Assessing by: (Low, Moderate, and High) according to [(0.0 – 33.33), (33.34 – 66.66), and (66.67 – 100)] intervals respectively.

Table (3) shows that the results obtained by estimating the percentile grand/global mean of score of barriers, the main domain results indicated a moderate assessed border to a high level. On the other hand, general information had accounted for a moderate border to low assessment

Discussion:

Table 1 shows social and demographic characteristic of the respondents in the study. That the majority of participants aged 25-29 years (28.7%), followed by those aged 30 - 34 years (27.3%). The lowest representation was from the < 20 and 40 - 45years age group (4.0%).This finding is supported by similar age distributions in studies by(Jemal et al., 2016) and Rabiu et al., (2019). Education status revealed that almost of the participants (26.0%) had illiterate. With only (10.7%) having Secondary school education. This high value of illiterate is supported by the research Demilew et al., (2021). Occupation shows the high participants (91.3%) were house wife. The lowest participants (2.7%) were students. These result is consistent with this study Aslam & Al-Jaroudi, (2018). Regarding residence , most participants (51.3%) were rural , minimal value (48.7%) urban. These results are consistent with this study Bekele et al., (2023) .. The statistical distribution of maternal perceptions regarding barriers to spinal anesthesia post-operation indicates that the majority of respondents agreed with most statements related to these barriers. However, 78.7% (118) disagreed with the assertion that spinal anesthesia complicates breastfeeding, while 73.3% (110) disagreed that

spinal anesthesia fails to provide complete pain relief. Additionally, 62.7% (94) disagreed with the notion that spinal anesthesia could harm the infant. Conversely, 41.3% (62) remained neutral regarding the pain associated with the spinal anesthesia injection, and 61.3% (92) expressed concerns about the potential for permanent paralysis, and 54.7% (82) of the sample gave a neutral response regarding the spinal anesthetic delays in delivery time. This aligns with the finding of (Kazom & Kareem, 2019). the main domain results indicated a moderate assessed border to a high level. On the other hand, general information had accounted for a moderate border to low assessment, and the subjects of the studied assessed main domains showed a moderate assessed border to high level primarily with regard to an overall main domain in compact form.(Dohlman et al., 2020).

Conclusion:

The majority of the questions in the study were evaluated at high and moderate levels, indicating that maternal perceptions of the obstacles to spinal anesthesia following surgery were generally positive for the pregnant women who had previously undergone a cesarean section.

Recommendation: Conducting educational programs and research about barriers of spinal to increase awareness of pregnant woman.

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Potential Conflict of Interest: None

Competing Interest: None

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