

Egyptian Journal of Anaesthesia

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/teja20

MATERNAL SATISFACTION TOWARDS SPINAL ANAESTHESIA FOR CAESAREAN SECTION

M Babajide Adegboye, I Kayode Kolawole, K. Adewale Adegboye, C Iyabo Oyewopo & O Oyewole Oladosu

To cite this article: M Babajide Adegboye, I Kayode Kolawole, K. Adewale Adegboye, C Iyabo Oyewopo & O Oyewole Oladosu (2022) MATERNAL SATISFACTION TOWARDS SPINAL ANAESTHESIA FOR CAESAREAN SECTION, Egyptian Journal of Anaesthesia, 38:1, 236-241, DOI: 10.1080/11101849.2022.2069345

To link to this article: https://doi.org/10.1080/11101849.2022.2069345

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

Published online: 25 Apr 2022.

Submit your article to this journal

Article views: 47

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=teja20

EGYPTIAN JOURNAL OF ANAESTHESIA
2022, VOL. 38, NO. 1, 236–241
https://doi.org/10.1080/11101849.2022.2069345

OPEN ACCESS Check for updates

MATERNAL SATISFACTION TOWARDS SPINAL ANAESTHESIA FOR CAESAREAN SECTION

M Babajide Adegboye[a], I Kayode Kolawole[a], K. Adewale Adegboye[b], C Iyabo Oyewopo[c] and O Oyewole Oladosu[b]

[a]Department of Anaesthesia, Faculty of Clinical Sciences, College of Health Sciences University of Ilorin, Nigeria; [b]Department of Anaesthesia, university of Ilorin teaching hospital, Ilorin, Nigeria; [c]Department of Anaesthesia, University of Ilorin Teaching Hospital, Ilorin, Nigeria

ABSTRACT

Background: There has been an increase in the use of spinal anaesthesia for Caesarean section (CS) in Nigeria in the past decades. There is, therefore, a need to evaluate the level of satisfaction among patients that had spinal anaesthesia, as an index of the quality of reproductive health care.

Methodology: A prospective observational study of 380 consenting parturients in ASA classes I, II, and III, who underwent CS under spinal anaesthesia between January and December 2019. Satisfaction score was assessed using a three-point Likert scale. Data were analysed using [IBM SPSS software version-22]. The level of statistical significance was set at p-value <0.05.

Results: A total of 380 consenting patients underwent spinal anaesthesia within the study period with 219 (57.6%) aged ≥30 years. Most were emergency CS 267 (70.3%). Most patients 294 (77.4%) expressed satisfaction for being involved in decision-making about the choice of anaesthesia technique. The majority of the patients 333 (87.6%) were satisfied with pain relief during the operation. The complications experienced by the patients intraoperatively included dizziness, 50 (13.2%), shivering, 139 (36.6%), and intraoperative nausea and vomiting, 48 (12.6%). Overall, 295 (77.6%) of the patients expressed willingness to have spinal anaesthesia again in the future, out of the 295, 293 (99.4%) were satisfied with the current spinal anaesthesia. P = 0.000

Conclusion: Maternal satisfaction to spinal anaesthesia in this study was high. This could be attributed to patient's participation in decision-making, prompt treatment of complications, and overall good anaesthetic care.

ARTICLE HISTORY
Received 11 May 2020
Revised 29 June 2020
Accepted 18 April 2022

KEYWORDS
Cesarean section; spinal anaesthesia; maternal satisfaction

1. INTRODUCTION

There is a rise in the trend of caesarean section rate for both emergency and elective surgical deliveries in Nigeria [1,2] and spinal anaesthesia as the anaesthetic technique of choice has also been on the increase [1–3]. Regional anaesthesia for caesarean delivery has generally been on the rise globally. In the United Kingdom, a survey by Jenkins and Khan [4] showed a 95% spinal anaesthesia rate for cesarean section in 2002. While in the West Indies by December 2001 more than eight out of ten cesarean sections were being done under spinal anaesthesia [5]. Imarengiaye et al. [6] reported that over 85% of the caesarean sections in some hospitals in Nigeria were conducted under spinal anaesthesia. Anaesthetists usually prefer spinal anaesthesia for caesarean delivery because it is safe and comfortable for the mother and is associated with the least fetal depression, as well as providing the best surgical conditions for the surgeon[7]. Spinal anaesthesia also has other advantages when compared to general anaesthesia, such as the reduced need for postoperative analgesia, fewer thromboembolic events, higher Apgar scores, and, more importantly, earlier onset of postoperative oral nutrition in the mother [8–10].

A prospective evaluation of maternal satisfaction to spinal anaesthesia is important in order to ascertain the changes required to improve on the overall quality of health-care delivery to the patient.

Patient satisfaction is a subjective and complex concept involving physical, emotional, psychological, social, and cultural factors [11]. It is an experience of the quality of care and a difficult outcome to measure, mainly because it is a subjective multidimensional concept based on patient expectation [12]. The complications of spinal anaesthesia, such as inadequate block, pain, shivering, nausea, and vomiting, as well as the spinal anaesthesia procedure itself, can be uncomfortable to the patients [13]. Portal et al. [14] concluded that anaesthesia was the single most important factor that leads to unsatisfactory memories of childbirth.

CONTACT M Babajide Adegboye jidodedoc2000@yahoo.com Department of Anaesthesia, Faculty of Clinical Sciences, College of Health Sciences University of Ilorin, Nigeria

This article has been corrected with minor changes. These changes do not impact the academic content of the article.

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.
This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

As in other settings across the world, the use of spinal anaesthesia for caesarean delivery has also increased in University of Ilorin teaching hospital. Adegboye et al. [15] reported in 2019 that 88.9% of cesarean delivery was by spinal anaesthesia in their institution. However, despite the high rate of spinal anaesthesia for caesarean delivery in our institution, there has been no study to assess the level of maternal satisfaction after the administration of spinal anaesthesia. Does this choice of spinal anaesthesia for parturients undergoing caesarean delivery meet the patient's satisfaction? Patient satisfaction is an objective way to provide feedback to the healthcare givers on the aspects that need improvement. It is the most important element in healthcare organizations and the top goal for any health-care delivery strategy [16].

Studies conducted on maternal satisfaction following spinal anaesthesia for caesarean delivery revealed variations in the rate of satisfaction, while most developed countries reported higher satisfaction rates, most developing African countries showed a relatively lower maternal satisfaction rate [17,18].

Therefore, this study aimed to ascertain the level of maternal satisfaction following spinal anaesthesia for caesarean delivery and to identify the predictors of dissatisfaction associated with spinal anaesthesia for caesarean delivery in order to improve on the quality of health-care delivery and to meet the patient needs.

2. Materials and methods

The study was a prospective observational study carried out by the department of Anaesthesia University of Ilorin Teaching Hospital (UITH) on women who underwent cesarean delivery under spinal anaesthesia. The University of Ilorin Teaching Hospital (UITH) is located in Ilorin metropolis, which is the capital of Kwara State in the north-central region of Nigeria. The hospital provides primary, secondary, and tertiary health services to the population. It also serves as a major referral centre for all areas in Kwara state and parts of the neighbouring states of Kogi, Ekiti, Osun, Oyo, and Niger. Institution ethical approval was obtained (ERC/2019/ 05/1508), and the study was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments

Inclusion criteria were all parturients aged between 18 and 49 years with American Society of Anesthesiologist (ASA) physical status class I, II, and III who consented to participate in the study. While the exclusion criteria were parturients who did not consent to participate in the study, parturients with communication problem with the investigator, parturients who had failed spinal anaesthetic technique and had to be converted general anaesthesia, parturients who were delivered through other methods of anaesthesia, for example, epidural anaesthesia and parturients who delivered per vagina.

3. Sample size determination

The following formula, described by Cochran, was used to calculate the sample size [19].

$n = Z\ [2](1 - \propto/2)\ x\ P\ (1 - P)/d\ [2]$

Where; $Z\ [2](1 - \propto/2)$ is the standard error of the mean corresponding to a 95% confidence interval and the corresponding value from a t-table is 1.96

P = the proportion of the target population, that is, incidence of spinal anaesthesia at 48% [3].

d = is the target margin of error at 0.05

n = sample size

n = 379

Therefore a sample size of 380 patients was used for the study.

4. Procedure

The study included all parturients scheduled for cesarean delivery under spinal anaesthesia. During the pre-anaesthetic review, all patients with ASA I, II, and III physical status between the ages of 18–49 years scheduled for cesarean section under spinal anaesthesia were enrolled in the study. The spinal anaesthetic technique to be used was carefully explained to the patient by the investigators, as well as the complications, and other outcomes related to the procedure during the pre-anaesthetic review. Patients were preloaded with 15 ml/kg of 0.9% normal saline over 15 min before spinal anaesthesia. A sterile tray for spinal anaesthesia was set up. Standard asepsis was maintained. The patient was positioned seated for the subarachnoid block with the feet placed on a stool so that the hips and knee were in a flexed position and the neck flexed. The skin over the lower back was cleaned with povidone-iodine. The spinal anaesthesia was performed using the L4/L5 or L3/L4 interspace. The spinal puncture site was infiltrated with 2mls of 1% lidocaine using a 25 G 30 mm hypodermic needle before the introduction of a 26 G Quinkes spinal needle (TAE-CHANG, Kongu city, Korea) using a midline approach and following a continuous free flow of cerebrospinal fluid, 12.5 mg of 0.5% hyperbaric bupivacaine (Duracaine myungmoon pharmco Ltd South Korea) was injected slowly without barbotage. Postoperatively in the recovery room patients' satisfaction with anaesthesia was assessed using a questionnaire sheet consisting of the five-point Likert scale (Very dissatisfied, Dissatisfied, Neither satisfied nor dissatisfied, Satisfied, Very satisfied) [20]. Provision for an interpreter was made available by

investigators who assisted in interpretation during the interview in cases of patients who could not communicate in English language.

The sampling method was purposive sampling in which all consenting patients who satisfied the inclusion criteria were recruited into the study. The study was carried out between January 2019 and December 2019.

All information obtained during the conduct of the study were handled with confidentiality and used only for the study.

5. Data analysis

The data were analysed using the statistical package for social sciences (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY. IBM Corp). Demographic data such as age groups, parity, education level, and previous exposure to anaesthesia are presented as frequency distribution. The five-point Likert scale [20] was compressed to three-point Likert scale (Satisfied, Neither satisfied or dissatisfied, Dissatisfied) for ease of analysis to measure patients satisfaction. The results are expressed as means and percentage and presented in tables and figures as appropriate. The level of significance for comparative analysis was p-value <0.05.

6. Result

A total of 380 parturient were enrolled in the study. Table 1 shows a summary of the socio-demographic aspects of the parturients. Most of the parturients were above 30 years of age with a mean age of 30.58 years and minimum and maximum age being 18 and 45 years, respectively. The parturients were mostly university graduates 239 (62.9%). Majority of the parturients were multiparous 313 (82.4%). About half of the parturients had previous exposure to anaesthesia 187 (49.2%) out of which 144 (77%) had spinal anaesthesia. The ASA physical status of most of the parturients was ASA II 228 (75.8%), 58 (15.2%) were ASAIII in which 24 (41.4%) of them were patients with severe preeclampsia. Most of the cesarean section was done as emergency 267 (70.3%). About 182 (49.2%) of the parturients had previous exposure to anaesthesia, out of which 144 (77.0%) had spinal anaesthesia. Preoperatively 102 (90.3%) parturients out of the 113 (29.7%) who had their caesarean section performed as elective were satisfied with the explanation of spinal anaesthesia and 209 (78.3%) parturients out of the 267 (70.3%) who had their caesarean section performed as an emergency procedure were satisfied with the explanation of spinal anaesthesia.

Table 2 shows that a total of parturients 294 (77.4%) were satisfied for being involved in the decision-making of the choice of spinal anaesthesia as the anaesthetic technique. Out of the 294 parturients, 94 (31.97%) of them had elective caesarean deliveries and 200 (68.03%) had emergency deliveries. The majority of the mothers (94%) were satisfied with the absence of pain during lumbar puncture. Most of the parturients 333 (87.6%) were satisfied with the intraoperative pain relief. While 364 (95.8%) of the parturients were satisfied with the overall conduct of the spinal anaesthesia.

Table 3 shows that out of the 380 parturients that had cesarean section performed under spinal anaesthesia 48 (12.6%) had intraoperative nausea and

Table 1. Socio-demographic characteristics of the parturients.

Variable	Frequency	Percentage
Age		
<30	161	42.4
≥30	219	57.6
Educational Level		
Uneducated	7	1.8
Primary school	21	5.5
Secondary school	113	29.7
Graduate	239	62.9
Parity		
Primiparous	67	17.6
Multiparous	313	82.4
Type of surgery		
Emergency	267	70.3
Elective	113	29.7
ASA Status		
I	34	8.9
II	288	75.8
III	58	15.3
Previous exposure to anaesthesia		
Yes	187	49.2
No	193	50.8
Previous anaesthetic technique		
General anaesthesia	40	21.4
Spinal	144	77.0
Other regional technique	3	1.6

Table 2. Level of satisfaction with, explanation of spinal anaesthesia, pre-operative decision-making, injection of spinal anaesthesia, intraoperative pain relief, and satisfaction with anaesthetic care.

Variable	D (%)	NS/D (%)	S (%)	Total
Explanation of spinal anaesthesia	8(2.1)	61(16.1)	311 (81.8)	380(100)
Decision making for choosing spinal anaesthesia.	12 (3.1)	74 (19.5)	294 (77.4)	380(100)
Injection of spinal anaesthesia	23(6.0)	25(6.6)	332 (87.4)	380(100)
Intraoperative pain relief	27(7.1)	20(5.3)	333 (87.6)	380(100)
Satisfaction with spinal anaesthesia.	5(1.3)	11(2.9)	364 (95.8)	380(100)

D = Dissatisfied, NS/D = Neither satisfied nor dissatisfied, S = Satisfied

Table 3. Intraoperative complication of spinal anaesthesia experienced by the parturients.

Variables	Yes (%)	No (%)	Total (%)
Intraoperative nausea and vomiting	48(12.6)	332(87.4)	380(100)
Intraoperative dizziness	50(13.2)	330(86.8)	380(100)
Intraoperative shivering	139(36.6)	241(63.4)	380(100)

Table 4. Level of satisfaction with the treatment of intraoperative nausea and vomiting, intraoperative dizziness, and intraoperative shivering.

Variable	D (%)	NS/D (%)	S (%)	Total (%)
Intraoperative nausea and vomiting	3(6.3)	8(16.7)	37(77.0)	48(100)
Intraoperative dizziness	3(6.0)	7(14.0)	40(80.0)	50(100)
Intraoperative shivering	20(14.5)	23(16.7)	95(68.8)	138(100)

D = Dissatisfied, NS/D = Neither satisfied nor dissatisfied, S = Satisfied

Table 5. Comparing parturients level of satisfaction to spinal anaesthesia to the choice of spinal anaesthesia next time.

Level of satisfaction to spinal anaesthesia	Acceptance of spinal anaesthesia in future N (%)				
	Yes	No	Not sure	Total	p value
D	1(0.3)	2(16.7)	2(2.7)	5(1.3)	
NS/D	1(0.3)	1(8.3)	9(12.3)	11(2.9)	0.000
S	293 (99.4)	9(75)	62(85)	364 (95.8)	
Total	295(100)	12(100)	73(100)	380(100)	

D = Dissatisfied, NS/D = Neither satisfied nor dissatisfied, S = Satisfied

vomiting, 50 (13.2%) had intraoperative dizziness and 139 (36.6%) had intraoperative shivering. Table 4 shows that 37 (77.0%) parturients were satisfied with the treatment of intraoperative nausea and vomiting by administering intravenous metoclopramide. While 40 (80.0%) and 95 (68.8%) were satisfied with the treatment of intraoperative dizziness and intraoperative shivering respectively

Table 5 compares the level of satisfaction of the parturients to spinal anaesthesia and if spinal anaesthesia would be their anaesthetic choice in the future. Majority of the parturients 295 (77.6%) said they would accept spinal anaesthesia for a similar procedure in the future. Most of the parturients that choose spinal anaesthesia as the technique in the future were satisfied with the spinal anaesthesia 293 (99.4%) with a p-value of 0.000.

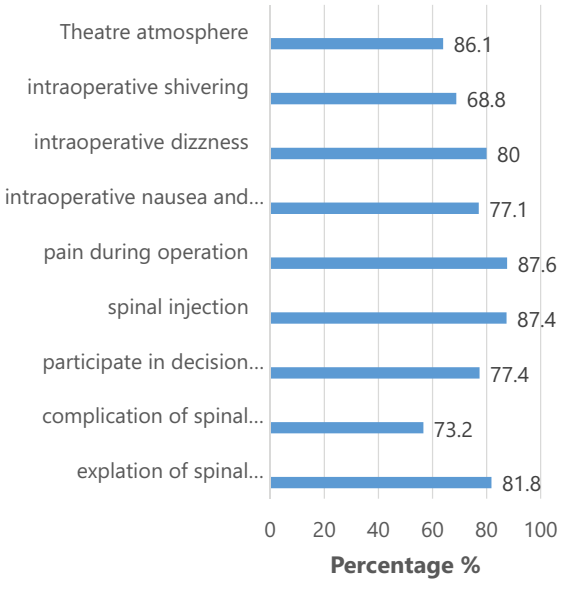


Figure 1. Level of satisfaction in percentage of various variables associated with the conduct of spinal anaesthesia.

Figure 1 shows the percentage level of satisfaction of the parturients to the conduct of anaesthesia, using various variables preoperatively and intraoperatively. Most of the parturients 81.8% were satisfied with the preoperative explanation of spinal anaesthesia by the anaesthetist, while 87.6% of the parturients were satisfied with intraoperative pain relief.

7. Discussion

The maternal satisfaction rate of spinal anaesthesia for caesarean delivery in this study is 95.8%. A recent study in two Eritrean hospitals also reported a maternal satisfaction rate of 87.9% in mothers towards spinal anaesthesia for caesarean delivery [21]. These rates are in keeping with several studies that have reported the maternal satisfaction score of spinal anaesthesia to be generally high, ranging from 85% to 100% [17,22,23]. The level of satisfaction on the pre-anaesthetic explanation of procedure in this study was 81.8%, which is relatively low compared with that of Dharmalingam and Zainuddin [17] which was 98%, but higher than that of Uziele et al. [24] (67.1%). The lower level of satisfaction to the explanation of the procedure in our study could be attributed to the fact that most of the caesarean deliveries were performed as emergencies 267(70.3%) when the parturients were already experiencing labour pain and unsure of the ability of spinal anaesthesia to offer immediate pain relief. Therefore, further breaking it down, the satisfaction level to the explanation of the spinal procedure was less among the parturients that had emergency caesarean section 78.3% when compared to those parturients that had elective caesarean section 90.3%. Some previous authors who recorded lower pre-anaesthetic level of satisfaction to the explanation of the procedure are also in agreement with our argument that it is because the parturients were experiencing labour pains, especially with parturients for emergency caesarean section, but attributed the reason to the fact that the parturients may not have concentrated on the explanation of spinal anaesthesia given by the anaesthetist. [17,22] Shisanya and Marema [22] further explained that besides the presence of labour pain

that is being associated with low satisfaction score, lack of pre-anaesthetic visit at all to the parturients also leads to low satisfaction to pre-anaesthesia explanation. In the current study, because of the high level of satisfaction with the preoperative explanation of spinal anaesthesia, the overall maternal satisfaction level to spinal anaesthesia was significantly influenced.

The level of satisfaction of parturients with the opportunity to be involved in decision-making to have spinal anaesthesia for caesarean delivery was 77.4% in this study, which is lower compared to that reported by Turnbull et al. [25] who reported 90.9%. However, if we break it down into satisfaction with involvement in decision-making in parturients for elective caesarean section and those for emergency caesarean section, the satisfaction score was 83.2% and 74.9%, respectively. This is comparable to that obtained by Mould et al. [26] who reported a satisfaction score of 93% for elective caesarean delivery and 69% for emergency caesarean delivery. Therefore, our study demonstrated that parturients had a good satisfaction score when involved in the decision-making to have their caesarean section by spinal anaesthesia.

There was a high level of maternal satisfaction with intraoperative pain control in this study 87.6%. Most intraoperative pain is usually a discomfort felt during the uterus exteriorization and peritoneal retraction[27]. Once the baby is delivered patients that complained of pain was given intravenous pethidine and diclofenac sodium according to their body weight. A similar study by Siddiqi and Jafi [23] reported a maternal satisfaction score of 74.09% to intraoperative pain control. The higher satisfaction in our study may be because our data collection was done in the recovery room (immediate postoperative period) compared to the study by Siddiqi and Jafi [23] in which there was no limit on the time of data collection after the caesarean delivery. When the analgesic effect of spinal anaesthesia wears off, the patient starts having post-operative pain and if the pain is not managed properly it may be difficult for some parturients to differentiate between intraoperative and post-operative pain, therefore, resulting in a lower anaesthesia satisfaction score. The high score of maternal satisfaction to pain control in this study shows that spinal anaesthesia is effective in controlling pain during the surgery and in the immediate post-operative period after the caesarean delivery.

Intraoperative shivering after spinal anaesthesia is a frequent event, occurring in up to 55% of the cases [28]. The shivering is caused by hypothermia due to redistribution of heat, mainly following vasodilation below the level of the neuraxial block [29]. In the current study, 36.6% of the parturient had intraoperative shivering and the maternal satisfaction to the treatment of shivering was the lowest in our study 68.8%. This is similar to the 40.2% reported by Uziele et al. [24]. Therefore, there is a need for prompt recognition of post-spinal shivering and treatment with the appropriate drug, such as opioids, following spinal anaesthesia.

The current study showed that 295 (77.6%) of the parturients accepted that they would choose spinal anaesthesia for a similar procedure in the future out of this 295, 293 (99.4%) of them were satisfied with the conduct of the current spinal anaesthetic technique. This was statistically significant $p = 0.000$. Similar findings were reported by Uziele et al. [24] and Sadeghi et al. [11] in which 95% and 78.6% of their parturient who had spinal anaesthesia as their choice of anaesthesia wished to use spinal anaesthesia for similar future surgeries. However, some factors such as dissatisfaction with the treatment of intraoperative shivering, intraoperative nausea, and vomiting, poor explanation of the spinal anaesthetic procedure, participation in decision-making and injection site pain are variables in the overall satisfaction to spinal anaesthesia, which could be simply controlled. The limitation of our study was that the level of maternal satisfaction to the spinal anaesthesia was done in the immediate postoperative period in the post-anaesthesia recovery room and assessment of complication like post-dual puncture headache PDPH could not be assessed.

8. Conclusion

The overall satisfaction to spinal anaesthesia in our study was high 95.8% that is good because ideally, a satisfaction level closer to 100% should be the target. This high level of satisfaction could be attributed to patient's participation in decision-making, prompt treatment of complications and overall good anaesthesia care that are important factors to ensure maternal satisfaction following spinal anaesthesia for caesarean delivery.

Disclosure statement

No potential conflict of interest was reported by the author(s).

References

[1] Anyaka C, Ocheke A, Shambe I, et al. Trends in elective caesarean section at the jos university teaching hospital, jos Nigeria. Science Journal of Clinical Medicine. 2016;5(6):51–54.

[2] Desalu I, Afolabi BB. Urgency of surgery and presence of maternal disease influence the choice of anaesthesia for caesarean section at LUTH. Niger Postgrad Med J. 2007;14:114–117.

[3] Ogboli-Nwasor E, Yunus AA. Anesthesia for cesarean delivery in a Low-resource setting, an initial review. Open J Anesthesiol. 2014;4:217–222.

[4] Jenkins JS, Khan MM. Anaesthesia for cesarean section: a survey in the UK region from 1992-2002. Anaesthesia. 2003;58:1114–1118.
[5] Crawford-Sykes A, Scarlett M, Hambleton I, et al. Anaesthesia for operative deliveries at the University Hospital of the West Indies: a change of practice. West Indian Med J. 2005;54(3):19–24.
[6] Imarengiaye C, Asudo F, Akinmola A, et al. A snapshot survey of spinal anaesthesia for caesarean section: the Nigeria experience. J Clin Sci. 2017;14:173–177.
[7] Juhani TP, Hannele H. Complications during spinal anesthesia for cesarean delivery: a clinical report of one year's experience. Reg Anesth. 1993;18 (2):128–131.
[8] Auquier P, Pernoud N, Bruder N, et al. Development and validation of a perioperative satisfaction questionnaire. Anesthesiology. 2005;102 (6):1116–1123.
[9] Bashir T, Shahazad A, Khilji BA, et al. Study of patients' satisfaction and hospital care in Pakistan: case study of madina teaching hospital university. Faislabad World App Sci J. 2011;12 (8):1151–1155.
[10] Arzola C, Wieczorek PM. Efficacy of low-dose bupivacaine in spinal anaesthesia for caesarean delivery: systematic review and meta-analysis. Br J Anaesth. 2011;107(3):308–318.
[11] Sadeghi M, Bayat R, Azimaraghi O, et al. Maternal satisfaction of spinal anesthesia for elective cesarean section in an academic hospital. Ann Anesth Crit Care. 2017;2(2):1–6.
[12] Pritchard MJ. Identifying and assessing anxiety in pre-operative patients. Nurs Stand. 2009;23(51):35-40.
[13] Smaoui M, Ayedi M, Derbel A, et al. Factors of patient dissatisfaction after spinal anaesthesia for cesarean section. Eur J Anaesthesiol. 2012;29:164.
[14] Porter M, van Teijlingen E, Chi Ying Yip L, et al. Satisfaction with cesarean section: qualitative analysis of open-ended questions in a large postal survey. Birth. 2007;34(2):148-54.
[15] Adegboye MB, Oyewopo CI, Adegboye KA, et al. An appraisal of anaesthetic technique for caesarean delivery in a tertiary institution in North Central Nigeria. Trop J Obstet Gynaecol. 2019;36:412–417.
[16] Afolabi BB, Lesi FE, Merah NA. Regional versus general anaesthesia for caesarean section. Cochrane Database Syst Rev. 2006;18(4):CD004350.
[17] Dharmalingam TK, Zainuddin NA. Survey on maternal satisfaction in receiving spinal anaesthesia for caesarean section. Malays J Med Sci. 2013;20 (3):51–54.
[18] Melese T, Gebrehiwot Y, Bisetegne D, et al. Assessment of client satisfaction in labor and delivery services at a maternity referral hospital in Ethiopia. Pan Afr Med J. 2014;17:76.
[19] Bartlett J, Kotrlik J, Higgins C. Organizational research: determining appropriate sample size in survey researchIT. Learning and Performance J. 2001;19(1):43–50.
[20] Likert R. A technique for the measurement of attitudes. Arch Psychol. 1932;140:1–55.
[21] Idris MI, Ghidey GW, Eyasu HT. Maternal satisfaction and its associated factors towards spinal anesthesia for caesarean section: a Cross-Sectional study in two Eritrean hospitals. Anesthesiol Res Pract. 2020;2020:1–8.
[22] Shisanya MS, Morema EN. Determinants of maternal satisfaction with spinal anaesthesia care for caesarian delivery at the Kisumu county hospital. IOSR J Nurs Health Sci. 2017;6(1):91–95.
[23] Siddiqi R, Jaffri SA. Maternal satisfaction after spinal anaesthesia for caesarean deliveries. J Coll Physicians Surg. 2009;19(2):77–80.
[24] Uziele MM, Lebitsi MM, Doudou KN. Satisfaction with spinal anaesthesia for Caesarean section at Tembisa hospital, South Africa: a cross-sectional study. S Afr Family Pract. 2019;61(2):39–47.
[25] Turnbull DA, Wilkinson C, Yaser A, et al. Women's role and satisfaction in the decision to have a caesarean section. Med J Aust. 1999;170 (12):580–583.
[26] Mould TA, Chong S, Spencer JA, et al. Women's involvement with the decision preceding their caesarean section and their degree of satisfaction. Br J Obstet Gynaecol. 1996;103(11):1074–1077.
[27] Pedersen H, Santos AC, Steinberg ES, et al. Incidence of visceral pain during cesarean section: the effect of varying doses of spinal bupivacaine. Anesth Analg. 1989;69:46-9.
[28] Crowley LJ, Buggy DJ. Shivering and neuraxial anesthesia. Reg Anesth Pain Med. 2008;33:241–252.
[29] Kim YA, Kweon TD, Kim M, et al. Comparison of meperidine and nefopam for prevention of shivering during spinal anesthesia. Korean J Anesthesiol. 2013;64 (3):229–233.