

PREVALENCE AND AWARENESS OF SPINAL ANAESTHESIA IN PATIENTS UNDERGOING MAJOR SURGERY AT GENERAL HOSPITAL DUTSE, JIGAWA STATE, NIGERIA

DALHATU, A 1.; YUNUSA, U. 1.; SANI DALHAT KHALID. ADAMU, ALHAJI. ABDULMALEEK, M. A., & RAJAH, A. S.

Abstract

Spinal anaesthesia is currently the commonest technique of choice in providing anaesthesia, most especially for surgeries below the umbilicus and lower extremities in developed countries. This study assesses the prevalence and awareness of spinal anaesthesia among patients undergoing surgery at General Hospital, Dutse, Jigawa State. The design of this study was descriptive and a sample size of 50 was determined by Taro Yameh's formula. The instrument used for this study was an adapted structured questionnaire based on Pollard (2020) and were slightly modified based on ASA (American Society of Anaesthesiologists). The validity of the instrument was done by two experts and errors were corrected. Test retest was used for the reliability and the score of 0.970 was obtained. The obtained data were analysed using descriptive statistics and presented in frequency distribution table with percentage and pie chart. The socio – demographic characteristics of the participants revealed that majority of the respondents are within 20 to 29years (40%) and are female (86%). Findings of this study indicate that the level of awareness was average (50%) and the prevalence rate was very high (80%) therefore, it is recommended that improvement in quality of care in the administration of spinal anaesthesia should be encouraged.

Keyword: Prevalence; Awareness; Spinal Anaesthesia; Patients; Major Surgery

INTRODUCTION

Spinal anaesthesia is currently the most common technique of choice for providing anaesthesia, especially for surgeries below the umbilicus and lower extremities in developed countries (August, 2000). It has significantly reduced the incidence of general anaesthesia

toxicities. Despite these benefits of this technique, statistics show that two-thirds of patients who have undergone caesarean section in developing countries prefer general anaesthesia to spinal anaesthesia (Pollard, 2000). An average of sixty patients undergo lower abdominal and lower extremity surgeries between January and December 2022, with only fifteen accepting spinal anaesthesia in General Hospital, Dutse, Jigawa State (Medical record GHD, 2022). Spinal, caudal, and epidural blocks were first used for surgical procedures at the turn of the twentieth century; these central blocks were widely used worldwide until reports of permanent neurological injury appeared, most prominently in the United Kingdom.

However, large scales epidemiological study concluded in the 1950s indicated that complications were rare when these blocks were performed skilfully, with attention to asepsis, and when never safer local anaesthetics were used. Today, neuraxial blocks are widely used for labour analgesia, and chronic pain management. However, they are still associated with various complications and much literature has examined the incidence of complications following neuraxial blocks associated with different disease states. The practitioner must therefore have a good understanding of the anatomy involved, be thoroughly familiar with the pharmacology and toxic dosages of the agents employed, diligently employ sterile technologies, anticipate and quickly treat the physiological derangements. According to Lee and Ashford (2006), a Canadian nurse anaesthetist, associated child birth as the most painful

experience of woman life, authorities in the fields of anaesthesia encourages the use of spinal anaesthesia, (Francophone Medical Journal 2010) it takes less time to perform, causes less discomfort to the patients during its placement and produce more intense sensory and motor anaesthesia (blockade) up to the level of umbilicus during caesarean section.

The first spinal anaesthesia was administered in 1885 by James Leonard Corning (1885-1922) a neurologist in New York. It was experimenting with cocaine on the spinal nerve of a dog when he accidentally pierced the Dura matter. The fear of being put to total sleep during surgery has been documented to be extreme. Spinal anaesthesia also called spinal block, subarachnoid block (SAB), intradermal block and intrathecal block is a form of regional anaesthesia involving injections of local anaesthetic agent into the subarachnoid space, generally through a fine needle usually 9cm long (3.5 inches). For extremely obese patients' longer needles are available (12.74cm inches). Spinal anaesthesia is a commonly used anaesthesia technique both alone and in combination with either sedation or general anaesthesia (August,2000). Spinal anaesthesia is the technique of choice for caesarean section as it avoids a general anaesthetic complications and the risk of failed intubation (which is approximately 1 in 250 in pregnant woman) it also means the mother is conscious and the partner is able to be present at the birth of the child (Pollard,2000). Spinal anaesthesia is very useful in patients with severe respiratory disease e.g. COPD as it avoid intubation and ventilation. It may also be useful in patient where anatomical abnormalities may make tracheal intubation very difficult (Aphami,et al., 2013). However, spinal analgesia is the mainstay of anaesthesia in countries like India, Pakistan, and part of Africa. The first planned spinal anaesthesia for surgery in man was administered by August Bier (1861-1949).

Thousands of spinal anaesthesia is administered daily in hospital and nursing home at a low cost, a surgery of up to two hours duration can be performed between the

umbilicus of the patient (Pollard, 2000). Additional benefits may include reducing the metabolic stress response to surgery, reduction in blood loss, decrease in the incidence of venous thromboembolism, reduction in pulmonary compromise (particular in patients with advance pulmonary disease), and ability to monitor the patients' mental status. Although, general anaesthesia has been the major technique of choice in providing anaesthesia in most obstetric procedures in the past, in recent time, spinal anaesthesia has taken a lead and gained popularity in the developed countries and most developing countries which is used as a technique of providing anaesthesia in most booked caesarean section (Bayable, et al., 2023). This study assesses the prevalence and awareness of spinal anaesthesia among patients undergoing surgery at General Hospital, Dutse, Jigawa State.

METHODOLOGY

Design: Descriptive research design was used for study.

Study Area: The study was conducted at Dutse, which is the local government area headquarters of Jigawa State. The town has a population of about 335,600 people and is located in the North-West geopolitical zone of Nigeria. Dutse General Hospital was established in 1972 as Dutse Comprehensive Health Centre by the old Kano State. The CHC was converted to Dutse General Hospital on August 8, 1985, and commissioned by the military governor of Kano State, Air Commodore Hamza Abdullahi FSS, PCC. Dutse General Hospital is located in Dutse metropolis along Kiyawa Road. It covers an area of 500m x 800m and is currently a 200-bed capacity secondary health facility serving as a referral centre for all PHCs in Dutse and Kiyawa Local Government Areas. It also provides services for other neighbouring settlements in Kano and Bauchi States. The hospital caters for healthcare access of 58,581 total catchment population consisting of 2,343

children under 1 year, 11,716 children less than 5 years, 2,929 pregnant women, and 12,888 women of childbearing age.

Human resources for health at the general hospital comprise 76 registered nurses, 24 JCHEWs, 18 CHEWs, 9 CAs, 12 nurses and midwives, 2 ENTs, 3 COMBEWs, 5 health information technicians, 4 health information officers, 6 pharmacists, 10 pharmacy technicians, 2 radiologists, 4 x-ray technicians, 3 physiotherapists, 6 laboratory scientists, 12 medical laboratory technicians, 8 medical laboratory assistants, 1 dentist, 1 dental therapist, 6 dental technicians, 3 environmental officers, 10 medical doctors, 104 health attendants, and 116 staff including NYSC personnel.

Target Population: The target population are surgical patients, and the total population is 150 patients

Inclusion criteria: Surgical patients who are undergoing surgical operation involving peritoneum

Exclusion criteria: Surgical patients undergoing surgery not involving peritoneum, surgical patients for secondary incision, and patients on stage 4 ASA (American Society of Anaesthesiologists) classification

Sample Size Determination: Taro Yamen formula was used to determine a Sample size of 50 participants.

Sampling Technique: Simple random sampling technique was used to select 50 participants from a target population of (150) patients for the study.

Instrument for Data Collection: the instrument used for the study was an adapted structured questionnaire based on Pollard (2020) and were slightly modified based on ASA (American Society of Anaesthesiologists).

Validity of the Instrument: The face and content validity of the questionnaire was carried out by two experts in the Department of Nursing Science, Ahmadu Bello University, Zaria. They examined the items in line with objectives set for the study. They also assessed

the language used in developing the instrument, made necessary modifications and their input and suggestions were affected prior to the administration of the instrument to the participants.

Reliability of the Instrument: In order to establish the reliability of the instrument, 10 Copies of questionnaires were administered 10 patients Kano Teaching Hospital, Kano, using test-retest method within 2 days interval. The instrument was re-administered to the same group of patients after 2 days. The two sets of scores were correlated using Pearson Product Moment Correlation statistics and the coefficient of reliability of 0.970 was obtained which showed a high value. This made the instrument reliable for data collection.

Method of Data Collection: the data was collected by the researcher through face-to-face method of data administration of the questionnaire and information was obtained from surgical patients in the operating theatre of the hospital. The researcher went to the hospital, met with the participants and distributed the questionnaires to them after informing them about the study after obtaining their consent to participate. A trained research assistant helped in the process of data collection and participants were allowed a period of 30minutes to 1hour to fill the questionnaires before same was retrieved from them. The process of data collection lasted for three days to enable the researcher cover all the participating subjects.

Data Analysis: the obtained data was analyzed using mean, range and standard deviation and presented in tables, charts and frequency. The study did not test the inferential aspect of the interacting variables which could limit the quality and depth of the findings.

Ethical consideration: the principles guiding the conduct of human subjects' research to include confidentiality, autonomy, beneficence, fidelity and justice were complied with after obtaining an introductory letter from the department

RESULTS

The table below shows that the majority of the respondents were between the age group of 20-29 years and reflected female preponderance. Female surgical patients within this age group

are higher in number than their male counterparts. The socio-demographic characteristics of the participants revealed that the majority of the respondents are within 20 to 29 years (40%) and are female (86%).

Table 1. The Socio – Demographic Characteristics of The Participants

S/	Variables N=50	FREQUENCY	PERCENTAGE
1.	Age distribution		
	20-29	20	40%
	30-39	15	30%
	40-49	10	20%
	50 – Above	5	10%
	Total	50	100%
2.	Sex		
	Male	7	14%
	Female	43	86%
	Total	50	100%

The below table indicates that majority of the participants agreed that Spinal anaesthesia is an intravenous injection of anaesthetic drugs (52%) while 48% disagreed. 60% of participants agreed that Spinal anaesthesia is an intramuscular injection of anaesthetic drugs while 40% disagreed. 44% of participants agreed that Spinal anaesthesia is an anaesthetic

drug given through the back or spine of an individual, drugs while 56% disagreed. Lastly, 44% of participants agreed that Spinal anaesthesia is a techniques whereby anaesthetic drugs is given through the skin into the subarachnoid space while 56% disagreed. This study there shows that the level of awareness in average (50%).

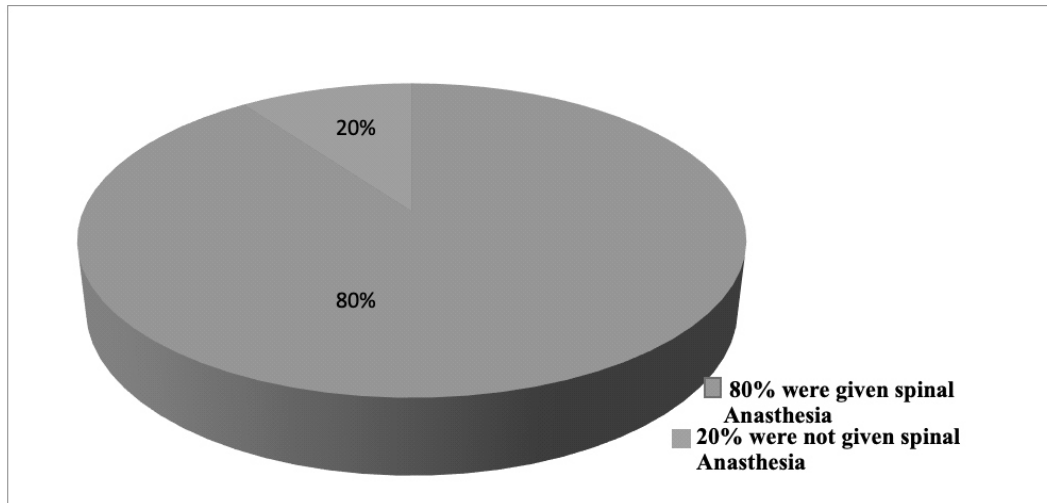
Table 2. Awareness on Spinal Anaesthesia Among Surgical Patients

Statement	Agreed	Disagree	Total
Spinal anaesthesia is an intravenous injection of anaesthetic drugs	26 (52%)	24 (48%)	50(100%)
Spinal anaesthesia is an intramuscular injection of anaesthetic drugs	30 (60%)	20 (40%)	50(100%)
Spinal anaesthesia is an anaesthetic drug given through the back or spine of an individual	22 (44%)	28 (56%)	50(100%)
Spinal anaesthesia is a techniques whereby anaesthetic drugs is given through the skin into the subarachnoid space	22 (44%) 50%	28 (56%) 50%	50(100%)

Fig 1 below shows that 80% of participants were given spinal anaesthesia while 20% were

not given. This study therefore shows that the prevalence rate of spinal anaesthesia is very high (80%)

Fig 1: Prevalence Rate of Spinal Anaesthesia Among Participants



DISCUSSION

This study assesses the prevalence and awareness of spinal anaesthesia among patients undergoing surgery at General Hospital, Dutse, Jigawa State. The socio-demographic characteristics of the participants revealed that the majority of the respondents are within 20 to 29 years and are female. The authors suggest that the possible explanation for witnessing high female preponderance in this study is not counterintuitive due to the fact that most surgeries performed were caesarean sections affecting female patients.

This study shows that the level of participants' awareness is average. This study is in line with Aphami et al. (2013), who reported a high awareness level of spinal anaesthesia among the studied subjects. The authors opined that possible reasons for the awareness level in this study could be linked to the fact that most patients were those who had undergone spinal anaesthesia surgery before, which gave them better experiences and increased their awareness level. This study does not concur with Ujma (2019), who reported that only 32% of his

respondents were aware that anesthesiologists provide anaesthesia.

The study revealed that the prevalence rate of spinal anaesthesia is very high. This study is consistent with Apfelbaum et al. (2013), who noted a higher prevalence rate of spinal anaesthesia among their respondents. The authors explained that the high prevalence could be linked to the fact that the majority of the respondents were recruited from patients who had had spinal anaesthesia surgery previously, which necessitated the patients to opt for spinal anaesthesia due to previous experience. This study is not consistent with Bishnupriya and Jubina (2021), who observed that the overall prevalence of PSBP in their study was low (40.5%).

CONCLUSION

It is concluded, based on the available descriptive data, that there is a high awareness level and prevalence of spinal anaesthesia among the studied groups. Therefore, we recommend improvement in quality care and

administration of spinal anaesthesia at the study settings. Regarding the strength of the study, this appears to be the first study conducted in this area at the study setting, and efforts are underway to establish a more robust study that could test the inferential aspects of some variables implicated among the studied group.

Limitation: the study is limited to fewer number of surgical patients therefore, the interpretation of the results should be done with cautions

Recommendations: the study recommends the replication of the study at larger scale to enable drawing a more robust findings that could inform policy making of the hospital

REFERENCES

- August B., (2000): "A Tribute to a Great Surgeon who contributed much to the Development of modern Anesthesia" on the 50th Anniversary of his Death." *Regional anaesthesia and pain medicine*, 25 (2) 26-33.
- Apfelbaum, J.H. et al., (2013). "American Society of Anesthesiologists Task force on Post anesthetic care Practice" guidelines for Postanesthetic
- Aphami, Salmosi and Panhea (2013) "Perception and attitude of patient toward Anesthesia".
Journal of Anesthesiology 2(3),55-61
- Bishnupriya Mohanty¹, Jubina Andrade² (2021) Prevalence and Factors Associated with Back Pain among Patients Undergoing Spinal Anaesthesia. *International Journal of Research Publication and Reviews*, Vol 2, no 11, pp 787-790,, November 2021 .Journal homepage: www.ijrpr.com ISSN 2582-7421 P
- Bayable ,S.D., Amberbir, W.D., & Fetene, M.B(2023). "Delayed awakening and it associated factor following General anaesthesia service, 2022: a cross – sectional study". *Annals of medicine and surgery*. 85(9), 85{9),4321 4328
- James L.C.(2021).*Recovery from Anesthesia*" *Neurology*. 37 (4) , 672 - 4 .
Doi:10.1212/WNL.37.4.672.
- Medical record GHD 2023.Note on way researcher set out to assess the level of knowledge, acceptance and Awareness of spinal anaesthesia among patient booked for surgery below the umbilicus Smith and Aitkenheads *Textbook of Anaesthesia [IE]*,(2017)7e.ISBN:9780702074998
Copper, E., Martin, F.,7
- Pollard, B.(2020). "Delayed Recovery of consciousness after general anaesthesia". *BJA Education*, 20(5), 173-179
- [Ujma Shrestha](#) (2019) Awareness and concern towards anaesthesia among patients undergoing surgical procedure: A cross-sectional study at pre-anesthetic clinic of a Teaching Hospital Journal of Kathmandu Medical College <https://doi.org/10.3126/JKMC.V8I2.28168>