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AWARENESS REGARDING SPINAL ANESTHESIA AMONG NON- MEDICAL UNDERGRADUATE FEMALE STUDENTS IN PRIVATE UNIVERSITIES IN PESHAWAR

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ABSTRACT

Background: Spinal anesthesia is widely used for surgical and diagnostic procedures but remains poorly understood among the general population. Misconceptions and lack of awareness may lead to difficulty in making informed healthcare decisions, particularly among non-medical undergraduate students.

Objective: To evaluate the level of awareness regarding spinal anesthesia among female non-medical undergraduate students in private universities in Peshawar.

Study Design: Descriptive cross-sectional study

Place and Duration of Study: Department of Anesthesia, Abasyn University Peshawar, Khyber Pakhtunkhwa, Pakistan, from August to December 2024.

Methodology: The study was conducted at the Department of Anesthesia, Abasyn University Peshawar, from August to December 2024. A total of 385 participants were recruited through convenience sampling from four private universities in Peshawar. Data regarding demographics, awareness, perceptions, and preferences about spinal anesthesia were collected using a structured questionnaire distributed through Google Forms. Ethical approval was obtained prior to data collection. Data were analyzed using SPSS version 27 and descriptive statistics were calculated.

Results: Among the participants, 62.3% were unfamiliar with spinal anesthesia and had limited knowledge regarding its safety and possible side effects. Social media and family were identified as the primary sources of information. A majority of respondents (56.9%) were reluctant to undergo spinal anesthesia due to fear of pain, back problems, and paralysis.

Conclusion: The findings indicate that awareness regarding spinal anesthesia among non-medical female undergraduate students is limited. Educational programs and awareness campaigns are required to improve understanding and address misconceptions regarding spinal anesthesia.

Keywords: Anesthesia, Cerebrospinal Fluid, Headache, Local Anesthetics, Post-Dural Puncture

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INTRODUCTION

Anesthesia is an essential component of modern surgical practice, enabling pain-free and safe operative procedures[1]. Among various anesthetic techniques, spinal anesthesia is widely used for surgeries involving the lower abdomen, pelvis, and lower extremities due to its effectiveness, rapid onset, and favorable safety profile[2, 3]. Despite its widespread clinical use, awareness and understanding of spinal anesthesia among the general population remain limited [4, 5].

Lack of knowledge and misconceptions regarding spinal anesthesia may lead to anxiety, fear, and reluctance to accept the procedure, even when medically indicated [6, 7]. Previous studies have shown that non-medical individuals often rely on informal sources such as family, friends, and social media for health-related information, which may contribute to misinformation and negative perceptions [6]. Inadequate awareness can therefore affect decision-making and reduce patient cooperation during surgical procedures [8].

Improving awareness regarding anesthesia is an important aspect of enhancing health literacy in the community. Educational institutions, particularly universities, can serve as effective platforms for promoting awareness and addressing misconceptions related to medical procedures [9, 10]. Understanding the level of awareness among non-medical students is essential for designing targeted educational interventions [11].

This study aims to evaluate the level of awareness regarding spinal anesthesia among non-medical undergraduate female students in private universities in Peshawar, and to identify gaps in knowledge, perceptions, and attitudes toward this commonly used anesthetic technique.

METHODOLOGY

This descriptive cross-sectional study was conducted at the Department of Anesthesia, Abasyn University, Peshawar, Khyber Pakhtunkhwa, Pakistan, from August to December 2024. The study aimed to assess the level of awareness regarding spinal anesthesia among non-medical undergraduate female students enrolled in private universities in Peshawar.

A total of 385 participants were included in the study. The sample size was calculated using an online sample size calculator with a 95% confidence level, 5% margin of error, and an assumed prevalence of 50%, resulting in a required sample size of 385 participants. Participants were recruited using a convenience sampling technique from four private universities in Peshawar.

Ethical approval for this study was obtained prior to the commencement of the study from the Institutional Review Board (IRB) of Abasyn University, Peshawar. (Ref No: AIMMS/D-Admin/8th-R-P/2024), dated 14 Jan 2024. Written informed consent was obtained from all participants before enrollment, and confidentiality and anonymity were maintained throughout the study.

The study was conducted over a four-month period. The initial phase involved preparation of study materials and ethical approval, followed by participant recruitment and data collection.

Unmarried female undergraduate students aged 18–25 years, enrolled in non-medical academic programs such as arts, business, and engineering in private universities in Peshawar, who voluntarily agreed to participate and provided informed consent were included in the study.Those who did not provide informed consent or submitted incomplete questionnaires were excluded from the study.

Data were collected using a structured questionnaire distributed through Google Forms. The questionnaire consisted of sections covering demographic information, awareness of spinal anesthesia, knowledge regarding its indications and complications, perceptions, and preferences related to the procedure.

Data were analyzed using Statistical Package for the Social Sciences (SPSS) version 27. Descriptive statistics, including frequencies, percentages, means, medians, and standard deviations, were calculated to summarize demographic characteristics and assess the level of awareness regarding spinal anesthesia among the participants.

RESULTS

A total of 385 participants were included in this study assessing awareness regarding spinal anesthesia among non-medical undergraduate female students in private universities in Peshawar, Khyber Pakhtunkhwa. The participants were recruited from four private universities in the city.

The majority of participants were aged 18–20 years (41.8%), followed by those aged 21–22 years (39.5%), while 18.7% were between 23–25 years (Figure 1).

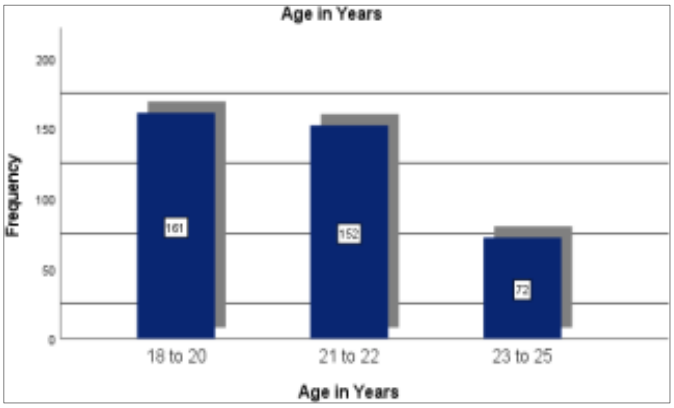

Figure 1. Age Distribution of Study Participants

When asked about familiarity with spinal anesthesia, 62.3% of participants reported that they were unfamiliar with the procedure, while 37.7% indicated familiarity. Among those who were familiar with spinal anesthesia, most reported informal sources of information. The most common sources included family or friends (17.7%), digital media (12.5%), university (10.9%), and health professionals (6.5%), while 52.5% of participants were unsure or did not specify the source.

Regarding surgical procedures commonly associated with spinal anesthesia, 37.4% of participants identified cesarean sections, 19.5% mentioned orthopedic surgeries, 17.1% reported abdominal surgeries, and 26.0% selected other surgical procedures.

When participants were asked whether they would agree to spinal anesthesia if recommended by an anesthesiologist, 56.9% responded negatively, 42.9% agreed, and 0.3% were unsure. Among those hesitant to undergo spinal anesthesia, common concerns included pain during needle insertion (21.0%), back pain after the procedure (14.8%), fear of permanent paralysis (13.0%), and other concerns (7.5%).

With regard to expectations upon entering the operation theatre, 63.4% of participants reported having no knowledge of the sequence of events, while 20.5% believed that patients would first be connected to monitoring equipment, 14.8% thought spinal anesthesia would be administered immediately, and 1.3% believed surgery would begin before anesthesia administration.

A summary of participant responses regarding awareness, perceptions, and experiences related to spinal anesthesia is presented in Table 1.

Table 1: Summary of Participant Responses on Awareness, Perceptions, and Experiences Related to Spinal Anesthesia

Category	Response Option	Frequency	Percentage (%)
Are you Familiar with Spinal Anesthesia?	Yes	145	37.7
	No	240	62.3
Have you ever undergone any surgical procedure in the past?	Yes	42	10.9
	No	343	89.1
Level of Understanding of Spinal Anesthesia	Very Good	22	5.7
	Good	51	13.2
	Average	69	17.9
	Poor	140	36.4
	No Understanding	103	26.8
Where did you learn about spinal anesthesia?	Digital Media	48	12.5
	Family/Friends	68	17.7
	Health Professionals	25	6.5
	University	42	10.9
	Unsure/Other	202	52.5
Do you believe spinal anesthesia allows patients to remain awake during surgery?	Yes	104	27.0
	No	55	14.3
	Unsure	226	58.7
Assessment of Spinal Anesthesia Safety	Safe	101	26.2
	Not Safe	61	15.8
	Do Not Know	223	57.9
Awareness of Side Effects	Back Pain	52	13.5
	Headache	32	8.3
	Low Blood Pressure	43	11.2
	Nausea	15	3.9
	Other	27	7.0
	Unsure/Not Aware	216	56.1
Surgeries Most Commonly Associated with Spinal Anesthesia	Abdominal Surgeries	66	17.1
	C-Sections	144	37.4
	Orthopedic Surgeries	75	19.5
	Other	100	26.0
Would you agree to spinal anesthesia if recommended by an anesthesiologist?	Yes	165	42.9
	No	219	56.9
	Unsure	1	0.3
Concerns Regarding Spinal Anesthesia	Pain During Needle Insertion	81	21.0
	Back Pain Afterward	57	14.8
	Permanent Paralysis	50	13.0
	Other	29	7.5
	Unsure/Not Concerned	168	43.6
	No Idea	244	63.4
Expectations Upon Entering Operation Theatre	Connected to Monitoring Equipment Before Anesthesia	79	20.5
	Spinal Anesthesia Administered Immediately Upon Arrival	57	14.8
	Surgery Begins Before Anesthesia	5	1.3

The study further showed that 89.1% of participants had not previously undergone any surgical procedure, while 10.9% reported a history of surgery. Self-assessed understanding of spinal anesthesia was generally low, with 36.4% reporting poor understanding and 26.8% indicating no understanding. Only 13.2% and 5.7% rated

their understanding as good and very good, respectively.

Regarding perceptions of spinal anesthesia, 27.0% of participants believed that patients remain awake during surgery under spinal anesthesia, while 58.7% were unsure and 14.3% believed otherwise. Similarly, 57.9% of participants were unsure about the safety of spinal anesthesia, while 26.2% considered it safe and 15.8% believed it was unsafe.

Awareness of possible side effects was also limited. Approximately 68.6% of participants reported being unaware of the risks associated with spinal anesthesia, while 31.4% indicated awareness. Among those aware of potential side effects, the most commonly reported were back pain (13.5%), low blood pressure (11.2%), headache (8.3%), nausea (3.9%), and other side effects (7.0%).

DISCUSSION

This study assessed the level of awareness regarding spinal anesthesia among non-medical undergraduate female students in private universities in Peshawar. The findings revealed that a considerable proportion of participants had limited or no awareness of spinal anesthesia, with many relying on informal sources of information. This highlights a significant gap in knowledge among non-medical students regarding commonly used anesthetic techniques.

The majority of participants reported unfamiliarity with spinal anesthesia, and among those who were aware, information was primarily obtained through non-professional sources such as family, friends, and digital media. Similar findings have been reported in previous studies, where lack of formal education and dependence on informal sources contributed to misconceptions and inadequate understanding of anesthesia-related procedures [12, 13]. This indicates the need for structured awareness programs to improve knowledge in the general population.

In terms of perception, a large proportion of participants were uncertain about the safety and effects of spinal anesthesia. Many participants expressed concerns regarding pain during needle insertion, back pain, and the risk of paralysis. These misconceptions are consistent with findings from other studies, which have demonstrated that fear and lack of accurate knowledge can significantly influence patient acceptance of anesthesia [14, 15]. Addressing these misconceptions through education can improve patient confidence and cooperation [16].

Furthermore, the study demonstrated that most participants had no clear understanding of what to expect during procedures involving spinal anesthesia. This lack of awareness may lead to increased anxiety and hesitation in accepting medically recommended procedures [17]. Previous literature also suggests that inadequate preoperative knowledge is associated with higher levels of anxiety and reduced satisfaction among patients [18, 19].

The findings of this study emphasize the importance of educational interventions aimed at improving awareness regarding anesthesia. Universities and educational institutions can play a vital role in disseminating accurate information and correcting misconceptions among students. Incorporating basic health education sessions or awareness campaigns may help bridge the knowledge gap and improve overall health literacy.

This study has certain limitations. The use of convenience sampling and the inclusion of participants from selected private universities may limit the generalizability of the findings. Additionally, data were collected through self-reported questionnaires, which may be subject to response bias.

CONCLUSION

This study found that awareness regarding spinal anesthesia among non-medical undergraduate female students in private universities in Peshawar is generally limited. Many participants demonstrated insufficient knowledge about the safety, risks, and applications of spinal anesthesia, and most relied on informal sources such as family, friends, and social media for information. These findings highlight the need for structured educational initiatives aimed at improving awareness and understanding of spinal anesthesia among university students. Increasing health literacy in this population may help promote informed healthcare decisions and reduce misconceptions regarding medical procedures.

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AUTHOR CONTRIBUTIONS

Concept and Design of Study: Ahmad Ullah

Drafting of Manuscript: Abid Alam, Salman Khan

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Final Approval of the Manuscript: All authors approved the final version of the manuscript.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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