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The anxiety of patients under regional anesthesia: operating room healthcare providers' point of view

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Abstract

Background: Preoperative anxiety is a widespread phenomenon in anesthesia, a challenging issue for the caring team in evaluating and managing patients' anxiety. This study aimed to determine the operating room (OR) healthcare providers' point of view on the patients' anxiety under regional anesthesia.

Methods: This cross-sectional study was conducted on 203 OR healthcare providers in the adult public educational hospitals of Golestan University of Medical Sciences, Gorgan, Iran, from April to November 2021. Eligible OR healthcare providers, including nurse anesthetists (104), surgical technologists (82), and anesthesiologists (17), were recruited through the census method. Data were collected using anesthesiologists' perception of patients' anxiety under a regional anesthesia questionnaire developed by Jlala (2010). The impact score was determined to ensure the face validity of the Iranian version of the questionnaire, and ten healthcare providers checked it qualitatively. The average score of the content validity index (CVI=0.978) and content validity ratio (CVR=0.978) were acceptable. The instrument's internal consistency was evaluated using Cronbach's alpha coefficient (α =0.675). Data were analyzed in SPSS software version 18 using Fisher's Exact, Chi-Square, and Kruskal-Wallis tests.

Results: There were no differences in most questionnaire items between healthcare providers' views based on their professional roles (P<0.05). More than half of the patients who were candidates for spinal anesthesia were anxious (57.1%). Incorrect information from non-experts, family, friends, and the media often increased patients' anxiety (59.3%). The most commonly used method for managing patients' anxiety is sedation using medication (40.9%) and relaxation techniques (35.5%).

Conclusions: Healthcare providers considered that anxiety of patients who were candidates for regional anesthesia was a prevalent problem that can be affected by various factors. All necessary facilities should be considered to create and maintain patients' comfort in the OR.

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Highlights:

What is current knowledge?

Healthcare providers should perform appropriate practice based on responding to patients' needs, problems, and concerns. Evaluating preoperative anxiety is important to achieve better postoperative outcomes.

What is new here?

Healthcare providers considered that anxiety of patients who were candidate for regional anesthesia was a prevalent problem which can be affected by various factors. In this study, relaxation techniques and communication were the most important approaches in the management of patients'

Introduction

Preoperative anxiety is widespread in anesthesia and intraoperative medicine (1, 2). Various factors, such as previous experience, knowledge about surgery, and anesthesia, can affect preoperative anxiety (3). Although one of the additional goals of anesthesia is to reduce anxiety levels (1), anesthesia and its related factors are important causes of anxiety in patients who are candidates for surgery (4,5).

Fear of regional anesthesia and its complications is an essential source of problems (6). Reportedly, approximately more than one-third of patients undergoing surgery with regional anesthesia experience severe anxiety before surgery (7). This type of anesthesia is a special issue for anesthesiologists because conscious patients under regional anesthesia exposed to various anxieties experience stimulated vision and hearing (8,9). The consequence of preoperative anxiety is a significant challenge for operating room (OR) healthcare providers (10). Some studies reported that healthcare teams do not assess patients' anxiety correctly and only treat it with medication without a proper approach (11,12).

It is essential that OR healthcare providers should achieve the ability to evaluate and understand all aspects of the patient's needs during all stages of surgery and after (13). The appropriate practice should be based on responding to patients' needs, problems, and concerns (14,15). Vogelsang et al. (2020) also mentioned this issue; when a patient is admitted to the OR, the first person to meet him is usually a nurse. Thus, it is necessary to create a calm and friendly atmosphere (16). Evaluating preoperative anxiety is essential for better postoperative outcomes (15,17). Reportedly, perioperative anxiety is not always assessed using a valid instrument. However, looking for signs of anxiety in patients' vital signs, eye movements, or communication pathways is not used to assess patients' intraoperative anxiety (11).

OR healthcare providers should perform because of differences in culture and society, as well as the lack of studies in this field in Iran with a particular emphasis on this issue. This study aimed to determine OR healthcare providers' point of view about patients' anxiety under regional anesthesia.

Methods

- ***Design and setting***

This cross-sectional study was conducted at Golestan University of Medical Sciences, Gorgan, Iran (5th Azar and Sayyad Shirazi hospitals), adult public hospitals from April to November 2021.

- ***Participants and sampling***

Eligible 203 OR healthcare providers, including nurse anesthetists (104), surgical technologists (82), and anesthesiologists (17), were recruited through the census method. Of the 280 questionnaires, 72.5% of participants' completed questionnaires were returned. Therefore, in data collection, there was a drop of about 20% in the study and non-response to the questionnaires.

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Inclusion criteria were willingness to participate in the study and clinical work experience in caring for patients undergoing surgery with regional anesthesia in OR. The exclusion criterion was the incomplete answer to the questionnaire.

• ***Data collection***

Data were collected using a questionnaire developed by Jlala (2010) (18). The questionnaire consists of 15 items covering a wide range of perspectives of healthcare providers about the anxiety of patients who are under regional anesthesia, including distribution of patient anxiety and its related concerns (items 1, 2, and 3), the success of healthcare providers in managing anxiety (items 4, 5, 6 and 11), effect of patient anxiety on health care providers (items 7, 8 and 9), anxiety management strategies (item 12), causes of patient anxiety (item 13), participants' general views about regional anesthesia and satisfaction (items 10 and 14), and one open-ended question (item 15). After obtaining permission from the developer of the questionnaire in the preparation phase of the translation possess, other steps were performed as follows:

Two bilingual English language experts independently translated the questionnaire into Persian in the forward translation step. Then, the Persian version was prepared by combining translations (reconciliation). The Persian-translated version was provided to two bilingual people (Persian-English) to be translated back into English without access to the original version, and their back translation was reviewed against the original version and content structure, which was matched and sent to the original developer of the questionnaire. The final questionnaire was given to ten healthcare providers after the necessary adjustment. Then, problems related to understanding the questions, completing the questionnaire, and estimating the time required for the main performance were determined. Finally, the researchers reviewed cognitive debriefing results (19).

In addition, a checklist of demographic information, including age, work experience of participants, gender, professional role, educational status, and interest in the profession, was used to collect data.

• ***Validity and reliability of questionnaire***

In order to ensure the qualitative face validity of the Persian version of the questionnaire, ten OR nurses assessed the ease of completing the questionnaire, ambiguity, level of difficulty, and irrelevancy. Next, the importance of each item based on the opinions of ten experts was determined. The impact score of each question was determined. The impact score of all items equal to or greater than (1.5) was considered appropriate.

First, the grammar and spelling, well-worded, order of items and scoring were assessed in qualitative content validity. After the completion of revisions of the qualitative reviews, the quantitative content validity was by assessing the content validity ratio (CVR) and content validity index (CVI) (20). The average score of CVI=0.978 and CVR=0.978 were acceptable.

In this study, to check the reliability of the questionnaire, Cronbach's alpha method was used based on the internal consistency of the total number of samples. The internal consistency method was used to check the reliability of the questionnaire.

The *internal* consistency of the questionnaire was calculated using the Cronbach's alpha coefficient. At this stage, all expressions' correlation with the scale's overall score was acceptable and statistically significant ($\alpha = 0.675$).

• ***Data Analysis***

Data were analyzed in SPSS software version 18 using descriptive analysis and Fisher's Exact Test, Chi-Square, and Kruskal-Wallis tests.

Results

A total of 203 OR health care providers participated in this study. The mean age and work experience of participants were 35.71±8.90 and 9.26±11.19 years, respectively. Most of them were female (73.4%), nurse anesthetists (51.2%), and bachelors (72.4%) (Table 1).

• ***Patient, anxiety and concerns***

There were no differences in most questionnaire items between healthcare providers' views based on their professional roles (P<0.05). More than half of the patients who were candidates for spinal anesthesia were anxious (57.1%). The major time of experiencing anxiety among patients was before anesthesia (72.9%). There were significant differences between participants based on their professional role in most time of anxiety among patients under regional anesthesia) P=0.007) (Table 2).

• ***Success of health care providers in managing anxiety***

The finding demonstrates that most participants (48.3%) underestimated the patient's anxiety level before their patient's regional anesthesia (Table 3).

• ***Anxiety management strategies***

According to the finding, the most commonly used method for managing patients' anxiety was sedation using medication (40.9%), followed by relaxation techniques (35.5%). The majority of participants rarely used these methods (Figure 1). There were no significant differences between participants based on their occupations in anxiety management strategies (P=0.293).

Table 1. The frequency of demographic characteristics of participants

Variable		N (%)
Gender	Female	149 (73.4)
	Male	54 (26.6)
Professional role	Surgical technologist	82 (40.4)
	Nurse anesthetist	104 (51.2)
	Anesthesiologist	17 (8.4)
Educational statue	Associate degree	27 (13.3)
	Bachelor	147 (72.4)
	Masters	12 (5.9)
	MD	17 (8.4)
Interest in profession	A little	17 (8.4)
	Somewhat	80 (39.4)
	Extreme	106 (52.2)

Table 2. Frequency distribution of patient anxiety and its related concern (n=203)

Items		Nurse anesthetist	Surgical technologist	Anesthesiologist	Total	P-Value
		N (%)	N (%)	N (%)	N (%)	
How concerned are you about the patient's anxiety during regional anesthesia as a problem?	A lot	49 (47.1)	31 (37.8)	7 (41.2)	87 (42.9)	0.068
	a little	53 (51)	49 (59.7)	7 (41.2)	109 (53.8)	
	not at all	2 (1)	2 (1)	3 (17.6)	7 (3.4)	
What proportion of patients under regional anesthesia are anxious?	Majority	54 (51.9)	52 (63.4)	10 (58.8)	116 (57.1)	0.210
	Some	45 (43.3)	30 (36.6)	7 (41.2)	82 (40.4)	
	None	5 (4.8)	0 (0)	0 (0)	5 (2.5)	
When do you think patients under regional anesthesia are most concerned?	Before	70 (67.3)	68 (82.99)	10 (58.8)	148 (72.9)	0.007
	During	34 (32.7)	13 (15.9)	6 (35.3)	53 (26.1)	
	After	2 (1)	1 (1.2)	1 (5.9)	2 (1)	

• ***Effect of patient anxiety on health care providers***

Based on the finding, patients' anxiety did not affect OR health care providers' performance, but participants reported that patients' anxiety made them anxious in total score (64.7%). There were no significant differences between participants based on their occupations regarding the effect of patient anxiety on healthcare providers on successful anesthesia (P=0.389) (Figure 2).

• ***Participants' general views about regional anesthesia***

Patients considered regional anesthesia rarely unpleasant (73.4%) and had little satisfaction with this approach (77.8%). Significant differences were found in the overall score of patients' dissatisfaction items about spinal anesthesia (14-1, 14-2, 14-3, 14-4, 14-6) in the study groups (P=0.46-3) (Table 4).

• ***Causes of patient anxiety***

The majority of participants reported that incorrect information from non-experts, family, friends, and the media information (59.3%), as well as fear of the unknown (49.5%), often led to patients' anxiety (Figure 3). There were no significant differences between participants based on their occupations regarding causes of patient anxiety items (P=0.409).

• ***Final comments***

The analysis of open-ended questions about reducing patients' anxiety under regional anesthesia (Please add any further comments) pointed as follows; Communicating with the patient and giving comprehensive information before the anesthesia is necessary. Patients have to educate about the type of anesthesia and its complications, providing music or audio facilities of the Quran (Islamic holy book) to reduce the patient's anxiety, improve the level of hospital hoteling and the hospital for more patient comfort, and wearing bright colors clothes by healthcare providers.

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Table 3. Frequency distribution of healthcare providers point of view about being succeed in managing patient anxiety (n=203)

Items		Nurse anesthetist	Surgical technologist	Anesthesiologist	Total	P-Value
		N (%)	N (%)	N (%)	N (%)	
Do you feel ready to react about the different behaviors of anxious patients during regional anesthesia?	Always Sometimes Never	56 (53.8) 40 (38.5) 8 (7.7)	38 (46.3) 41 (50) 3 (3.7)	12 (70.6) 5 (29.4) 0 (0)	106 (52.2) 86 (42.2) 11 (5.4)	0.051
Do the different suggestions of the surgeon and anesthesiologist (nurses) regarding anesthesia techniques increase the patient's anxiety?	Yes No	23 (22.1) 81 (77. 9)	21 (25.6) 61 (74.4)	4 (23.5) 13 (76.5)	48 (23.6) 155 (76.4)	0.939
How exactly do you think you are examining anxiety before your patient's regional anesthesia? (How is estimated)	More Less correctly	28 (25.9) 47 (45.2) 29 (27.9)	19 (23.2) 45 (54.9) 18 (22)	2 (29.4) 6 (35.3) 6 (35.3)	52 (25.6) 98 (48.3) 53 (26.1)	0.517
How much do you evaluate patient satisfaction after the spinal anesthesia process?	Never Often Always	11 (10.6) 34 (32.7) 59 (56.7)	8 (9.8) 35 (42.7) 39 (47.6)	1 (5.9) 2 (11.8) 14 (82.4)	20 (9.9) 71 (35) 112 (55.2)	0.135

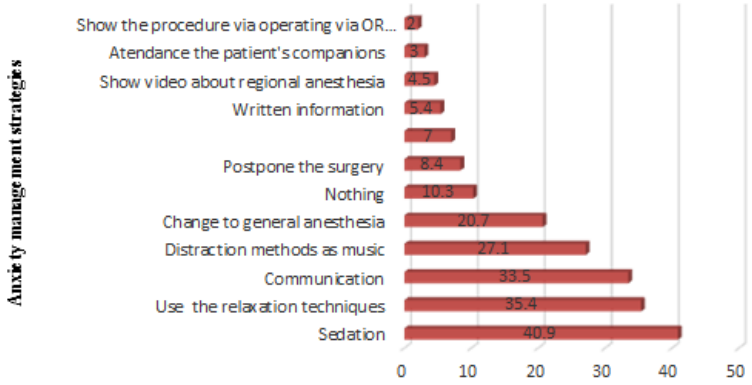

Figure 1. Frequency distribution of applying anxiety management strategies by healthcare providers

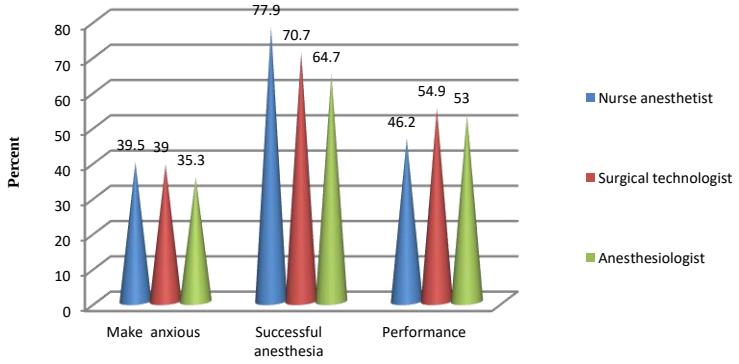

Figure 2. Effect of patient anxiety on health care providers

Table 4. The mean score of patients' satisfaction about spinal anesthesia

Items		Nurse anesthetist	Surgical technologist	Anesthesiologist	Total	P-Value
Dissatisfaction about spinal anesthesia Mean±SD		12.048 ± 2.05	13.67 ± 2.85	12.94±2.63	12.77±2.56	0. 46*10-3
Satisfaction about spinal anesthesia Mean±SD		6.19 ± 1.53	82 ± 1.34	5.94±0.89	5.96±1.43	0.54
How important is patient satisfaction in your performance? N (%)	High Low	89 (83.7) 17 (16.3)	71 (86.6) 11 (13.4)	14 (82.4) 3 (17.6)	170 (83.7) 33 (16.3)	0.916

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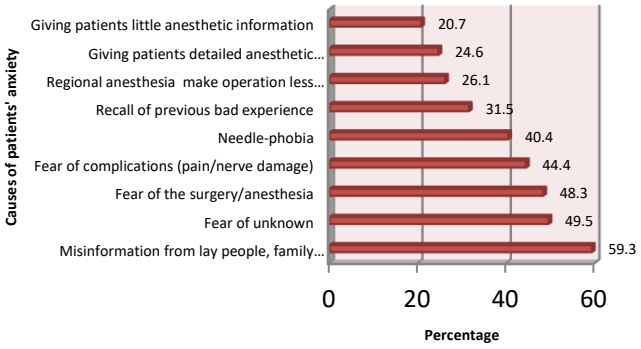

Figure 3. Frequency distribution of causes of patient anxiety based on healthcare providers'

Discussion

In this study, there were no differences in the majority of questionnaire items between healthcare providers' view based on their professional roles. More than half of the patients who were candidates for spinal anesthesia were anxious. The prevalence of preoperative anxiety in adults before surgery has been reported to be 11 to 80 % (21). Yuzkat (2020) stated that 75% of patients who are candidates for surgery experience anxiety from the very beginning of the time they decide to undergo surgery until discharge from the OR (22).

In the present study, participants reported that fear of the unknown was the cause of half of the patient's anxiety. Another major cause of anxiety was fear of surgery/anesthesia and side effects (pain, nerve damage). Arakelian (2018) reported that patients' concerns about anesthesia, including loss of body control, confinement of life in other people's hands, and unknown words about surgery, can cause anxiety (15). One study reported that from the participants' point of view, patients' fear was due to anesthesia, surgery, complications (such as pain and nerve damage), fear of needles, and inability to perform daily activities after surgery (18).

In the current study, healthcare providers use different methods to reduce this anxiety. Clair (2020) reported four strategies to relieve patients' preoperative anxiety before anesthesia based on the experiences of nurse anesthetists. These included behavior style, providing information, diverting attention, and medication as an alternative method (17). Pestana-Santos et al. (2021) reported in a review study that creating soothing and suitable conditions for the patient by healthcare providers helped to reduce preoperative anxiety and can be used as a supplement to pharmaceutical interventions to create a feeling of well-being in patients (23).

Relaxation techniques and communication in this study, were the most important approaches to managing patients' anxiety following drug interventions. Regarding interactive communication between the anesthetists and their patients, over 80% of patients cared about anesthesia complications and postoperative pain management (24). Anxious patients who are candidates for surgery need the support of healthcare providers (25). Kwame et al. (2020) reported that providing effective healthcare requires clear communication as an essential element, and in a cross-cultural healthcare environment, healthcare providers are responsible for communicating effectively with people from different backgrounds. Poor nurse communication skills can harm the quality of care, nursing practices, and safety (26). One of the duties of the caring team is to create a sense of respect and empathy and to preserve the patient's privacy by providing the environment of the OR in a way that is favorable to the patient (27). Thus, in addition to making behavioral changes with the patient in the care team, improving the environment of the OR can reduce the anxiety of patients who are candidates for surgery under local anesthesia (28).

This study reported a lack of educational, environmental, and supportive patient facilities led to poor anxiety management. Lee (2018) reported that educational interventions and relaxation skills reduced patient anxiety and increased patient satisfaction (29). In the present study, most participants said they rarely used distraction techniques such as music because of a lack of facilities. Notably, distraction by music relieves the patients from unpleasant stimuli and reduces preoperative anxiety. Music with a soothing rhythm and melody helps people experience a calm environment and better tolerate provoking situations. By selecting one of the patient's preferred genres through a speaker, music therapy reduces their anxiety and controls clinical parameters under spinal anesthesia (30).

One limitation of this study was the refusal of participation by some healthcare providers. Thus, some of the provided questionnaires were not completed. Another limitation of this study is the lack of examination of patients' anxiety status.

Conclusion

Healthcare providers considered that the anxiety of patients who were candidates for regional anesthesia was a prevalent problem that can be affected by various factors. All necessary facilities should be considered to create and maintain patients' comfort in the OR. It is vital to identify the problem. The best context-based interventions are then required to achieve better results. In this study, relaxation techniques and communication were the essential approaches to managing patients' anxiety.

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Ethical statement

The present study was approved by the center of the Ethics Committee of Golestan University of Medical Sciences, Iran (Code: IR.GOUMS.REC.1399.230).

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

Author contributions

Solmaz Halakou: collected and analyzed the data and drafted the paper, Homeyra Khoddam: Guided the study and contributed specifically to the analysis plan,Mahnaz Modanloo: Consultant in the project and contributed specifically to the analysis plan, Nasrin Nikpeyma: Drafted the paper, that was modified and supplemented by all other authors, Seyedmahrokh A. Maddaha: Helped to collected data, drafted the paper, that was modified and supplemented by all other authors, Fatemeh Asgari: Helped to collected data.

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