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Comparing Written and Planned Training On Anxiety Among Patients Undergoing Orthopedic Surgery

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ABSTRACT

Background: The prevalence of preoperative state anxiety is an unavoidable complication. Aside from its type and scope, the surgical operation is considered as a severely stressful situation for patients. Considering the importance of reducing the anxiety in patients undergoing surgery, the aim of the current study was to compare the effect of written and planned training on the state anxiety state among patients undergoing orthopedic surgery. **Methods:** In this study, 81 patients candidate for orthopedic surgery were selected using convenience sampling and were randomly divided into 3 groups, including planned training, pamphlet, and control groups. All patients answered 20 Questions-State-Traits Anxiety Inventory (STAI) questionnaire before surgery, and the intervention was later carried out in the planned training and pamphlet groups. Then the effect of preoperative anxiety state was re-evaluated about half an hour after training in three groups. For data were analyzed by SPSS16 using independent t-test and ANOVA. **Results:** The results of comparing pre- and post-training mean score of the anxiety in three groups showed that the mean score of anxiety reached from 50.41 to 41.03, 52.41 to 44.37 and 45.04 to 50.56 in planned, pamphlet and control groups, respectively. ANOVA test showed that there was a significant difference in this comparison. The results of Tukey's test also revealed that the mean score of anxiety in the planned and pamphlet groups significantly was lower than the control group ($P<0.05$). **Conclusion:** Based on our findings, the planned training method was more efficient in decreasing anxiety among patients compared to the pamphlet group before orthopedic surgery. Therefore, considering the fact that nurses play a major role in examining and relieving the anxiety among patients and spend more time with patients undergoing surgery compared with other members of the healthcare team, the planned training method must be considered to ensure effective support to reduce the preoperative anxiety among patients.

INTRODUCTION

Surgery is a diagnostic and therapeutic process in many diseases, which causes an increase in the incidence of many different psychological and physiological reactions in some patients, among which anxiety and depression are considered as the most important complications (1). Anxiety as a deterrent and destructive factor reducing the tolerance of patients in the treatment process, which can be associated with dangerous consequences such as increased irritability of the heart, increased blood pressure, decreased wound healing, increased risk of infection, and water and electrolyte imbalances (2). The anxiety changes the recovery process and has adverse impacts on the anesthesia and recovery steps by weakening the immune system and producing fear and associated chemical agents (3). Considering the importance of reducing anxiety in patients undergoing surgery, there are different methods for this purpose (1). These methods include a visit to the patient by the nurse, building trust in the patients towards medical staff and training techniques to reduce anxiety, use of therapeutic touch, use of music and recitation of the Qur'an and patient education (2). Among these methods, the use of preoperative patient education, to ensure that the patient has a positive experience of surgery, will be effective in reducing his/her state anxiety (4). Notification of the disease, the surgical process, medical care affects the anxiety rate, distress and postoperative outcomes, such as adaptation duration, psychological and physical recovery (5). The purpose of training is to help reduce anxiety that leads to prepare patients for surgery, change inappropriate behaviors, affect recovery period and improve patient's

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satisfaction (6). Training on the preoperative readiness, anesthesia preparation process, controlling complications such as nausea, vomiting, and postoperative pain and how to provide intraoperative patients care could fill the information gap and subsequent reduction in the state anxiety. Many studies have emphasized that raising preoperative awareness decreases the levels of anxiety, postoperative complications and accelerates the recovery process. Jack Bell et al. showed that patient education and identification of preoperative symptoms of anxiety could be effective in reducing the anxiety (2). Brown believes that the type of education should be selected based on cultural, social, physical and mental state and level of knowledge of the patient (7).

There are several methods for patient education that are divided into two groups: in-person and remote.

In-person training consists of lectures, group discussions, discussion, role-plays and practical exercises, face-to-face, planned training, discussion or question and answer forum, panel discussions and remote training include written training, audio and video files, media and exhibitions (8). There are different studies on the effect of educational methods on preoperative patients' anxiety. However, few studies have been carried out on the planned training; therefore, this study aimed to investigate the effect of planned and written training on the anxiety of patients undergoing orthopedic surgery who were admitted to the orthopedic ward of Imam Reza Hospital, Birjand.

METHODS

The present experimental study was conducted at the Medical Center of Imam Reza, Birjand in 2014. A total of 81 individuals were randomly selected using convenience sampling from those patients who were admitted to the orthopedic ward and needed fixator.

Inclusion criteria included age between 18 and 65 years, the ability to read and write.

Exclusion criteria included having emergency surgery, history of surgery, drug addiction, having first degree relatives among medical staff and employment in the healthcare sector. After obtaining informed consent from patients and reassuring them about the confidentiality of information gathered, they were assigned randomly to three groups: written training, planned training and control groups. Data collection tools included the demographic questionnaire information and Spielberger Sate-Trait Anxiety Inventory (STAI). This questionnaire included 20 items. The questionnaire was completed by the three groups 24hours before surgery. At this stage, a simple and understandable pamphlet, prepared in advance, was given to the written training group. This pamphlet contains educational content and a brief description of the surgery. In the planned training group, the training was offered based on the Socratic method and progression from the easy to the more difficult stages, and educational materials were taught to the subjects in a multistage manner (from easy to difficult). Each of these steps requires the active involvement and active participation, which was accomplished by filling in the blanks, solving a problem and answering a question. The control group was given no training, and STAI questionnaire was completed by three groups 30 minutes before surgery. After being collected and entered into the SPSS V. 16, data was analyzed using descriptive tests, including ANOVA test.

RESULTS

Findings related to demographic characteristics of patients undergoing orthopedic surgery revealed that most of them were in the age group of 21-30 years and the minimum age class of 31-40 years. The number of men (66.8%) was more than women (33.2%). The majority of patients were married (61.7%) compared to single participants (38.3). The results of comparing anxiety scores (pre-test) showed a significant difference among the three groups regarding preoperative anxiety scores, which were lower in the control group. So that the mean level of anxiety in the day before surgery was 50.41±10.67, 52.41±9.40 and 45.04±11.63 in the planned training, written and control groups, respectively (Table 1). The results of ANOVA showed that there was a significant difference in at least two groups of patients regarding the pre-training overall mean score of anxiety. The results of Tukey test also showed that the mean score of anxiety in the written training group was significantly higher than those in the control group. The post-intervention anxiety score was 41.03±6.25, 44.37± 6.07 and 50.56±12.23 in the planned training, written training group and control groups, respectively (Table 1).

The results of ANOVA test showed that there was a significant difference in at least two groups of patients regarding the overall mean anxiety score after training. The results of Tukey test also showed that the overall mean score of anxiety in the planned training group was significantly lower than those in the control group after the intervention (P <0/05).

Table 1. Comparing the overall mean score of state anxiety in written training, planned training and control groups before and after training

Variable	Group	Mean	Standard deviation	F	df	p
Pre-training anxiety level	Control	45.04	11.63	3.49	(78.2)	0.04
	Pamphlet	52.41	9.40			
	Planned	50.41	10.67			
Post-training anxiety level	Control	50.56	12.23	7.38	(78.2)	0.001
	Pamphlet	44.37	6.07			
	Planned	41.03	6.25			

Table 2. Comparing the mean changes in overall state anxiety score and its dimensions before and after training in three groups

Variable	Group	Mean	Standard deviation	F	df	p
Overall anxiety	Control	5.52	12.13	15.20	(78/2)	0.001>
	Pamphlet	–8.04	10.41			
	Planned	–9.37	10.31			

The results of ANOVA test showed that there is a significant difference between at least two groups of patients in terms of the mean changes of anxiety score. The result of Tukey test showed that the mean score of anxiety was decreased in the pamphlet and planned groups after training (Table 2).

DISCUSSION

The findings of this study showed that more than half of the subjects suffer from the anxiety before the study and special attention must be paid to this issue considering the high percentage of this amount and impact of the anxiety, affect on patient's performance. Based on research findings, there was a difference among the three groups (control, pamphlet and planned) in terms of anxiety score before training. Also, a preoperative pre-test was not carried out (2004), and only the post-test was carried out in some studies such as Asiliaglu et al. (9). Some studies such as the one conducted by Mousavi et al. on patients with heart surgery in Kerman also showed differences between groups regarding in anxiety scores, which can be due to various causes such as duration of admission and anesthesia, socioeconomic and support conditions of patients that were not included in demographic characteristics. The findings of this study showed that preoperative training to patients undergoing orthopedic surgery could reduce the anxiety that promises in the use of non-pharmacological anxiety-relieving methods. Anxiety-reducing methods such as patient education can reduce the stimulation of the sympathetic system, and the suppression of the sympathetic system results in decreased anxiety level (10). Many studies have been carried out on the impact of education on preoperative anxiety such as the study conducted by Morrell et al., Bellca et al., in Canada, and Mousavi et al. whose results are consistent with findings obtained in the current study. All these studies showed that training has been effective in reducing anxiety. The results of this study showed that the mean score of anxiety was changed from 50.41 to 41.03, 52.41 to 44.37 and 45.04 to 50.56 in planned, pamphlet and control groups, respectively, which shows that planned training was more effective than the pamphlet training in reducing anxiety in patients compared with the control group. Considering the difference in post-training anxiety scores in three groups, it can be concluded that the preoperatively planned training was helpful in monitoring patients' conditions and also created opportunities for patients to raise their questions and concerns with researchers and modify their false beliefs and information about the surgery in their mind. On the other hand, nurse ensures patients' understanding of information through with face to face contact with the patient and observes the reflection of his/her (nurse) activities (1). For the same reason, the planned training will be effective in reducing the patient's anxiety. Morrell et al. showed that the preoperative structured training significantly reduced the level of anxiety in patients undergoing cataract surgery, which is in line with the results of the current research. In a study on the effect of spoken and written training on the patients' preoperative anxiety, Izadi et al. (2) obtained results that are consistent with the results obtained in the present study. In the above study, the level of anxiety was also more reduced in spoken training group than the written training group. *Mousavi* et al. who investigated the effect of face to face training and training manual in reducing depression and anxiety in adult patients before and after open heart surgery using the Hospital Anxiety Depression Scale, obtained results that are consistent with the results achieved in the present study (11). In Mousavi et al. study, the intervention group received face to face training and training manual at the same time, and the control group was given only the normal training. The results showed that postoperative depression and anxiety levels were reduced in both groups that were statically significant. However, the mean anxiety level was decreased more significantly in the intervention group that received both face to face training and training manual. The results also showed the mean anxiety score was decreased more significantly in the pamphlet group compared with the control group. This finding may be due to the fact that as the surgery date approaches, patients feel a greater need for training regarding unknown issues and knowing the answers to the questions that create a fear of the unknown in their minds, and studying the pamphlet reduces their anxiety before the surgery. Asiliaglu et al. study also showed that the mean anxiety score was more reduced in the studied group who were trained using the training pamphlet (9) compared with the control group although this difference was not significant. However, the researchers stated that a training manual is an effective tool for enhancing communication and training quality among patients and their families so tat they improve their self-care behaviors and better cope with anxiety. In his study, Nelson-et al. showed (11) that the level of fear and anxiety is decreased in patients by giving information before the surgery and 100% of patients who received preoperative information felt that they have received useful contents and 86% of them felt that their anxiety was decreased.

CONCLUSION

Based on research findings and other studies, non-pharmacological anxiety-soothing methods such as patient educa-

tion are effective in reducing anxiety in patients undergoing orthopedic surgery. Considering the fact that nurses play a major role in examining and relieving the anxiety among patients and spend more time with patients undergoing surgery compared with other members of the healthcare team. Therefore, the planned training method must be considered to ensure effective support to reduce the preoperative state anxiety among patients.

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AUTHORS CONTRIBUTION

All the authors contribute in this study equally

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