

## Study the Effect of Planned and Writing Training on the Anxiety of Patients Undergoing Orthopedic Surgery

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DOI: <http://dx.doi.org/10.13005/bpj/568>

(Received: February 10, 2015; accepted: March 10, 2015)

### ABSTRACT

Surgery process is a diagnostic and therapeutic process in many diseases which increases the psychological and physiological reactions in some patients, that among them, anxiety and depression are considered as the most significant complications resulted from surgery. Given the importance of reducing anxiety in patients undergoing surgery, various methods are used for this purpose, which patient training is one of them. The study was aimed to study the effect of planned and writing training on the anxiety of patients undergoing orthopedic surgery. In this study, 81 patients scheduled for orthopedic surgery were selected by convenience sampling method, and then randomly divided into 3 groups of planned, pamphlet and control. All patients filled out Spielberger's 40-question anxiety questionnaire on the day before surgery, and then intervention was done in two planned and pamphlet groups. Then the patient's anxiety was re-evaluated in three groups about a half hour before surgery after training. In addition to calculating the mean, standard deviation, independent t test and variance were used with software Spss16 to analyze the data. Comparison of the mean anxiety scores before and after training in the three showed that the mean of total anxiety score is reached from 93.37 to 81.37 in planned group, from 99.74 to 88.07 in pamphlet group and from 85.63 to 96.33 in control group. Using analysis of variance for comparing the three groups shows a significant difference. The results of Tukey test showed that the patients' mean anxiety score in planned and pamphlet groups was significantly lower than that in control group patients ( $P < 0.05$ ). Based on the findings, planned training had a more effect on patients' anxiety reduction in compared to pamphlet group before orthopedic surgery. Therefore, since nurses have an important role in investigating and relieving anxiety and take more time with patients undergoing surgery than other members of therapeutic team, they must consider the planned training methods to support their patients more to reduce preoperative anxiety.

**Key words:** Writing Training, Panned Training, Anxiety.

### INTRODUCTION

The surgery is a process of diagnosis and treatment of many diseases which increases the psychological and physiological reactions in some patients, in the meantime, anxiety and depression are considered as the most important principal complication of surgery<sup>1</sup>. Anxiety is a deterrent and

destructive factor to resistance in the treatment of patients which can pointed to serious consequences caused by increased irritability of the heart, blood pressure, decreased wound healing, increased risk of infections, and water and electrolyte imbalance<sup>4</sup>. Anxiety changes the recovery process by weakening the immune system and generating fear and chemical factors

and has adverse effects on the anesthesia, surgery and recovery<sup>5</sup>. Given the importance of reducing anxiety in patients undergoing surgery, various methods are used for this purpose<sup>1</sup>, such as Nurse-patient visiting, creation of confidence in the patient toward medical staff and training techniques to reduce anxiety and stress, therapeutic touch, the use of music and recitation of the Qur'an and education<sup>4</sup>. Among these methods, educating the patient before surgery to ensure that the clients have a positive experience of surgery will be effective in reducing the anxiety<sup>6</sup>. Informing about the disease, the surgery process and the medical care can affect the anxiety level, frustration and postoperative consequences, such as adaptation time, psychological and physical healing<sup>7</sup>. The purpose of training is to help reducing the anxiety, preparing the patients for surgery, changing the inappropriate behaviors, impacting on the recovery and patient's satisfaction<sup>8</sup>. Training on preoperative readiness, the anesthesia process, controlling the complications such as nausea, vomiting, postoperative pain and the way to care the patient during the surgery can fill the information vacuum, and subsequently reduces the patient's anxiety. Several studies have emphasized that informing the patients before surgery reduces the anxiety levels and the postoperative complications, and increases the recovery rate. Jack Bell et al., have stated that educating the patient and introducing the stressful points before surgery can be effective in reducing anxiety<sup>9</sup>. Brown believes that the training should be based on the cultural, social, physical and mental status and the patient's level of knowledge. There are several methods to educate the patients that divides into two groups of In person and non-In person. The In person training includes speeches, group discussions, debates, playing role, practical exercises, planned training, face to face training, assembly of debate or question and answer, panel discussion. The non-In person training includes writing, providing the audio and video files, the media and exhibitions<sup>10</sup>. Several studies have been performed on the effect of different training methods on the preoperative anxiety; however, less research has been done in the field of planned training. The aim of this study is to evaluate the effect of planned and written training on the anxiety levels of surgical patients admitted to the orthopedic ward of Imam Reza (AS), Birjand.

## METHODS

The experimental study was conducted in 1393 at the Educational Hospital of Imam Reza (AS), 81 people were selected by random sampling out of the patients admitted to the orthopedic ward that required fixator. Inclusion criteria were aged between 18 and 65 years, with the ability to read and write. Exclusion criteria for the study included having an emergency surgery, a history of surgery, drug addiction, and an immediate family member in the medical staff working in the healthcare field. After obtaining the consent from the patients and reassuring them concerning the confidentiality of information obtained, the people were randomly divided into three groups of writing, planned training, and control. Data collection tool included the questionnaire of personal information and Spielberger Anxiety inventory, the questionnaire was comprised of 40 items, 20 items related to hidden anxiety and 20 items related to obvious anxiety that the total anxiety score is between 20 and 80. The anxiety questionnaires were completed 24 hours before the surgery in all three groups. At this stage, the writing group was provided by a simple and understandable pamphlet. This pamphlet contains the contents of training and a brief description about the surgery. In the planned group that contains a Socratic Method Based Learning and the progress is from easy steps towards the harder steps, the educational materials are given step by step (from easy to difficult). Each of these steps requires an active participation and the active participation is to fill out a write, solve a problem or answer a question. The control group received no kind of training. Then half an hour before surgery, the Spielberger Anxiety Inventory was completed by all three groups. Following data collection and data entry, the analysis was performed using SPSS version 16, the use of descriptive and inferential tests such as Variance test.

## RESULTS

The results related to the individual characteristics of patients undergoing orthopedic surgery showed that the most patients were aged 30-21 years and the minimum age was related to 40-31 years. The number of males was 66.8% more

than females (33.2%). The patients were mostly married with 61.7% more than singles (38.3%). The comparison of anxiety scores (pre-test) showed that there were differences between the preoperative anxiety scores in all three groups, the scores was lower in the control group. Such that the mean level of anxiety in the days before surgery in the planned surgery was  $97.37 \pm 18.47$ , in the writing group was  $99.74 \pm 14.09$ , and in the control group was  $85.63 \pm 19.69$ . Variance test results showed significant differences in the mean of total anxiety before the training in at least two groups, and Toki test results showed that the mean of anxiety scores was significantly higher in the writing group than the control. The mean and the standard deviation of *post-intervention anxiety* was  $81.37 \pm 9.74$ ,  $88.07$

$\pm 10.90$  and  $96.33 \pm 19.56$  in the planned, writing and control groups, respectively.

Analysis of variance results showed a significant difference in the mean of total post-training anxiety score at least two groups of patients. The Toki test results showed that the mean of total post-training anxiety score in the planned group was significantly lower ( $p < 0.05$ ) than control and writing groups. The analysis of variance results in comparing the mean changes of total pre- and post-training anxiety scores in all 3 groups showed a significant difference in the mean change of anxiety scores in at least two groups of patients. Toki test results showed that the mean of total post-training anxiety score in the pamphlet and planned groups were decreased to larger amount before training.

**Table 1: The comparison of total anxiety scores before and after the training in the patients of writing, training, planning and control groups**

P	df	F	SD	Mean	Group	Variable
0.02	(78, 2)	4.36	19.69	85.63	control	Pre- training Anxiety
			14.09	99.74	Pamphlets	
			18.47	93.37	planned	
0.001	(78, 2)	7.62	19.57	96.33	control	Post- training Anxiety
			10.94	88.07	Pamphlets	
			9.74	81.37	planned	

**Table 2: The comparison of the mean of total pre- and post-training anxiety scores in the patients of writing, training, planning and control groups**

p	df	F	SD	Mean	Group	Variable
<0.001	(87, 2)	14.44	19.45	10.7	control	Total
			16.4	-11.67	Pamphlets	Anxiety
			17.4	-12	planned	

## DISCUSSION

Pre-operative anxiety is one of the most important problems in patients undergoing surgery. In most cases, tranquilizers are used to control it, which have many disadvantages, while controlling anxiety using nondrug remedies can prevent complications and also satisfy patients more. Based on research findings, patient's pre-training anxiety scores differ in three groups (control, pamphlet and

planned), so that the mean anxiety is 85.63 in control group, 99.74 in pamphlet group and 93.37 in planned group, that pre-test is not performed before surgery in some studies such as Asiliaglu (2004) and post-test has been only carried out in patients<sup>14</sup>. There was a difference in anxiety scores among groups in some studies, like the study of Mousavi in Kerman, conducted on patients with heart surgery, as in the present study. The difference in anxiety levels among the three groups can

depend on some causes like the time of admission, unconsciousness, and socioeconomic-supportive conditions for patients which are not considered in terms of individual characteristics. Findings of this study showed that preoperative training in patients undergoing orthopedic surgery may reduce anxiety in patients undergoing surgery that it is a clear promise in nondrug remedies for anxiety. Anxiety reducing methods, such as training patient leads to decrease in stimulation of the sympathetic system and suppression of the sympathetic system results in reduced anxiety<sup>2</sup>. Many studies have been conducted regarding the impact of training on preoperative anxiety, such as the study of Morrell, Bellca in Canada, Izadi and Mousavi which are consistent with the present results and in all these studies, the training was effective in reducing anxiety. Unlike the studies mentioned, Deyirmenya et al., in a study entitled preoperative training for patients undergoing open heart surgery in Beirut, found a marginal difference between the two test and control groups in terms of anxiety<sup>13</sup>. And also in the study of Asiliaglu and Celik, conducted on the effect of preoperative anxiety in patients undergoing open heart surgery in Turkey, the results showed that there was no difference between anxiety scores in control and test groups that the results differ with the present study<sup>14</sup>. Besharat's study, entitled "pre-general surgery informing" performed on 180 patients showed no significant difference between anxiety level of writing and speaking training<sup>7</sup>. The study Najafi et al., conducted to examine the effect of face-to-face training and pamphlets in reducing anxiety in 7-25 year old patients referred for echocardiography in Hajar hospital of shahrekord, show that there is no significant differences in overt and covert anxiety in three groups of face-to-face, pamphlet and combined training<sup>11</sup>, that based on the results of these studies, it appears that other factors such as familiarity with medical procedures, the goal of surgery, the place of surgery, culture and some other factors also contribute to changes in the level of anxiety. So the reason for difference in the results listed in the present results may be due to the specific culture of studied society and the type of operation carried out<sup>2</sup>. But in general, numerous studies show that without appropriate nursing interventions to reduce anxiety, the more the closer to the time of surgery, the more the anxiety,

indicating the necessity of the use of nondrug anxiety-reducing approaches. Comparison of the mean anxiety scores before and after training in the three groups in the findings of this study showed that the mean of total anxiety score was changed from 93.37 to 81.37 in planned group, from 99.74 to 88.07 in pamphlet group and from 85.63 to 96.33 in control group, indicating that the planned training affects patients' anxiety reduction more than pamphlet training in the control group, given to the differences in post-training anxiety scores in the three groups it can be concluded that pre-operative planned training is helpful in monitoring the patient's conditions and also make some opportunities for patients to ask for any questions or concerns and modify any incorrect beliefs and information about the surgery and on the other hand, nurse can found patients' understanding of information with face to face contact with the patient, and observe the reflection of his/her activity<sup>1</sup>. That's why planned training can be effective in reducing anxiety. In Morrell's study, entitled "the effect of structured preoperative training on anxiety in patients undergoing cataract surgery", showed that structured preoperative training is substantially effective on anxiety reduction in patients undergoing cataract surgery<sup>2</sup>, which is consistent with our results. The result of the study Izadi et al. conducted on the effect of speaking and writing training on pre-surgery anxiety<sup>4</sup>, is also consistent with the present study. In this study, the level of anxiety showed more reduction in speaking training than in writing one. The result of the study conducted by Mousavi et al. on the impact of face to face training and booklets on reducing depression and anxiety in adult patients before and after open heart surgery using the hospital anxiety and depression questionnaire was also consistent with the present study<sup>11</sup>. In this study, people were given both face to face training and booklets simultaneously in intervention group and only routine training in control group. Based on the results, post-surgery depression and anxiety had decreased in both groups which was statistically significant, but the anxiety in the intervention group, that was received both methods of face to face training and booklets, was reduced significantly. According to the results in which the mean anxiety score in the pamphlet group has significantly reduced compared to the control group, the finding may be due to that the

more the closer to the time of surgery, the more the patient feels need for training about unknown items and answering the questions in their minds that lead to fear of unknowns and reading pamphlet reduces anxiety before surgery<sup>6</sup>. Also Asiliaglu's study, in which the study group was trained by booklets<sup>14</sup>, had a more reduction in mean anxiety score compared with the control group. Although it was not significant, the researchers stated that booklets are effective tools for communication and training patients and their families for self-care and coping with anxiety. Nelson showed in his study<sup>11</sup> that patients' fear and anxiety become less with preoperative information and patients who received preoperative information, 100% felt that they have

received useful information and 86% felt that their anxiety has decreased.

### CONCLUSION

Based on the findings of this study and other similar studies, nondrug anxiety-reducing approaches such as patient training are effective in reducing anxiety in patients undergoing orthopedic surgery. Since nurses have an important role in investigating and relieving anxiety and take more time with patients undergoing surgery than other members of therapeutic team, therefore, they must consider the planned training methods to support their patients more to reduce preoperative anxiety.

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