ORIGINAL ARTICLE

Psychological Preparation Efficacy on Anxiety of Patients with Breast Biopsy

MASOUMEH NAZARINASAB[1*], AZIM MOTAMEDFAR AND SAJEDEH ZARIF
[1]*Department of Psychiatry, Golestan Hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran*
[2]*Department of Radiology, Golestan Hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran*
[3]*Student Research Committee, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran*

ABSTRACT

Background: Breast biopsy as one of the most important diagnostic methods may be induce anxiety, so aim of study was evaluation of psychological preparation efficacy on anxiety of patients with breast biopsy.

Method: This as a clinical trial study, conducted on patients with indications of breast biopsy in Golestan hospital. After explaining the plan to the patients, in case of obtaining consent form, and considering the inclusion and exclusion criteria, they are divide into two control and intervention groups based on a random list. In the intervention group, patients received psychological preparation, in control groups, patients received related to breast cancer training. Then, after the intervention, information about the anxiety condition and background information obtained, we used SPSS Ver.23 for statistical evaluation.

Results : In this study, 62 patients with indications of breast biopsy considered as study group. After evaluations, it observed that the mean and standard deviation of state anxiety before the intervention in the intervention group was 51.03 ±18.58 and in the group was 51.29±17.82 (P = 0.95), also trait anxiety in the intervention group was 50.7 ± 18.7 and in the control group was 51.0 ± 18.1 (P = 0.94). After the intervention, the mean and standard deviation of state anxiety in the intervention group was 42.8 ± 14.9 and in the control group was 51.6 ± 17.9 (P = 0.04), also trait anxiety in the intervention group was 42.3 ± 15.2 and in the control group was 51.7 ± 17.79 (P = 0.03).

Conclusion : Based on the results of this evaluation, the importance of paying attention to psychological preparation in reducing patients' anxiety is determined.

Key words: Psychological Preparation, Anxiety, Breast Biopsy

INTRODUCTION

Breast cancer is the most common cancer in women and the leading cause of cancer mortality of childbearing age. The prevalence of breast cancer increases with age and detected more often in screening mammography at older ages. Therefore, its prevention, diagnosis and appropriate treatment have special importance(1, 2). Staging of breast cancer requires clinical and para-clinical evaluations during surgery. In staging breast cancer, determining the status of lymph node involvement has a particular importance. In patients who do not have clinical involvement of the axillary lymph nodes and are in the first and second stages of breast cancer, performing a sentinel lymph node biopsy, increase staging accuracy and prevent unnecessary dissection of the axillary lymph nodes and complications ,3) (4.

Biopsy and surgery of Sentinel Lymph Node, known as the first drainage glands, are used to evaluate regional lymph nodes in patients who are negative for lymph node involvement on clinical examination and imaging techniques(6 ,5).. Therefore, importance of lymph node biopsy will clear, but this approach has some complications, and anxiety as a condition after different surgeries will be under attention.

The term anxiety is define as the human response to any unknown situation, which includes anxious situations such as surgery and unfamiliar operating room environment for patients with invasive medical procedures, and the patient with a stressful experience, both physiologically and psychologically, has little control over the situation or its consequences.(9-7).

Anxiety is a normal response to danger and considered abnormal when its severity is disproportionate to the threat or when it lasts longer than the duration of the threat. This feeling is a pervasive, unpleasant, and ambiguous anxiety that closely related to psychological, physical, and autonomic systems. All of these components used to prepare for danger, and the result is readiness to flee, avoid, and confront the aggressor. Mild to moderate anxiety enhances most functions, but severe anxiety can interfere with functioning (10 ,8).

Some studies have shown that psychological preparation of patients before invasive medical procedures can affect their adaptation and recovery. Psychological preparation techniques are generally useful in reducing patients' anxiety during stressful medical procedures (9-7). These procedures also may be reduce the length of hospital stay, reduce the use of sedatives, improve postoperative mood, reduce recovery time, significantly reduce fear and anxiety before and after surgery(12 ,11). Therefore, importance of this study cleared, so this study conducted to evaluation importance of paying attention to psychological preparation in reducing patients' anxiety.

Study Populations: In this study, by reviewing the other studies, δ = **10.76**, standard deviation of anxiety score before intervention and α = **0.05** and power test of **%80**, and considering the degree of accuracy equal to d=**0.35**, the sample size was obtained using the following formula equal to 62 cases, who were randomly divided into two groups of intervention and control.

$$n = \frac{2(z_{1-\frac{\alpha}{2}} + z_{1-\beta})^2 \delta^2}{d^2} = 61/6 \simeq 62$$

Study Setting: This study conducted in Golestan hospital.

METHOD

In this study, which is a clinical trial study, 62 cases who refer to Golestan hospital and have indications for breast biopsy selected. After obtaining the ethical code and approval of ethical committee of AJUMS, sampling done. After explaining the plan to the patients, the informed consent were obtained from patients, in following based on a random list prepared by the statistical consultant, cases were divided into two groups of control (n=31) and intervention (n=31).

The demographic and clinical information of the patients was completed, and the Spielberge anxiety questionnaire was completed twice by the patients, the first time at the visiting the medical center (a few days before the biopsy) and the second time one hour before the breast biopsy.

For the intervention group, after the first stage of completing the questionnaire, 2 to 3 hours before the biopsy, a psychiatric assistant performed psychological preparation. After evaluating the concerns, the information of patient about breast biopsy in different sections were as follows:

1- Information control: At this stage, the patient's incorrect information corrected and additional information including how to perform the biopsy, the time of its performance, its duration and the general conditions of this procedure, given to the patient
2- Cognitive control: According to the cognitive distortions in the patient, cognitive control performed for the patient.
3- Behavioral control: Behavioral control methods including special breathing exercises, pain tolerance training, to the patient to use these methods in case of anxiety during breast biopsy. For the duration of the intervention for the case group, and the neutral material (properties of fruits and vegetables) prepared in the form of pamphlets were given to the control group for study and no other intervention was performed.

Inclusion and Exclusion Criteria

Inclusion Criteria

18-80 years of age,
Persian conversational language,
Ability to verbally communication,
No previous biopsy history,
And having informed consent.

Exclusion Criteria

Dementia,
Mental retardation,
Obvious physical problem that interferes with counseling,
A history of major psychiatric disorder,
Drug use except nicotine and caffeine,
And other co-morbidities including high blood pressure, hyperlipidemia, diabetes, chronic kidney failure and lung disease

Measurement: The Spielberger State and Trait anxiety questionnaire (STAI) includes a self-assessment scale to measure state and trait anxiety. The state anxiety scale consists of twenty questions that assess a person's feelings at the time to respond. The trait Anxiety Scale also includes twenty sentences that measure a person's general emotions.

STAI, designed for self-administered use, can be use individually or in groups. This questionnaire has no time limits. College students needed about six minutes to complete each of the two scales. People with lower education or emotional distress took ten minutes to complete each scale. The validity criterion of the questionnaire was that, the subjects clearly understood the instructions of the "state" and "trait" scales. In addition, in order to be honest in answering the test, the subject told that their answers kept as a secret, and in particular, it said that the results reflected to them. State anxiety assessment can used for any interval situation that considered by the researcher or clinical specialist. Most people have no problem responding to expressions of state anxiety in a particular situation or at a particular moment in time. The reliability and validity of the Spielberger test are 89 and 90%, respectively(14 ,13) . The clinical and demographic questionnaire completed based on the information obtained from the patient, which included as age, education level, marital status, employment, income level and family history of breast cancer.

Statistically Methods: After collecting the necessary information, these results statistically evaluated by SPSS software. In the descriptive section, we used percentage, frequency, mean and standard deviation and in the analytical part used paired-t-test, independent-t-test, chi-square and correlation coefficient used.

Ethical Statistics: In this study, aim and method informed to patients, and emphasized on rights of the subjects to get out from study. No additional costs imposed on patients during the study process and no harm done to the patients during the implementation of the treatment process through this plan. In addition, all the subjects assured that their data registered without surname and data kept confidential, the results used only for the dissertation of the specialized medical course. In addition, we obtained the informed consent from all participants.

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RESULTS

In this study, 62 patients with indications of breast biopsy considered as study group. After evaluations, it observed that the mean and standard deviation of state anxiety before the intervention in the intervention group was 51.03 ±18.58 and in the group was 51.29±17.82 (P = 0.95), also trait anxiety in the intervention group was 50.7 ± 18.7 and in the control group was 51.0 ± 18.1 (P = 0.94). After the intervention, the mean and standard deviation of state anxiety in the intervention group was 42.8 ± 14.9 and in the control group was 51.6 ± 17.9 (P = 0.04), also trait anxiety in the intervention group was 42.3 ± 15.2 and in the control group was 51.7 ± 17.79 (P = 0.03) (Table 1). In addition, in evaluation demographic information, four patients in intervention group and six patients in the control group employed. In addition, the mean and standard deviation of age in the intervention group was 45.4±23.3 and in the control group was 46.4±22.4 years. However, demographic indicators had not a statistically significant difference

Table 1. Comparison of background information in two groups of patients

Variables	Groups		P Value
	Intervention	Control	
Employment			0.1
Employed	4	6	
Unemployed	27	25	
Income			0.15
Mean	2.5	2.39	
SD	1.81	1.68	
Age			0.26
Mean	45.4	46.8	
SD	23.3	22.4	
Family History of Breast Cancer			0.35
Positive	8	7	
Negative	23	24	

Table 2. Comparison of background information based on anxiety

Variables	Anxiety		P Value
	State	Trait	
Employment			0.8
Employed	16.8±51.02	17.1±51.04	
Unemployed	17.1±50.8	17.3±51.1	
P Value	0.42	0.45	
Income			0.15
< 3	16.2±51.09	17.2±51.07	
> 3	16.09±51.02	16.9±51.1	
P Value	0.5	0.55	
Age			0.26
< 30	16.94±51.1	16.89±51.00	
> 30	16.7±51.05	16.9±51.05	
P Value	0.6	0.8	
Family History of Breast Cancer			0.04
Positive	18.1±53.1	17.1±52.9	
Negative	16.8±51.02	16.85±50.9	
P Value	0.03	0.04	

Table 3. Comparison of State and Trait Anxiety Levels before and after the intervention

Anxiety	Groups		P Value
	Intervention	Control	
State (Before)	51.03	51.29	0.001
Mean			
SD	18.58	17.82	
State (After)			
Mean	42.84	51.68	
SD	14.98	17.98	
Trait (Before)			0.001
Mean	50.71	51.06	
SD	18.73	18.15	
Trait (After)			
Mean	42.3	51.7	
SD	15.24	17.79	

(Table 2). Also in evaluating demographic information in comparison with anxiety status, only family history of breast cancer had a statistically significant relationship with the state and trait anxiety. The level of state anxiety in a group of patients with a history of breast cancer was 18.1 ± 53.1 and in the group without a family history was 51.02±16.8 (P = 0.03). On the other hand, the status of latent anxiety in the group that had a history was equal to 52.9±17.1 and in the group without history was equal to 16.8 ± 50.9 (P = 0.04). Other indicators assessed items, including age, employment and income status had no statistically significant relationship with state and trait anxiety status (P> 0.05) (Table 3).

DISCUSSION

In breast cancer, biopsy and surgery of the sentinel lymph node, as the first drainage glands of breast cancer, were important to evaluate regional lymph nodes in patients which were negative in clinical examination and imaging methods(6 ,5).

On the other hand, anxiety is a normal response to danger and considered abnormal when its severity is disproportionate to the threat or when it lasts longer than the duration of the threat. This feeling is a pervasive, unpleasant, and ambiguous anxiety that closely related to psychological, physical, and autonomic systems(15). All of these components used to prepare for danger, and the result is readiness to flee, avoid, and confront the aggressor. Mild to moderate anxiety enhances most functions, but severe anxiety can interfere with functioning.(10 ,8). Some studies have shown that psychological preparation of patients before invasive medical procedures can affect their adaptation and recovery. Psychological preparation techniques are generally useful in reducing patients' anxiety during stressful medical procedures. These methods can also reduce the length of hospital stay, use of sedatives and recovery time and improve postoperative mood(16, 17).

In this study, 62 patients with indications of breast biopsy considered as study group. After evaluations, it observed that the mean and standard deviation of state anxiety before the intervention in the intervention group was 51.03 ±18.58 and in the group was 51.29±17.82 (P = 0.95), also trait anxiety in the intervention group was 50.7 ± 18.7 and in the control group was 51.0 ± 18.1 (P = 0.94). After the intervention, the mean and standard deviation of state anxiety in the intervention group was 42.8 ± 14.9 and in the control group was 51.6 ± 17.9 (P = 0.04), also trait anxiety in the intervention group was 42.3 ± 15.2 and in the control group was 51.7 ± 17.79 (P = 0.03). However in following results of other studies been discussed.

After intervening on the anxiety of patients who were candidates for surgery and examining the anxiety status of patients, Zareh et al. stated that the level of anxiety in the postoperative intervention group was significantly lower than the average preoperative anxiety (13), which was consistent with the results of the recent study. Cakmak et al. in a study evaluating the effect of video-based training on reducing anxiety and satisfaction of patients under spinal anesthesia and observed that level of anxiety in two groups was statistically different (p = 0.033). Accordingly, these was consistent with the results of the recent evaluation (18). Also Kumar et al. studied the effect of psychological preparation on preoperative stress and anxiety in children and found that children under intervention had significantly less stress, anxiety and pain (19). The results which observed in this evaluation have been consistent with the results observed in the present

evaluation and have shown the importance of evaluating this approaches in this group of patients.

In addition regarding the evaluation of patients' anxiety status, Majzoobi et al. in a study examined the effect of mental preparation on reducing the symptoms of surgical anxiety in children and observed that the mean scores of anxiety in experimental group compared to control group has a significant decrease in all four indicators of the Hamilton questionnaire (15). Which was consistent with the results of the recent evaluation. On the other hand, Chiu-Hsiang Lee et al. in an article examined the effect of education on patients' anxiety and pain and observed that the level of anxiety and pain in the intervention group decreased significantly and the mean STAI scores at the beginning was 52.6, and 30 minutes before surgery was 47.5 ($p < 0.001$). This study was consistent with the results of the recent evaluation (16). Also Pinar et al. evaluated the effectiveness of preoperative preparation in reducing anxiety after gynecological surgeries and observed that the level of anxiety of patients in the intervention group was significantly lower than the control group (17), which is also consistent with the results of the recent evaluation. Mirbaqer et al. stated that music reduces the level of anxiety and blood pressure in patients before surgery, so that the level of anxiety in this group vary from 39.1 before listening to music, to 31.1 after Listening to music was found to be consistent with the results of a recent evaluation (14). However, the method used to improve patients' anxiety was different in the two studies.

Zare et al. evaluated the effects of preoperative awareness on stress and anxiety in orthopedic surgery candidates and observed that between systolic and diastolic blood pressure, heart rate, temperature and respiration rate, there was no statistically significant difference before and after surgery (13). In addition, Mirbagher et al. in the field of vital signs of patients stated that the mean of heart rate was 73.5 beats per minute, the mean of respiratory rate was 20.3 per minute and mean of systolic blood pressure was 101.5 mm Hg (14). However, in the recent study, the condition of patients' vital signs has not evaluated. Accordingly, in most studies, it has been observe that the use of this treatment can be effective in improving the condition of patients.

CONCLUSION

Based on the results of this evaluation and in comparison with other studies, psychological preparation has been effective on patient’s anxiety and has improved their condition. Based on this, so the importance of paying attention to psychological preparation in reducing patients' anxiety is determined. Based on this and relying on these cases, the next condition of patients and the results of surgery can be improve.

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