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Effect of Two Instructional Methods on reducing the Anxiety level of the Patients before Open Cardiac Surgery

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Abstract

Aims: Surgical operation may instigate anxiety symptoms among patients. The more serious the surgery is, the more anxious the patients will be. The anxiety will be even greater in open cardiac sugary patients. Therefore, it is strongly recommended that nurses take the appropriate actions to reduce the patients' anxiety. Literature has shown that preoperative patient instruction could be helpful in minimizing the patients' anxiety symptoms. This study aims at comparing two instructional methods of medical procedures (face to face and watching film) to examine their effects on reducing the anxiety level of hospitalized patients before open cardiac surgery.

Methods: A Quasi-experimental study was conducted to assess two instructional methods of medical procedures (face to face and watching film) to examine their effects on reducing the anxiety level of hospitalized patients before open cardiac surgery. The patients were divided into two groups each containing 45 patients. Simple random sampling was conducted for the patients with a total sample size of 90 subjects.

Results: State anxiety was found to be significantly different between the two groups (P=0. 03).In the film watching group, 30 % of the subjects showed the high-moderate anxiety, 25% showed partly severe anxiety, and 7.5 % showed severe anxiety. Furthermore, in the face to face instruction group, 37.8 % of the subjects showed high-moderate anxiety, 4.4 % showed partly severe anxiety and 2.2 % showed severe anxiety. Trait anxiety was not significantly different between the two groups (P=0.91).

Conclusion: The results showed a significant difference between the two groups in term of the state anxiety after face to face and watching film instructions. Thus, instructions were found to be effective in reducing the anxiety level among surgical patients.

Keywords: Surgical • Cardiac

Introduction

Surgery operation is considered as a diagnostic and therapeutic process. Studies have shown that percent of people undergoing open cardiac surgery suffer from preoperative anxiety. Anxiety is a strange feeling and a state of worry, sadness, or fear. It is often caused due to exposure to a strange situation, feeling the risk of death, discomfort, fear from post-surgery pain, changes in the form or function of the body, an increase of dependency, family concerns and the potential changes in the life style. In this regard, one of the first known factors that because anxiety is the fear of postsurgery pain [1-3].

Anxiety in human being affects all aspects of his life. It is a factor which has a considerable influence on health. In the same regard, disease and chronic anxiety usually have negative effects on a sick person. Therefore, recovery and returning to the normal situation would become prolonged in case of anxiety [4].

In addition to its negative effects on healing and recovery of the tissues, anxiety would also result in wasting a great amount of mental and physical energy. Stressful situations can lead the patients into a state of fatigue and cause a series of biochemical activities in the body which can in turn stimulate the autonomic system, muscle tension, and the increased production of corticosteroid. Furthermore, as the sympathetic system is stimulated, there will be an increase in heart rate and blood pressure, a reduction in the blood supply to the wound, the contraction of arterial, and a reduction in the partial pressure of the tissues [5,6]. If anxiety were not controlled or became chronic, it would lead to high protein degradation, slow wound healing, high risk of infection, and change in the immune response, imbalance of fluid and electrolyte, and changes in the sleep patterns [3].

These factors would result in the prolonged hospitalization and delay the discharge of patients from the hospital [7]. In the preoperative period anxiety can also lead to the stomach ulcers [8] and the satisfaction of patients with treatment and the nursing care [9]. Most patients tend to receive adequate information about the disease and the surgical procedure. Being provided with the information in the preoperative period leads to more patients' satisfaction and also hastens the healing process. Moreover, giving the proper information is very effective in reducing the patients' anxiety, stress, and pain [10].

Surgery may create anxiety symptoms among patients and the more serious the surgery, the higher the anxiety level might be, especially in open cardiac surgery. Therefore, it is necessary for the nurses to take the necessary actions to reduce anxiety in the patients. It is shown that preoperative education is helpful in reducing the patients' anxiety.

This study aimed at comparing two educational methods of therapeutic procedures (face-to-face and watching film) and examining their effects on reducing anxiety during preoperative open cardiac surgery in the patients hospitalized in Ayatollah Kashani and Hajar hospitals in Sharekord, Iran, from 2018 to 2019.

Methods

This educational procedure was conducted on 90 patients who met the required criteria for the study and had the desire to participate in the educational sessions. In fact, this study was conducted to compare and examine two educational methods of therapeutic procedures (face-to-face and watching film). In the first method was face to face, the researcher (physician) did all cares and treatments through face-to-face education and based on face to face education, the patients' needs, drugs, care, period of treatment, and complications risk and then the request of the patients were answered. Their families could participate in the educational programs. The second method in this project was film. The film showed a process of an open heart surgery along with clinician

speaking and the patients were operated and just they have good health. In this process, the questions of the patients were responded by the researcher. The film was internally. Therefore, this project evaluated the two methods' effects on reducing the anxiety level during preoperative open cardiac surgery in the patients hospitalized in different hospital wards of Ayatollah Kashani and Hajar hospitals in Sharekord from 2018 to 2019. The subjects were randomly selected from the patients undergoing open cardiac surgery in 2019 in the above-mentioned hospitals. They were randomly assigned to the experimental and control groups; each one included 45 subjects.

All the subjects voluntarily participated in the sampling and were well-informed., all the participants were assured about the confidentiality of the information. They were able to withdraw from the study at any time. According to Helsinki's statement, the subjects who have participated in a study, may be randomly assigned to one of the above two groups. The data collection tool included a written questionnaire consisting of two parts: (1) Demographic information of the patients and (2) The evaluation of their anxiety level reduced by their awareness of the surgical treatment procedures. The study population includes all patients undergoing open cardiac surgery in hospitals in Sharekord from 2018 to 2019 which using statistical evaluations the sample size was estimated to be 90 patients.

Considering a=0.05, P=0.2, and d=0.1, the sample size of each group was 45 patients who were randomly assigned to each group. In the first phase of the current study, a questionnaire was given to the two groups (before instruction), then both groups were given the instructions concerning the surgical treatment procedures.

In the second phase (after giving the instruction and before operating the surgery), the same questionnaire was given to both groups. Spiel Berger's state and trait anxiety questionnaires with 20 questions in each of them were answered in Likert scale. For items with a positive attitude in the state anxiety questionnaire (items 1, 2, 5, 8, 10, 11, 15, 16, 20), 4 points is given to the "almost never" item, 3 points to "sometimes" item, 2 points to "most often" item, and 1 point to "almost always".

Items with a negative attitude (items 3, 4, 6, 7, 9, 12, 13, 14, 17, 18) were enumerated in the reverse form. In the trait anxiety questionnaire, positive items (1, 3, 6, 7, 10, 11, 13, 14, 16, 19) and negative items (2, 4, 5, 8, 9, 12, 15, 17, 18, 20) were also calculated the same as the above factors. Scores obtained from each of the anxiety questionnaire varied from 20 to 80. A score among 20-42 was considered as low anxiety, a score among 43-64 as the moderate anxiety and a score among 65-80 as the severe anxiety. The content validity of Spiel Berger anxiety scale was confirmed by the professors of Tehran University and its reliability coefficient was reported to be 0.94 using Cronbach's alpha [11]. The ethical approval of this study is 92-1-33.

SPSS version 19 was used to analyze the obtained data. Data frequencies were presented as numbers and percentages. The quantitative variables were presented as mean and standard deviation. Furthermore, the qualitative and quantitative variables were compared using chi-square and T-test, respectively.

Results

Among 85 patients who were suffering from heart diseases, 5 patients left the study. As a result, the face-to-face instruction group (the first group) included 45 patients (52.94%) and the watching-film instruction group (the second group) included 40 patients (47.05%). In term of the gender, in the first group 32 subjects (71.1%) were male and 13 subjects (28.9 %) were female with an average age of 62.86 ± 10.51. In the second group, 32 subjects (60%) were male and 40 subjects (16%) were female with an average age of 60.37 ± 80.22. Regarding the age, 24 patients (53.3%) in the first group and 30 patients (50%) in the second group were 60 to 74 years old, respectively. In term of the educational level, 35.6% of subjects in the first group and 30% of the second group were illiterate. Concerning the subject's occupation, 53.3% of the subjects in the first group and 22.5% of the subjects in the second group were self-employed.

Finally, there was no significant difference in anxiety levels in pre-education for the two groups. The first group had CABG (80%), ASD (6.7%), MBR (8.9%), and ABR (4/4%) surgeries while the second group had CABG (85%), MVR (10%), and AVR (5%). Moreover, the chi-square results for both groups were not significantly different and were similar to each other in terms of age (P=0.57), sex (P=0.28), education (P=0.44) and type of surgery operation (P=0.42).

According to Table 1, during the patient reception time, the average blood pressure of the patients' right hand in the first group was 140 on 86.25 and the average blood pressure of their left hand was 136.22 on 84.97.

	Watching film group			**Face to face group**			
During reception	SD	Mean	Max	SD	Mean	Max	Min
Systolic blood pressure of the right hand	16.19	124.17	180	10.5	140	210	100
Diastolic blood pressure of the right hand	4.82	65.85	75	13.31	86.25	117	35
Systolic blood pressure of the left hand	11.73	119.47	147	21.53	136.22	212	80
Diastolic blood pressure of the left hand	5.68	65.07	75	11.81	84.97	114	65
Pulse beat	8.67	82.37	100	16.42	84.28	121	53
Heartbeat	15.32	85.27	120	14.67	79.15	107	56
During delivering to OR	SD	Mean	Max	SD	Mean	Max	Min
Systolic blood pressure of the right hand	14.09	144.2	190	13.7	134	168	110
Diastolic blood pressure of the right hand	8.76	77.12	90	10.25	80.93	118	60
Systolic blood pressure of the	16.95	146.5	190	17.88	132.63	182	85

left hand							
Diastolic blood pressure of the left hand	9.26	77.5	100	12.2	80.57	121	60
Pulse beat	10.6	96.95	120	12.47	85.71	120	61
Heartbeat	12.19	103.87	140	10.53	84.68	109	66

Table1: Frequency distribution of the clinical variables of patients in face to face and watching film groups.

On the other hand, the average blood pressure of the patients' right hand in the second group was 124.17 on 65.85 and the average blood pressure of their left hand was 119.47 on 65.07. Pulse beats (radial) and heartbeat in the first group were 84.28 and 79.15, respectively while pulse beats (radial) and heartbeat in the second group were 82.37 and 85.27, respectively.

During delivering patients to the OR, the average blood pressure of their right hand in the first group was 134 on 80.93 and the average blood pressure of their left hand was 132.63 on 80.57. On the other hand, the average blood pressure of the patients' right hand in the second group was 144.20 on 77.12 and the average blood pressure of their left hand was 146.50 on 66.50. Pulse beats (radial) and heartbeat in the first group were 85.71 and 84.68, respectively while pulse beats (radial) and heartbeat in the second group were 96.95 and 103.87, respectively.

According to Spearman test, there is a significant positive correlation between diastolic blood pressure of the left hand with state anxiety (r= 0.394, p= 0.012) and trait anxiety (r= 0.536, p=0.000) in the control group.

As Table 2 shows, there is a significant correlation between the two groups regarding the state anxiety (P =0.012). The mean score of the state anxiety in the second group (47.97 ± 13.35) was higher than the first group (41.64 ± 9.18). However, no significant correlation was found between two groups in term of trait anxiety (P =0.61).

	Trait anxiety	State anxiety
Intervention groups	Mean ± SD	Mean ± SD
Face to face	43.44±9.66	41.64± 9.18
Watching film	42.40±9.58	47.97±13.35
	P= 0.61	P= 0.012

Table 2: Comparison of the mean of state and trait anxiety in both face to face and watching film groups based on (Mann-Whitney).

According to Table 2, there is a significant correlation between the two groups regarding the state anxiety (P=0.012) so that the mean score of the state anxiety in the second group (47.97 ± 13.35) was higher than that in the first group (41.64 ± 9.18). However, no significant correlation was found between two groups in term of trait anxiety (P=0.61).

Table 3 shows that the value of state anxiety in two groups was significant (P = 0.03).

The value of State anxiety											
Intervention	**Severe**		**Partly Severe**	**High-medium**		**Low-medium**		**Low**		**P-value**	
groups	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Face to face	1	2.2	2	4.4	17	37.8	18	40	7	15.6	
Watching movie	3	7.5	10	25	12	30	8	20	6	15	0.03

Table 3: Comparison of the value of state anxiety in two groups of face-to-face and watching film based on (in depended t test).

According to the results shown in Table 3, the value of state anxiety in two groups was significant (P=0.03) so that in the second group 30% of the patients indicated high-moderate anxiety, 25% showed partly severe anxiety and 7.5% of the patients indicated severe anxiety, respectively. However, in the first instruction group, 37.8% of the patients indicated high-moderate anxiety, 4.4% showed partly severe anxiety and 2.2% of the patients indicated severe anxiety. According to the results shown in Table 6, trait anxiety in two groups was not significantly different (P=0.91).

In the second group 30% of the patients indicated high-moderate anxiety, 25% showed partly severe anxiety and 7.5% indicated severe anxiety. However, in the first instruction group, 37.8 % of the patients indicated high-moderate anxiety, 4.4% showed partly severe anxiety and 2.2% indicated severe anxiety. According to Table 6, trait anxiety in two groups was not significantly different (P=0.91).

The value of Trait anxiety											
Intervention	**Severe**		**Partly Severe**	**High-medium**		**Low-medium**		**Low**		**P-value**	
groups	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Face to face	1	02-Feb	7	15.6	16	35.6	16	35.6	5	11.1	
Watching film	0	0	6	15	14	35	15	37.5	5	12.5	0.91

The value of Trait anxiety											
Intervention	**Severe**		**Partly Severe**	**High-medium**		**Low-medium**		**Low**		**P-value**	
groups	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Face to face	1	02-Feb	7	15.6	16	35.6	16	35.6	5	11.1	
Watching film	0	0	6	15	14	35	15	37.5	5	12.5	0.91

Table 4: Comparison of the value of trait anxiety in two groups of face-to-face and watching film based on (in depended t test).

Discussion

The findings showed that after providing the patients with face-to-face and watching film instructions, the anxiety level was significantly different in two groups. It can be concluded that instruction is effective in reducing anxiety among patients under surgery operations. Hanifi et al. (2012) showed that the orientation program has been effective in reducing anxiety among patients who underwent angiography [12]. Given the importance of patients' taking care of themselves, considering their health, identifying health obstacles and promote their mental-physical health are of utmost importance. Providing the patients who suffer from heart diseases with curing and therapeutic instructional programs in order to reduce the anxiety level and psychological problems can be considered a positive step in managing their health issues and improving postoperative care.

Furthermore Osilioglu et al. (2004) showed that the preoperative open cardiac surgery patients who receive the instructional pamphlet and oral face to face education experienced less anxiety than those did not, no statistically significant difference was found between the two groups though [10]. Ping Guo et al.'s study also confirms that instructional interventions such as giving instructional brochure or oral consulting were effective in reducing anxiety [13].

Similar to present findings, Amy et al. showed that educational videos about preoperative general anesthesia techniques reduced anxiety level and increased patient satisfaction among the Spanish-speaking patients [14].

Yildiz et al. presented preoperative standard and purposeful instruction for the special needs of patients in order to reduce their anxiety levels regarding their care after being discharged from the hospital [15]. Unlike most studies conducted in such cases, they found no significant difference in the anxiety level among patients. Surprisingly they found that the anxiety level was even higher in the instructed group after the surgery. One reason may be that the clients may have felt that a tremendous responsibility was imposed upon them after receiving the information. Another reason could be that the instructional sessions had been scheduled improperly. In other words, patients were not willing to learn prior to the operation time. Furthermore, the patients' cultural and social level can be effective in this regard.

Conclusion

The results showed that the face to face instruction group experienced less anxiety compared with the watching film instruction group. The face to face instruction program can well perform as a psychological-healing factor in order to create some degree of peace and comfort in stressful situations. Accordingly, using non-pharmacologic interventions, especially face to face instruction among nurses in clinical practice, is highly recommended. Such treatments may have many positive effects on encouraging the patients in their use.

Finally, it is strongly recommended instructional programs be given to the patients in order to inform and familiarize them with the operation procedures before beginning the invasive and diagnostic procedures.

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