

Original Article

The effect of personnel primary communication on the pre-operative anxiety of patients admitted to operating room

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ABSTRACT

Background & Aim: Operation as a stressor can induce physical and psychological negative reactions. Considering the anxiety prevalence as the most important sign and symptoms before surgery, on one hand, and the necessity of patients' mental preparation as the most essential care before surgery, on the other hand, the importance of primary communication of medical centers' staff would be determined. Hence, this study was conducted to evaluate primary communication with personnel on the pre-operative anxiety of patients in operating rooms of Al-Zahra hospital in Isfahan city in 2014.

Methods & Materials: This study is a two-group, two stages clinical trial. Participants were selected by convenience sampling from male and female patients who were candidated for general surgery and then allocated to the control (n = 43) and intervention (n = 43) group based on odd or even number of patients record. In the intervention group, researcher introduced herself/himself and then patients were allowed to speak out about their surgery-related stresses and worries until 10 minutes. But in the control group, researcher conducted no intervention and just stayed in the room for 10 minutes. Data were gathered through the demographic characteristics checklist and the Amsterdam pre-operative anxiety questionnaire and analyzed using descriptive and inferential statistics with SPSS version 18.

Results: Results showed no significant difference between the score of score in the control group and the intervention group before the intervention (P > 0.050). However, results of paired t-test showed that in the intervention group, the mean score of anxiety in patients after the intervention was significantly lower than before the intervention (P < 0.050).

Conclusion: Personnel primary communication can reduce pre-operative anxiety of patients admitted to operating room.

Introduction

Among pre- and post-operative psychological disorders, anxiety is the most common and important sign. Although in the present time anesthesia and surgery have fewer complications and are a more successful than before, pre-operative anxiety still exists (1). Spielberger determines anxiety as a threatening or negative excitement that a person experiences generally during a long time (character-

istic of anxiety) or in a special occasion (2). Anxiety in patients could be due to unfamiliar situations, separation from family, lack of required information about medical interventions, diagnosis of the disease, induction of anesthesia, post-operative pain, possible disabilities, and death (3). In some studies, the prevalence of anxiety in patients undergoing elective surgeries has been estimated about 80%. In the study of Fathi et al. (4) that was aimed to evaluate pre-operative anxiety and its predisposing factors in patients undergoing heart surgery, the score of anxiety in patients was 20%-55%.

Human is a social creature and communication is one of the key roles of medical staff in a way that

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due to critical working environment of medical centers, a large number of employees and units and the complexity of matters in medical centers, wrong communication could lead to disability or even death of patients (5). If the medical staff would be able to make proper communication with patients, the quality of healthcare provision would be increased and when the provided cares are more appropriate and accurate, patients would feel more satisfaction. Therefore, effective communication is an essential tool for high-quality care in hospitals (5). Different studies have resulted that effective communication could, along with improving patients' satisfaction with provided care, reduce anxiety and depression and lead to acceptance of treatment. A surgical operation is a stress that could lead to physiologic reaction (endocrine) psychological stress (fear and anxiety) (6). Anxiety could have profound effects on the process of anesthesia and post-operative procedures. Fear, anxiety, and changes in vital signs like increase in a heart beat and blood pressure are some of the further complications of surgery that could have a negative effect on induction of anesthesia and then the recovery process (7). Recent studies have shown that providing information before surgery for patients about surgical methods could decrease patient's anxiety. In a study, three main subjects that patients considered as important information for reduction of anxiety in great surgeries were information about the surgery, details of nursing care and information about anesthesia. Furthermore, in this study, more than 50% of patients undergoing surgery mentioned that the most important factor for their anxiety was not receiving enough pre-operative information based on their needs (8). In another study, patients who received pre-operative instructions and tips experienced less anxiety in comparison to patients who received usual pre-operative nursing cares (9). To reduce the pre-operative anxiety of patients traditionally doctors use pharmaceutical methods; but nowadays, alternative treatments have attracted increasing attention (10). Alternative and complementary treatments include music therapy, tough therapy and massage therapy. Moreover, existing documents have shown that informing patients before surgeries could decrease their anxiety and also increase their knowledge and hence shorten the recovery process after surgery (11). In nurse-based

trainings, a professional nurse would assess the patient at reception and provide the necessary trainings for the patient. It seems that this process could affect the anxiety and worrisome of the patient (11). An increased number of surgeries and patients and consequently reduced time of patient-nurse communication would keep nurses away from understanding patients' pre-operative needs and providing necessary trainings for them. Hence, this study was aimed to determine the effect of personnel primary communication on the pre-operative anxiety of patients.

Methods

This study is a two-stage clinical trial with pre-test post-test design that was aimed to evaluate the effect of the independent variable of "personnel primary communication" on the dependent variable of "anxiety" of patients before surgery in 2014 in Al-Zahra hospital of Isfahan. The study population was all the men and women referring to operating rooms of Al-Zahra Hospital of Isfahan for general surgery. Participants were selected by convenience sampling from male and female patients who were candidated for general surgery and then allocated to the control (n = 43) and intervention (n = 43) group based on odd or even number of patients record. Demographic characteristics and Amsterdam pre-operative anxiety questionnaire were completed for both control and intervention group before the intervention by the researcher. Numbers of samples were calculated by the following formula:

$$n = \frac{(Z_1 + Z_2)^2 \cdot 2(S)^2}{d^2}$$
 and mean difference and reliability of 95%, power of 80% and minimum acceptable difference of 0.7 s and 10% possibility of sampling loss, 86 patients were selected for the study (Figure 1). Inclusion criteria were willingness to participate, being physically healthy enough to be able to answer to the questionnaires, not mentioning a history of severe anxiety and mental distress in the past few weeks, having full consciousness, being candidate for elective surgery with general anesthesia and being aged from 18 to 60 years. Exclusion criteria were having an emergency surgery, having visual impairments, consumption of psychotropic drugs, being in the American Society of Anaesthesiologists 3 class (an anesthetic standard) or higher and unwillingness to participate in the study. Data gathering tool was a two-part questionnaire that its first part was about demographic

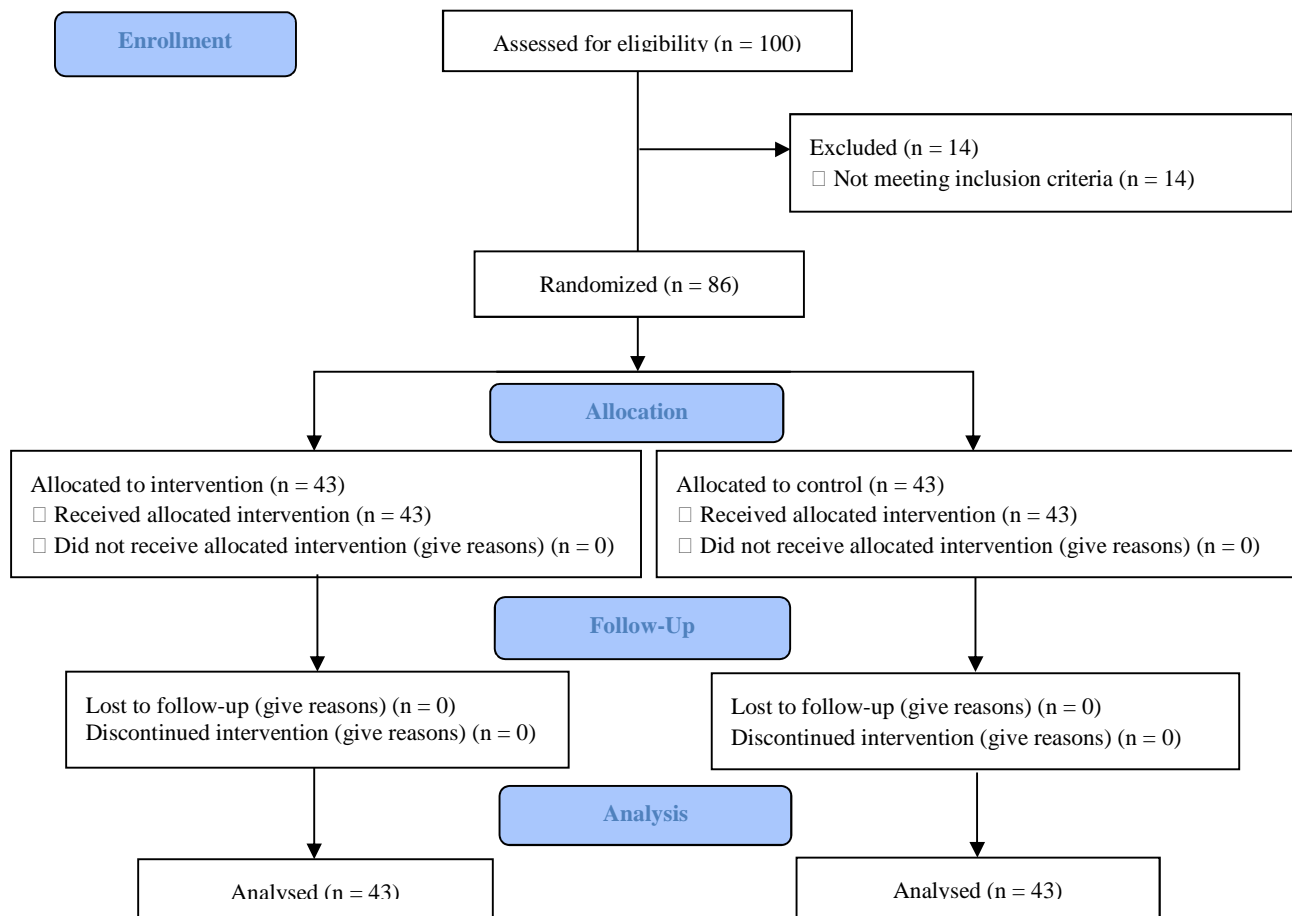


Figure 1. The process of study

characteristics and the second part was “6-item” pre-operative anxiety questionnaire. This questionnaire includes 4 questions about pre-operative anxiety with a Chronbach’s α of 0.86 and 2 questions about pre-operative information with a Chronbach’s α of 0.72. The Persian version of Amsterdam’s questionnaire was normalized by Nikandish et al. in 2007 and has Chronbach’s α of 0.84 for pre-operative anxiety and 0.82% for the needed pre-operative information. Regarding concurrent validity, Amsterdam’s measures of anxiety have a high correlation coefficient with Spielberg’s anxiety state questionnaire. Filling the demographic data and Amsterdam’s pre-operative need for information questionnaires was done by the researcher for both groups before the intervention; meaning that the nurse read the questions for the patients and the patients answered them. Then, in the intervention group, at first patients were introduced to the researcher and after the researcher was in-

formed about their referral reason, medical history, family history, history of hospitalization and using any special drug treatments, he/she gave the patient some information about anesthesia and the type of surgery; then patients were allowed to speak out about their surgery-related stresses and worries. At the end, a short time was given to patients for asking any possible questions about the surgery. Since the study was one-way blinded, for the control group the researcher just stayed in the patient’s room for 10 minutes without doing anything particular and then the questionnaires were completed. After gathering the data for comparing the level of anxiety in patients and also comparing demographic characteristics of the intervention and the control group independent t-test and chi-square test were used. For determining the significance level, Pearson correlation test ($P < 0.050$) and for comparing patients’ anxiety in the intervention group before

and after the intervention, paired t-test were used.

Ethical considerations of the study were regarded by gaining permission from the Nursing and Midwifery Care Research Center, Research Council of Isfahan University of Medical Sciences and management of Al-Zahra Hospital and also by taking written consent form from the participants.

Results

Results showed that most of the participants in both groups were 30-40-year-old men. Furthermore, 65% of patients in both groups had a great need for pre-operative information, and the type of the surgery of most of them was minor. Most of the participants in both groups had a diploma and lived outside Isfahan. Moreover, most of the patients of both groups had a history of hospitalization but no surgery. Using chi-square and independent t-test showed that both the intervention and the control

group were similar regarding demographic variables ($P > 0.050$) (Table 1).

Furthermore, results of independent t-test showed no significant difference between the score of anxiety of the control group and the intervention group before the intervention ($P > 0.050$). But according to table 2, there was a significant difference between the score of anxiety of the control group and the intervention group after intervention ($P < 0.050$).

Furthermore, the results of paired t-test showed a significant difference between the mean score of anxiety of the intervention group before and after the intervention. Hence, the researcher believes that this type of intervention had a significant effect on the mean score of anxiety; in a way that the mean score of anxiety of the intervention group decreased from 12.4 ± 3.8 to 10.3 ± 4.4 after the intervention. Moreover, the results of this study showed that the mean score of anxiety in the control group increased from 13.1 ± 4.4 to 19.7 ± 3.3 after the intervention (Table 2).

Table 1. Demographic characteristics of patients of the control group and the intervention group

Variables	Group		P value
	Intervention N (%)	Control N (%)	
Age			
20 years or younger	7 (16.28)	7 (16.28)	0.150
20-30 years	7 (16.28)	7 (16.28)	
30-40 years	17 (39.54)	19 (44.19)	
40 years or older	12 (27.90)	10 (23.25)	
Gender			
Male	25 (58.14)	29 (67.44)	0.230
Female	18 (41.86)	14 (32.56)	
Need for information			
Little	0	1 (2.33)	0.090
Moderate	15 (34.88)	14 (32.56)	
High	28 (65.12)	28 (65.11)	
Educational level			
Elementary	11 (25.58)	12 (27.90)	0.190
Guidance	10 (23.25)	10 (23.25)	
Diploma	16 (37.21)	16 (37.21)	
Bachelor degree	6 (13.95)	5 (11.63)	
Type of surgery			
Minor	16 (13.95)	17 (39.54)	0.350
Major	27 (63.79)	26 (61.46)	
History of surgery			
Yes	21 (48.84)	17 (39.54)	0.110
No	22 (51.16)	26 (61.46)	
History of hospitalization			
Yes	25 (58.14)	30 (69.77)	0.440
No	18 (41.86)	13 (30.23)	
Place of residence			
Isfahan	19 (44.19)	21 (48.84)	0.530
Out of Isfahan	24 (55.82)	22 (51.16)	

Table 2. The mean score of anxiety of the control and the intervention group before and after the intervention

Period	Group		Independent t-test	
	Intervention Mean ± SD	Control Mean ± SD	T	P value
Before intervention	12.4 ± 3.8	13.1 ± 4.4	0.49	0.630
After intervention	10.3 ± 4.4	19.7 ± 3.3	3.26	0.02

Independent t-test, SD: Standard deviation

According to table 3, in the intervention group, the mean score of anxiety after the intervention decreased significantly than before the intervention ($P < 0.001$).

Table 3. Determining and comparing the mean score of anxiety before and after the intervention in the intervention group

Variable	Period		Paired t-test	
	Before intervention	After intervention	T	P value
	Mean ± SD	Mean ± SD		
Anxiety	12.4 ± 3.8	10.3 ± 4.5	0.85	<0.001

Discussion

The present study was conducted to evaluate the effect of personnel primary communication on pre-operative anxiety of patients. According to the results of this study, the anxiety of patients in the intervention group was significantly reduced after the intervention. Consistent with these results, the study of Bahrami et al. (12) that was aimed to evaluate the effect of trainings before surgery on physical indicators and cortisol level of women undergoing elective gynecology surgery showed that physical indicators and cortisol level of both groups were higher than normal before surgery that was significantly decreased after the intervention. Furthermore, the study of Vaezzadeh et al. (13) that was aimed to examine effects of performing pre-operative preparation program on children's anxiety resulted that performing pre-operative program with using therapeutic play intervention is effective for preparing children before surgery and decreases their anxiety. The study of Ezadi Tame et al. (14) also showed that verbal communication is more effective than written trainings in the reduction of pre-operative anxiety, heartbeat, systolic and diastolic blood pressure. However, results of Shahmansouri et al. (2014) (15) study that was aimed to evaluate the effect of group psychological training on fear and anxiety of patients undergoing coronary artery bypass graft (CABG) showed that psychological training before CABG could reduce pre-operative fear

but has no significant effect on pre-operative anxiety. In the present study, by creating a context where patients were allowed to talk about their worries about their surgeries and its related matters, trainings could have a great effect on pre-operative anxiety. Moreover, according to the results of the present study, while the difference between the mean score of anxiety in the control and the intervention group was not significant before the intervention, this difference became significant after the intervention. In consistent with this result, the study of Pinar et al. (16) that was titled "effective ness of pre-operative guidance on reduction of anxiety after gynecology surgery" and conducted on 120 patients ready for surgery, showed that pre-operative anxiety in the intervention group was lower than the control group. Considering that fear of unknowns is the most important factor in creation of patients' pre-operative anxiety (17) using pamphlets and educational pictures of the surgery in this study increased patients' information about their surgery and consequently reduced their anxiety. In addition, in the study of Sadegh Tabrizi et al. (18) aimed to evaluate the educational intervention on children and maternal anxiety and their satisfaction from anxiety management, showed that reading books and education by residents lead to reduced considerable anxiety in recipients (children and mothers). Furthermore, in the study of Dizaniha et al. (19) that was aimed to evaluate the effect of pre-operative verbal communication on preventing patients' anxiety when entering operating room, researcher's verbal communication with patients who were candidates for elective hernia surgery reduced the anxiety of the intervention group in comparison to the control group. However, the results of Asilioglu and Celik (20) showed that although pre-operative training session reduced patients' anxiety, its effects were not significant in comparison to the control group. In general, in the present study, verbal communication with patients of the intervention group including face to face communication, giving hope to the

patient and answering their probable questions could significantly decrease the pre-operative score of anxiety in the intervention group in comparison to the control group.

The results of this study indicate the effect of personnel primary communication on pre-operative anxiety of patients who were candidates for general surgery. Hence, the personnel of medical centers and especially nurses could use appropriate communicative skills with patients before surgery to take an effective step toward mental preparation and reduction of anxiety in patients.

Researcher gender, to effective communication with male patients, was an important limitation of this study. So a male researcher, who was oriented about the research objectives and intervention procedure helped us in this project. Another limitation of this study was its relatively small sample size. Therefore, it is suggested more researches to be done with more samples and taking into account multiple medical centers.

The results of this study could increase awareness of the personnel in the operating room about patients' anxiety before surgery and the importance of their primary communication, as an effective step to increase patients comfort and safety feeling, at the time of patient's admission.

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Conflict of interest

The authors declare no conflict of interest.

References

1. Esmaeeli Douk Z, Vaezzadeh N, Shahmohamadi S, Shahhosseini Z, Ziabakhsh Tabary S, Mohammadpour RA, et al. Anxiety before and after coronary artery bypass grafting surgery: relationship to QOL. *Middle-East J Sci Res* 2011; 7(1): 103-8.
2. Ebirim L, Tobin M. Factors responsible for pre-operative anxiety in elective surgical patients at a university teaching hospital: a pilot study. *The Internet Journal of Anesthesiology* 2010; 29(2): 1-6.
3. Bradt J, Dileo C, Shim M. Music interventions for preoperative anxiety. *Cochrane Database Syst Rev* 2013; 6: CD006908.
4. Fathi M, Alavi SM, Joudi M, Joudi M, Mahdikhani H, Ferasatkish R, et al. Preoperative anxiety in candidates for heart surgery. *Iran J Psychiatry Behav Sci* 2014; 8(2): 90-6.
5. Ali A, Altun D, Oguz BH, Ilhan M, Demircan F, Koltka K. The effect of preoperative anxiety on postoperative analgesia and anesthesia recovery in patients undergoing laparoscopic cholecystectomy. *J Anesth* 2014; 28(2): 222-7.
6. Wetsch WA, Pircher I, Lederer W, Kinzl JF, Traweger C, Heinz-Erian P, et al. Preoperative stress and anxiety in day-care patients and in patients undergoing fast-track surgery. *Br J Anaesth* 2009; 103(2): 199-205.
7. Madarshahian F, Hasanabadi M, Khazaei S. The effect of preoperative cares with holistic approach prior to surgical procedure on the patient's anxiety and fulfillment. *Holist Nurs Midwifery* 2015; 25(1): 45-53. [In Persian].
8. Matthias AT, Samarasekera DN. Preoperative anxiety in surgical patients- experience of a single unit. *Acta Anaesthesiol Taiwan* 2012; 50(1): 3-6.
9. Nigussie S, Belachew T, Wolancho W. Predictors of preoperative anxiety among surgical patients in Jimma University Specialized Teaching Hospital, South Western Ethiopia. *BMC Surgery* 2014; 14: 67.
10. Lim L, Chow P, Wong CY, Chung A, Chan YH, Wong WK, et al. Doctor-patient communication, knowledge, and question prompt lists in reducing preoperative anxiety: a randomized control study. *Asian J Surg* 2011; 34(4): 175-80.
11. Nikandish R, Anvar M, Avand A, Habibi N, Gahramani N, Dorri R. Translation and validation of the Amsterdam Preoperative Anxiety

- and Information Scale (APAIS) for Iranian population. *Pajouhesh Dar Pezeshki* 2007; 31(1): 79-84. [In Persian].
12. Bahrami N, Soleimani MA, Sharifnia H, Shaigan H, Sheikhi MR, Mohammad-Rezaei Z. Effects of anxiety reduction training on physiological indices and serum cortisol levels before elective surgery. *Iran J Nurs Midwifery Res* 2013; 18(5): 416-20.
 13. Vaezzadeh N, Douki ZE, Hadipour A, Osia S, Shahmohammadi S, Sadeghi R. The effect of performing preoperative preparation program on school age children's anxiety. *Iran J Pediatr* 2011; 21(4): 461-6.
 14. Ezadi Tame A, Sadeghi R, Safari M, Esmaeili Douki Z. Effect of verbal and audio methods of training on pre-surgery anxiety of patients. *J Qazvin Univ Med Sci* 2011; 15(1): 21-5. [In Persian].
 15. Shahmansouri N, Janghorbani M, Salehi OA, Karimi AA, Noorbala AA, Arjmandi A, et al. Effects of a psychoeducation intervention on fear and anxiety about surgery: randomized trial in patients undergoing coronary artery bypass grafting. *Psychol Health Med* 2014; 19(4): 375-83.
 16. Pinar G, Kurt A, Gungor T. The efficacy of preoperative instruction in reducing anxiety following gynecological surgery: a case control study. *World J Surg Oncol* 2011; 9: 38.
 17. Ting KEL, Ng MSS, Siew WF. Patient perception about preoperative information to allay anxiety towards major surgery. *International e-Journal of Science, Medicine & Education* 2013; 7(1): 29-32.
 18. Sadegh Tabrizi J, Seyedhejazi M, Fakhari A, Ghadimi F, Hamidi M, Taghizadieh N. Preoperative education and decreasing preoperative anxiety among children aged 8 - 10 years old and their mothers. *Anesth Pain Med* 2015; 5(4): e25036.
 19. Dizaniha M, Yaghoubi S, Yazdi Z, Mahdipour H. Effects of verbal communication before elective hernia operation on the prevention of anxiety patients in the operating room. *Edrak Journal* 2013; 8(32): 35-42. [In Persian].
 20. Asilioglu K, Celik SS. The effect of preoperative education on anxiety of open cardiac surgery patients. *Patient Educ Couns* 2004; 53(1): 65-70.