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The effect of slow-stroke back massage on anxiety in female patients with heart failure



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ABSTRACT

Introduction and Aims: Patients with heart failure experience many physical and psychological symptoms such as anxiety, which reduces their life expectancy. The use of alternative methods of therapy, including slow-stroke back massage (SSBM), can be effective in reducing the symptoms of heart failure. This study aims to investigate the effect of slow-stroke back massage on anxiety in women with heart failure.

Methods: In this quasi-experimental study conducted in the Department of Cardiology of Ghaem Hospital (affiliated with the Hamedan University of Medical Sciences) in 2015, 60 patients with heart failure were randomly assigned to the control and intervention groups. Slow-stroke back massage was performed in 7 sessions for 7 consecutive days (one session per day) for 10 minutes in the intervention group. Demographic characteristics and standard anxiety questionnaires Depression, Anxiety and Stress Scales (*DASS-42*).

were used to collect the patient data. The data were analyzed using descriptive and inferential statistics.

Findings: The mean of anxiety before intervention in intervention group 28.2 ± 6.04 and in control group was 27.47 ± 5.22 and after the intervention in the intervention group was 21.37 ± 6.24 and in control group 26.1 ± 6.27 , that showed a significant difference compared with before the intervention ($p < 0.001$).

The mean anxiety scores of all participants in the intervention group before and after the intervention was very severe, but after the intervention, its mean anxiety scores decreased. Using Paired t-test, the mean anxiety scores of the control group before and after the intervention was not significantly different ($P < 0.05$).

Conclusion: Slow-stroke back massage significantly decreased anxiety in female patients with heart failure.

Keywords: Slow-stroke back massage, anxiety, heart failure

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INTRODUCTION

One of the most common chronic diseases and one of the most important causes of death worldwide is heart diseases. Heart failure is the common endpoint of many cardiovascular disorders.¹ Heart failure is a pathophysiologic condition in which the heart is not able to supply sufficient blood to fit the metabolism of the body tissues. This disease is a gradual process, which often begins with an acute event and gradually causes changes in the heart structure, and ultimately losing its function and death.²

In the Middle East, including Iran, heart disease is becoming a major health and social problem. In Iran, despite the young population, cardiovascular diseases cause a high number of mortality and are considered as the third cause of death after accidents and cancer,³ comprising 30-35 percent of deaths in Iran – annually, nearly 150,000 Iranians die from cardiovascular diseases.⁴

Patients with heart failure experience many physical and psychological symptoms such as dyspnea, chest pain, lack of energy, fatigue, edema, sleep disturbances, stress, anxiety, and depression. Stress and anxiety cause a lack of

cooperation between the patient and the medical team and lack of appropriate response to treatment, as well as a reduction in life expectancy in these patients.⁵ Stress, anxiety and other psychological problems in women lead to secretion of hormones, which can cause problems such as osteoporosis, asthma, and so on.⁶ Today, medications are used to reduce complications of psychiatric problems caused by heart failure, such as stress, anxiety, and depression, but those medications can be associated with some side effects.⁷ Therefore, in order to adapt to the physiological problems, patients with heart failure frequently seek interventions that can be done outside of medical clinics, including complementary or alternative medicine.⁸

One of the most common methods of alternative medicine used by nurses is massage therapy, which ranks third in the care and satisfaction of patients.⁷ Massage therapy is a scientific and systematic manipulation of soft tissues and muscles to enhance and maintain function, healing, and obtaining therapeutic outcomes including muscular and mental relaxation.⁹

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Several studies have reported the beneficial effects of massage as a relaxation method for reducing stress, anxiety, depression, and improving the relationship between nurse and patient.¹⁰ However, studies on the effect of massage have shown different and sometimes contradictory results; some studies have shown that massage is effective in reducing the anxiety in heart failure patients, but in other studies, massage has not induced any changes in this variable.^{9,11}

Alternative medicine is usually effective, economical, non-invasive and safe, and natural that helps patients to feel better and adapt themselves to acute and chronic conditions.¹² Among these methods, relaxation is generally the most important non-medication method for reducing anxiety and its effects and stabilizing vital signs. The relaxation methods affect the parasympathetic nerves through the hypothalamus, thereby reducing heart rate, blood pressure, metabolism, respiratory rate, and oxygen consumption.¹³ Relaxation is one of the nursing interventions that is introduced in many studies and can be used as alternative therapy and sometimes as a complementary for drug therapy. In nursing, relaxation is described as a state free of any anxiety and musculoskeletal system tension, as well as defined as a relaxed and balanced mental state. Basampour et al. (2005) showed that relaxation techniques reduce anxiety and modify vital signs in patients with myocardial infarction.¹⁴ In summary, the aim of this study is to investigate the effect of slow-stroke back massage on anxiety in female patients with heart failure.

MATERIALS AND METHODS

In this quasi-experimental study, the study population included all patients with heart failure hospitalized in the heart department of Ghaem Hospital in Asadabad, Afghanistan. using the following formula and the probability of 10% attrition, for each group, 30 participants were selected (a total of 60 participants).

In this study, convenience sampling method was used. Assignment of samples was done randomly by asking the patient to select a card inside a bag. The word 'intervention' was written on 30 of the cards, and the word 'control' was written on the other 30; after selecting the participants according to the inclusion criteria, each patient took a card from the bag and placed in groups according to the card.

The inclusion criteria for participants included: suffering from heart failure, ejection fraction (EF) of 30 to 50% according to the patient's medical records, permission from the responsible physician

for the intervention, age 18 to 65, ability to communicate verbally, have reading and writing literacy and understanding of Persian language, lack of abuse and sensation and perception of touch and pressure on the back based on the claims of the patent (healthy areas of the back).

To collect the patient's data, a demographic questionnaire (age, education level, marital status, occupation, economic status, duration of heart disease, family history of heart failure and smoking, chronic illness and ejection fraction) was used. The standard anxiety inventory Depression, Anxiety and Stress Scales (*DASS-42*) was used to measure the anxiety status of the participants, which is a standard questionnaire developed by Lovibond and Lovibond (1995) to measure the severity of stress, anxiety, and depression.¹⁵ In this study, we used a 14-item anxiety subscale. Anxiety subscale has phrases that assess the physiological arousal, fears, and situational anxieties. Stress subscale includes phrases such as difficulty in achieving relaxation, nervous tension, irritability and restlessness.

The participants, after reading each item of the questionnaire, ranked the intensity of the sign in the item that they experienced during the past 3 days using a 4-point scale (between 0 and 3). If the participants have not at all, somewhat, considerably and always experienced the sign in the item, the scores 0, 1, 2, and 3 were assigned to them respectively. Participants' score in each subscale was calculated by adding scores of 14 items of that subscale, which is a number between 0-42. The scores obtained in the subscales represent the level of anxiety experienced by the participants, so higher scores represent the high level of anxiety experienced.¹⁶

To measure the anxiety scale, the Likert scale has been used as follows: it does not apply to me at all (zero scores), somewhat applies to me (score 1), considerably applies to me (score 2), always applies to me (score 3). By adding the scores of items in each sub-scale, the score for it was calculated and interpreted as follows: the anxiety levels 0 to 7 (normal), 8 to 9 (mildly), 10 to 14 (moderate), 15 to 19 (severe) and above 20 (extremely). The validity of this questionnaire was confirmed in various studies¹⁶ and its reliability using Cronbach's alpha was 0.83.

Demographic and disease data form and anxiety inventory were completed by participants in two groups, control and intervention, before the study. The participants' medical records were also used to complete their demographic questionnaire. According to previous studies, the number and duration of massage sessions ranges from a session of 3 to 45 minutes to several sessions in several

weeks.^{18,17} In this study, the intervention group received 7 sessions of slow-stroke back massage (SSBM) for 7 consecutive days (one session per day) for 10 minutes. The intervention done by the researchers at 5:00 pm to 7:00 pm, which was a quieter time of the day, was carried out in a private room and on the massage chair beside the patient's bedside by observing their privacy. Patients in the control group did not receive this intervention. After completing the intervention, the anxiety inventory questionnaire was completed again by both groups.

For ethical considerations, after obtaining a license from the Research Directorate of Iran University of Medical Sciences, the participants were assured that their information would remain confidential. All participants were informed about the voluntary nature of participation, with the option to withdraw from the study at any time.

After entering data into SPSS software version 21, the data of the questionnaires were analyzed by inferential statistical tests such as Chi-square, t-test, and independent t-test and descriptive statistics such as mean, standard deviation and variance.

FINDINGS

The majority of participants in both control (N=19, 63.33%) and intervention (N=18, 60%) groups were married and the majority of them in control (N=23, 76.7%) and intervention (N=25, 83.3%) groups were non-smokers. 17 participants in the control group (56.7%) and 24 in the intervention group (80%) have not had a history of heart disease. The mean age in the control and intervention group was 51.83 ± 11.67 and 53 ± 9.83 years respectively. The mean duration of disease in the control and intervention group was 6.85 ± 4.7 and 8.56 ± 4.32 years respectively. Ejection fraction (EF %) in the control and intervention group was 33.03 ± 3.84 and 53.3 ± 5.49 percent respectively.

The anxiety level on the Likert scale before the intervention in the control group was 27.47 ± 5.22 with a range of 18 to 39 and in the intervention

group 28.2 ± 6.04 with a range of 16 to 45, and after the intervention in the control group was 26.1 ± 6.27 with a range of 16 to 41 and in the intervention group 21.37 ± 6.24 with a range of 9 to 35. The mean anxiety level of all participants before and after the intervention was in the 'extremely' category, but after the intervention, the level of anxiety was reduced. (Table 1)

Independent t-test showed no significant difference in the mean of anxiety level before the intervention between the two groups ($P < 0.05$). Therefore, both groups were homogeneous before the intervention and did not have any significant difference. Using independent t-test, there was a significant difference in the mean of anxiety after the intervention between the two groups ($P < 0.05$), so that the mean anxiety of the control group was significantly more than the control group.

DISCUSSION

The aim of this study was to determine the effect of slow-stroke back massage on anxiety in female patients with heart failure. In this study, the mean level of participants' anxiety on the Likert scale before the intervention was 27 and 28 in the control and intervention group, respectively, and the two groups did not differ significantly in terms of mean anxiety levels. Thus both groups were homogeneous. After the intervention, the mean anxiety of the control group was 26, while in the intervention group were 21 and decreased significantly. It can be concluded that changes in the level of anxiety in the intervention group were affected by the intervention (slow-stroke back massage), not the effect of demographic and intervening variables.

Similar to our study, the effect of slow-stroke back massage on reducing anxiety levels in patients had been demonstrated in several studies. In the study of Shafie et al. (2013), the mean anxiety level of the intervention group decreased from 14 to 8, and in our study, the mean anxiety level of the intervention group decreased from 28 to 21. They reported the use of massage therapy could reduce depression, anxiety, and postoperative stress in patients undergoing coronary artery bypass graft surgery.⁹ Yeganehkah et al. (2008) have shown that slow-stroke back massage is effective in reducing blood pressure and anxiety in the elderly.²⁷ The results of Atashi et al. (2014) showed that slow-stroke back massage could prevent or reduce anxiety in patients with cerebrovascular accidents (CVA).²⁸ The findings of a study by Jouzi (2009) show the positive effect of massage on reducing blood pressure and anxiety levels in patients with cerebrovascular accidents.²⁹ Adib Haj Bagheri

Table 1 The mean anxiety level of participants on the Likert scale before and after the intervention

	Control group		Intervention group		Independent t-test	
	Mean	SD	Mean	SD	t	P-value
Before the intervention	27.47	5.22	28.2	6.04	-0.503	0.617
After the intervention	26.1	6.27	21.37	6.29	2.91	0.005
Paired t-test	t	0.922	4.953			
	P-value	0.364	<0.0001			

et al. (2012) reported that massage therapy by the nurses and patient's surrogate could reduce anxiety in hospitalized men in the coronary care unit (CCU) and concluded that massage could reduce the anxiety in heart disease patients.³⁰ Chen et al. (2013) showed that back massage significantly reduces the anxiety in patients with congestive heart failure.¹⁷ In all of these studies, the effectiveness of slow-stroke back massage in reducing the anxiety in patients regardless of the type of disease, the research community, the research environment and research tools have been confirmed, although only in the study of Shafie et al. (2013), the DASS-42 questionnaire has been used.⁹

Regarding the existence of various stressors and anxiety factors in hospitals, training the patient's family to apply slow-stroke back massage to patients in conjunction with nurses can have a significant effect on reducing their anxiety in various therapeutic situations.

The confounding effects of some variables such as individual differences, psychological states and different motivations, environmental factors and culture levels on the level of individual perception of health, learning and implementing the educations were among the limitations of this study. Despite the efforts of the researcher to provide a quiet and relaxed environment, the crowding of the hospital wards was one of the causes of the lack of patients' concentration.

CONCLUSION

The findings of this study show that slow-stroke back massage in the intervention group compared with the control group significantly decreased the anxiety of the patients; therefore, slow-stroke back massage can be effective in reducing anxiety in women with heart failure.

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