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Effect of tactile touch on stress in patients with myocardial infarction

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ABSTRACT

Aims: Nowadays, myocardial infarction is one of the cardiovascular life threatening diseases. After myocardial infarction, many patients experience psychological reactions such as stress. These emotional reactions can lead to increased treatment costs, mortality; delay of recovery and cardiac ischemia progression .The present study was done with the aim of "studying the effect of tactile touch on stress level in patients with myocardial infarction".
Methods: This quasi-experimental study was performed on 80 patients with myocardial infarction that were hospitalized for the first time in Zahra Heart Center in Shiraz during 2011 and 2012. Patients were randomly in two groups of intervention and control. For patients in the intervention group tactile touch was performed five days, it was half an hour every day. Questionnaires DASS-21 was used for data collection. Data were analyzed through SPSS version 15 and by using descriptive statistics and analytic statistical tests.
Results: Stress in patients with myocardial infarction after tactile touch period had a significant decrease($p<0.001$) compared with that before intervention. Also, after tactile touch, Significant difference between intervention and control group was observed ($p<0.001$).This result reflects the positive impact of this method in reducing stress in these patients.
Conclusion: Using tactile touch can be effective in reducing stress in patient with myocardial infarction. Training nurses in using this method can be effective in reducing these patients' stress.

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1. Introduction

Cardiovascular diseases are one of the main reasons of death in the world [1]. In 2008 this disease has been the first reason of death of the people with more than 35 years old in Iran and it is the reason of 40% of deaths in Iran. Every year from 120 to 140 thousand people lose their lives because of this reason [2]. Myocardial infarction is one of the human's life threatening cardiovascular diseases that is expected to increase remarkably until 2020 [3].Myocardial infarction is said to Ischemic necrosis of heart hyperoxia is because of lack of blood flow or

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reduced blood flow of the heart tissue that is among the most common and the most dangerous diseases of industrial countries. The recent years' studies confirm the effect of psychosocial factors on occurrence and course of coronary disease more than before. Stressful conditions of the present societies has been caused that cardiovascular disease is the leading cause of premature death and endangering millions of lives and cause billions of dollars due to wastes of death and disability [4].

People who suffer from myocardial infarction, myocardial infarction, heart failure and angina need to moral boost and stress control, that achieving to this main aim needs to decrease their stress level with different methods, because cardiovascular diseases are devastating events and frighten the patient and her/his relatives that they need to be supported for consistency with such a situation [5]. This disease can be effective mentally and physically on the person's life [6].

Stress is the set of physical, psychological, mental and behavioral reactions that organism show them against internal or external stimuli of its internal stability disruptive, and the main aim of these reactions is restore of the lost stability of the organism and compatibility with the environment[7]. According to general compatibility syndrome of Hans Selye, body physiological answer to stress happens in three stages. In danger feeling stage, sympathetic system is active, epinephrine and norepinephrine hormones are released into blood. Theses hormones cause increase of heart rate, cardiac output and blood flow to the muscles, rapid breathing and dilation of pupils that are necessary for resistance to stressor. In resistance stage, hypophysis secretes Adernokortikoterpin hormone that stimulates the adrenal glands for cortisol production. This hormone is called stress hormone. In the case of prolongation of stress, secret of stress hormones increases that can causes inappropriate effects on blood circulation, body immunity and other parts [8].

Actually psychological stresses can cause exacerbation of heart failure and ischemic through exacerbation of hart needs. Existence of some symptoms such as; heartthrob, tachycardia and angina in the moments that the person gets excited represent the effect of psychological factors on cardiology [9].

Stress can have inappropriate effects on disease prognosis and person's life quality and with increase of duration of hospital stay, it increases treatment and cardiac events cost [10]. According to the study of Rahayee et.al lack of stress control is among perceived barriers by the patients against performing preventive behaviors from myocardial infarction recurrent [11]. In one study Heidari et.al for assessing reasons of readmission of cardiac patients, perceived that stress is the first effective reason of heart disease recurrence and readmission of myocardial infarction patients [12]. Since with decrease of perceived barriers, myocardial infarction preventive behaviors increase, so in performance of myocardial infarction recurrent preventive programs, stress decrease should be in priority as one of the perceived barriers [11]. Stress decrease is among necessary aims for these patients. Although using pharmacological methods are very common in stress level decrease, it can have complications too and they also cause decrease of consciousness and cognition in the person [13]. Non-pharmacological and noninvasive methods that have no complication also do not impose a cost for the patient; have special priorities in this regard [14]. Among non-pharmacological methods that are used for stress decrease it can be pointed to massage [13]. Massage is one of the oldest methods in the world that have different types [15]. Also Key massage therapy is the most common and the safest and complementary therapies in all over the world [16]. Tactile touch is a kind of massage that according to Taylor's definition is said to skin touch with palm and fingers lobe with constant and gentle pressure in a way that fingers are sticking together, movement of the hand is slow and steady with the same speed and pressure

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without any interval [17]. Recently there were some studies for the effect of tactile touch that among them it can be pointed to the study of Henricson et.al in 2008 for assessing the effect of tactile touch on hospitalized patients in intensive care units. The results of this study showed that tactile touch causes decrease of anxiety level and decrease of blood pressure in patients [13]. Tactile touch in women with breast cancer caused decrease of nausea [18]. Olsson in one study in 2004 that had done in the patients with cerebral vascular accident perceived that their incontinence, motion and health improve with this method [19].

According to the harmful effects of stress on cardiac patients and importance of interventions for decreasing of that, this study assesses the effect of tactile touch on stress level of the patients who suffer from myocardial infarction for the first time.

2. Methods

This quasi-experimental study has been done on patients with myocardial infarction who are hospitalized in intensive care units of Alzahra (s) carduiacharity of Shiraz in 2012. After taking informed consent from the people 80 patients with myocardial infarction who had conditions of entry to the study were chosen randomly by the help of numbers table and they were in two groups of control and intervention. Criteria of entry to the study included; the age less than 70, to have ability of communication , myocardial infarction for the first time, lack of experience of skin disease and psychological diseases such as; anxiety, stress or depression and psychiatric drugs consumption …and patients who do not suffer from severe and life threatening diseases according to the doctor's diagnosis. Exclusion criteria included; complication incidence of myocardial infarction like; paroxysmal tachycardia and ventricular fibrillation.

In this study for collecting data, demographic form and DASS-21 questionnaire had been used. This questionnaire had been presented for the first time by Lovibond in 1995 [20]. Reliability and validity of these tools have been tested and confirmed by Sahebi and Moradipanah in Iran in nursing studies [21, 22]. This questionnaire has been designed in the form of Likert and has choices of never, little, moderate and many. The least score is related to every zero question and the most score is three. 24 hours after patients' hospitalization in coronary care unit, demographic questionnaire and Dass-21 were completed by the people, then for intervention group, tactile touch had been done for five days, daily for half an hour, in head, face, hand to the shoulder parts, feet to groin and back. Tactile touch is actually skin touch with palms and fingers lobe with constant and gentle pressure in a way that fingers are sticking together. For tactile at first touch is started from the organ distal parts and the pressure is doing and continued up to the proximal portions of the organ. Of course there is less pressure on the joints. Hands movement is continued constantly from distal to proximal portions. It should be attended that the movement is not in the form of reciprocating motion; it means that at the end of the organ the massager's hand has been picked up from the organ and again starts to touch organ from distal. During doing this method, hand's touch should not be cut from the person's body. Cut of this touch causes loss of sense of comfort and trust. Movements should be soft and smooth and with rhythm. Fast and erratic and sudden movements should be avoided. When small parts like face is massaging only fingers can be used. There should not be any pressure in rubbing down. Rubbing motion should always be from down towards the heart or above the thighs, arms and back. Tactile touches in patients who are women have been done by a nurse who was a woman and in men it has been done by a man who was a nurse. Technique and skill of both of the nurses have been assessed and confirmed by cardiac rehabilitation specialist. At the end patients of two groups of control and intervention completed stress assessment form.

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Data analysis had been done by statistical SPSS version 15 software and with using descriptive analytical statistic according to the aims of the study. paired t test, independent t-test, chi-square test and variance analysis have been used for determining intervention effectiveness.

3. Results

Half of the women of the study were women. 61.2% were in the age group f 41-50, 30% were in the age group of 51-60 and 8.8% were in the age group of 61-70. 65% of the patients were married, 3.75% single, 3.75% divorced, 7.5% widow and 20% did not mention their marital status. Patients of both of the groups didn't have any significant difference in age (P=0.922), gender (P=1), marital status, (P=0.06) and education (P=0.819) and they were homogeneous. Comparison of patients' stress score in control group do not show any significant difference (P=0.274) before and after intervention by the help of paired t-test. But comparison of patients' stress score in the last case group and after tactile touch shows remarkable statistical difference (P=0.001). Comparison of patients' stress average in two case and control group after intervention with the help of statistical independent t-test shows significant difference (P=0.000).

4. Discussion

Results showed that all the patients of this study had stress that this issue is justifiable according to heart sensitivity for human and threatening nature of this disease and also hospitalization and is in consistent with results of the study of Digiacomo et.al [23]. Physiologic answers to stress include; epinephrine and cortisol secretion that is for helping the person for resisting with stressor factor and maintaining body homeostasis. When the person's adaption mechanisms are not effective for decreasing stress, this stress can lead to physiological and psychological inappropriate effects like cardiovascular diseases, increase of blood pressure, weak immune, depression and many inappropriate reactions [24].

Among important problems that patients with myocardial infarction are encountered with them are psychological problems that their moods should be known and it should be tried to decrease their sadness due to that. That lack of attention to stress and psychological reactions of the patients cause extent of their disease [25]. Heidari et.al in one study for assessing reasons of cardiac patients' readmission, perceived that stress is the first effective reason in disease recurrence [12].

In this study there was significant decrease in patients' stress level of intervention group in compare with control group that indicates the effectiveness of tactile touch in decrease of myocardial infarction patients' stress. Acquired findings of this study is in confirm with the study of Henricson et.al that has been done with the aim of assessing the effect of tactile touch on stress physiologic parameters in patients who are hospitalized in ICU and caused anxiety level decrease, adrenalin secretion reduce, circulation improvement [13]. Also Abolhasani et.al had a study with the aim of determining sensory stimulations effect on myocardial infarction patients' anxiety in CCU that observed significant effect of massage for decreasing anxiety in patients [26], that findings of the present study is in consistent with that. Jarianin et.al used progressive muscle relaxation technique for decreasing stress and anxiety level of the patients who suffer from myocardial infarction that results of their study indicate that this method can cause decrease of stress and anxiety level, Systolic and Diastolic blood pressure in patients with myocardial infarction who are

Table: comparison of stress average in case and control group before and after intervention.

	Before		After		Significant
	Average	Standard deviation	Average	Standard deviation	
Intervention	17.15	2.67	9.32	2.17	0.001
Control	13.13	4.04	13.48	4.24	0.27

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hospitalized in CCU [27]. In the study which had been done with the aim of assessing life quality and its relation with stress and patients' coping method who suffer from coronary artery disease, it was clear that stress causes life quality decrease of these people and using problem--solving strategies can lead to stress decrease and at the end improve of life quality[28]. In 2005 Blumenthal et.al compared effect of stress management programs, sport and routine drug treatment for decreasing patients' stress who suffer from Ischemic Heart Diseases such as myocardial infarction. Results of this study showed that stress management programs and sport can cause decrease of stress level of these people [29].

Since massage with activating parasympathetic nervous system leads to stress hormones reduce and in result person's anxiety and stress reduce and decrease of its inappropriate physiologic effects like heart rate increase, blood pressure and respiration rate [24] and does not need special facilities and is practicable easily and does not impose a cost to the patient and does not need much time, the only nurse's tool is himself/herself. So this method can be used as a kind of massage for reducing myocardial infarction patients' stress during hospitalization in CCU.

Among posed problems for doing this intervention it can be pointed to the following cases: in the present situation there is no appropriate and standard beds in hospital units for doing massage for the patients, that this problem can cause nurse's tiredness during tactile touch and it can be said as a reason for reducing tactile touch quality for the patients. Also because of lack of a special room for every person and lack of transferring of the patients to a separated room for doing intervention because of the illness condition and treatment, there wasn't any quiet and convenient environment for doing tactile touch. Since for assessing stress level we can measure stress hormones level, and also record and assess number of the heartbeats, respiration and blood pressure, for more exact assessing of tactile touch on stress level and its physiologic parametric, measuring and assessing the said cases can have useful results.

Also since final measuring of stress level was immediately after the end of intervention period its usefulness after this period of time is not known, it is suggested that to assess the effect of this method in longer period of time after the end of intervention period in other studies. At the end it is suggested that for more confirming of the results of this study there should be other studies about this issue. Also the effect of this kind of massage in another target group and also in other physiological and psychological problems of the patients should be assessed. Anyway with existence of the limitations, acquired results of this research indicate decrease of cardiac patients' stress level after using this method.

We can be hopeful that with performing this method, valuable results can be achieved about improving cardiac patients' stress and this method can be used in nursing training, management and increase of clinical service quality. Also nursing managers should try to make some conditions in their organizations that increase nurses' confidence and with the feeling of having strength and authority, use their knowledge and authority in professional care. So culture and structure of the organization are going to be changed along with professional development and influence of nurses.

5. Conclusion

Using tactile touch in myocardial infarction patients has appropriate effects in decreasing stress level of these patients. With decreasing stress level, negative complications in the patients that are due to that are decreased.

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