



The effect of foot reflexology on physiological parameters

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ABSTRACT

Reflexology have a positive impact on stabilize the physiological parameters such as blood pressure and heart rate. This study aims to investigate the effects of foot reflexology on physiological parameters of patients before coronary angiography. This study is an interventional study performed in Kashan hospitals and 100 male patients undergoing angioplasty were randomly divided into two groups. In the intervention group for 30 minutes of foot reflexology massage and stimulate the soles of the feet in three points the solar plexus, the pituitary gland and the heart was performed, but in the control group was only Masazhmvmmy feet. The vital signs 30 minutes before and after the intervention in both groups were measured. To analyze the data, t-test and ANOVA with repeated observations was used. The mean systolic blood pressure in both groups had significant difference compared to before [0010. = p]. Diastolic blood pressure in both groups had significant difference compared to before [420. = p]. Changes in heart rate before and after the intervention had no significant difference [090. = p]. The average number of breathing in both groups had significant difference compared to before [0010. = p and 0010.> P]. Foot reflexology can sustain physiological parameters such as systolic and diastolic pressure.

Key words: Reflexology, physiological, coronary angiography

INTRODUCTION

In general, any invasive procedure on patients with stress and anxiety [1]. It's actually a physiological response of the body's natural stress and anxiety and a feeling of concern Mntshrast often sympathetic nervous system stimulation, autonomous and associated instability in these parameters [2]. The most important changes in these patients can stimulate the sympathetic system include increased blood pressure, sweating, tremor, dizziness, palpitations, arrhythmias, dysrhythmias and noted chest pain [3]. One of the aggressive actions that can be associated with instability of physiological parameters, cardiac angiography. Before performing invasive techniques such as angiography, patients can undergo physical and mental status changes [4]. Research studies on patients before angiography shows that more than 82% of patients who underwent coronary angiography are experiencing fear and anxiety that could change the physiological parameters stability [5].foot reflexology noted [6]. This simple, low-cost and side effects are rare [7].Foot reflexology is based on the method of energy throughout the body through vertical areas of the foot to the head there. So the pressure on the foot can be a reflection point on all organs,

including glands, muscles and bones, the effect [8,26]. Few studies have been done on the effect of reflexology on vital signs, so with this in mind, as well as inconsistencies in the studies [9] the effects of reflexology massage on patients' physiological parameters in the field of reflexology situation in Iran, implementing suitable non-pharmaceutical care programs such as reflexology on physiological parameters pointed out. The aim of this study was to evaluate the effect of foot reflexology on patients' vital signs is to coronary angiography.

MATERIALS AND METHODS

This study is an interventional study that was conducted in Beheshti hospital. A total of 100 male patients undergoing angioplasty were randomly divided into two groups. According to certain studies and colleagues [10] examined the effect of reflexology based on the vital signs of patients before coronary bypass surgery, standard deviation change in the average level of anxiety in two groups of 10 and 8 were considered. The number of samples in each group of 50 people and a total of 100 patients in each group were considered. Simple random sampling was done by coin toss. By taking simple random sampling, samples were numbered with numbers from 1 to 100. Then toss and the line, the first sample was randomly assigned to the experimental group. The rest of the samples were placed in groups of one to 50 samples were in each group.

Entry criteria are aware of the disease, the patient is interested in participating in the study, patients with mental retardation or blindness and deafness is not based on patient history and clinical diagnosis of disease is not known and anxiety, anti-anxiety medications in the last 48 hours is not used, avoiding the use of an anticoagulant in one week, no diabetes based on history and clinical diagnosis, lack of deep venous thrombosis (DVT) based on clinical symptoms and clinical diagnosis, lack of drug addiction, lack of foot skin infection based on clinical diagnosis and clinical evidence.

Exclusion criteria included lack of desire to continue to participate in research, create any problem that the patient is no longer able to continue to participate in the study and emergency angiography. After learning researcher foot reflexology techniques under the expert advisor the day before angiography patients in CCU wards visited Beheshti Hospital and allocated examples based on inclusion criteria and based on the toss of a coin, patients in both groups (intervention) and control group. After obtaining written informed consent of patients in the intervention and control groups and explaining the purpose and method of the study, the researchers attempted to measure vital signs in both the intervention and control groups. To measure the vital signs of a mercury manometer ALKP2 made in Japan and a number N1DF Japanese model CASIO digital clock to measure heart rate and respiratory rate were used. Vital signs (blood pressure, heart rate and respiratory rate) of all patients were measured with a pressure gauge and a clock. Before the start of the study to the reliability of the measure, barometer was calibrated by the Department of Medical Equipment. To record physiological parameters of the check list consisted of demographic variables and indices vital signs were used.

Before starting the massage, the vital signs did noted then researcher for 30 minutes of foot reflexology techniques to patients in the intervention group and a control group of simple foot massage for 15 minutes for every two feet. Room conditions, including the amount of light, color room, traffic and noise, the two groups were almost identical. During techniques for positioning of the patients in both groups was 30 degrees supine and head. First leg mass, pain and sensitivity review and then the legs to the ankles, feet, legs and the fingers on the palm and fingers massage. The move was repeated 10 times. These two techniques, relaxation techniques, which relaxes and was prepared to foot for foot reflexology techniques. So that heel and ankle support with one hand and taken away with the other metatarsal bones rotated 10 times to turn around. These two techniques, relaxation techniques, which relaxes and was prepared to foot for foot reflexology techniques. Massage therapist to perform the technique with two thumbs from the leg to the foot began. Researchers first on left foot 3 sensitive points that are the solar plexus, pituitary and heart for 2 minutes (anywhere) with the thumb placed under constant pressure. The pressure was so much that the upper third of thumb white investigator and the patient also feels the pressure but not pain.

The first points for fixed pressed for 2 minutes and then for the period were massaged. The purpose of the massage, move the thumb or other fingers rotating counter-clockwise direction without being interrupted and prolonged contact with the skin is a reflection on points. Again 30 minutes after the completion of the process, vital signs measurement and Czech list was completed. Information obtained through SPSS16.0 software using t-test, chi-square tests, t-test and ANOVA with repeated observations were analyzed.

RESULTS

In this study, 100 patients were evaluated criteria of the study, the average age of patients in both intervention and control groups, respectively $8/7 \pm 6/52$ and $6/5 \pm 8/54$ years, according to t-test, a significant difference the mean

age of both groups was not significant [11 \neq p]. The intervention group and 19 patients in the control group were 10 patients aged under 50 years and the chi-squared distribution of frequency groups were not significantly different between the two groups [07 \neq p].

In both intervention and control groups, respectively 5 and 3 were single. Fisher's exact tests on the data showed no significant difference between groups in the frequency of marital status [72 \neq p]. The two intervention and control groups, respectively, 35 and 37 were employed workers and other patients.

Chi-square test showed no significant differences in the employment situation in the two groups [66 \neq p]. Angiography in 40 patients in the intervention group and 30 patients from the control group, the type of diagnosis. The two groups, respectively 10 and 20 patients underwent coronary angiography were taken for treatment. The t-test was performed on the data, due angiography intervention and control groups, a significant difference ($p=0/029$).

Table 1: Mean and standard deviation of systolic blood pressure before and after the intervention and control groups

Group Time	Intervention	control	P
Before intervention	121/6 \pm 12/2	126/8 \pm 9/6	0.02
After intervention	118/5 \pm 10/9	122/6 \pm 9	0.04
P	<0.001	<0.001	----
Difference before and after intervention	3/1 \pm 3	4/2 \pm 2/9	0.027

Table 2: Mean \pm SD diastolic blood pressure before and after the intervention and control groups

Group Time	Intervention	control	P
Before intervention	63/2 \pm 9/6	66/9 \pm 7/1	0.03
After intervention	63/3 \pm 9/2	66/7 \pm 7	0.04
P	0.66	0.42	----
Difference before and after intervention	3/1 \pm 3	4/2 \pm 2/9	0.034

Table 3: Mean \pm SD heart rate before and after the intervention and control groups

Group Time	Intervention	control	P
Before intervention	80/9 \pm 5/4	79/2 \pm 4/4	0.082
After intervention	78/9 \pm 5/3	77/4 \pm 3/9	0.11
P	<0.001	<0.001	----
Difference before and after intervention	2/02 \pm 1/9	1/78 \pm 1/6	0.09

Table 4: The mean respiratory rate before and after the intervention and control groups

Group Time	Intervention	control	P
Before intervention	15/5 \pm 1/4	15/3 \pm 1/2	0.49
After intervention	15/1 \pm 1/1	14/8 \pm 0/95	0.13
P	0.001	<0.001	----
Difference before and after intervention	----	----	0.25

DISCUSSION

The overall objective of this study was to determine the effect of foot reflexology on patients' vital signs before coronary angiography . Results showed a significant difference between systolic blood pressure to intervene in the two groups was significant that The findings was consistent with the study by the Holland [11], Cambron[12] and Abdi [13] and colleagues based on significant reduction in systolic blood pressure before and after the intervention. But the study by Wang's study [14], Hatan [15] and Hayes [16] and colleagues did not match .This discrepancy could be due to the duration of the massage because the studies were not consistent with the results of the present study was less time massage. Baseline diastolic blood pressure between the two groups was statistically significant findings by the Holland [11], cambron [12], Abdi [13]and Afzali [17]and associates of significant pressure reduction diastolic blood before and after the intervention But the study of Ejindu and colleagues [18] that there is no significant difference in diastolic blood pressure before and after intervention foot reflexology not match.

The average heart rate in both groups was not significant to the study Kuhn [19], Wang [14] and Abdi consistent with the findings of the study, but Taghizadeh [20], Shermeh [21], Jones [22] and Albert [23] and colleagues did not match that of the non-conformance can measure the duration and foot massage is the time to register vital signs after the massage.

The mean respiratory rate before the intervention and control groups was not significant between the two groups that consistent with Hughest study [24], Jones [22], Albert [23] and Shermeh [21] and Taghizadeh [20] but consistent with Sadeghi study [25] was non consistent. Of course, as in this study, in fact, a vital indicator changes during the intervening period, the presence or absence of significant difference between the two groups before intervention there was no objection and given that in this study, analysis of covariance (ANOVA with repeated observations) is used, these differences will not affect the study results.

Average systolic blood pressure after intervention in both groups was significantly different from that with findings from the Holland [11], Cambron [12] and Abdi [13] and colleagues. Mean diastolic pressure after the intervention and control groups was significant intervention that consistent With findings from the Holland[11], Cambron [12], Abdi [13] and Afzali [17] based on significant reduction in diastolic blood pressure before and after the intervention. The average heart rate after treatment in the two groups were not significantly different. The mean respiratory rate after treatment in the two groups were not significantly different.

CONCLUSION

Most studies of reflexology massage has a positive effect on reducing hemodynamic variables such as blood pressure and heart rate and given the complications and limitations of drug therapy, the use of these techniques can be useful in patients before angiography. The results of this study that the positive effect of foot reflexology on blood pressure and reduces the amounts used. But no have positive effect on heart rate and respiratory rate. Foot reflexology to reduce blood pressure in patients before angiography, which can be caused by things like stress, fear of the unknown procedure and the procedures.

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