

The impacts of foot reflexology on anxiety among male candidates for coronary angiography: A three-group single-blind randomized clinical trial

Farhad Ramezianbadr^a, Kouros Amini^{b,*}, Kayvan Hossaingholipor^a, Sograt Faghihzadeh^c

^a Department of Critical Care Nursing, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran

^b Zanjan Social Determinants of Health Research Center, Zanjan University of Medical Sciences, Zanjan, Iran

^c Department of Biostatistics, Zanjan University of Medical Sciences, Zanjan, Iran

1. Introduction

Cardiovascular disease (CVD) is currently the first leading cause of death worldwide [1]. At the beginning of the 21st century, 25% of all deaths in developed countries were due to CVD [2,3]. Besides, CVD has been known as a major cause of disability in the world [4]. Moreover, its treatment includes different types of medical and surgical treatments and thus, it incurs huge costs to communities and individuals [5]. Studies show that CVD is also the commonest and the most important cause of preventable death in Iran, with a death rate of more than 40% [6].

The most well-known diagnostic technique for diagnosing coronary artery disease is angiography [7]. However, like other medical procedures and interventions, angiography is also associated with different adverse effects. For instance, most patients who are candidates for angiography experience high levels of anxiety [8–11], so that anxiety is considered as one of the most common pre-angiography psychological problems. A study reported that 50% of the candidates for angiography suffer from pre-angiography anxiety [8].

Anxiety can adversely affect physical and mental functioning [12]. It enhances sympathetic activity and thereby, increases heart and respiratory rates, blood pressure, cardiac workload, and myocardial oxygen demand [13], and results in cardiac arrhythmias [14]. Moreover, it causes thrombosis formation through stimulating catecholamine release, damaging arterial walls, and impairing platelet function. It can also affect patients' attitudes towards care services, their expectations, their decision-making ability [13,14], and angiography and treatment outcomes [17–19]. Therefore, effective anxiety prevention and management, particularly through non-pharmacological interventions, are needed to improve patient outcomes [10,15].

There are different non-pharmacological therapies for anxiety management, including massage, relaxation, music, social support, and reflexology [16–18]. As a complementary therapy, reflexology is the gentle massage of the feet, hands, and ears [15,19–23]. Previous studies reported conflicting findings about the effectiveness of foot reflexology in alleviating anxiety among patients who undergo different cardiac

procedures. Some studies showed that the technique has positive effects on cardiac patients' procedural anxiety [24], while some others reported the ineffectiveness of the technique [25,26] [26].

Due to the methodological limitations [33] and the contradictory results of previous studies, some scholars highlighted the necessity for further studies in this area [25–28]. These limitations include, but are not limited to, small sample size and failure to eliminate the confounding effects of gender, prescribing physician, and therapist's presence. The present study was made to provide further evidence concerning the effectiveness of foot reflexology. The aim of the study was to investigate the impacts of foot reflexology on anxiety among male candidates for coronary angiography.

2. Methods

2.1. Design

This study was a three-group single-blind randomized clinical trial.

2.2. Participants

Sample size was calculated by using the sample size calculation formula for experimental studies as well as the results of a similar study [29]. Based on an alpha of 0.05, a beta of 0.80, an effect size of 0.8, and an attrition rate of 15%, it was determined that 50 patients were needed for each study group. Therefore, 150 male candidates for undergoing coronary angiography were conveniently recruited to the study from a total of 213 patients who referred to the study setting for undergoing angiography. The inclusion of only male candidates was due to the fact that the interventionist in this study was a male nurse who, based on cultural and religious beliefs in Iran, could not touch female patients for the purpose of reflexology. Moreover, the inclusion of only male candidates helped us remove the effects of confounders such as gender and multiple interventionists. Sampling was performed during a 120-day time period from 28 February, 2017 to 25 June, 2017. Participants were randomized through block randomization to the three groups of

* Corresponding author.

E-mail address: korosh@zums.ac.ir (K. Amini).

experimental, placebo, and control.

Patients were included if they aged 40–80, were completely conscious and not addicted to opioids (based on the data retrieved from their medical records and healthcare providers), had neither health problems nor arterial line in the feet, suffered from no bleeding or mental disorders, received no anxiolytic agent during the past 48 h before the intervention, experienced neither bradycardia nor hypotension, used no pacemaker, participated in no other simultaneous trial, had no history of diabetes mellitus for more than ten years, and obtained a score of greater than 40 for the state subscale of Spielberger's State-Trait Anxiety Inventory. All patients were treated by one prescribing physician.

2.3. Procedure

Each day during sampling, we primarily generated a list of patients who were going to undergo coronary angiography at the next day and identified eligible patients. Then, a research assistant completed the Spielberger's State-Trait Anxiety Inventory for eligible patients through interviewing them at the morning of their angiography (between 06:00 to 08:00).

2.4. Measures

Data were collected using a two-part questionnaire. The first part contained items on participants' demographic characteristics including age, educational and marital status, place of residence, employment, living alone or with family, and previous history of physical health problems. The second part was Spielberger's State-Trait Anxiety Inventory. This inventory includes two subscales which measure state and trait anxiety. The state anxiety subscale comprises twenty items that evaluate feelings at the current moment. The trait anxiety subscale also consists of twenty items which assess general and usual feelings. Trait anxiety is a personality trait which can significantly affect state anxiety. Therefore, trait anxiety was considered in this study as a confounder and its measurement was done for the purpose of controlling its confounding effects. The Persian version of the inventory (generated through the process of forward and back-translation) was reported in an earlier study to have acceptable content validity and reliability [30].

The items of the state anxiety subscale are scored on a four-point scale as follows: "Not at all": 1; "Sometimes": 2; "Usually": 3; and "Very much": 4. Ten items of this subscale are scored reversely. The total score of this subscale ranges from 20 to 80 and is interpreted as follows: 20–29: mild anxiety; 30–49: relatively mild anxiety; 50–69: relatively severe anxiety; and 70–80: severe anxiety. As most of the participants had poor literacy skills, a research assistant who was blind to the groups was invited to interview the participants and complete the questionnaires.

2.5. Manipulation

Patients in the experimental group received foot reflexology from the third author (KH), who had passed a one-year reflexology course in a faculty of Iranian Traditional Medicine in Iran and had a five-year work experience in providing reflexology. Reflexology was provided through compressing and stimulating the solar plexus, heart, and pituitary reflex points at the plantar surface of participants' feet (Fig. 1). According to the principles of reflexology [19], these points can contribute to anxiety [19]. Each participant received reflexology for 20 min. The level of state anxiety was reassessed by the research assistant both 1 h after foot reflexology and immediately before being transferred to angiography room.

Patients in the placebo group received the same reflexology intervention as their counterparts in the experimental group. However, instead of the solar plexus, heart, and pituitary reflex points, the first

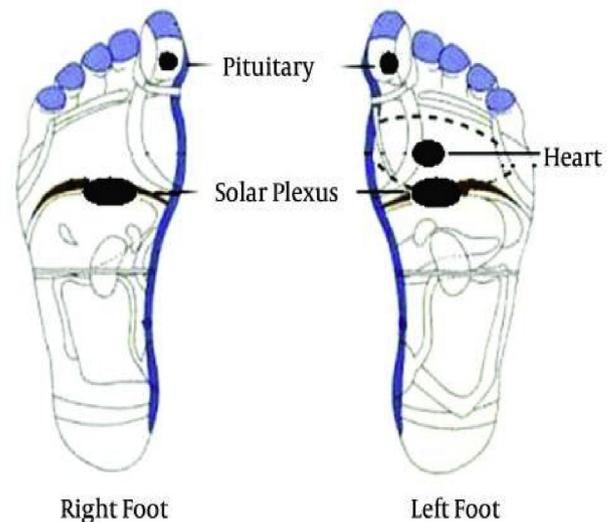


Fig. 1. Solar plexus, heart, and pituitary reflex points (19).

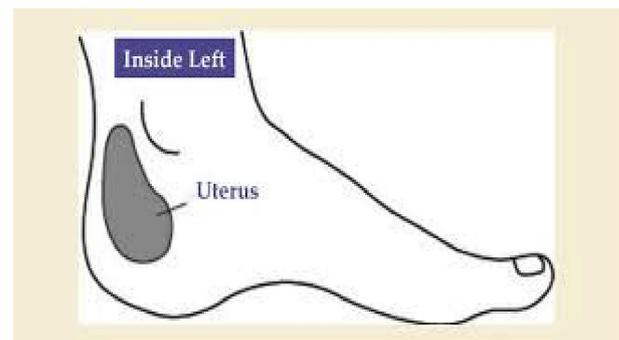


Fig. 2. Uterus reflex point.

author massaged the uterine reflex point at their feet (Fig. 2). Finally, the state anxiety subscale of Spielberger's inventory was recompleted for these patients at the aforementioned measurement time points.

Patients in the control group received no reflexology intervention. Rather, the first author attended their bedside and answered their questions. Then, the level of their anxiety was assessed at the same time points as the patients in the experimental and the placebo groups.

2.6. Ethical considerations

The target population of the study consisted of male candidates for undergoing coronary angiography who referred to Mousavi Hospital as one of the largest teaching hospital in the Northwest of Iran. Ethical approval for this study was obtained from the Ethics Committee of a local university (approval code: ZUMS.REC.1394.145). Informed consent was obtained from all participants.

2.7. Statistical analyses

The SPSS program v. 22.0 was used to analyze the data. The distributions of all study variables were normal and thus, the one-way analysis of variance (ANOVA) and the Chi-square tests were used for comparing the groups in terms of the demographic characteristics and the baseline values of state and trait anxiety. Moreover, the repeated measure ANOVA and the Tukey's post hoc test were used to assess the variations of state anxiety score in each group and also to compare the groups in terms of the variations of state anxiety score across the three measurement time points.

Download English Version:

<https://daneshyari.com/en/article/8563033>

Download Persian Version:

<https://daneshyari.com/article/8563033>

[Daneshyari.com](https://daneshyari.com)