

Research Paper

Effect of Acupressure on Stress and Anxiety of Patients with Multiple Sclerosis: A Sham-controlled Randomized Clinical Trial



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ABSTRACT

Objective Stress and anxiety are common in patients with Multiple Sclerosis (MS). These complications exacerbate the symptoms of MS. This study aims to evaluate the effect of acupressure on stress and anxiety of MS patients.

Methods In this randomized clinical trial, participants were 106 MS Patients referred to Multiple Sclerosis Society in Mashhad, Iran. After signing an informed consent form, they completed a demographic form and stress, and the Depression Anxiety Stress Scale - 42 items (DASS-42). Then, they were randomly assigned into intervention and sham groups by tossing a coin. Participants in the intervention group were asked apply a pressure on the Shenmen and Yin Tang acupoints for one month (once per day for 15 minutes), while the sham group applied pressure 2.5 cm below the Shenmen acupoint and 3 cm above the Yin Tang acupoint. Participants in each group were then completed the DASS-42 again one hour after the final session. Data were analyzed using chi-square test, Kolmogorov-Smirnov test, independent t-test, and Paired t-test.

Results In the intervention and sham groups, there was no statistically significant difference between the mean pre-test scores of stress (34.73 ± 5.80 vs. 33.06 ± 6.42) and anxiety (27.09 ± 6.99 vs. 25.31 ± 6.88), and neither between the mean post-test scores of stress (29.20 ± 6.21 vs. 33.73 ± 9.44) and anxiety (22.79 ± 5.68 vs. 25.21 ± 6.72) ($P > 0.05$). However, comparison of DASS-42 scores between groups showed that the mean scores of stress and anxiety in the intervention group were significantly lower than in the sham group ($P < 0.05$).

Conclusion It seems that acupressure can be used along with other therapeutic and pharmacological interventions to reduce stress and anxiety in patients with MS.

Extended Abstract

1. Introduction

The most common demyelinating neurological disease in the world is Multiple Sclerosis (MS) [1]. MS, in addition to physical com-

plications, causes psychological problems such as stress and anxiety on patients [9, 10]. In Iran, the prevalence of stress and anxiety is 44.8% and 39.1% respectively [13]. Stress and anxiety aggravate the symptoms of MS and reduce the quality of life of these patients [15, 16, 19, 20]. People with MS usually do not use anti-stress and anti-anxiety medications due to side effects and financial costs [21, 22]. There-

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fore, it seems that treatment methods such as acupressure should be provided to patients with MS [24]. In acupressure, to treat some diseases and induce relaxation, certain acupoints on the body skin are put under pressure with a finger or non-invasive tool [25]. The results of studies on the effect of acupressure on stress and anxiety of different patients are inconsistent [27-34]. There is also no strong evidence that acupressure is effective in improving or reducing stress and anxiety in people with MS [35]. Therefore, conducting more studies to investigate the effect of acupressure on stress and anxiety in patients with MS can help to gather more evidence and expand the related knowledge. In this regard, the present study was conducted to determine the effect of acupressure on stress and anxiety in patients with MS.

2. Materials and Methods

The present study is a clinical trial conducted on 53 patients with MS. A demographic form and the Depression Anxiety Stress Scale - 42 items (DASS-42) were used for collecting data from participants before study. They were then randomly and evenly assigned to the intervention and sham groups. Participants in the intervention group were asked to apply a pressure of 2-3 kg to the Yin Tong and Shenmen acupoints using the thumb pulp [22, 23]. The method of applying pressure on the mentioned acupoints as well as the correct amount of pressure (2-3 kg) were explained and taught using a digital scale. Participants were asked to perform the intervention every day from 9 to 10 am for a month, first on Shenmen acupoint of the right hand (5 minutes), then on Shenmen acupoint of the left hand (5 minutes) and finally on the Yin Tang acupoint (5 minutes). The intervention in the sham group was similar to the intervention group; the difference was that the participants in this group pressed 2.5 cm below the Shenmen acupoint (towards the arm) and 3 cm above the Yin Tong acupoint. One day after the intervention, the

DASS-42 was completed again. In order to analyze the data, frequency and percentage were used for description; paired t-test was used for within-group comparison; and independent t-test for between-group comparison and comparison of changes in mean scores of stress and anxiety.

3. Results

Before the intervention, there was no statistically significant difference between the two groups in terms of demographic variables and mean scores of stress and anxiety ($P>0.05$) (Table 1). In the intervention group, the results of paired t-test showed that the mean scores of stress and anxiety decreased significantly after acupressure ($P<0.001$). The results of independent t-test showed no statistically significant difference between the mean scores of stress and anxiety in the two groups after acupressure ($P>0.05$) (Table 1). However, comparing the changes in the mean scores of stress and anxiety between the two groups, results showed that the mean scores of stress and anxiety in the intervention group were significantly lower than in the sham group ($P<0.001$) (Table 2).

4. Conclusion

The results of the present study showed that the application of acupressure in Yin Tong and Shenmen acupoints was effective in reducing stress and anxiety in patients with MS. The results of Hmwe et al. and Fassoulaki et al. are in line with the results of the present study [22, 24]. Kwan et al. and Sand-Jecklin et al. showed that the application of acupressure reduces patients' stress [14, 15], while Honda et al. reported that acupressure does not reduce students' stress in a short period [16]. Regarding the effect of acupressure on anxiety, Koo et al. showed that acupressure reduces anxiety in women undergoing cesar-

Table1. Comparison of stress and anxiety scores in groups before and after intervention

Variables	Mean±SD		Test Results ^a
	Intervention	Sham	
Stress	34.73±5.80	33.06±6.42	t=1.10, P=0.27
	29.20±6.21	33.73±9.44	t=1.71, P=0.09
Test results ^b	t=7.09, P<0.001	t=0.67, P=0.51	
Anxiety	27.09±6.99	25.31±6.88	t=1.12, P=0.25
	22.79±5.68	25.21±6.72	t=1.64, P=0.08
Test results ^b	t=6.28, P>0.001	t=2.10, P=0.04	

^aIndependent sample t-test; ^bPaired t-test; SD: Standard Deviation.



Table 2. Comparison of mean stress and anxiety scores between groups

Variables	Mean±SD		Test Results ^a
	Intervention	Sham	
Stress	-5.52±5.16	0.67±5.71	t=4.89, P<0.001
Anxiety	-4.29±4.53	-0.25±0.67	t=5.83, P<0.001

^aIndependent sample t-test; SD: Standard Deviation.



can section [25]. Mansourzadeh et al. also showed that acupressure reduces anxiety [17]. The results of Dehghan Mehr et al. and Ganak et al. are also consistent with our results [18, 19]. However, Vali et al.'s study showed that acupressure does not reduce preoperative anxiety [20].

One of the disadvantages of the present study was its relatively small sample size. The selection of samples from one center was another disadvantage. It is recommended that the effect of pressure of other acupoints in acupressure on stress and anxiety of patients with MS be investigated in future studies. It is also recommended to compare other complementary medicine methods such as aromatherapy combined with acupressure on stress and anxiety of MS patients. Applying acupressure to Shenman and Yin Tong acupoints, in addition to other medications and therapies, can reduce stress and anxiety in people with MS.

Ethical Considerations

Compliance with ethical guidelines

This study has an ethical approval (Code: IR.BUMS.REC.1398.218) and is a registered clinical trial (Code: IRCT20190515043601N5). All patients were free to leave the study at any time, and were assured of the confidentiality of their information.

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Authors' contributions

Conceptualization: Hossein Rahimi and Seyed Abolfazl vaghar Seyedin; Editing & review: Nasim Mehrpooya; Data analysis: Nasim Mehrpooya and Hossein Rahimi; Data collection: Zahra Rezaei; Intervention design: Hamid Reza Bahrami Taghanaki and Mohammad Ali Nahayati.

Conflicts of interest

The authors declare no conflict of interest

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