

Effects of SP6 and ST36 Acupressure on Pain and Physiological Indexes in Addicted Men: A Single-Blind Randomized Clinical Trial

Yaghoob Madmoli¹, Dariush Rokhafroz¹, Kouros Zarea², Elham Maraghi³

Original Article

Abstract

Background: Pain is the most crucial reason to seek treatment, and acupressure is one of the most common ways to relieve pain; therefore, this study was conducted with the aim to investigate the effectiveness of acupressure on the reduction of pain and stability of physiological indexes in addicted men.

Methods: The present single-blind, randomized, clinical trial was performed on 90 participants who were hospitalized in an addiction treatment camp in Masjed-e-Soleyman, Iran. The participants were divided into acupressure group (n = 45) and control group (n = 45) through allocating permutation blocks method. The acupressure group received acupressure on SP6 and ST36 points for 3 consecutive sessions and each session for 10 minutes. The data collection tools used included a demographic information questionnaire, the Short-Form McGill Pain Questionnaire (SF-MPQ), and a physiological index registration form, tympanic thermometer, sphygmomanometer, pulse oximetry device, and digital watch. Repeated measures ANOVA was used to analyze the data. $P \leq 0.05$ was considered statically significant.

Findings: There was a statistically significant decrease in the sensory dimension of pain in the acupressure group compared to the control group in all 3 sessions ($P \leq 0.001$; $P \leq 0.001$; $P = 0.001$, respectively). There was no statistically significant difference in the overall pain score ($P \geq 0.005$), emotional pain dimension ($P \geq 0.005$), and physiological indexes of pain ($P \geq 0.005$) between the two groups after the intervention.

Conclusion: Acupressure is a non-invasive and cost-effective method that reduces the sensory dimension of pain, and its application does not require special tools; thus, the use of such a safe and secure method for relieving pain is recommended.

Keywords: Acupressure; Pain; Opium dependence

Citation: Madmoli Y, Rokhafroz D, Zarea K, Maraghi E. **Effects of SP6 and ST36 Acupressure on Pain and Physiological Indexes in Addicted Men: A Single-Blind Randomized Clinical Trial.** *Addict Health* 2022; 14(1): 52-61.

Received: 15.08.2021

Accepted: 22.10.2021

1- Pain Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

2- Nursing Care Research Center in Chronic Diseases, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

3- Department of Biostatistics and Epidemiology, School of Health, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

Correspondence to: Dariush Rokhafroz; Pain Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran; Email: darushrokhafroz@gmail.com

Introduction

Addiction is a chronic disorder associated with substance abuse.^{1,2} Drug abuse and dependence is one of the most critical psychosocial health challenges.^{3,4} Addiction is one of the problems of the international community,⁵ especially in developed countries and developing countries, which lead to wasting of national capital.⁶ Moreover, addiction is one of the most essential factors in the disruption of order and security of society.⁷ Overall, the estimated annual rate of illicit opioid and cannabis use reported in the 2017 United Nations World Drug Report is 0.37% (approximately 28 million) and 3.8% (approximately 226 million), respectively.⁸ According to the same report, the prevalence of opioid drug use in the Middle East and Southwest Asia is estimated at 1.4%. In addition, studies on addiction in Iran have shown that the prevalence of drug abuse in the Iranian population is 2% and 3%.⁹

Being caught in the trap of addiction reduces the quality of life (QOL), increases the mortality rate, decreases social values, and increases criminal behaviors.¹⁰ Moreover, addiction has adverse effects on the physical, psychological, social, and spiritual functions of individuals.¹¹ In a person who has been using drugs for a long time, withdrawal symptoms appear after stopping or reducing their use, which includes severe muscle pain and cramps (especially in the limbs), abdominal cramps, depression, anxiety, increased heart rate, and blood pressure, and irregular body temperature.^{12,13}

Pain is the experience of an unpleasant emotional sensation that results from actual or potential tissue damage and is the most common reason for seeking health care.¹⁴ Pain relief reduces physiological instability, hormonal and metabolic stress, and behavioral reactions to painful procedures.¹⁵ In general, pain management includes all pharmacological and non-pharmacological methods performed to prevent, reduce, or alleviate pain.¹⁶ Nevertheless, the critical point is that the pain caused by addiction withdrawal has a different nature and has physiological, physical, and psychological components that distinguish it from other pains, and therefore, the response to this kind of pain requires different treatments that reduce QOL.¹⁷

In recent years, non-pharmacological methods, known as "complementary medicine", have

attracted much attention.¹⁸ Complementary medicine is holistic and meet the unidentified needs of patients. It also complements standard medical treatment.¹⁸ In Iran, about 42% of people use complementary medicine.¹⁹ A complementary medicine technique that is easily applicable is acupressure.²⁰ This method is noninvasive and uncomplicated.²¹ This method is safe and can even be done by the patient him/herself. Another advantage of this method is that it does not require special equipment and does not impose costs.²² In this method, acupuncture points are stimulated using pressure and massage to accelerate and control the body's functions through stimulating energy channels.²³ There have been reports that acupressure can be effective in relieving pain, reducing anxiety, and controlling vital signs, but further studies with detailed findings are needed to confirm this statement.²⁴ There are several points in acupressure, including Sanyinjiao and Zusanli. SP6 or Sanyinjiao, 3 cm above the inner ankle of the foot behind the posterior edge of the tibia, is one of the most important and commonly used points. ST36 or Zusanli point, one finger laterally, at the lower edge of the tibial tuberosity, 3 cm below the knee joint, which is associated with a wide range of effects such as analgesic and antispasmodic effects.²⁵

Pain is one of the challenges for patients and staff of health care systems, especially nurses, so finding ways to reduce the severity of pain can reduce nurses' concerns. If nurses can find inexpensive and easy solutions to reduce pain, they will be able to help improve the quality of care provided to patients and reduce patients' pain, and thus, improve their QOL and increase their life satisfaction.²⁶ Some studies have shown that pain manifests itself in the form of changes in vital signs such as heart rate and blood oxygen saturation levels, large fluctuations in blood pressure, and increased restlessness.²⁷ Furthermore, because self-report tools that determine the severity of pain based on the patient's reports may not be valid enough for a variety of reasons, such as lack of cooperation of the patient or changes in his or her level of consciousness, professionals are more likely to evaluate pain by more objective criteria such as physiological and vital signs.²⁸ Therefore, measuring physiological indexes in pain-related studies will be an excellent tool for the evaluation

of the effectiveness of an intervention.

As mentioned above, the nature of pain in addicts is different from other people; in addition, acupressure is a noninvasive, safe, and cost-effective method. Considering these facts and the lack of a study on the effect of acupressure on SP6 and ST36 points on pain in addicts and the essential role of the nurse in relieving pain and monitoring vital signs and physiological parameters, this study was performed to determine the effect of acupressure on pain and physiological indexes in addicted men living in addiction treatment camps.

Methods

Design and participants: The present study was a single-blind clinical trial that was conducted to determine the effect of acupressure on pain and physiological indexes in addicted men living in addiction treatment camps. The study participants consisted of addicted men who had a history of opium, opium juice, and heroin addiction, were treated with methadone, and lived in Masjed-e-Soleyman addiction treatment camp, Iran. The inclusion criteria were as follows: (a) informed and written consent to participate in the study, (b) no history of peripheral neuropathy, (c) no liver disease, (d) no skin disease, (e) no fracture in the ankle to knee area, (f) no history of using acupressure, and (g) absence of an open wound, especially in the reflex points. If individuals did not want to continue the treatment and were absent from one of the sessions, they would be excluded from the study.

According to the findings of previous studies,¹⁶ which stated that the intensity of pain in the intervention group was 20% lower than the control group and by considering $\beta = 0.9$, $\alpha = 0.05$, S_1 and $S_2 = 1.42$, and $d = 25.59$, the sample size in each of the intervention and control groups was 43 individuals. By considering a 5% loss of samples in each group, 45 participants were included in each study group. Participants were divided into intervention and control groups through the sampling method of permuted block technique. The intervention was assigned to individuals randomly through random permuted block technique with block size 6 (using the table related to random permutations). The randomization list was prepared by a statistician. The intervention used in this study was performed according to a

randomized list by an individual who was not a part of the study and was unaware of the research objectives. The corresponding codes were also placed in sealed envelopes and assigned to each participant who entered the study. The intervention site consisted of the separate rooms in the addiction treatment camp, which were controlled in terms of light, sound, and other environmental stimuli and were the same in both groups.

Instruments and data collection: The following tools were used to collect data:

1) The demographic information questionnaire consisted of questions regarding age, level of education, marital status, occupation, place of residence, type of addiction, duration of drug use, and the number of drug withdrawal times by participants.

2) The SF-MPQ was used to measure the participants' pain. The MPQ was developed in 1975 and has been widely used to assess pain.²⁹ The SF-MPQ was used in the present study. The main component of the SF-MPQ consists of 15 descriptors (11 sensory and 4 affective) that are rated on an intensity scale ranging from 0 to 3 (0 = none, 1 = mild, 2 = moderate, and 3 = severe); 3 pain scores are derived from the sum of the intensity rank values of the words chosen for sensory, affective, and total descriptors. The SF-MPQ is a useful tool in situations wherein the standard MPQ takes too long to administer. Higher scores on the questionnaire indicate greater severity and perception of pain. The minimum and maximum total score of the SF-MPQ is 0 and 78, respectively.

3) The physiological indexes chart includes heart rate per minute, systolic and diastolic blood pressure, respiration rate per minute, body temperature, and arterial blood oxygen saturation.

4) A tympanic thermometer (Beurer GmbH, Germany) was used to measure body temperature.

5) An analog sphygmomanometer (Beurer GmbH, Germany) was used to measure blood pressure.

6) A portable pulse oximeter device (ChoiceMMed C2) was used to measure heart rate and oxygen saturation of the arterial blood.

7) A digital watch (Casio, Tokyo, Japan) was used to calculate time.

Equivalent reliability was used to determine the reliability of devices; each morning, the patient's blood pressure, heart rate, and

respiration rate were measured with a mercury sphygmomanometer, radial artery palpation, and chest observation, respectively, count the number of breaths and compare the results. It should be noted that the devices were calibrated after each measurement of physiological indexes. Adelmanesh et al.³⁰ confirmed the validity of the MPQ and calculated the reliability of all its dimensions using Cronbach's alpha coefficient (range: 0.83-0.87).

Intervention: The intervention was performed for 3 consecutive days, 3 times a day, each time for 10 minutes (each foot for 5 minutes) on ST36 and SP6 points simultaneously by applying pressure using the thumb.²⁵ In the intervention group, touch was performed symmetrically and simultaneously. Moreover, direct and deep pressure was applied on each of the points (ST36 and SP6) for 5 minutes. The pressure on the acupuncture points was so great that the participant felt mild pain and burning in that area.

The SP6 or Sanyinjiao point is located 3cm above the inner ankle behind the posterior edge of the tibia, and the ST36 or Zusanli point is one finger wide on the side with the lower side of the tibial tuberosity, 3cm below the knee joint (Figure 1). (Figure 1).¹⁸ In the control group, only a light touch was implemented at points adjacent to ST36 and SP6 points simultaneously.

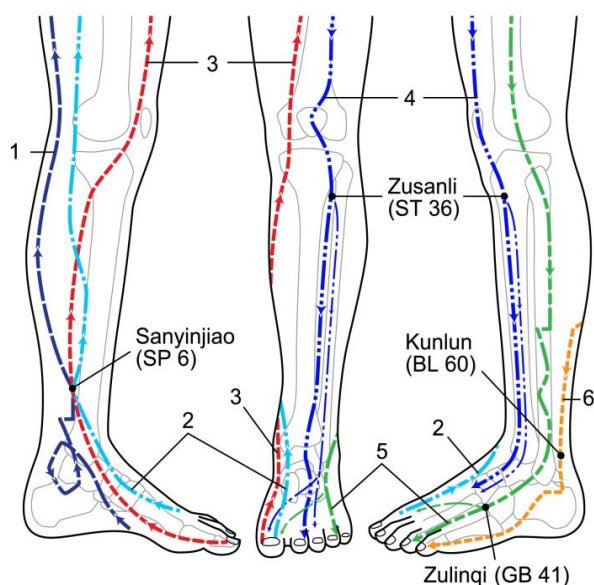


Figure 1. Designations of the pressure points used for acupressure in the study

Comparison of pain and physiological indexes

was made before the intervention (T0), immediately after the intervention (T1), 24 hours after the intervention (T2), and 48 hours after the intervention (T3) in the intervention and control groups and was recorded in the relevant checklist. It should be noted that the researcher (Master's student of nursing) passed a training course in acupressure under the supervision of a professor of traditional medicine, and all research was conducted under his supervision.

Data were analyzed using the Statistical Package for Social Sciences (SPSS) software (version 21, IBM Corp., Armonk, NY, USA). Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to describe the participants' characteristics, and two-way repeated measures ANOVA was conducted to assess pain and physiological indexes within and between groups over time. Moreover, t-test and chi-square test were used to compare the intervention and control groups in terms of demographic characteristics, and pain and physiological indexes before the intervention. P-value ≤ 0.05 was considered significant.

The study was approved by the Research Committee of Joundishapour University of Medical Sciences, Iran (IR.AJUMS.REC.1397.455).

- The participant was informed about the aims and methods of the study.
- Written consent for participation was obtained from all participants.
- Confidentiality was observed.
- The proposal was registered in the Iranian Registry of Clinical Trials (www.irct.ir/; Registration number: IRCT20170117032023N2).
- In the control group, after the intervention, the treatment was performed if desired.

Results

The current study was performed on 90 participants 45 of whom were in the intervention group and the other 45 were in the control group.

Baseline measures: Table 1 shows the baseline measures of participants in the experimental and control groups. The mean age of the participants in the intervention and control group was, respectively, 33 ± 8 years (min: 20; max: 58) and 34.06 ± 8.00 years (min: 21; max: 58). Opium juice was the most commonly used drug in both groups. In the intervention group, 33.3% of the participants and in the control group, 31.1% of the participants were addicted to opium juice.

Table 1. Comparison of the baseline characteristics of participants

Baseline measures	Intervention (n = 45) [n (%)]	Control (n = 45) [n (%)]	P
Duration of use (year)			
1-5	21 (47.0)	20 (44.0)	0.87
6-10	15 (33.0)	14 (31.0)	
11-15	5 (11.0)	7 (15.0)	
16-22	4 (9.0)	4 (9.0)	
Frequency of drug withdrawal (times)			
1-2	22 (49.0)	25 (55.0)	0.38
3-4	13 (29.0)	13 (29.0)	
5-6	7 (15.0)	7 (15.0)	
7-8	3 (8.0)	0 (0)	
Marital status			
Single	25 (55.6)	23 (51.1)	0.90
Married	20 (44.4)	22 (48.9)	
Level of Education			
Illiterate	5 (11.1)	5 (11.1)	0.93
High school	16 (35.6)	15 (33.3)	
Diploma	16 (35.6)	18 (40.0)	
Graduate and higher	8 (17.8)	7 (16.6)	
Employment status			
Unemployed	4 (8.9)	6 (13.3)	0.73
Employed	41 (91.1)	39 (86.7)	
Type of addiction			
Opium	12 (26.7)	9 (20.0)	0.77
Opium Juice	15 (33.3)	14 (31.1)	
Heroin	12 (26.7)	13 (28.9)	
Others	6 (13.3)	9 (20.0)	

Moreover, 47.0% of the participants in the experimental group and 44.0% of the participants in the control group had been addicts for 1 to 5 years. The results of this study showed that both groups were homogeneous in terms of baseline measures ($P > 0.05$) (Table 1).

The effectiveness of acupressure therapy on pain according to SF-MPQ dimensions: The mean scores

obtained at the pre-intervention (T0), immediately post-intervention (T1), 24 hours post-intervention (T2), and 48 hours post-intervention (T3) stages were used for analysis. The results revealed that there was a statistical difference between the intervention group and control group regarding the emotional dimensions of SF-MPQ at T1 ($P = 0.001$), T2 ($P < 0.001$), and T3 ($P < 0.001$) (Table 2).

Table 2. The results of the Short-Form of McGill Pain Questionnaire (SMPQ) for the intervention and control groups

Type of perception of pain	Intervention (n = 45) (mean \pm SD)	Control (n = 45) (mean \pm SD)	P
SMPQ			
T0	43.29 \pm 16.21	39.73 \pm 15.26	0.280
T1	37.93 \pm 16.26	39.98 \pm 15.25	0.540
T2	38.33 \pm 15.23	41.47 \pm 15.03	0.320
T3	36.84 \pm 14.76	41.67 \pm 15.11	0.120
SMPQ sensory			
T0	22.40 \pm 13.10	18.09 \pm 12.48	0.110
T1	20.96 \pm 12.17	17.13 \pm 12.10	0.110
T2	21.46 \pm 12.06	17.53 \pm 11.27	0.090
T3	20.80 \pm 11.66	17.15 \pm 10.82	0.130
SMPQ emotional			
T0	7.84 \pm 3.20	9.04 \pm 3.49	0.060
T1	6.98 \pm 2.91	9.40 \pm 3.60	0.001*
T2	6.55 \pm 2.75	9.86 \pm 3.78	< 0.001*
T3	6.15 \pm 2.59	10.28 \pm 3.41	< 0.001*

T0: Pre-intervention; T1: Immediately post-intervention; T2: 24 hours post-intervention; T3: 48 hours post-intervention

SMPQ: Short-Form of McGill Pain Questionnaire; SD: Standard deviation

* $P < 0.05$

The effectiveness of acupressure therapy on physiological indexes: The mean scores obtained at the T0, T1, T2, and T3 stages were used for analysis. There was no statistically significant difference between the intervention and control group regarding the physiological indexes (heart rate, respiration, systolic blood pressure, diastolic blood pressure, and temperature) ($P \geq 0.005$) (Table 3).

Discussion

Various complementary methods such as traditional medicine have given recommendations for the reduction of pain.³¹ One of the most common and cost-effective traditional medicine methods for the reduction of pain is acupressure.³² Therefore, this study was performed with the aim to determine the effectiveness of acupressure on pain and

physiological indexes in addicted men living in addiction treatment camps. The results of the current study showed that acupressure can reduce pain in individuals who are quitting addiction. These findings were consistent with the results of previous studies.^{33,34} These findings are based on the fact that there are several particular channels in the human body called meridians; these channels regulate the flow of energy and imbalance in this flow leads to various diseases.³⁵

Regarding the effectiveness of acupressure on pain reduction, the western concept of gate control theory states that acupressure prevents pain stimuli from reaching the spinal cord or brain at different gates to these areas.³⁶ Moreover, according to the principles of Traditional Chinese Medicine (TCM), acupressure on the SP6 point can enhance blood flow to the organs, and consequently, relieve pain.³⁷

Table 3. Comparison of the physiological indexes between the study groups before and after acupressure

Physiological indexes	Intervention (n = 45) (mean ± SD)	Control (n = 45) (mean ± SD)	P
Heartbeat			
T0	74.38 ± 12.15	72.04 ± 10.40	0.330
T1	72.44 ± 11.32	73.04 ± 10.37	0.790
T2	72.40 ± 10.49	72.13 ± 9.78	0.900
T3	70.47 ± 9.82	72.89 ± 10.12	0.250
Breathing			
T0	16.44 ± 2.65	16.18 ± 2.69	0.630
T1	16.44 ± 2.76	17.02 ± 2.88	0.330
T2	16.36 ± 2.46	17.29 ± 2.80	0.090
T3	17.51 ± 2.52	16.63 ± 2.88	0.120
SBP			
T0	119.33 ± 12.04	117.89 ± 13.20	0.580
T1	116.33 ± 12.40	119.56 ± 12.91	0.230
T2	117.22 ± 12.94	117.67 ± 12.27	0.860
T3	117.00 ± 12.17	118.84 ± 12.64	0.570
DBP			
T0	77.33 ± 9.26	76.67 ± 8.79	0.720
T1	75.89 ± 9.37	77.49 ± 8.79	0.400
T2	76.78 ± 9.05	78.00 ± 9.00	0.520
T3	75.78 ± 9.94	78.11 ± 7.85	0.220
Arterial blood O ₂ saturation			
T0	97.47 ± 1.82	98.20 ± 1.72	0.470
T1	98.38 ± 1.72	97.82 ± 1.55	0.110
T2	98.33 ± 1.82	97.62 ± 1.83	0.060
T3	98.31 ± 1.81	97.76 ± 1.86	0.150
Temperature			
T0	36.88 ± 0.55	36.77 ± 0.52	0.410
T1	36.88 ± 0.52	36.79 ± 0.49	0.370
T2	36.87 ± 0.54	36.79 ± 0.52	0.490
T3	36.89 ± 0.53	36.77 ± 0.53	0.360

T0: Pre-intervention; T1: Immediately post-intervention; T2: 24 hours post-intervention; T3: 48 hours post-intervention
SD: Standard deviation; SBP: Systolic blood pressure; DBP: Diastolic blood pressure

Although the mean overall score of pain intensity in the intervention group decreased after the intervention, the difference between the two groups was not statistically significant. Simply put, there was no statistically significant difference in the mean scores of pain intensity between the two groups, which indicated that acupressure had no immediate effect on the reduction of pain intensity in the intervention group. In justifying such findings, it can be said that pain is a complex and multifactorial process, and in addition to its early investigation, it should be investigated for a long time. However, other studies have shown that acupressure can have an immediate effect on reducing the overall severity of patients' pain.³⁸

The present study investigated the effectiveness of acupressure on pain in addicts, while Jun et al.³⁸ examined the effectiveness of acupressure on dysmenorrhea in college students. Furthermore, since the nature of pain in addicted people is different from other people, the difference in the effectiveness of acupressure in these two studies can be attributed to difference in the nature of pain in the participants of these two studies. Moreover, in the present study, the participants were all men, and in the study by Jun et al.³⁸, the participants were all women, and perhaps the gender difference in these two studies has influenced their findings. In the acupressure group, the mean score of the emotional dimension of pain intensity decreased, and the difference in this score between the intervention and control groups was statistically significant. Such findings can be attributed to the functional mechanism of acupressure. In this mechanism, the reduction in pain intensity may be due to the stimulation of acupressure points such as SP6; this factor activates an endogenous opioid system and releases specific neuropeptides (e.g., endorphins) in the central nervous system, which ultimately leads to the relief from the pain process.²⁹ There was no statistically significant difference between the two groups in terms of the mean scores of the sensory dimensions of pain intensity. The reason for this may be that in this study the researcher personally performed acupressure and the pressure of the researcher's fingers may have upset the participants, but the participants did not declare this. Regarding the effectiveness of acupressure on physiological indexes, the results showed no statistically significant differences in

the mean systolic and diastolic blood pressure of the participants in this study, which was consistent with the findings of previous studies.³⁹

This similarity in the results can be attributed to the short duration of acupressure, and the sympathetic system's response to anxiety. Other studies have shown conflicting results regarding the effect of acupressure on patients' blood pressure. Chen et al. observed a significant decrease in the systolic and diastolic blood pressure of patients after acupressure.⁴⁰ Moreover, in a study by Bassampour et al., there was no significant difference in the blood pressure of participants between the two groups after acupressure.²² The result of the current study revealed that the variation in the respiratory rate and pulse rate of the participants in the two groups after the intervention was not statistically significant. The results of this study were consistent with the findings of Bassampour et al.²² and inconsistent with the findings of Sharifi et al.⁴¹ Perhaps, these differences are related to the type of research participants, the research environment, and the situation in which they were presented.

Conclusion

The findings of the present study revealed that the performance of acupressure on SP6 and ST36 points relieves the pain of addicts living in the addiction treatment center. Acupressure is a non-invasive and cost-effective method, and its application does not require special tools; thus, the use of such a safe and secure method for relieving pain is recommended.

Limitations: There were several potential limitations in this study. First, due to religious beliefs, the researcher could not perform acupressure on female addicts. Second, due to the rules of the camp, it was not possible to follow up with the participants for a longer period.

Conflict of Interests

The Authors have no conflict of interest.

Acknowledgements

The authors would like to express their gratitude and appreciation to all the participants of this study.

Authors' Contribution

Study concept and design, acquisition of data,

drafting of the manuscript, administrative, technical, and material support: YM; study concept and design, acquisition of data, drafting of the manuscript, critical revision of the manuscript for important intellectual content, Administrative, technical, and material support, Study supervision: DR; study concept and design,

drafting of the manuscript, critical revision of the manuscript for important intellectual content, Study supervision: KZ; analysis and interpretation of data, drafting of the manuscript, critical revision of the manuscript for important intellectual content, statistical analysis, study supervision: EM.

References

1. van Huijstee AN, Mansvelder HD. Glutamatergic synaptic plasticity in the mesocorticolimbic system in addiction. *Front Cell Neurosci* 2014; 8: 466.
2. Vanderschuren LJ, Ahmed SH. Animal studies of addictive behavior. *Cold Spring Harb Perspect Med* 2013; 3(4): a011932.
3. Mohammadkhani M, Behrouz B. Prediction of tendency to addiction and substance-related disorders based on social anxiety disorder and quality of life among students of Kermanshah University of Payame-Noor, 2016. *Community Health Journal* 2017; 11(1): 10-9. [In Persian].
4. Abdi M, Pourrahimi A, Yousefi K, Nouri Khaneghah Z, Rabie Siahkali S, Torkmandi H. A Preventive approach to the risk of substance abuse in medical personnel with migraine: A case report. *Preventive Care in Nursing and Midwifery Journal* 2019; 8(4): 23-6.
5. Motazakker M, Shokate Naghadeh M, Anosheh M. The frequency of high-risk behaviors in drug addicted patients referring to methadone treatment centre in Urmia, West-Azerbaijan, 2010. *Journal of Medical Science Studies* 2012; 22(6): 560-8. [In Persian].
6. Jenkinson J, Ravert P. Underutilization of primary care providers in treating opiate addiction. *J Nurse Pract* 2013; 9(8): 516-22.
7. Jalilian F, Mirzaei Alavijeh M, Amoei MR, Zinat Motlagh F, Hatamzadeh N, Allahverdipour H. Prevalence and pattern of drug abuse among prisoners in Kermanshah City. *Iran J Health Educ Health Promot* 2013; 1(2): 41-50. [In Persian].
8. Peacock A, Leung J, Larney S, Colledge S, Hickman M, Rehm J, et al. Global statistics on alcohol, tobacco and illicit drug use: 2017 status report. *Addiction* 2018; 113(10): 1905-26.
9. Herizchi S, Dargahi Abbasabad G, Delnavaz P, Torkmandi H, Dezhampoor S, Roshanas B, et al. factors involving in the substance abuse among medical students and its association with medical students' general health: A mixed-method study. *Preventive Care in Nursing and Midwifery Journal* 2020; 10(1s): 1-8.
10. Becker WC, Sullivan LE, Tetrault JM, Desai RA, Fiellin DA. Non-medical use, abuse and dependence on prescription opioids among U.S. adults: psychiatric, medical and substance use correlates. *Drug Alcohol Depend* 2008; 94(1-3): 38-47.
11. Sarrami, H. The survey of death and murder resulted from addiction, smuggling drugs and psychelic drugs. *Social Health and Addiction* 2014; 1(1): 23-42. [In Persian].
12. Solhi H, Salehi B, Alimoradian A, Pazouki S, Taghizadeh M, Saleh AM, et al. Beneficial effects of *Rosmarinus officinalis* for treatment of opium withdrawal syndrome during addiction treatment programs: A clinical trial. *Addict Health* 2013; 5(3-4): 90-4.
13. Ahmadi R, Pishghadam S, Mirali A. The effect of hydroalcoholic extract of *Hypericum scabrum* on morphine withdrawal symptoms in adult male mice. *Med Sci J Islamic Azad Univ Tehran Med Branch* 2014; 24(3): 143-7. [In Persian].
14. Seyyedzadeh Aghdam N, Vakilian K, Dawood Abadi M. Effect of BL32 and GB21 acupressure on labor pain in the first stage of labor. *Complement Med* 2012; 2(1): 104-10. [In Persian].
15. Majidipour N, Nirouza F, madmoli Y, Sarrafzade S, Kalani L, Aghababaeian H, et al. The effect of Holy Quran Recitation on the physiological responses of premature infants during phlebotomy: A Randomized Clinical Trial. *Int J Pediatr* 2018; 6(7): 7869-81.
16. Nazemi A, Kazemi R, Hashemi J, Jesarati A. The effectiveness of pain management and supportive psychotherapy on alleviating pain tramadol desuetude. *Police Med* 2016; 4(4): 217-26. [In Persian].
17. Koohestani HR, Baghcheghi N, Rezaei K. Comparison of satisfaction with post-operative pain management and level of functional interference in addicted and non-addicted patients. *Holist Nurs Midwifery* 2014; 24(3): 48-55. [In Persian].
18. Lee EJ, Frazier SK. The efficacy of acupressure for symptom management: a systematic review. *J Pain Symptom Manage* 2011; 42(4): 589-603.
19. Zargarzadeh M, Memarian R. Assessing barriers for using of complementary medicine in relieving pain in patients by nurses. *Nursing Management* 2013; 1(4): 45-53. [In Persian].
20. He Y, Guo X, May BH, Zhang AL, Liu Y, Lu C, et al. Clinical evidence for association of acupuncture

- and acupressure with improved cancer pain: A systematic review and meta-analysis. *JAMA Oncol* 2020; 6(2): 271-8.
21. Zhao M, Gao W, Zhang L, Huang W, Zheng S, Wang G, et al. Acupressure therapy for acute ankle sprains: A randomized clinical trial. *PM R* 2018; 10(1): 36-44.
 22. Bassampour SH, Nikbakht Nasrabadi A, Mehran A, Poresmaeil Z, Valiee S. Effect of acupressure on patients' anxiety and vital sign before abdominal surgeries. *Hayat* 2008; 14(2): 23-34. [In Persian].
 23. Motalebi SA, Zajkani Z, Mohammadi F, Habibi M, Mafi M, Ranjkesh F. Effect of acupressure on dynamic balance in elderly women: A randomized controlled Trial. *Exp Aging Res* 2020; 46(5): 433-45.
 24. Au DW, Tsang HW, Ling PP, Leung CH, Ip PK, Cheung WM. Effects of acupressure on anxiety: A systematic review and meta-analysis. *Acupunct Med* 2015; 33(5): 353-9.
 25. Bastani F, Sobhani M, Bozorgnejad M, Shamsikhani S, Haghani H. Effect of acupressure on severity of pain in women with multiple sclerosis (MS). *Complement Med J* 2012; 2(1): 75-84. [In Persian].
 26. Karimipour F, Fayazi S, Mowla K, Latifi SM. Effect of acupressure on severity of pain in arthritis rheumatoid patient. *Jundishapur Sci Med J* 2012; 11(3): 269-75. [In Persian].
 27. Rahmani VZ, Rejeh N, Heravi-Karimooi M, Tadrissi SD, Saatchi K, Poshtchaman Z, et al. Comparison of the effects of hand reflexology versus acupressure on anxiety and vital signs in female patients with coronary artery diseases. *Healthcare (Basel)* 2019; 7(1).
 28. Ledowski T, Reimer M, Chavez V, Kapoor V, Wenk M. Effects of acute postoperative pain on catecholamine plasma levels, hemodynamic parameters, and cardiac autonomic control. *Pain* 2012; 153(4): 759-64.
 29. Wong CL, Lai KY, Tse HM. Effects of SP6 acupressure on pain and menstrual distress in young women with dysmenorrhea. *Complement Ther Clin Pract* 2010; 16(2): 64-9.
 30. Adelmanesh F, Arvantaj A, Rashki H, Ketabchi S, Montazeri A, Raissi G. Results from the translation and adaptation of the Iranian Short-Form McGill Pain Questionnaire (I-SF-MPQ): preliminary evidence of its reliability, construct validity and sensitivity in an Iranian pain population. *Sports Med Arthrosc Rehabil Ther Technol* 2011; 3(1): 27.
 31. Wallace M, Leung A, McBeth M. Malignant pain. In: Raj PP, editor. *Textbook of Regional Anesthesia*. Philadelphia, PA: Churchill Livingstone. 2002. p. 585.
 32. Turkmen H, Ceber TE. The effect of acupressure on labor pain and the duration of labor when applied to the SP6 point: Randomized clinical trial. *Jpn J Nurs Sci* 2020; 17(1): e12256.
 33. Yeh ML, Hung YL, Chen HH, Lin JG, Wang YJ. Auricular acupressure combined with an internet-based intervention or alone for primary dysmenorrhea: A control study. *Evid Based Complement Alternat Med* 2013; 2013: 316212.
 34. Kim SY, Lee HY. Effect of the auricular acupressure therapy on dysmenorrhea of puberty girls. *Korean J Women Health Nurs* 2010; 16(1): 20-8.
 35. Kober A, Scheck T, Schubert B, Strasser H, Gustorff B, Bertalanffy P, et al. Auricular acupressure as a treatment for anxiety in prehospital transport settings. *Anesthesiology* 2003; 98(6): 1328-32.
 36. Mollart LJ, Adam J, Foureur M. Impact of acupressure on onset of labour and labour duration: A systematic review. *Women Birth* 2015; 28(3): 199-206.
 37. Yang LH, Duan PB, Hou QM, Du SZ, Sun JF, Mei SJ, et al. Efficacy of auricular acupressure for chronic low back pain: A systematic review and meta-analysis of randomized controlled trials. *Evid Based Complement Alternat Med* 2017; 2017: 6383649.
 38. Jun EM, Chang S, Kang DH, Kim S. Effects of acupressure on dysmenorrhea and skin temperature changes in college students: A non-randomized controlled trial. *Int J Nurs Stud* 2007; 44(6): 973-81.
 39. Hosseinabadi R, Biranvand S, Pournia Y, Anbari K. The effect of acupressure on pain and anxiety caused by venipuncture. *J Infus Nurs* 2015; 38(6): 397-405.
 40. Chen HM, Chang FY, Hsu CT. Effect of acupressure on nausea, vomiting, anxiety and pain among post-cesarean section women in Taiwan. *Kaohsiung J Med Sci* 2005; 21(8): 341-50.
 41. Sharifi RM, Shamsalinia A, Ghaffari F, Keyhanian S, Naderi NB. The effect of acupressure on pain, anxiety, and the physiological indexes of patients with cancer undergoing bone marrow biopsy. *Complement Ther Clin Pract* 2017; 29: 136-41.

اثربخشی طب فشاری در نقاط SP6 و ST36 بر درد و شاخص‌های فیزیولوژیک افراد معتاد: یک مطالعه کارآزمایی بالینی یک سوکور

یعقوب مدملی^۱، داریوش رخ‌افروز^۱، کوروش زارع^۲، الهام مراغی^۳

مقاله پژوهشی

چکیده

مقدمه: درد، حیاتی‌ترین دلیل جستجوی درمان و طب فشاری، یکی از شایع‌ترین راه‌های تسکین درد می‌باشد. پژوهش حاضر با هدف بررسی تأثیر طب فشاری در کاهش درد و ثبات شاخص‌های فیزیولوژیک در مردان مصرف‌کننده مواد انجام گرفت.

روش‌ها: این مطالعه از نوع کارآزمایی بالینی یک سوکور بود که بر روی ۹۰ مشارکت‌کننده که در یک کمپ ترک اعتیاد در شهرستان مسجد سلیمان بستری بودند، انجام گردید. مشارکت‌کنندگان به صورت تصادفی و روش بلوک‌های جایگشتی، به دو گروه مداخله (۴۵ نفر) و شاهد (۴۵ نفر) تقسیم شدند. در گروه مداخله، طب فشاری طی سه جلسه و در هر جلسه به مدت ۱۰ دقیقه در نقاط SP6 و ST36 صورت گرفت. روش جمع‌آوری داده‌ها شامل پرسش‌نامه اطلاعات دموگرافیک، فرم کوتاه پرسش‌نامه درد (McGill Pain Questionnaire) Short-Form McGill یا (SF-MPQ)، فرم ثبت شاخص‌های فیزیولوژیک، دماسنج تمپانیک، فشارسنج، دستگاه پالس‌اکسی‌متری و یک ساعت دیجیتال بود. داده‌ها با استفاده از آزمون Repeated measures ANOVA مورد تجزیه و تحلیل قرار گرفت. $P < 0/05$ به عنوان سطح معنی‌داری در نظر گرفته شد.

یافته‌ها: در خصوص بعد حسی درد، کاهش معنی‌داری در شدت درد گروه مداخله در مقایسه با گروه شاهد در هر سه جلسه مشاهده شد (به ترتیب $P \leq 0/001$ ، $P \leq 0/001$ و $P = 0/001$). در خصوص نمره کلی درد ($P \geq 0/005$)، بعد عاطفی درد ($P \geq 0/005$) و شاخص‌های فیزیولوژیک ($P \geq 0/005$)، بین دو گروه تفاوت معنی‌داری وجود نداشت.

نتیجه‌گیری: با توجه به اثربخشی طب فشاری در کاهش بعد حسی درد، مقرون به صرفه بودن این روش و عدم نیاز به ابزار خاصی در اجرای این روش، توصیه می‌گردد که از طب فشاری جهت تسکین درد افراد مصرف‌کننده مواد استفاده گردد.

واژگان کلیدی: طب فشاری؛ درد؛ وابستگی به تریاک

ارجاع: مدملی یعقوب، رخ‌افروز داریوش، زارع کوروش، مراغی الهام اثربخشی طب فشاری در نقاط SP6 و ST36 بر درد و شاخص‌های فیزیولوژیک افراد معتاد: یک مطالعه کارآزمایی بالینی یک سوکور. مجله اعتیاد و سلامت ۱۴۰۰؛ ۱۴ (۱): ۵۲-۶۱.

تاریخ پذیرش: ۱۴۰۰/۷/۳۰

تاریخ دریافت: ۱۴۰۰/۵/۲۴

۱- مرکز تحقیقات درد، دانشگاه علوم پزشکی جندی شاپور اهواز، اهواز، ایران

۲- مرکز تحقیقات مراقبت‌های پرستاری در بیماری‌های مزمن، دانشگاه علوم پزشکی جندی شاپور اهواز، اهواز، ایران

۳- گروه آمار و اپیدمیولوژی، دانشکده بهداشت، دانشگاه علوم پزشکی جندی شاپور اهواز، اهواز، ایران

نویسنده مسؤول: داریوش رخ‌افروز؛ مرکز تحقیقات درد، دانشگاه علوم پزشکی جندی شاپور اهواز، اهواز، ایران