

Research Paper

The Effectiveness of Mindfulness-Based Stress Reduction on the Depression, Anxiety, Stress, and Pain Perception in Females with Obstructed Labour-Induced Chronic Low Back Pain



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ABSTRACT

Objectives The present study aimed to investigate the effectiveness of Mindfulness-Based Stress Reduction (MBSR) on the severity of depression, anxiety, stress, and the perception of low back pain after childbirth.

Methods This was a quasi-experimental research with a pre-test, post-test and a control group and one-month follow-up design. The statistical population included all females with chronic postpartum low back pain in Tehran City, Iran. Forty of them were selected by convenience sampling method and were assigned into the experimental (20) and control (20) groups. The study instruments included Depression Anxiety Stress Scale (DASS-21) and Ossouri's low back pain scale. The samples were followed-up one month after conducting the intervention. A mindfulness training program based on stress reduction was carried out in 8 120-minute sessions once a week for the experimental group. The collected data were analyzed using SPSS.

Results The study findings suggested a significant difference between the mean post-test scores of the experimental and control groups. Thus, mindfulness training on chronic low back pain perception had a significant effect at $P < 0.01$. Additionally, mindfulness training had a significant effect on reducing depression, anxiety, and stress.

Conclusion Mindfulness exercises are associated with increasing the awareness of the thoughts, feelings, and senses of the patients and their admission. Moreover, these techniques reduced their level of depression, anxiety, stress, and lower chronic back pain perception. Therefore, they can help in designing better healthcare programs for therapists, counselors, and psychologists.

Extended Abstract

1. Introduction

The high prevalence of low back pain during pregnancy and postpartum is among the most important issues worldwide. Numerous women are extensively affected by

chronic low back pain after pregnancy, and they fail to perform their daily and occupational activities. Thus, patients with chronic pain experience depression, stress, emotional disturbance, and fatigue. Psychological dimensions not only can shape emotional performance but also can affect nervous system activities through pain perception.

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Thus, the maladaptive cognition of pain, like pain catastrophizing, may be accompanied by negative emotional and behavioral responses, such as stress, anxiety, and depression and impact the recovery of chronic pain. The mere use of medical methods, like pharmacotherapy, physiotherapy, etc. is not effective in the treatment of chronic lower back pain. Accordingly, new therapeutic pain-management approaches, like Mindfulness-Based Stress Reduction (MBSR) program are developed based on self-centered attention and self-focus; they can reduce pain by increasing the coping skills for chronic pain. In this method, the individual focuses on the process of focusing mind through teaching behavioral, cognitive, and metacognitive strategies. Thus, the present study aimed to investigate the effectiveness of MBSR on depression, anxiety, stress, and pain perception in women with delivery-induced chronic low back pain.

2. Methods

This was an experimental study with a pre-test, post-test design, control group, and one-month follow-up. The study population was all women with postpartum-induced chronic low back pain admitting to Saadat Abad Health Center in Tehran City, Iran, in 2017. Forty subjects were selected by random sampling method. They were randomly divided into the experimental (20 subjects) and control (20 people) groups. The study used Depression, Anxiety, and Stress Scale (DASS-21) by Lovibond & Lovibond (1995) and Os-teor in Patients with Inferiority Scale (ODI).

These questionnaires were used before and after performing the intervention and at one-month follow-up. The MBSR was derived from Kabat Zaynn's book (2013) and conducted in 8 sessions of 120 minutes for once a week on the experimental group. The session contents were as follows: first session: Setting up a general policy, relaxation training, discussion and appointment of weekly meetings, and distribution of educational pamphlets. Second session: Body-scan training.

Third session: Meditation training and review. Fourth session: Understanding mindful-breathing. Fifth session: Attention to body movements during breathing, focusing on body organs and their movements. Sixth session: Training paying attention to the mind, pleasant or unpleasant thoughts, allowing negative and positive thoughts to enter the mind and efficiently removing them from the mind. Seventh session: Seated meditating practice. Eighth session: Reviewing the past contents and summing up questions and answers. After the training completion, post-test was performed on both groups. Finally, the collected data were analyzed using SPSS.

3. Results

The mean scores of the dependent variables suggested significant differences between the experimental and control groups in the pre-test, post-test, and follow-up stages. This finding was in favor of the experimental group in all of the variables (understanding chronic back pain, depression, anxiety, and stress). The mixed variance analysis model was used to evaluate the effectiveness of mindfulness-based stress reduction program. Accordingly, the necessary assumptions were examined to use the parametric test (mixed variance analysis). Considering the significance of Levene's test in the studied variables, the equality of variances was established.

The distribution of data was normal, the homogeneity of regression was slope, and the linearity of dependent and covariate regressions were observed. The mixed variance analysis results revealed a significant difference between the experimental and control groups. Given the obtained mean scores, this difference was in favor of the experimental group ($P < 0.05$). Eta square obtained in the experimental group in all dependent variables was greater than 0.14. Therefore, considering the significant interaction between the repetition of the test with the experimental variable and the magnitude of the effect obtained with a 99% confidence coefficient, MBSR could reduce chronic back pain perception, depression, anxiety, and stress in the experimental group, compared to the controls ($P < 0.05$).

4. Discussion

The obtained results are consistent with those of Bakhshani et al. (2016), Dehestani (2015), Samadi et al. (2010), and Moroni et al. (2008). Mindfulness-training program focuses on in-person processes. Therefore, this technique can help individuals change their relationships with their inner states, thoughts, and emotions, and could reduce the internal anxiety symptoms. In MBSR, participants are encouraged to curiously observe their thoughts and feelings. They are also encouraged to consider a non-judgmental approach to their mental and emotional content, which reduces their depression.

Moreover, training MBSR techniques along with mental relaxation can lead to the normalization of respiration and the reduction of external symptoms of anxiety (palpitations, anxiety, pressure drop, sweating, and difficulty in breathing). Using relaxation techniques of MBSR returns the oxygen uptake of the body to a normal level, thereby increases the calmness and reduces the feeling of pain. As mindfulness exercises are associated with the increased awareness of patients, their thoughts, emotions, and body senses are

associated with their acceptance, which reduces their level of depression, anxiety, stress, and perceived symptoms of chronic pain. The study signified the importance of mindfulness, the unpleasant consequences of stress, and chronic postpartum low back pain in women's lives. Thus, extensive activities and psychological interventions are essential and could be used to design better therapeutic programs by therapists, counselors, and psychologists.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles were observed in this study and an ethical approval was obtained from the Research Ethics Committee of Islamic Azad University (code: IR.IAU.TMU.REC.1396.217). Participants were free to leave the study at any time. They were aware of the study objective and method and were assured of the confidentiality of their information.

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Authors contributions

The authors had same contribution in preparing this paper.

Conflicts of interest

The authors declared no conflicts of interest.