The Efficacy of Mindfulness-Based Stress Reduction on Reducing the Perceived Stress and Depressive Symptoms among Female-Headed Households

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Abstract

Objective: some recent studies suggested the beneficial effects of mindfulness-based stress reduction on stress reduction and perceived stress, leading to the improvement of mental disorders caused by stress. Given that female-headed households are one of the most vulnerable groups of society that need to be studied, the aim of this study was to assess the efficacy of mindfulness-based stress reduction on the reduction of perceived stress and depressive symptoms among this group.

Method: The present study was a semi-experimental study with pretest-posttest and follow-up phase. The study population consisted of 400 female-headed households aged 25 to 50 years covered by Ilam City Relief Committee. The participants were randomly divided into control and experimental groups. The perceived stress and depression symptoms were assessed using Cohen's Perceived Stress Scale (1983) and Beck Depression Inventory-II (1996), respectively. Mindfulness-based stress reduction program was performed for 8 weeks and all subjects were reassessed after intervention completion.

Results: Both groups had similar characteristics at baseline. The mean preserved stress and depression scores significantly improved in the experimental group after the intervention and at follow-up phase (p<0.001). However, no significant changes were observed in the control group (p=0.49).

Conclusion: Mindfulness-based stress reduction had a positive effect on perceived stress and depressive symptoms in female-headed households. It is also likely that the reduction in stress appraisals can improve psychological well-being and physical health.

Keywords: Depression, Female-headed households, Mindfulness, Stress, Women.

Introduction

Female-headed households are one of the most vulnerable groups of the society that need to be studied. In developing countries, being a woman alone has some consequences; the majority of female headed households face more complex challenges. Several factors, such as divorce, addiction, incarceration, and death of a spouse, can alter the family structure and lead to an increase in single-parent families headed by households (Liu, Esteve & Treviño, 2017). Today, 60 percent of households are headed by women. It is estimated that 37.5 percent of the world's households are headed by women. Also, statistical indicators indicate that the number of households headed by women is increasing in our country. The female-headed households are more vulnerable to stress compared to other women (Cohen & Venter, 2020). They are generally considered as being among the most vulnerable groups of the society (Cheeseman,

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Ferguson & Cohen, 2011). It is showed that the personal, psychological, and social pressures on female-headed households lead to psychological trauma such as depressive symptoms, anxiety and perceived stress.

Stress is known as an important risk factor for mental health disorders. Studies show that chronic stress can lead to many complications (Janusek, Tell & Mathews, 2019). Many researchers view stress as an important risk factor leading to the development of symptoms of depression and anxiety in adults (Reich et al., 2017).

These problems can affect the mental health of women headed households. Previous studies have reported the high prevalence of anxiety and depression in this group. Methodological-behavioral stress management training is a multifaceted approach through which techniques such as training are taught to people (Riley et al., 2017).

Various training methods are used to improve people's mental health. Psychological approaches, such as mindfulness-based stress reduction (MBSR) can be effective in treating the different types of stress. MBSR is a type of psychological-educational intervention that helps people to practice mental-physical meditation and is used to reduce stress and improve health (Asuero et al., 2014).In recent years empirical evidence suggests that mindfulness-based intervention (MBIs) are effective in improving the mental or physical health-related outcomes in a range of clinical and non-clinical populations (Gotink et al., 2015; Khoury et al., 2013; Sedlmeier, Loße & Quasten, 2018). These mindfulness-based therapies are integrated based on Eastern Buddhist psychology which are also widely used to treat mental disorders and physical illness. MBIs can be delivered in an organized program composed of several mindfulness-based practices.

MBSR program was first developed by Kabat-Zain. Over three decades ago, his colleagues (1985) at the University of Massachusetts Medical Centre have become popular group helping people cope with the stress inherent in their lives (KabatZinn, 2003), and its effectiveness has been confirmed (Taylor, Kennedy, Lee, & Waller, 2020).

Mindfulness also involves the ability to be aware of present-moment experiences and observe these experiences instead of judging them (Hofmann & Gómez, 2017). Responding mindfully to experiences in daily life is assumed to be beneficial for one's well-being because it may enhance emotion regulation (Hölzel et al., 2011) and decrease negative cognitive responses (MacKenzie & Kocovski, 2016). In general, another study demonstrated the effectiveness of this type of therapy may increase coping ability and adaptation to stressful situations (Valikhani et al., 2020). Studies have shown that MBSR has positive effects on stress reduction, leading to the improvement of mental disorders caused by stress (Momeni, Omidi, Raygan, & Akbari, 2016).

Several studies have shown that MBSR is effective in treating the mental disorders such as depression (Kuyken et al., 2016), stress reduction, posttraumatic stress disorder (PTSD) (Hilton et al., 2017), insomnia (Gong et al., 2016), anxiety disorders (Zoghi, Torabian, & Ajilchi, 2019), chronic pain, smoking, substance abuse (Britton et al., 2018), and cardiovascular disease (Abbott et al., 2014) as well as enhancing positive emotions and acceptance and also are more effective in controlling depressive symptoms and improving negative effect. However, the lack of pleasure is one of the key symptoms of depression and is exacerbated by chronic stress (Slavich & Irwin, 2014).

Many studies have been conducted on the effectiveness of mindfulness on depression (Kia & ZarehHarafte, 2018; Kuyken et al., 2016; Wang et al., 2018). Thus, the present study aimed to assess the efficacy of mindfulness-based stress reduction on reducing perceived stress and depressive symptoms among Iranian female-headed households.

Method

Population

This study was a semi-experimental study with a pretest-posttest and follow-up phase with the control

group. The study population consisted of 400 female-headed households aged 25 to 50 years covered by Ilam City Relief Committee. The inclusion criteria were: having at least one child, having at least a third of secondary education, not receiving any drug or other psychotherapy at the same time, earning at least one standard deviation higher in the Depression and Perceived Stress Questionnaire at the screening stage, agreeing to participate in the study and providing written consent form and participating in all therapeutic sessions, having no physical illness or psychiatric disorders, and taking no drugs and other psychotropic drugs. A careening test was performed using the Beck Depression Inventory (BDI-II) and Cohen's perceived stress scale (PSS). They scored higher on average than those tested for depression and perceived stress. Thirty people were randomly selected as a sample. Finally, among those with higher stress and depression, the subjects were randomly divided into experimental and control groups. The two groups were similar in terms of age, education level, the head of the household, and

the number of children. Also, the BDI-II and PSS were distributed among them. Then, the experimental group received compassion-based therapy. Finally, BDI-II and PSS were again taken from both groups (posttest and follow-up period two months later), and the results were compared with the pre-test results.

Study intervention

MBSR program was performed for 8 weeks. Each session lasted about 90 minutes. Sessions included the practice of meditation skills, discussion of stress, coping techniques, and homework. The guidelines for the sessions were as follow:
Statistical analysis was performed using SPSS version 16.0 (SPSS Inc., Chicago, IL). P values less than 0.05 were considered statistically significant.

Instruments

Perceived stress was assessed by the PSS. The PSS is a self-reported measure that has three versions (PSS-14, PSS-10 and PSS-4). Also, the PSS assesses the level

session	Contents
session 1	Automated guidance: communication and conceptualization, the need to use mindfulness training, explaining automated guidance system, and homework presentation
Session 2	Encountering obstacles: reviewing homework, examining self-body, feeding and talking about examining self-body, respiratory awareness, meditation practice, and homework presentation.
Session 3	Breathing mind: reviewing homework, sitting meditation practice, practice review, three-minute breathing practice, assigning homework.
Session 4	Staying present: reviewing homework, doing a five-minute "see-and-hear" exercise, re-breathing mind-body exercise, body assessment, and assigning homework.
Session 5	permission/Attendance: reviewing homework, breathing exercises, sitting meditation (awareness of breathing, body, sound, thoughts
Session 6	Thoughts are not facts: reviewing homework, exercising mindful yoga, discussing the difference between observing thoughts or alternate thoughts, and sitting meditation.
Session 7	How I can take care of myself: reviewing homework, sleeping health, repeating exercises, preparing a list of fun session activities, and homework presentation.
Session 8	Acceptance and change: reviewing homework, bodybuilding exercise, meeting wrap-up, reviewing and discussion of plans and continuing home exercises.

of stress perceived by the subject in his/her life during the past month (Cohen, Kamarck, & Mermelstein, 1983). The PSS-14 is comprised of 14 items intended to measure how unpredictable, uncontrollable, and overloaded individuals find their life circumstances. Items are rated on a five-point Likert scale, ranging from 0 "Never" to 4 "Very often." Scores are obtained by reverse scoring the positively stated items (4, 5, 6, 7, 9, 10, and 13) and then summing them across all 14 items. Scores range from 0–56, with higher scores indicating greater perceived stress. This questionnaire was validated with Spanish by Remor. Cronbach's alpha for this scale was 84%, 85%, and 86% in the three studies. The Persian version of PSS-14 has high internal consistency (Cronbach's α=0.80). The Beck Depression Inventory II (BDI II; Beck, Steer, & Brown, 1996) was used to depression severity

. This is a 21-item questionnaire, which is a revised Beck Depression Inventory, measuring the severity of depressive symptoms in the last two weeks in psychiatric patients, the general population, and adolescents and adults (Beck, Steer, Ball, & Ranieri, 1996). Items were assessed based on the cognitive, affective, and somatic symptoms of depression. All items are answered using a 4-point Likert scale, ranging from 0=never to 3=always. Higher scores indicate greater depression. The overall score for depression is the sum of females' total scores, ranging from zero to 63. Considerable evidence attests to the internal consistency and test-retest reliability (Allan et al., 2018). A large body of evidence from research supports the notion that the BDI-II is a psychometrically sound instrument with an internal consistency rate of 0.9 and the retest reliability, ranging from 0.73 to 0.96. The Persian version of BDI-II has high internal consistency (Cronbach's α=0.87) and acceptable test-retest reliability (r=0.74). The current sample also revealed an adequate internal consistency (Cronbach's α=0.90).

In order to determine the validity of the questionnaires used in this study, Content validity, formal validity and face validity were measured. For validating the questionnaires, they were given to 10 psychologists.

All questionnaire questions were approved. Cronbach's alpha was used to evaluate the reliability of the questionnaires. The calculated value of the perceived stress questionnaire was 0.92, and it was 0.77 for the depression questionnaire.

Ethical Statement

The informed consent form was given to all subjects, and all necessary information, including the aims, and confidentiality, was given to them. If the subjects are reluctant to continue, they could stop participating at any time. It was also explained that after the completion of the study, the results of the study would be disclosed to the participants. Meanwhile, the participants in control group were provided free training sessions.

Careful monitoring was carried out on how to complete the questionnaires and implement the intervention. Participants were assured that the information was confidential and that the results would only be used for research purposes and that the results would be published in general.

Measurement

Quantitative variables were presented as mean and standard deviation (SD) and categorical variables were expressed as the absolute frequencies and percentages. The normality of data was analyzed using the Kolmogorov-Smirnoff test. Categorical variables were compared using the chi-square test or Fisher's exact test when more than 20% of cells with an expected count of less than five were observed. The Paired t-test showed changes in mean scores of self-efficacy in each group.

Results

The baseline characteristics of study subjects are shown in Table 1. There was no significant difference between the two groups in terms of demographic variables, including age, educational level, household supervision status, and the number of children (p > 0.05 for all). The mean score of depression in the experimental group was 19.60±13.26 before and after the intervention and its was 11.53±11.01 after the intervention, which indicated a significant decrease in

the score (p < 0.001). However, pre-test and posttest scores in the control group were 27.00±13.52 and 25.80±14.64, respectively, indicating no change in the score of this range (p =0.494). During the follow-up period, the mean score of depression in the experimental group changed from 19.60±13.26 to 11.07±11.09, which was also significant (p <0.001). It changed from 27.00±13752 to 23.07±11.76 in the controls, which was also significant (p =0.005) (Table 2). The mean score of perceived stress adjustment in the experimental group was 29.20±9.36 before the intervention and 22.66±7.67 after the intervention, which indicated a significant decrease in the score (p=0.010). However, pre-test and posttest scores in the control group were 30.78±9.59 and 31.13±9.68, respectively, indicating no change in the score of this range (p-value = 0.540) (Table 2).

Discussion

The present study aimed to investigate the efficacy of a mindfulness-based stress reduction (MBSR) program on reducing perceived stress and depressive symptoms in female-headed households in Ilam. The findings suggest that MBSR could significantly reduce perceived stress and symptoms of depression among female-headed households. Participants reported a significant reduction in perceived stress and depressive symptoms after intervention. There was a significant improvement in the experimental group, while the control group dis not changed. The reduction was maintained during two months' follow-up.

our findings are consistent with previous studies that increases in mindfulness were significantly related to the decreases in depressive symptoms and perceived stress (Janusek et al., 2019; Lindsay, Young, Smyth, Brown, & Creswell, 2018). Also, changes in mindfulness mediated some aspects of outcome of mindfulness-based interventions, including perceived stresss (Zhong, Zhang, Bao, & Xu, 2019) and depressive symptoms (Kuyken et al., 2016; Sadeghi Firoozabadi, 2020) .

In fact, mindfulness training is an important treatment to create two extensive aspects of mental processing including awareness of physical, emotional and cognitive processes (being aware of present) and ability to experience these processes with a non-judgmental and non-reaction attitude (non-judgment acceptance). These abilities contribute to increased psychological flexibility and reduced maladaptive habits (kabat- zin, 2013, segal, williams, & teazdale, 2018).

In his study, Hilton showed that the MBSR help individuals to control their life in changing perception of stressful incidents and increasing their abilities. It emphasized on patient's training in the context of mentioned aspects regarding stress reduction (Hilton et al., 2017)

In their study, Sobczak and West (2013) demonstrated that when patients are empowered to create acceptance and mindfulness less do avoidance and move improve behaviors leading to vulnerable life and the results highlight the importance of changes in mindfulness as mediators of the effects of the intervention and suggest that there are unique processes in MBSR that are responsible for specific outcomes. It is likely that MBSR increases the awareness of the individual toward the present and by using techniques like attention to breathing and the body, and shifting consciousness to here and now, MBSR affects both the cognitive system and data processing, thereby leading to a coordination of adaptive behaviors and psychological states (Chambers, Gullone, & Allen, 2009). Findings of the present study confirm that cultivating a more mindful way of being is associated with less depression, which may imply less emotional distress and more positive states of mind. Increased attention to and awareness of thoughts and emotions, acceptance, and compassion appear to promote optimal mental health. The findings of this study support a relationship between cultivating a more mindful way of being on the one hand, and a tendency to experience less emotional distress and more positive states of mind on the other. This study confirms that one salutary mechanism of mindfulness appears to involve reshaping ways of thinking that engender improved emotional well-being.

Accordingly, mindfulness may provide a "middle ground" to provide extreme listening and avoidance of threat with increased attention control, which is essentially one of the main mechanisms of mindfulness (Coronado-Montoya et al., 2016). Several studies conducted on mindfulness and its role in reducing stress and mental health also show that mindfulness training can help people to recognize their personal weaknesses and strengths. Also, mindfulness training can be effective in improving mental health, increasing well-being, and reducing stress (Duan, 2016). This improvement comes from attention regulation, body awareness and sustained attention to physical sensations, emotional regulation through acceptance without judgment, emotional regulation through exposure, extinction of automatic responses and reconsolidation, and changes in self-perspective that involve greater disregard for a rigid image of self (Hölzel et al., 2011).

People learn to observe the internal and external reality; they learn to accept it and react without being impulsive. They trust their own capacity to find an adequate response with an open and secure attitude.

Conclusion

In conclusion, our results showed that MBSR had a positive effect on perceived stress and depressive symptoms in female-headed households, leading to improved physical functioning and their spiritual and behavioral aspects. Thus, this treatment can help female-headed households to reduce the cognitive inaccuracies that play a role in stress perception by facilitating evaluation and changing the interpretation and meaning of events, and better manage stressful events by increasing effective and adaptive coping capabilities. Therefore, it is advisable to provide comprehensive and ongoing plans on the efficacy of these therapeutic approaches in this group of society.

The limitations of the present study were using only females covered by Ilam City Relief Committee as the sample, and also, short duration of follow-up in this study. Future studies should continue to examine the effects of MBSR and those of other potential processes of change, in the interest of broadening the understanding of the mechanisms of mindfulness-based interventions and, eventually, refining and enhancing treatment, specifically. Finally, doing study with larger sample sizes and longer follow-up and in male patients are recommended.

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Table 1: Demographic characteristics of the study population

Characteristics	Experiment group	Control group
Age subgroup	N(%)	N(%)
<25 years	13.3%	13.3%
26 to 30 years	33.3%	26.7%
31 to 35 years	26.7%	26.7%
> 35 years	26.7%	33.3%
Education level		
Undergraduate	80.0%	66.7%
Diploma	13.3%	20.0%
Academic degree	6.7%	13.3%
Household status		
Abandoned	26.7%	13.3%
Divorced	13.3%	60.0%
Death of husband	26.7%	13.3%
Others	13.3%	13.3%
Number of children		
one	46.7%	60.0%
Two	33.3%	26.7%
Three	20.0%	13.3%

Table 2: The effect of mindfulness therapy based on depressive symptoms and perceived stress in female-headed households

Item	Pre-test	Post-test	P-value
Depression After intervention			
Intervention group	19.60±13.26	11.53±11.01	0.001
Control group	27.00±13.52	25.80±14.64	0.494
Within follow-up			
Intervention group	19.60±13.26	11.07±11.09	0.001
Control group	27.00±13.07	23.07±11.76	0.005
Perceived stress After intervention			
Intervention group	29.20±9.36	22.66±7.67	0.010
Control group	31.78±9.59	31.13±9.68	0.540
Within follow-up			
Intervention group	29.36±9.36	19.80±7.32	0.001
Control group	30.78±9.59	32.35±7.65	0.493