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The Effectiveness of Mindfulness-based Stress Reduction (MBSR) in Reducing of Depression, Anxiety and Quality of Life in Women with Generalized Anxiety Disorder

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ABSTRACT

Objective: This study was conducted to examine effectiveness of mindfulness-based stress reduction on reducing depression and anxiety levels as well as improved quality of life in women with generalized anxiety disorder in Tehran.
Method: In this research, 30 members with generalized anxiety disorder were selected from individuals who had inclusion criteria then assigned to two experimental and control groups in Tehran by 2017. To collect data, respondents filled in the questionnaire of generalized anxiety disorder (GAD-7), quality of life questionnaire (PWI-A) (Personal Wellbeing Index) and Beck's depression inventory (BDI) within two pretest and posttest steps. Research data were analyzed using Kolmogorov-Smirnov test, independent and dependent t tests.
Findings: Results indicated that mindfulness-based stress reduction could decrease anxiety and depression symptoms in patients and improved quality of life of patients with generalized anxiety disorder.
Conclusion: Mindfulness-based stress reduction could affect anxiety and depression levels as well as improvement of quality of life among women with generalized anxiety disorder.

Key words: Anxiety, Generalized anxiety disorder, Mindfulness, Depression, Quality of life

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INTRODUCTION

Generalized anxiety disorder (GAD) is a chronic and disabling disorder with lifetime prevalence between 4.3 and 5.9% [1]. GAD is along with sever and long anxiety besides cognitive and physical symptoms such as heart beat, tension and some problems in focus and sleep [2]. There is a high rate of simultaneity of GAD with psychological disorders such as depression, anxiety disorders, and drug abuses [2]. Mindfulness-based interventions are third wave treatments; one of these interventions is mindfulness-based stress reduction (MBSR) that was first designed by Kabat-Zinn in 1979 as an intervention foe mental health in chronic physical circumstances [3]. Kabat-Zinn defined mindfulness as paying attention to a specific and purposeful method in present time without any judgment or prejudgment [4]. Various studies have proved effectiveness of MBSR in treating anxiety, depression and stress [5,6].

Numerous studies have indicated the effects of MBSR on reducing symptoms of general depression [7,8], worry, rumination and anxiety [9-12], chronic pain [9,10] quality of life [8,13,14], and depression [10]. Mindfulness-based approaches are rooted in Buddhist beliefs considering judgmental mind as the reason for psychological pain and distress that divides experiences to good ones and bad ones increasing failure, distress, anxiety and depression with commercial copying or avoidance [11].

Since there have been few studies on effectiveness of MBSR in anxiety disorders in Iran and since there is a relative high prevalence of generalized anxiety disorder in Iranian patients due to research gap in the context of effectiveness of MBSR in patients with GAD in Iran, this

study was conducted to examine whether MBSR is effective in reducing anxiety and depression as well as quality of life of these patients.

METHODS

This is a quasi-experiment study with two experimental and control groups besides pretest and posttest. The sample was chosen from individuals who had inclusion criteria; 30 members were selected and randomly assigned to two experimental (n=15) and control (n=15) groups using convenient sampling method among women who had referred to psychiatric clinic of Imam Hussein Hospital in Tehran and diagnosed with general anxiety disorder. At first, the names of all subjects were placed in a container and placed in a 15-sheet container and another 15 test pieces in another. Without identifying the names of the individuals or groups, each item has a name and a group of containers removed without the ability to be restored. This work went on until everyone was in the groups. Also, considering the fact that in the experimental and semi-experimental studies the sample size was considered appropriate by 15, the sample size in this study was determined for each group of 15 individuals.

Experimental group participated in 8 sessions of MBSR while the control group waited. It should be noted that 15 members were entered in both groups considering the risk of loss in studied groups. Respondents were measured by structured clinical interview considering I level disorders (SCID-I) then both groups filled in 7-item questionnaire of generalized disorder (GAD-7), quality of life questionnaire (PWI-A), and Beck's depression questionnaire (BDI). Inclusion criteria consisted of diagnostic indexes of DSM-IV-TR for GAD or diagnosis of psychiatrist, lack of receiving psychological treatments before entering to the research and during the research, age range of 18-40, having education degree of secondary school and above, and informed consent of participation in research plan; exclusion criteria included psychological treatments, personality disorder because of a severe physical disease such as cancer or any disease that interfered with participation in intervention sessions, psychotic disorders, serious neurological disorders, drug abuse, patients who think of suicide, education level lower than secondary school, lack of tendency for treatment continuation.

Instruments

Demographic properties questionnaire: This questionnaire consisted of personal specifications including sex, age, education level, marital status, duration of disease, and type of disease.

Structured clinical interview for I-disorders (SCID-I): Interview is a flexible instrument that was designed by First et al. [12]. In addition, researchers translated this interview into Persian then implemented it for 299 participants. Diagnostic agreement for specific and general diagnoses was average or good (Kappa above 60%). General agreement (total Kappa of existing diagnoses obtained to 52% and for total diagnoses of life span to 55%) was satisfying [13].

7-Item generalized anxiety disorder scale (GAD-7): This scale was presented by Spitzer and colleagues in 2006 consisting of 7 items at scale of 0-3 at score range of 0-21 [14]. A research was conducted in Iran in which, Cronbach's alpha obtained to 0.85 and reliability of two times implementation of scale obtained to e=0.48 ($p<0.01$) indicating acceptable internal coherence and reliability of Iranian version [15].

Quality of life questionnaire (PWI-A): This questionnaire consists of 7 items that each of them is related to one scope of life quality such as standard of living, health, achievements in life, personal relationships, safety, feeling part of community, and future security. Psychiatric specifications of scale were reported at good level by studies conducted in Australia and other countries [16]. Every question is scored at range of 0-10 based on the score domain (0-70) of scale that consists of overall quality of life. According to an Iranian study, correlation coefficient after two implementations of this questionnaire obtained to r=0.81 ($p<0.01$) and Cronbach's alpha of 0.90; the correlation coefficient of general health questionnaire (GHQ) obtained to -0.61 ($p<0.01$). Research findings indicated optimal reliability, internal consistency coefficient, and acceptable convergent validity of quality of lie questionnaire (PWI-A) in Iranian community [17].

Beck's depression questionnaire (BDI): Results obtained from the study conducted by Beck et al. indicated high internal stability of this questionnaire [18]. Moreover, Cronbach's alpha and reliability of retest within one week obtained to 0.91 and 0.96, respectively in a 94-member Iranian sample [19].

Treatment protocol was performed in experimental sample group within 2-hour sessions per week by PhD clinical psychologist while control group remained in waiting list.

The content of 8 sessions was based on the Chaskalson protocol [20]:

Session 1: Making relationship and conceptualize mindfulness, explaining about the treatment protocol, explaining about the concept of mindfulness and use of mindfulness training, and training the informed eating.

Session 2: Reviewing the previous task, body checking mediation, giving feedback and discussing it, practicing mindfulness-based berating treatment, calendar for pleasant events.

Session 3: Reviewing the task of previous session, practicing of sitting treatment, reviewing the practice, practicing the informed walking, and calendar for unpleasant events.

Session 4: Reviewing the task of previous session, sitting mediation of awareness breathing, body, sounds and thoughts, explaining about stress and discussing stressful experiences of patients, ending the session with short sitting mediation.

Session 5: Reviewing the task of previous session, breathing, sitting mediation of awareness breathing, being aware of pleasant and unpleasant events for feelings, thoughts, and body senses, and ending the session with short sitting mediation.

Session 6: Reviewing the task of previous session, mountain mediation, lake mediation, discussing different thoughts or substitute thoughts, ending the session with short sitting mediation.

Session 7: Reviewing the task of previous session, sitting mediation, practicing mindfulness-based walking.

Session 8: Reviewing the trained technics and presenting feedback.

Two groups filled the questionnaire in after treatment. Research data were analyzed using Kolmogorov-Smirnov test, independent and dependent t tests. It should be noted this paper has been recorded in Iranian Registry of Clinical Trials coded IRCT2014110819855N1.

FINDINGS

Research data were analyzed through SPSS Software. Age range of experimental group was 20-40 with average age of 31.27 205 of respondents had lower the diploma degree, 33.3% had diploma, 46.7% had BA degree and above. Marital status was as follows: 40% singles, 56.7% married participants, and 3.3% divorced participants. As the results of Table 1 show, there was no significant difference between the experimental and control groups in terms of age, education and marital status.

Table 1: Frequency and percentage of distribution information of subjects by group

Variable		Experimental group		Control group		Kolmogorov-Smirnov	
		Frequency	Percent (%)	Frequency	Percent (%)	z	Sig.
Age	20-24 years	2	13.3	4	26.7	0.365	0.999
	25-29 years	3	20	1	6.7		
	30-34 years	4	26.7	3	20		
	35-40 years	6	40	7	46.7		
Study	Under the diploma	2	13.3	4	26.7	0.365	0.999
	Diploma	5	33.3	5	33.3		
	Undergraduate and higher	8	53.3	6	40		
Marital status	Single	7	46.7	5	33.3	0.365	0.999
	divorced	1	6.7	0	0		
	Married	7	46.7	10	66.7		

According to Table 2, scores of depression and generalized anxiety in experimental group were decreased in post-test compared to pre-test and score of quality of life of them were increased in post-test; nevertheless, post-test and pre-test scores of these components were not different in control group. There was not any difference between data of two experimental and control groups in terms of depression, generalized anxiety and quality of life at the beginning of study, but a difference was observed between two groups at post-test step. Depression and generalized anxiety of respondents were decreased after intervention compared to control group and quality of life was improved. To test effect of treatments on reducing depression and anxiety and increasing life of quality, mean scores of groups (experimental and control) were compared in pre-test and post-test using t test for dependent groups and results are demonstrated in Table 3.

Table 2: Results of independent t test for scores of pre-test and post-test in two groups

Variable	Step	Experimental group		Experimental group		Independent t-test	
		Mean	SD	Mean	SD	t	Sig.
General anxiety	Pre-Test	16.93	3.41	16.6	3.26	-0.273	0.787
	Post-Test	15.13	4.89	4.86	4.22	-6.149	0
Depression	Pre-Test	30.26	14.4	30.26	15	0	1
	Post-Test	29.79	19.96	14	9	-2.793	0.011
Quality of life	Pre-Test	21.93	12.15	22.86	11.49	0.216	0.83

	Post-Test	21.26	9.19	39	12.34	4.463	0

Table 3: Results of dependent t-test for scores of pre-test and post-test in each group

Variable	Group	t	df	Sig. (2-tailed)
General anxiety	Control	1.43	14	0.17
	Experimental	10.29	14	0
Depression	Control	0.24	14	0.81
	Experimental	4.71	14	0
Quality of life	Control	0.4	14	0.69
	Experimental	-6.37	14	0

According to Table 2, there was a statistically significant difference between three components of depression, anxiety and quality of life of experimental groups before and after test ($p<0.001$) implying the effect of MBSR on stress and anxiety reduction as well as quality of life improvement. However, there was not any significant difference between pre-test and post-test scores in control group ($p>0.05$). Mean scores of experimental group in pre-test and post-test obtained to 14.00-30.26 for depression, 4.86-16.60 for anxiety and 39.00-22.86 for quality of life; while mean scores of control group in pre-test and post-test obtained to 29.79-30.26 for depression, 15.13-16.93 for anxiety and 21.26-21.93 for quality of life.

DISCUSSION

This study was conducted to examine effectiveness of MBSR. Results of study showed the effectiveness of MBSR in reducing depression and anxiety besides increasing quality of life of patients with GAD ($p<0.05$). Results of this research were in line with findings obtained by Kabat-Zinn et al. [9,10], Roemer et al. [21], Koszycki et al. [22], Vøllestad et al. [23], Hofmann et al. [24], Arch et al. [25], Garland et al. [26], and Gaylord et al. [27]. 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-judgmental acceptance). These abilities contribute to increase in psychological flexibility and reduction in maladaptive habits [3,28]. Mindfulness plays a vital role in increasing psychological and physical wellbeing helping person to identify ordinary thinking patterns and behaviors. Mindfulness practices are formal and informal. Formal practice consists of mindfulness practices in certain times being aware of breathing, physical feelings, sounds, other feelings or thoughts and focus emotions. Informal practices consist of aware mindfulness of daily activities such as eating, exercise and relationship with others. MBSR help individuals to control their life changing their perception of stressful incidents and increasing their abilities. It is emphasized on patients' training in the context of mentioned aspects regarding stress reduction and relaxation. MBSR is a program contributing to improved quality of life of patients [29].

Roemer et al. mentioned in their study that mindfulness and acceptance-based approaches could contribute to accepting internal experiences instead of suppression, control, or avoidance enabling patient to have different relationship with their emotion feeling less distress toward these emotions and thoughts [30]. The study conducted by Sobczak et al. was in line with present study; he explained that when patients are empowered to create acceptance and mindfulness less do avoidance and more improve behaviors leading to valuable life [31].

LIMITATION

This current study has some limitations such as loss of follow up in post treatment. Also, our samples were women; hence, it would be better to perform further studies on men. Moreover, similar studies can be done on samples with various demographic and indigenous specifications considering the gender of participants. Also, the lack of follow-up period is another limitation of the study, which is suggested to be considered in subsequent studies.

CONCLUSION

The present study makes a significant contribution to research in anxiety disorders, especially GAD; hence, the results of this study can be used in psychiatric clinics to treat patients with GAD.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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INFORMED CONSENT

Informed consent was obtained from all individual participants included in the study.

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