

Comparing the Effectiveness of Mindfulness-Based Cognitive Therapy and Recovery-Focused Cognitive Behavioral Therapy on Anxiety, Difficulties in Emotion Regulation, and Quality of Life in Patients with Bipolar Disorder

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Received: 12 May 2018

Accepted: 30 August 2018

Published online: 1 September 2018

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Competing interests: The authors declare that no competing interests exist.

Citation: Hasani Ardekani H, Javidi H, Mehryar AH, Hosseini SE. Comparing the effectiveness of mindfulness-based cognitive therapy and recovery-focused cognitive behavioral therapy on anxiety, difficulties in emotion regulation, and quality of life in patients with bipolar disorder. *Rep Health Care*. 2018; 4 (3): 24- 35.

Abstract

Introduction: Bipolar disorder (BD) is a chronic psychiatric disorder that accompanies anxiety, difficulties in emotion regulation (DER), and low quality of life. The aim of this study was to compare the effectiveness of mindfulness-based cognitive therapy (MBCT) and recovery-focused cognitive behavioral therapy (RfCBT) on anxiety, difficulties in emotion regulation, and quality of life in patients with BD.

Methods: This study was a quasi-experimental research conducted in the form of pretest-posttest with control group. Thirty six five volunteer BD patients for participation in this study were included randomly in two experimental groups and one control group. The first experimental group (n=12: females=4, males=8) received the MBCT and the second experimental group (n=12: females=4, males=8) received the RfCBT, and the control group (n=12: females=5, males=7) received no intervention and was placed in the waiting list. Participants completed the Beck Anxiety Inventory (BAI), the Difficulties in Emotion Regulation Scale (DERS), and the World Health Organization Quality of Life (WHOQOL-BREF) in pre-test and post-test. Data were analyzed using covariance analysis by SPSS-22. P<0.05 was considered statistically significant.

Results: The results of this study showed that both MBCT and RfCBT interventions significantly reduced anxiety (p<0.001) and DER (p<0.001) and increased quality of life (p<0.001) in BD patients, but no significant differences were observed between the two interventions regarding the degree of effectiveness on these variables (p>0.05).

Conclusion: The findings suggested that both MBCT and RfCBT interventions were effective on reduction of anxiety and DER as well as increasing quality of life.

Keywords: Mindfulness, Anxiety, Emotion, Bipolar Disorder

Introduction

Bipolar disorder (BD) is a complex chronic disorder that is located in the range of mood disorders, characterized by recurring episodes of depression and mania or hypomania, and divided into bipolar I disorder and bipolar II disorder (1). BD is a chronic and debilitating psychiatric disorder that has lower recovery and higher mortality rates than other mood disorders (2). Therefore, the World Health

Organization (WHO) has ranked this disorder as the sixth cause of disability in individuals aged 15 to 44 years. Also, the prevalence of bipolar spectrum in the whole lifespan is between 2.5 to 6.5% (3). Variables such as anxiety, difficulties in emotion regulation (DER), and quality of life are among important variables on which therapeutic programs should be evaluated in BD patients. Anxiety is a common characteristic of bipolar

disorder, and anxiety symptoms are even presented as comorbid anxiety disorders (4). Also, the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) has considered anxiety as a contributor to describing mood episodes in BD (5). Anxious symptoms precede the symptoms of BD (5). The level of anxiety in individuals with BD is higher than normal samples (6). Anxiety structure is associated with some negative outcomes in BD such as suicide, emotional instability, and substance abuse (7). Emotion regulation (ER) as a multi-faceted construct contains the experience and separation of positive and negative emotions as well as the capability to regulate strong emotions (8). Failure in emotion regulation is called difficulties in emotion regulation (DER). The DER is a maladaptive response to emotions which includes non-acceptance, difficulty in controlling behaviors in emotional distress, and a deficit in the functional use of emotions as information (9). BD models emphasize the importance of the role of DER in this disorder (10-12). On the other hand, some authors have shown that depressive periods are the consequence of emotion regulation dysfunction (13). According to this view, depressive symptoms are considered as a consequence of the failure of individuals in their emotion regulations. It has also been proven that patients with BD have higher DER than healthy individuals (14). The WHO defines quality of life as follows: the perception of people from their position in life in the structure of culture and value system in relation to goals, expectations, standards, and important aspects to them. Quality of life is one of the indicators used to evaluate treatment outcomes. Evidence has suggested that adverse effects of BD on the quality of life in individuals with this disorder in the normal mood phase are more than disabling diseases including multiple sclerosis and severe stages of rheumatoid arthritis, and these effects cause problems in the patient's social life (16). A study has shown that quality of life in BD

patients is significantly lower in the recovery stage than healthy subjects (17). Another study has shown that patients with this disorder have low quality of life even after treatment (18). Although patients with BD appear to respond to the existing therapies, a large proportion of these patients experience symptoms that reduce their quality of life (19). Retrospective longitudinal studies have indicated that less than half of the patients with BD have a long-term favorable response to treatment and even if the treatment continues, many patients will not fully recover, while many patients also have a low acceptance for continuous drug therapy (1). In BD, clinicians frequently confront with episodes of depression and mania in patients due to non-compliance with drug orders and lack of follow-up. Also, each of the disorder recurrence periods accompanies numerous costs and disadvantages for patients and their families (1). Therefore, the study of psychological treatments along with drug therapy can be effective (20). Among treatments that may be effective in BD patients the Mindfulness-Based Cognitive Therapy (MBCT) can be mentioned (21). The MBCT is a new and advanced program in the treatment of mood disorder, which is made up of combining aspects of cognitive therapy with mindfulness exercises (22). The pivotal component of this therapeutic program is the concept of mindfulness. Mindfulness means paying attention to a particular method and concentrating on a goal in the present time and without any judgment. The result of this development and raising attention is to increase one's awareness of internal experiences including thoughts and feelings (23). In the MBCT, individuals learn skills that help them be aware of their thoughts without judgment, review it, not accept their mental events as a fact, and allow these mental events to pass without judgment (22). This therapeutic program is a short-term group therapy that combines mindfulness techniques with some aspects of cognitive therapy for

depression. Although the primary goal of the MBCT was to treat depression and prevent its recurrence (24), recent mood disorder researchers have recently been struggling to use this method for bipolar disorder (21, 25-27). This treatment has been successful in improving some symptoms and preventing relapses. For example, Hashemi (28) in a research study has shown that the MBCT in comparison with drug therapy leads to an increase in more adaptive behaviors and a decrease in the severity of manic behaviors and, as a result, a decrease in relapse rate in BD patients undergoing drug therapy. Other studies have shown that the MBCT can improve exacerbation and reduce anxiety in patients with bipolar disorder (21, 29, 30). In addition, Miklowitz *et al.* (26) have reported that the use of the MBCT reduces depression syndrome, suicidal ideation, anxiety, and manic symptoms in patients with BD. Mehri Nejad and Saatchi (31) have shown that this therapeutic program can reduce the difficulty in emotion regulation in veterans' spouses. Talebizadeh *et al.* (27) have also found that this treatment reduces the symptoms of depression but not mania in patients with BD. Asghari *et al.* (32) have revealed that mindfulness training significantly increases the effective emotion regulation and quality of life in women with substance-dependent husbands. Another treatment that may be effective in BD patients is the Recovery-focused Cognitive Behavioral Therapy (RfCBT) (33-34). The RfCBT consists of key components of effective cognitive-behavioral therapy (CBT) interventions including mood monitoring and awareness, regularization of routines, enhancing coping skills, problem solving training (35,36) as well as findings from a series of case studies on CBT for recently diagnosed BD (37). The RfCBT helps individuals move towards the constituent goals of personal values and achieve this goal and to this aim use social and job support. This intervention includes an important formulated component ensuring that any treatment is

consistent with the patient's current needs (33). Jones *et al.* (33) have shown that the RfCBT leads to improve depressive and manic symptoms in BD patients. Also, Jones *et al.* (34) have revealed that this intervention results in personal improvement and increases the duration of the next recurrence of negative mood in BD patients. Murray *et al.* (38) have also reported that online, recovery-focused, bipolar individual therapy (ORBIT) leads to improve quality of life and decrease anxiety in BD patients. In addition, Beck *et al.* (39) have found that the effectiveness of recovery-focused group therapy intervention regarding quality of life and BD symptoms is acceptable and practical in BD patients. Moreover, Tyler *et al.* (40) have shown that the recovery-focused cognitive-behavioral therapy for older adults with BD (RfCBT-OA) is acceptable and practical; also, this program is effective concerning the improvement of depression, mania, and quality of life. Given the above-mentioned contents, both MBCT and RfCBT have promising effects on patients with bipolar disorder. Therefore, comparing the effectiveness of these two treatments on important factors of BD such as anxiety, DER, and quality of life may help clarify a more effective treatment. As a result, the aim of this study was to compare the effectiveness of the MBCT and RfCBT on anxiety, DER, and quality of life in BD patients. To this end, the following hypotheses were formulated: 1- The MBCT leads to reduce anxiety and improve DER and quality of life in BD patients; 2- The RfCBT leads to decrease anxiety and improve DER and quality of life in BD patients; 3- There are significant differences between the effectiveness of the MBCT and RfCBT on anxiety, DER, and quality of life.

Methods

This study was a quasi-experimental research conducted in the form of pretest-posttest with control group. Statistical population of this study included all patients with BD in hospitals of Moharrery, Ebn-e-sina, and Hafez

in the city of Shiraz. Forty five volunteer BD patients were selected for this study. After obtaining informed consents from the patients, samples were matched in terms of sex, age, disease period, and drug therapy (all patients received lithium) and were included randomly in two experimental groups and one control group. Inclusion criteria were a definitive diagnosis of BD by a psychiatrist; having a DSM-5 diagnostic criterion for suffering from mania, semi-mania, major depression, or a mixture of them; age over 18; having a minimum reading and writing literacy and the ability to complete questionnaires; not being in the acute phase of illness or hospitalization during the past 2 months due to a mental problem (at least two months since the last recurrence period); and willingness to participate in the research. Exclusion criteria were spinal BD (occurred more than four episodes of depression and mania in less than one month during the last year), secondary bipolar disorder due to organic causes, a history of substance abuse during past and present years, past or current history of psychiatric disorders in axes I and II. In this study, the first experimental group (n=12: females=4, males=8) received 12 sessions of the MBCT twice a week (1.5 hours per week) based on Deckersbach *et al.*'s (41) therapeutic protocol. The second experimental group (n=12: females=4, males=8) received 16 sessions of the RfCBT twice a week (1.5 hours per week) based on Basco's (42) and Jones's (33) therapeutic protocols. Also, the control group (n=12: females=5, males=7) received no intervention and was placed in the waiting list. The sessions of MBCT included session 1: welcome to the moment I; session 2: welcome to the moment II; session 3: ending the honeymoon; session 4: attachment and aversion; session 5: depression and acceptance; session 6: mania; session 7: aggression; session 8: anxiety; session 9: openness to consciousness and kindness-love making; session 10: kindness-love making; session 11: love making-kindness; session 12:

mindfulness never ends. Also, the sessions of RfCBT involved session 1: familiarization of patients and their family members with the logic of cognitive-behavioral therapy for bipolar patients; session 2: what is bipolar disorder?; session 3: mood stabilizing medications; session 4: antidepressant medications; session 5: symptoms of bipolar disorder; session 6: monitoring the symptoms; session 7: follow the treatment; session 8: biased thinking; session 9: the goal of the session; session 10: logical analysis (challenge) of negative auto-thoughts; session 11: cognitive changes in mania; session 12: behavioral aspects of depression; session 13: behavioral changes in mania; session 14: psychosocial problems; session 15: psychosocial performance assessment; session 16: improving problem solving skills. In this study, The Beck Anxiety Inventory (BAI) was used to assess anxiety. The BAI (43) is a 21-item scale to assess the severity of anxious symptoms during the past week. Each item is rated on a four-point Likert scale from 0 (never) to 3 (severe). The total score of this scale ranges from 0 to 63. Higher scores indicate higher anxiety. This scale has been designed to measure the severity of anxious symptoms and reduce overlap with depressive symptoms, and its psychometric properties have been confirmed (43). Liang *et al.* (44) have reported the Cronbach's alpha for this scale equal to 0.94. In Iran, Ghasemzadeh *et al.* (45) have reported that the Cronbach's alpha for the BAI is 0.87. Also, to examine DER, the Difficulties in Emotion Regulation Scale (DERS) (9) was used in the current research. The DERS is a brief 36-item self-report questionnaire to assess multiple aspects of emotion regulation difficulties. The DERS items focus primarily on the regulation of negative emotional states. The measure yields a total score as well as scores on six subscales: 1) non-acceptance of emotional responses, 2) difficulties engaging in goal-directed behaviors, 3) impulse control difficulties, 4) lack of emotional awareness, 5) limited access

to emotion regulation strategies, and 6) lack of emotional clarity. Gratz and Roemer (9) have reported that the validity of DERS scale is acceptable and the Cronbach's alpha for this scale is equal to 0.93. Mazaheri (46) has also shown that the EERS have a six-factor structure in Iranian population and the Cronbach's alpha for this scale is 0.90. In addition, the World Health Organization Quality of Life (WHOQOL-BREF) was used to evaluate the quality of life. The WHOQOL-BREF with 26 items measures four dimensions of quality of life including physical health, mental health, social relations, and environmental health. To examine the validity and reliability of this scale, a study was performed on 1167 individuals from Tehran in which the participants were divided into two groups including patients with and without chronic illness. Test-retest reliability scores for the subscales of physical health, mental health, social relations, and environmental health were 0.77, 0.77, 0.75, and 0.84 respectively (47). In the present study, the data were analyzed using covariance analysis by SPSS-22. Also, $P < 0.05$ was considered statistically significant.

Results

Mean and standard deviation of dependent variables in pre-test and post-test in the experimental and control groups are shown in Table 1. As Table 1 shows, in the two experimental groups, both MBCT and RfCBT could significantly reduce the DER and anxiety and significantly increase the quality of life in the post-test. Analysis of covariance (ANCOVA) was used to analyze these hypotheses. One of the preconditions for ANCOVA is equalization of covariates. This default was examined through the Box test. The non-significant results of the Box test ($F=1.14$, $P=0.12$) indicate the default of covariance equality in all dependent variables between the three groups. In other words, covariance or the relationship between dependent variables in the three groups is

equal in population and so, it is possible to use ANCOVA. Another assumption for ANCOVA is the homogeneity of variance, which was assessed by using the Levine's test. The non-significant results of the Levine's test for DER ($F=0.66$, $P=0.53$), anxiety ($F=0.62$, $P=0.55$) and quality of life ($F=1.83$, $P=0.32$) showed the homogeneity of these variables (Table 2). The results of ANCOVA to assess research hypotheses are shown in Tables 3 and 4. The results of are presented in Table 3. As it can be seen, the results of Lambda test as the most commonly used test in ANCOVA indicate that there is a significant difference between the three groups in post-test scores ($F = 16.22$, $P < 0.001$). Also, eta squared shows that 63% of the score variance of the three groups is related to group membership. Table 4 shows the differences among the three groups in the DER, anxiety, and quality of life in the post-test. As it can be seen, there were significant differences between the three groups in the post-test scores of DER ($F=27.77$, $P < 0.001$). Here, despite controlling the pre-test scores of DER, the DER scores in the two experimental groups were lower than the control group ($P < 0.001$). Also, the effects of the MBCT and RfCBT on DER were 0.65. The results showed that there were significant differences among the three groups in the post-test scores of anxiety ($F=20.64$, $P < 0.001$). In other words, despite controlling the pre-test scores of anxiety, the anxiety scores further decreased in the two experimental groups compared to the control group ($P < 0.001$). The effects of the MBCT and RfCBT on anxiety were 0.58. Also, the findings indicated that there were significant differences among the three groups in the post-test scores of quality of life ($F=8.62$, $P < 0.001$). In other words, in spite of controlling the pre-test scores of quality of life, the scores of quality of life in the two experimental groups further increased compared to the control group ($P < 0.001$). The effects of the MBCT and RfCBT on quality of life were 0.58 (Table 4). Therefore, these interventions had a positive impact on

improving the DER, anxiety, and quality of life. In addition, the results of Bonferroni's test in all three variables showed that there were significant differences between the two experimental groups (MBCT and RfCBT groups) with the control group ($P < 0.001$), but no significant differences were observed

between the effectiveness of MBCT and RfCBT on dependent variables (DER, anxiety, and quality of life) ($P > 0.05$). Therefore, these two interventions were equally effective on improving the DER, anxiety, and quality of life.

Table 1. Mean (M) and standard deviation (SD) of dependent variables in pre-test and post-test

Variables		The first experimental group: MBCT		The second experimental group: RfCBT		Control group	
		Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
DER	M	102.92	81.25	98.58	81.92	100.92	99.92
	SD	13.12	10.96	11.20	10.26	14.85	17.56
Anxiety	M	33.33	26.17	33.92	27.42	34.75	33.83
	SD	7.02	5.25	4.19	3.85	7.51	6.06
Quality of life	M	42.48	49.99	45.53	51.88	45.60	45.78
	SD	7.87	8.30	6.06	7.84	7.30	6.55

Table 2. The Levin's test to determine the homogeneity of variance

Variables	F	P
Post-test for DER	0.66	0.53
Post-test for anxiety	0.62	0.55
Post-test for quality of life	1.83	0.32

Table 3. The results of ANCOVA regarding the difference between the three groups

Effect		Value	F	p	Partial eta squared	Observed power
Group	Pillai's trace	0.87	7.42	0.001*	0.43	1
	Wilks' lambda	0.13	16.22	0.001*	0.63	1
	Hotelling's trace	6.48	29.18	0.001*	0.76	1
	Roy's largest root	6.48	62.66	0.001*	0.87	1

* $p < 0.001$.

Table 4. ANCOVA to determine the effectiveness of the MBCT and RfCBT on the DER, anxiety, and quality of life

Dependent variables		Sum of squares	Mean square	F	p	Partial eta squared	Observed power
Post-test	DER	2569.80	1284.90	27.70	0.001*	0.65	1
	Anxiety	329.15	164.57	20.64	0.001*	0.58	1
	Quality of life	343.79	171.89	20.82	0.001*	0.58	1

* $p < 0.001$.

Discussion

This study aimed to compare the effectiveness of MBCT and RfCBT on anxiety, difficulties in emotion regulation, and quality of life in patients with BD. The results of this study showed that the MBCT could improve anxiety, difficulty in regulation of excitement, and quality of life in patients with BD. This finding was consistent with other studies conducted on various samples. For example, Esmailiyan *et al.* (48) showed the positive effect of MBCT on increased effective emotion regulation and significantly reduced anxiety and depression in children with divorced parents. Also, Norouzi and Hashemi (49) reported the effect of MBCT on the improvement of emotion regulation in breast cancer. Furthermore, Carlson *et al.* (50) revealed the effectiveness of MBCT on increased quality of life in patients suffering from breast and prostate cancers. Moreover, MehriNejad and Saatchi (31) suggested the efficiency of MBCT on reduced DER veterans' spouses. In addition, Asghari *et al.* (32) found the positive effect of mindfulness training on increased emotion regulation and quality of life in women with substance-dependent husbands. The results of our study were also in line with Williams *et al.*'s (21), Ives-Deliperi *et al.*'s (29), Perich *et al.*'s (30), and Miklowitz *et al.*'s (26) studies reporting the effect of MBCT on the improvement of emotion regulation and reduction of anxiety in BD patients. Moreover, in another study, Jannati *et al.* (51) have shown that cognitive-behavioral group therapy leads to significant reduction of anxiety and depression. In addition, Hashemi (28) has revealed that the MBCT leads to the increase of more adaptive behaviors as well as the reduction of manic severity and recurrence rate in BD patients undergoing drug therapy in comparison with drug therapy. Anxiety (6-7), DER (11-12), and low quality of life (16- 18) are the problems associated with BD patients. Some studies have shown that conscious mindfulness training increases effective emotional

regulation (52). If conscious attention is attributed to emotional adjustment, the improvements in emotional regulation may result from a general increase in positive emotional experiences and a reduction in negative emotional experiences. Increasing positive emotional experiences and reducing negative emotions by using mindfulness exercises can lead to improved emotional regulation and, as a result, relief of anxiety and other psychological stress in individual with BD. The central element of MBCT, namely acceptance, leads the individual's attention to less distressing aspects of the stimuli motivating negative emotions, reduces negative emotions, and thus can reduce the DER and subsequently anxiety. Improving psychological distress such as DER and reducing anxiety in BD patients may also help improve the quality of life. The MBCT relies on mindfulness and self-affection and significantly reduces the emotional regulation problems, fear of emotions, concerns, and suppression of anger, and consequently, life satisfaction and quality of personal, social, and family functions enhanced in the participants. It can be argued that during the period of mindfulness participants learn how to be aware of their emotional states without any effort to change these states (53). A core skill taught in mindfulness-based interventions is cultivating a quality of awareness in which thoughts and emotions are acknowledged without judgment and considered passing mental events. This technique of regulating emotion has proven effective in reducing anxiety and alleviating emotional stress (54). Therefore, the MBCT may be effective in improving the regulation and management of emotions (55) and anxiety (29), and as a result, improving quality of life (56). The results of this study also showed that the RfCBT had a positive effect on modifying anxiety and DER as well as improving the quality of life in BD patients. These findings were in line with Murray *et al.*'s (38) study reporting that online mindfulness-based intervention leads to

improve quality of life and reduce anxiety in BD patients; Beck et al.'s (39) study reporting that the effectiveness of recovery-focused group therapy on quality of life and symptoms is acceptable and practical in BD patients; and Tyler et al.'s (40) study revealing that the effectiveness of the RfCBT on increasing quality of life is acceptable and practical in older patients with BD. Jones *et al.* (33) have shown that the RfCBT can lead to improve manic and depressive symptoms in BD patients. Also, Jones et al. (34) have concluded that the RfCBT leads to personal improvement and increase the duration of the next recurrence of negative mood in BD patients. This result can be explained by the fact that the RfCBT shows a strong influence on improving cognitive function of BD patients including improvement in explicit memory, improvement in attempts to drop memory bias, and improvement in overall memory performance, and has high effects on cognitive functions and thus, can modify ineffective attitudes of patients. Therefore, correcting inefficient attitudes of patients can reduce anxiety and improve the emotion regulation and quality of life in patients with BD. Also, since monitoring and awareness of the mood, the adjustment of daily life, the increase of coping skills, and problem solving training are the key components of this treatment (35-36), monitoring and awareness of the mood or emotions and the increase of coping skills can help individuals with BD gradually observe their emotional deficits and by becoming aware of them, they will move toward improving the use of adaptive emotion regulation strategies and effective emotion regulation, and by improving the emotional regulation of them, psychological distress such as anxiety will also reduce. The components of daily life adjustment and problem-solving training can help BD patients have more control over their lives and have appropriate confrontation with everyday life problems and resolve these issues in a desirable manner and these results subsequently lead to satisfaction

with life and increased quality of life in them. Also, like other diseases, the primary goal of care in BD is to maximize the quality of life, and the goal of the health care team in treating these patients is to maximize occupational abilities and improve the quality of life (57), and this aim is achieved in RfCBT by helping people move towards the constituent goals of personal values, providing social and job support for them, and aligning with the patient's current needs (33). The current research also showed that the MBCT and RfCBT were both equally effective in reducing anxiety and DER as well as improving quality of life. There has been no research on the differences in the effectiveness of these two treatments. Therefore, this study showed for the first time that both MBCT and RfCBT can be effective in improving anxiety, DER, and quality of life in patients with BD. Given that this study was the first study to compare the effectiveness of the MBCT and RfCBT, so in order to further clarify the results, more research is needed to compare the effectiveness of these two treatments on other problems of BD patients.

Conclusion

In general, according to the findings of this research, it can be concluded that anxiety, DER, and low quality of life which are problems associated with BD patients can be improved through the use of psychological interventions such as the MBCT and RfCBT. Also, since the sample of this study was under medical treatments, both MBCT and RfCBT can be used in conjunction with drug therapy for patients with BD. On the other hand, the MBCT and RfCBT had no superiority in terms of their efficacy on anxiety, DER and quality of life, and both treatments were equally effective.

Ethical issues

Morally, at the beginning, the purpose of the research was described to the patients, and the emphasis was placed on the confidentiality of

information and secrecy. It was noted that participation in the study was optional and during the execution of the interventions, the subjects were allowed to withdraw from the test. All patients received informed consents. The Code of Ethics (Code of Ethics Committee 1178191/95) was taken from Shiraz University of Medical Sciences.

Authors' contributions

All authors contributed to the writing of manuscript and have approved the final manuscript.

Acknowledgements

This research was obtained from a Ph.D thesis in general psychology, sponsored by Islamic Azad University of Marvdasht. Finally, we thank all the officials and staff of the psychiatric hospitals Moharreri, Ebn-e-sina, and Hafez in Shiraz, and especially appreciate the respectable patients who have had strong participation in the present research.

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