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Original Article

Is mindfulness a mediator factor in obsessive compulsive disorder?

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Abstract
Introduction: The aim of this study was to determine the effectiveness of mindfulness-based cognitive therapy (MBCT) on positive reappraisal in patients suffering from obsessive compulsive disorder (OCD).
Methods: The research design was quasi-experimental of pre-test and post-test type with control group. The statistical population of present study involved all patients referring to psychiatry clinics of Tabriz University of Medical Sciences who received obsessive-compulsive disorders diagnosis. Thirty available patients were selected that filled cognitive emotion regulation questionnaire (CERQ) after being randomly assigned to experimental and control groups. The experimental group attended 8 sessions of MBCT. The cognitive emotional regulation questioner was administered after completion of the sessions and data of both states (before and after sessions) were collected and analyzed using covariance analysis test.
Results: The MBCT was effective in increasing positive strategies (positive reappraisal, positive refocusing, planning, putting into perspective) and decreasing negative strategies (self-blame, blaming others, catastrophizing, rumination, and acceptance) in patients with obsessive-compulsive disorder ($P < 0.05$).
Conclusion: This study indicated that it is possible to increase positive strategies of emotion regulation through training MBCT.

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Introduction

Obsessive compulsive disorder (OCD) as a disabling disorder is commonly experienced illness with a 1-3% prevalence in life time and a prevalence of 1-2% in 12 months period.[1] Patients suffering from OCD experience repeated intrusive thoughts or impulses (obsessions) and/or repeated behaviors (compulsions). Patients with OCD problem need to be treated, otherwise relapsing course will occur,[2,3] which can affect quality of life[4,5] and social and professional life of OCD patients.[6] OCD not only can disable the patients but also imposes a high cost to families, health system, and the society. People with OCD report higher levels of anxiety and distress due to the nature of their symptoms in comparison to the general population. In addition to the primary symptom domains of obsessions and compulsions, those with OCD tend to place more significance on the content of their thoughts[7] and feel a heightened sense of responsibility for the existence of their thoughts[8,9] in comparison to the general population. In other words, those with OCD tend to present or display symptoms of cognitive dysfunction that result in difficulty for rationalizing or making sense of their intrusive thoughts.[2]

Cognitive-behavioral and appraisal models of OCD elucidate the cognitive mechanisms that reproduce the symptoms of the disorder. Research suggests that certain types of OCD

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are characterized by dysfunctional beliefs.[10,11] Common dysfunctional beliefs include an inflated sense of responsibility,[1,12] thought significance,[8] thought control,[12] and intolerance for uncertainty.[13-15] These dysfunctional belief systems elicit anxiety and compulsive behavior in the afflicted individual.[12] What follows are brief summaries of each of these cognitive dysfunctions. According to Lazarus and Folkman,[16] appraisal has a major role in stress process. When a situation in the first glance apprised as threatening, challenging or harmful, subjective experience of stress simultaneously occurs with activation of organism involved in stress response.

Cognitive emotion regulation strategies are techniques in which the individual cognitively reevaluates an emotional situation to change its emotional impact.[16,17] Emotion regulation is considered as inner and outer processes included in starting, maintaining, and changing the quality, intensity or duration of affected response, respectively.[18] Individuals can regulate their emotions in a number of different ways.[17,19,20] Cognitive reappraisal is one type of emotion regulation, which appears to be particularly adaptive. Positive reappraisal is one of the nine cognitive emotion regulation strategies that were distinguished within the cognitive emotion regulation questioner (CERQ), on theoretical and empirical bases; each refers to thinking system of individual after confronting a threatening or stressful events. One of the major elements of meaning based coping is positive reappraisal which enables individuals to cope effectively to stressful life events. Positive reappraisal is considered to be an active coping strategy,[21] not just a defense mechanism applied for repression or denial. In comparing with suppression of negative emotion, in which activation of sympathetic nervous system increases, psychological and organismic complication does not occur due to positive reappraisal.[22,17]

Besides, positive reappraisal most of the time is first step onto involvement with distressing event. Positive reappraisal is an adaptive strategy not avoidant, something which can be employed by clinicians to improve the well-being of their clients. Considering the relation between positive reappraisal and health it is necessary for clinicians and researchers to discover the mechanisms through which it works. The mechanism which facilitates the shift from stress appraisals to positive reappraisals includes meta-cognition state of mindfulness, a state in which thoughts are treated as temporary mental events but not just absolute facts. Mindfulness as a form of awareness is the process of transferring cognitive sets which makes alternative appraisal of life events to occur. Mindfulness practice probably facilitates the strengthening effect of this capacity for positive reappraisal.[23] Mindfulness is a process of attending into ongoing experience in a way that is not judgmental. According to manualized program, mindfulness-based cognitive therapy (MBCT)[22] is an eight session's intervention on outpatient group. This program combines mindfulness practices with cognitive therapy factors and it is basically tailored to inhibit relapse in depression. According to some research conducted in randomized and control trials of two independent research groups, including MBCT into treatment program of TAU (treatment as usual) decreases the probability of relapse in depressed patients with three or more history of depressive episode in comparison with TAU alone (without including MBCT).[24-26] In a study with an uncontrolled research design, MBCT was helpful in depressed patients suffering from acute symptoms; after intervention, significant reduction in symptoms was observed with large effect size.[27] The original manual have adapted for individuals with other psychiatric disorders in several research groups. In different disorders, a medium effect size for MBCT was reported.[28,29] In randomized pilot study, it was shown that MBCT is effective in treating patients with panic disorder, generalized anxiety disorder,[30] social phobia,[31] and OCD as well. In an uncontrolled study,[32]

among patients suffering from primary insomnia, including mindfulness with some components of cognitive behavioral therapy reduced symptoms.[32] However, there are few controlled studies considering application of MBCT in OCD patients.

Training OCD patients through MBCT to bring their attention to moment by moment experience in a nonjudgmental way might be a powerful way for these patients to confront their thoughts which are experienced as intrusive, unwanted, and most of the time as shaming.[33] Mindfulness as a supplementing evidence based therapy is shown to be effective and is recommended by Teasdale et al.[25] along with other researchers for OCD patients. Primary results obtained from MBCT intervention for treating OCD showed its effectiveness.

Methods

Thirty participants with the OCD diagnosis (including all types) were randomly assigned to experimental and control groups (15 experimental and 15 control groups). The experimental group attended 8 sessions of MBCT. The control group did not go under any psychotherapy. It should be noted that both groups were taking medicine for OCD for last three to five years. Inclusion criteria consisted of: 1) OCD diagnosis from psychiatrist, 2) age between 20 and 45 years, 3) having diploma as a minimum level of education. Exclusion criteria consisted of comorbidity with schizophrenia, personality disorders, bipolar disorder, mental retardation, organic brain syndrome and being under psychotherapy. After explaining the purpose of the study all participants signed the written consent. The subjects were filled demographic form and cognitive emotion regulation questionnaire (CERQ). The participants individually attended the treatment sessions which lasted one hour for eight consecutive weeks. MBCT intervention program combined training of meditation and cognitive processing in order to educate the followings: 1) control of the attention, the way of staying in here and now, awareness without distraction of emotions or thought (and bringing attention back over and over again to the focused object for controlling highly distractible mind; 2) teaching the way of disengaging from judgmental processing which is based on language and to shift to an experiential awareness of here and now; 3) application of above skills to consider and disengage from negative thoughts and emotions and physical sensations. Mindfulness based intervention includes creating a specific type of attention, characterized by awareness which is judge free, openness to experience, and accepting the moment by moment experiences which occurs inside and outside of the individuals, which helps the person to behave more reflectively.

In this study, the intervention was provided in eight sessions. In the first session, goals and techniques included building a rapport with the client, obtaining information from the client, providing psycho education on mindfulness, depression, stress, anxiety, identifying automatic thoughts, and leading the client through a guided mindfulness meditation. In the second session, the goals and techniques included 'Automatic pilot' (acting without conscious awareness), having a childlike curiosity and mindful eating body scan (intentionally bringing awareness to bodily sensations). In the third session, the goals and techniques included dealing with barriers (being aware of how feelings and behavior is affected by self-talks of the mind), and being compassionate with oneself and short breathing meditation. The goals and techniques in the fourth session included helping the client to recognize that most of his/her thoughts are not facts, and teaching her to use the thought record, and provide training on cognitive distortion. The goals and techniques in the fifth session included teaching the client the ability to stay in the present time with awareness of attachment and aversion; then, diaphragmatic breathing and sleep hygiene were explained; next, the client was taught a brief body scans exercise

to reduce muscle tension. In the sixth session, the goals and techniques included the acceptance of thoughts and emotions as fleeting events; next, introducing mindful daily activity, teaching mindful eating and mindful labeling on thoughts, feelings and behaviors. In the seventh session, the goals and techniques included familiarizing the clients with the symptoms of depression, stress and rumination thinking. Also, we trained them to accept their rumination thinking without judgment and to use the diffusion technique to reduce it. In the eighth session, the goals and techniques included reviewing the insights and techniques found most useful by the client, identifying the obstacles to practice mindfulness, and providing a checklist of techniques included in the program.

The CERQ was developed by Garnefski et al.[34] on theoretical and empirical basis. It has 36 items and assesses 9 different cognitive emotion regulation strategies. For the total scale score, alpha reliabilities of 0.91, 0.87, and 0.93 were obtained.[34] The CERQ has good factor validity, discriminative properties and construct validity.[35] In the current study the alpha coefficients of subscales were good, ranging from 62 to 85.

The strategies were distinguished within the CERQ, each refers to thoughts of individuals after being exposed to some experience with threatening or stressful nature. The scores for each strategy can range from 4 to 20. Cognitive emotion regulation strategies were measured on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). In an Iranian sample, the alpha coefficient for the total scale score was 0.82 as reported by Besharat et al.[36] Cognitive coping strategies includes self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing and other-blame. Positive reappraisal is one of the nine strategies that comes from the coping tradition,[37] refers to thoughts of creating a positive meaning to the event in terms of personal growth. Positive reappraisal has four items in CERQ:[38]

1) I think I can learn something from the situation

2) I think that I can become a stronger person as a result of what has happened

3) I think that the situation also has its positive sides

4) I look for the positive sides to the matter

The internal consistency of the positive reappraisal scale reported by Besharat et al. was 0.85 and 0.83.[36]

Obtained data was subjected to analysis of covariance. Before examining research questions, the assumptions of normal distribution of variable for covariance analysis, the slope of the regression line and homogeneity of variances was tested. The results showed that the assumptions established and authorized to use the analysis of covariance. Non-parametric test such as Kolmogorov-Smirnov test was also used.

Results

At pre-test, there was no significant difference between the control (15.3 ± 2.8) and experimental (16.1 ± 2.9) groups in positive reappraisal scores.

But, at post-test, the positive reappraisal scores differed significantly among the two groups of control (12.0 ± 2.5) and experimental (18.3 ± 2.8) (P = 0.001).

The results of table 1 (F = 42.35, df = 27, and P = 0.001) shows a significant difference between the groups with 99 percent of confidence. So it can be concluded that MBCT increases positive reappraisal strategy in people with obsessive-compulsive disorder. It also indicates that 61% of the square of changes in positive reappraisal scores of experimental group (difference between groups in the post-test) was because of the dependent variable (MBCT).

Discussion

Results of this study provided preliminary evidence supporting the feasibility and efficacy of MBCT in treatment of patients suffering from OCD. Outcomes revealed a more significant improvement in MBCT

Table 1. Covariance analysis of differences between experimental and control group at post-test

Variable	Sum of square	df	Mean square	F	Statistical significance	Partial Eta squared
Pre-test	11.243	1	11.243	1.592	0.218	0.065
Group	299.001	1	299.001	42.351*	0.001	0.611
Error	190.624	27	7.06			
Total	7391	30				

*P < 0.01; df: Degree of freedom

group compared to those receiving just medicine. Compared to the usual treatment, mindfulness proves to have a positive effect. Our findings suggest the effectiveness of mindfulness techniques in treatment of OCD. Results obtained by other studies confirm the results of the current study. The current findings along with findings of other researchers indicate psychiatric interventions such as mindfulness can play an important role in the treatment of OCD. The findings of current study on improving the effects of mindfulness is in line with those obtained by Goldin and Gross,[39] Garnefski and Kraaij,[40] Brown and Ryan,[41] Bayrami and Abdi,[42] Azargoon et al.,[43] and Carlson et al.[44]

There is little doubt that cognitive emotion regulation strategies play an important role in influencing people's lives. Further exploration of the nature of cognitive emotion regulation and its determinants and consequences is important, as it might carry important implications for the content of prevention and intervention.

MBCT is a method that improves mind separation and enhances awareness level of individual's body and their environment. Through this technique distraction of intrusive thoughts (obsession) and repeated behaviours (compulsions) become easier by being conscious about the present. MBCT helps individual to perceive the events in time of occurrence less unpleasant. MBCT makes the mind to be conscious to recognize what is going on at the time being. When we are conscious about present, our attention will not return to the past or future. Psychological problems that are mostly linked with OCD patients occur as a result of past experience or due to being anxious, or fearful of future events. MBCT encourages individuals to observe and describe experiences in the present moment and positive reappraisal attributes a positive valence to experience and makes it easier to control the thoughts and behaviors and tends to avoid disturbing responses and the development of new ideas.

The small sample size was one of the major limitations of the present study, since generalization gets affected by sample size. In the present study, follow-up was not carried out, as it would present important information regarding maintenance of treatment gains, future studies should be carried out with follow-up studies to establish the efficacy of this treatment in a long run. In this study, personality differences concerning optimism and pessimism was not taken into consideration in assigning patients, which could influence the result in some respect, also dosage of medicine prescribed by psychiatrist was not controlled.

Conclusion

The findings of this study show that MBCT is an effective intervention for OCD patients. This study is one of the few studies carried out in Iran, in which a combination of mindfulness and elements of cognitive therapy was adopted in patients with OCD problem. Training in mindfulness meditation is cost-effective in terms of time and is applicable to a wide range of patients. All of the clients who participated in the study were under medication. The significant increase in positive reappraisal that happened in patients after the intervention showed that MBCT is an effective treatment technique in managing patients with OCD.

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University of Tabriz, Iran.

Authors' Contribution

Naeimeh Moheb and Fatemeh Alam-Dianati designed the study; diagnosing, interviewing and prescribing medicine for patients was provided by Shahrokh Amiri; training mindfulness for patients was done by Fatemeh Alam-Dianati. Data analysis was done by Fatemeh Alem-Dianati under supervision of Naeimeh Moheb and Shahrokh Amiri. Editing the whole manuscript was done by Naeimeh Moheb.

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Conflict of Interests

Authors have no conflict of interest.

Ethic Approval

The Ethics Committee of Tabriz Branch, Islamic Azad University, approved the study.

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