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Cognitive restructuring compared with progressive muscle relaxation on comorbid depression and anxiety in chronic obsessive-compulsive disorder

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Original Article

Abstract

BACKGROUND: Comorbidities are one of the major factors in the failure of treatment of chronic obsessive-compulsive disorder (OCD). The present study examines the efficacy of cognitive restructuring (CR) and progressive muscle relaxation (PMR) on depression and anxiety in patients with chronic OCD.

METHODS: In this experimental study, from among 112 patients referred to a clinic for treatment of OCD in Tehran, Iran, in 2019, sixty people who were eligible were selected and assigned randomly into three groups: two experimental groups, CR and PMR, and a control group; each of them included twenty persons. After pre-test in all three groups, two experimental groups received CR and PMR interventions separately in group format. In the end, all groups completed Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI). Data were analyzed using covariance, Bonferroni adjusted alpha, and L-matrix in SPSS software.

RESULTS: Though CR and PMR both were effective in improving depression and anxiety in patients with OCD, CR was more effective in reduction of depression and PMR was more effective in reduction of anxiety (P = 0.001).

CONCLUSION: CR is effective for depression and obsessions and PMR is more effective in anxiety in patients with chronic OCD.

KEYWORDS: Cognitive Restructuring; Progressive Muscle Relaxation; Depression; Anxiety; Chronic; Obsessive-Compulsive Disorder

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Introduction

Obsessive-compulsive disorder (OCD) is a psychiatric disorder characterized by chronic repetitive obsessions that invoke anxiety and tension. Obsessions and compulsions are frequently linked by tension, anxiety, depression, and agitation.[1] Among the general population, the common prevalence of OCD has been found 3%.[2] Approximately, 20% of population experience symptoms of OCD at the age of 10. Sexual and religious obsessions are more prevalent in young people.[3] This disorder is significantly associated with a high Global Burden of Diseases (GBD), psychiatry, and relational problems.[4] This disorder is very challenging to handle and many different methods including exposure

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and response prevention (ERP) therapy, cognitive-behavioral therapy (CBT), and drug treatments are used for it.[5] Despite this, OCD is a chronic, pervasive, and recurrent disorder.[6] This prevalent and chronic disorder affects personal, familial, educational, occupational, and social life of population negatively.[7]

CBT is typically conceptualized as a short-term, skill-focused treatment aimed at altering negative emotions by changing the patient's maladaptive beliefs, behaviors, or both.[8]

Psychologists believe that for treatment of OCD, we should correct negative beliefs and cognitive errors and control the obsessions and behaviors that contribute to the persistence of these negative cognitions. This indicates the significant impact of CBT on OCD and the other psychiatric disorders.[9,10]

In CBT, we identify and correct negative cognitions and obsessions, increase the exposure behaviors, and reduce avoidance behaviors by modifying attitudes related to over responsibility in patients with OCD. Besides, it should prevent neutralization behaviors that arise compulsions.[12]

The origins of behavior therapy can be traced back to psychologists such as B. F. Skinner and Joseph Wolpe, who pioneered the behavioral therapy movement in the 1950s and showed that behavior techniques were effective for OCD symptoms.[13] These techniques are ERP and relaxing strategies. Behavioral therapy supposes that changing behaviors leads to change in emotions and cognitions such as obsessive appraisals. Progressive muscle relaxation (PMR) is an effective strategy for reduction of stress in patients with OCD.[14] Some studies showed the efficacy of relaxation in reduction of anxiety and depression symptoms in patients with OCD.[3,15]

In regard to the significance of this subject, the present study aimed to examine and compare the effectiveness of two of the most common components of CBT, cognitive restructuring (CR) and PMR, in reducing anxiety and depression symptoms in patients with chronic OCD.

Methods

In this experimental study, from among 112 patients referred to a clinic for treatment of OCD in Tehran, Iran, in 2019, 60 people who were eligible were selected and assigned randomly into three groups: two experimental groups (CR and PMR) and a control group; each of them included twenty individuals. We selected patients for several months on May to September 2019. Inclusion criteria were: scores above the cut-off point in depression and anxiety scales, age between 20 t0 35, at least high school education, and diagnosis of OCD in past 5 years. Exclusive criteria were: having history of psychosis and personality disorder, using psychiatric drugs during the study, and using alcohol and addictive substances. After signing a written consent by the participants, interventions including ten 70-minute sessions and twelve 45-minute PMR sessions were performed. The control group received no intervention. This study was approved by the Ethics Committee of Islamic Azad University, Tonekabon Branch, Tonekabon, Iran (15920701902016).

Research questionnaires

Questionnaires used in this study were as follows:

Beck Depression Inventory-II (BDI-II): This widely-used self-rated inventory contains 21 items, each with a series of four statements describing the severity of depressive symptoms. Scores on this test can thus range from 0 to 63. The Persian version of BDI-II has shown excellent internal consistency in several studies in Iran.[16,17]

Beck Anxiety Inventory (BAI): BAI is a 21-item anxiety symptom inventory that includes common anxiety symptoms commonly experienced by clinically anxious people. Scores on this test range from 0 to 63.[18] The Persian version of BAI has shown acceptable

internal consistency in several studies in Iran.[19]

Educational package for CR group: This package is provided based on Beck cognitive approach which is implemented in form of an 8-week schedule in group.[20]

In the first session, cognitive therapy was introduced for patients. In the second session, we focused on identifying automatic thoughts and their effects on mood and behaviors. In the third to seven sessions, the participants were acquainted with how to challenge negative automatic thoughts and correct them. Moreover, cognitive errors and obsessions were detected and challenged. In the eighth session, we reviewed and summarized total sessions and participated in answering post-test.

Educational package for PMR group: This package is provided based on Jacobson approach,[20] which is implemented in form of an 8-week schedule in group.

In first session, the benefits of relaxation and self-monitoring of early symptoms of anxiety were discussed and deep breathing was exercised. In the second session, relaxation in the hands, arms, face, neck, and shoulders was taught. In third and fourth sessions, the participants learned how to relax their whole bodies. In fifth to seventh sessions, relaxation time was reduced to 5 to 7 minutes by eliminating the contractions and relaxation was introduced as a practical strategy of coping for anxiety. Eighth session focused on reviewing the content of sessions.

Data were analyzed using descriptive statistics [mean and standard deviation (SD)] and inferential statistics [analysis of covariance (ANCOVA), Bonferroni adjusted alpha, and the L-matrix] in SPSS software (version 22, IBM Corporation, Armonk, NY, USA).

Results

Demographic characteristics of the participants in this study included the following: 44 patients (74%) were women and 16 patients (26%) were men. All of them were in the age range of 21-38 years. 32 (54%) were employed and 28 (46%) were unemployed. 22 patients (37%) were in good socio-economic status (SES), 27 patients (41%) were in the middle SES, and 11 (22%) were in low SES. 50 patients (82%) had graduated from university and ten (18%) had high school education.

Mean and SD of scores of three groups in pre-test and post-test are shown in table 1.

Three groups were compared in terms of anxiety and depression by ANCOVA. The results showed that both CR and PMR were effective in reducing depression and anxiety [depression: sum of squares (SS) = 1148.372, degree of freedom (df) = 2, mean square (MS) = 574.163, F = 60.106, P = 0.001; anxiety: SS = 1832.985, df = 2, MS = 916.492, F = 52.090, P = 0.001].

For comparing the effectiveness of CR and PMR on improvement of anxiety and depression, Bonferroni adjusted alpha was used to clear the difference between the effectiveness of two methods in the experimental groups. The results revealed that there was a significant difference in efficacy of these two methods in reducing anxiety and depression in participants [depression: SS = 329.489, df = 1, MS = 329.489, F = 34.492, P = 0.001; anxiety: SS = 345.973, df = 1, MS = 345.973, F = 19.664, P = 0.001].

Table 1. Mean and standard deviation (SD) of participants' pre-test and post-test scores in dysfunctional attitudes, depression, and anxiety

Variables	Depression		Anxiety		Dysfunctional attitudes	
Groups	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
CR group	33.80 ± 4.59	18.10 ± 3.70	30.90 ± 3.29	23.35 ± 2.81	38.20 ± 3.29	20.90 ± 2.20
PMR group	36.30 ± 3.27	26.05 ± 3.01	38.65 ± 3.57	17.75 ± 1.81	48.55 ± 2.58	39.20 ± 1.92
Control group	38.20 ± 3.74	35.25 ± 3.35	38.35 ± 3.38	35.86 ± 3.34	44.24 ± 3.18	45.66 ± 3.56

CR: Cognitive restructuring; PMR: Progressive muscle relaxation

Then, L-matrix post-hoc test was used to determine more effective interventions. The results showed that there was 7.201 difference between mean of CR group and PMR group in anxiety (SD = 1.624, P = 0.001). This significant difference suggests that PMR was more effective than CR in reducing anxiety. Furthermore, there was -7.028 difference between mean of CR group and PMR group in depression (SD = 1.197, P = 0.001), which means that CR was more effective than PMR in reducing depression in participants.

Discussion

The main aim of current study was to evaluate and compare the effectiveness of two components of CBT, i.e., CR and PMR, in reducing anxiety and depression symptoms in patients with chronic OCD.

Based on the results, this study showed that CR and PMR as two treatment approaches of CBT were effective in removing of depression and anxiety in patients with chronic OCD. Several studies have shown that CBT leads to a major reduction in obsessive-compulsive symptoms in the test groups compared to the control group.[22] This finding is consistent with some studies which showed that cognitive behavioral techniques (CR, ERP, and relaxing strategies) were effective for removing of depression, anxiety, and symptoms of OCD.[1,2,9,22]

In explanation of these results, we could conclude that co-occurring depression and anxiety were common among adults with chronic OCD. Depression can manifest as thoughts that one is powerless (low self-efficacy) and that the future is hopeless, as well as low energy and motivation. These symptoms in particular can be problematic in treating OCD, particularly by reducing patients' adherence to treatment procedures. Anxiety could increase tension and obsessions that could increase compulsive symptoms. Cognitive strategies could reduce negative and obsessive thoughts that are triggers of compulsions. With control of them, the tension of patients was reduced.

The findings revealed that PMR was substantially successful in improving anxiety and obsessions in patients with OCD and this finding is in line with the studies conducted by some psychologists.[14,15,22,23] It seems that PMR increases OCD patients' ability to relax and control negative thoughts and obsessions. This ability could improve their coping for adjustment with OCD.[22,23]

Moreover, present study showed that CR was more effective than PMR in reducing depression and PMR was more effective than CR in anxiety reduction in patients with chronic OCD. Based on these results, it can be concluded that reduction of anxiety by PMR could reduce obsessions and increase relaxations in patients. We know that obsessions induce tension and compulsions in patients.

Limitation of the study included the lack of follow-up in samples. We suggest follow-up for future studies.

Conclusion

This research on OCD supports the efficacy and effectiveness of these two methods: CR in the treatment of depression and the PMR in reduction of anxiety in patients with chronic OCD. However, these results may change as additional research is conducted on cognitive therapy alone and cognitive therapy combined with other behavioral techniques.

Conflict of Interests

Authors have no conflict of interests.

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References

1. Abramowitz JS, Reuman L. Obsessive compulsive disorder. In: Zeigler-Hill V, Shackelford TK, editors. Encyclopedia of personality and individual differences. Cham, Switzerland: Springer International Publishing; 2020. p. 3304-6.
2. Hofmann SG, Wu JQ, Boettcher H. Effect of cognitive-behavioral therapy for anxiety disorders on quality of life: a meta-analysis. J Consult Clin Psychol. 2014; 82(3): 375-91.
3. Law C, Boisseau CL. Exposure and response prevention in the treatment of obsessive-compulsive disorder: Current perspectives. Psychol Res Behav Manag. 2019; 12: 1167-74.
4. Sharma E, Tripathi A, Grover S, Avasthi A, Dan A, Srivastava C, et al. Clinical profile of obsessive-compulsive disorder in children and adolescents: A multicentric study from India. Indian J Psychiatry. 2019; 61(6): 564-71.
5. Arumugham SS, Reddy YC. Commonly asked questions in the treatment of obsessive-compulsive disorder. Expert Rev Neurother. 2014; 14(2): 151-63.
6. Del Casale A, Sorice S, Padovano A, Simmaco M, Ferracuti S, Lamis DA, et al. Psychopharmacological treatment of obsessive-compulsive disorder (OCD). Curr Neuropharmacol. 2019; 17(8): 710-36.
7. Afzal MU. Obsessive compulsive disorder (OCD) recognition. A review. J Curr Res Sci. 2014; 2(6): 920-4.
8. Kyrios M, Ahern C, Fassnacht DB, Nedeljkovic M, Moulding R, Meyer D. Therapist-assisted internet-based cognitive behavioral therapy versus progressive relaxation in obsessive-compulsive disorder: Randomized controlled trial. J Med Internet Res. 2018; 20(8): e242.
9. Ost LGr, Havnen A, Hansen B, Kvale G. Cognitive behavioral treatments of obsessive-compulsive disorder. A systematic review and meta-analysis of studies published 1993-2014. Clin Psychol Rev. 2015; 40: 156-69.
10. Pascual-Vera B, Roncero M, Doron G, Belloch A. Assisting relapse prevention in OCD using a novel mobile app-based intervention: A case report. Bull Menninger Clin. 2018; 82(4): 390-406.
11. Manjula M, Sudhir PM. New-wave behavioral therapies in obsessive-compulsive disorder: Moving toward integrated behavioral therapies. Indian J Psychiatry. 2019; 61(Suppl 1): S104-S113.
12. Hellberg SN, Buchholz JL, Twohig MP, Abramowitz JS. Not just thinking, but believing: Obsessive beliefs and domains of cognitive fusion in the prediction of OCD symptom dimensions. Clin Psychol Psychother. 2020; 27(1): 69-78.
13. Nayebaghayee A, Aleyasin SA, Heidari H, Davodi H. Effectiveness of metacognitive therapy on dysfunctional beliefs, inflated sense of responsibility, and intolerance of uncertainty in patients with obsessive-compulsive disorder (OCD). Clinical Psychology Studies. 2019; 9(33): 1-24.
14. McKay D, Sookman D, Neziroglu F, Wilhelm S, Stein DJ, Kyrios M, et al. Efficacy of cognitive-behavioral therapy for obsessive-compulsive disorder. Psychiatry Res. 2015; 225(3): 236-46.
15. Twohig MP, Hayes SC, Plumb JC, Pruitt LD, Collins AB, Hazlett-Stevens H, et al. A randomized clinical trial of acceptance and commitment therapy versus progressive relaxation training for obsessive-compulsive disorder. J Consult Clin Psychol. 2010; 78(5): 705-16.
16. Beck AT, Steer RA, Ball R, Ranieri W. Comparison of Beck Depression Inventories -IA and -II in psychiatric outpatients. J Pers Assess. 1996; 67(3): 588-97.
17. Hossein KH, Mousavi AS. Psychometric properties of the Persian version of Beck Anxiety Inventory (BAI). Tehran Univ Med J. 2008; 66(2): 136-40.
18. Khesht-Masjedi MF, Omar Z, Masoleh SMK. Psychometrics properties of the Persian version of Beck Anxiety Inventory in North of Iranian adolescents. Int J Educ Psychol Res. 2015; 1(2): 145-53.
19. Kaviani H, Mousavi A S. Psychometric properties of the Persian version of Beck Anxiety Inventory (BAI). Tehran Univ Med J. 2008; 66 (2) :136-40
20. Jacobson, E. Progressive relaxation: A physiological and clinical investigation of muscular states and their significance in psychology and medical practice. 1st ed. Chicago, IL: University of Chicago Press; 1938.
21. Mohyadini H, Bakhtiar Pour S, Pasha R, Ehteshmzadeh P. Effectiveness of cognitive-behavioral treatment community on progress in patients with obsessive-compulsive disorders. Women Health Bull. 2021; 8(1): 18-25.
22. Hezel DM, Simpson HB. Exposure and response prevention for obsessive -compulsive disorder: A review and new directions. Indian J Psychiatry. 2019; 61(Suppl 1): S85 -92.
23. Olatunji BO, Davis ML, Powers MB, Smits JA. Cognitive-behavioral therapy for obsessive-compulsive disorder: a meta-analysis of treatment outcome and moderators. J Psychiatr Res. 2013; 47(1): 33-41.