European Online Journal of Natural and Social Sciences 2016; www.european-science.com
Vol.5, No.1 pp. 147-154
ISSN 1805-3602

Effectiveness of Systematic Desensitization and Cognitive Behavior Therapy on Reduction of Obsessive Compulsive Disorder Symptoms: A Comparative Study

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Received for publication: 07 October 2015.
Accepted for publication: 02 February 2016.

Abstract

In this paper, we focused on effectiveness of two treatment techniques-cognitive behavior therapy (CBT) and systematic desensitization imagination (SDI) on reducing Obsessive Compulsive Disorder Symptoms among OCD patients. A total of 38 participants was selected and then randomly assigned to two groups, where the first group received systematic desensitization imagination and the latter one cognitive behavior therapy. In the present study Yale-Brown Obsessive-Compulsive Scale (Y-BOCS; Goodman et al., 1989) was employed to assess the intensity of OCD symptoms during pre and post-test situations. To find out the effectiveness of treatment techniques, repeated measure analysis of variance was used to compare the mean scores of the subjects in pre-post treatment. On the whole, both the therapeutic techniques significantly reduced OCD symptoms. Further, results indicated that CBT was found to be more effective than systematic desensitization technique in reducing OCD symptoms for compulsion and total OCD symptoms. SD and CBT were found to be equally effective in reducing obsession symptoms.

Keywords: Systematic, desensitization, Cognitive, behaviour therapy, Obsessive, Compulsive, Disorder, OCD symptoms

Introduction

Obsessive-compulsive disorder (OCD) has been cited as one of the most common and debilitating psychological disorders; it is the fourth most common psychological disorder following phobias, substance abuse, and depression (Rasmussen & Eisen, 1992). In additional to frequent obsessions, most individuals with OCD (98%) engage in actions (compulsions) to reduce anxiety or distress (Bruce, Hyman & Cherry,2011).The DSM-V proposals continue to define obsessions in terms of persistent unwanted, intrusive thoughts, urges or images that cause marked anxiety or distress in most individuals. (APA, 2013). It is estimated that 2-3% of people of the world suffers from OCD (Podea, 2012).

One of the challenges facing cognitive behavioural therapy (CBT) with focus on Exposure Response Prevention (ERP) today is developing effective therapies for "difficult-to-treat" patients. Although the efficacy of CBT with a focus on ERP for obsessive-compulsive disorder (OCD) has been well established in many studies (Abramowitz, 2006; Eddy, Dutra, Bradley, & Westen, 2004), ERP is now considered as the best available psychotherapy for OCD (Abramowitz, Foa, & Franklin, 2003; Sachs, Printz, Kahn, Carpenter, & Docherty, 2000). But approximately 50% of patients still do not respond optimally to CBT, including many who drop out or relapse (Cottraux, Bouvard, & Milliery, 2005). The method is based on the theory of therapeutic effect, and is achieved when subjects confront their fears and discontinue their escape response (Huppert & Roth, 2003). It is

most effective in treating compulsive disorders (Houghton, Saxon, Braburn, Riketts, & Hardy, 2010). Among those who do complete ERP, approximately 80% have been classified as improved, and most OCD patients maintain these improvements several months after treatment. In CBT approach, therapists and patients work together to specify and pinpoint problems, regarding the associations between thoughts, feelings, and behaviors. Cognitive behavioral therapy presumes that altering maladaptive thinking results in the change in feelings and behavior (Hassett & Gevirtz , 2004), but new versions focus on changes in one's relationship to maladaptive thinking rather than alterations in thinking itself (Hayes; Villatte; Levin & Hildebrandt, 2011) There are two types of clinicians and researchers: cognitively oriented (e.g., cognitive restructuring), and behaviorally oriented (e.g., in vivo exposure therapy). On the other hand, treatments such as imagined exposure therapy mingle both methods (Foa, Rothbaun & Furr, 2003). According to Abramowitz (2002), there are four techniques in cognitive-behavioral therapy for OCD as follows: Education, Cognitive Therapy, Exposure and Response Prevention

The other approach for treatment of OCD is Systematic Desensitization. SD is a graduated exposure therapy, based on the principle of classical conditioning, developed by Wolpe (Wolpe, 1961). In SD, a person learn to overcomes the maladaptive anxiety resulted of a stimuli (a situation or an object) by exposure to the feared situation gradually, in a psycho physiological condition that inhibits the anxiety. Wolpe suggested that "if a response antagonistic to anxiety can be made to occur in the presence of anxiety-evoking stimuli so that it is accompanied by a complete or partial suppression of the anxiety response, the bond between these stimuli and the anxiety response will be weakened" (Wolpe, 1961). The SD technique guided by a therapist consisted of a three steps including: Relaxation Training, Hierarchy Construction and Desensitization of Stimulus. In the present study, an attempt is made to compare the treatment efficacy of SD and CBT techniques in reducing the obsession and compulsion symptoms among OCD patients.

Methodology

The present research is one type of quasi-experimental studies with two group interventions in which the interventions are compared, so this study can be categorized as a comparative one also. The purpose of merging the two studies was to increase the statistical power. Inclusion criteria included age between 20and 35; Level of education: higher primary and above; primary diagnosis of OCD obtained via the Structured Clinical Interview for DSM-IV (SCID-1; First, Spitzer, Gibbon, & Williams, 1995). The SCID was administered by trained, independent psychologist I Primary types of compulsive acts: Cleaning/washing-Checking-Repeating Ordering/Arranging and Counting (Carson et al, 2008). Inclusion criteria also included a score of 16 or more on the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS); Goodman et al., 1989). Exclusion criteria included the Current psychotic disorder, current alcohol or drug abuse/dependence; the use of benzodiazepine medication, a high risk of suicide, Those who have had similar treatment earlier than six months.

Participants

The sample of the present study included 36 male and female patients with OCD that were selected based on the inclusion and exclusion criteria by a purposive sampling technique from psychiatric outpatient clinics and private psychiatric clinics of YAZD Province, IRAN. Out of this, 18 of them were exposed to cognitive behaviour therapy and 18 of them were exposed to systematic desensitization and each therapeutic technique lasted 20 sessions.

Measures

In this study, researchers used Y-BOCS for data collection.

Yale-Brown Obsessive-Compulsive Scale (Y-BOCS): The Yale-Brown Obsessive-Compulsive Scale (Y-BOCS; Goodman et al., 1989) was used to assess the intensity of OCD

symptoms. The scale has separate indices that measure distress caused by obsessions and compulsions, which are combined to calculate cumulative score. This total score is based on 10 items (5 describing obsessive symptoms, 5 describing compulsive symptoms) with scores from 0 to 4 (total score range: 0e40). Higher scores indicate greater OCD symptomatology. Y-BOCS has good psychometric properties and has been evaluated by Taylor (1995) as the best available instrument for assessing the response to OCD treatment. Cronbach's alpha was 0.84 at pre-treatment and 0.92 at post treatment in the current study.

Procedure

The required information collected in the following steps.

Step1: Pretesting

In pretesting the selected sample administered following tools for identifying the patients with OCD.

Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) (Goodman et al, 1989)

Step-2: Intervention

Those patients who were on medication asked to maintain a steady dosage of medication throughout the period of treatment, of course with informed consent of them.

Treatment

In this study, two different types of interventions were used namely:

Individual Systematic desensitization Imagination (SDI)

The individual SDI treatments was based on the Wolpe's method (O' Donahue & fisher, 2009). The individual SDI treatment sessions will be 60 minutes in duration and delivered weekly for a total of 20 sessions. Sessions consists 20-30 minutes: Jacobson progressive muscle relaxation (JPMR) followed by SD (O'Donohue & Fisher, 2009).

Once SD has been determined as an appropriate therapeutic treatment for the client, a three-step process unfolds:

Step1- Relaxation training

Step2- Development of graduated anxiety hierarchies.

Step3- Presentation of hierarchy item while the client is in a deeply relaxed state

Individual Cognitive Behaviour Therapy (CBT)

The most empirically supported treatment for OCD is the cognitive-behavioural approach. CBT propos that certain type of dysfunction in believes results in the obsessions and compulsions behaviours (Abramowitz, Taylor, & McKay, 2009). In treatment of OCD, CBT is used to understand OCD at the symptom level, and how these symptoms have developed in to maladaptive thinking and behavioural pattern. In CBT, patient learns skills that help them weaken anxiety resulted from obsessional thoughts and situations. Patient also learns skills to change or weaken the compulsive rituals to reduce obsessional anxiety. (Abramowitz, 2005). The individual CBT treatments was based on a standard CBT manual for individual CBT for OCD, developed by Kozak and Foa (Kozak & foa, 1997). The treatment program consists of approximately 17-20 sessions that are generally 90 to 120 minutes each. The session once weekly, twice weekly, or daily(Foa, Yadin,, Lichner,2012).

Four techniques are used in CBT:

• The first is education, which means that patients learn about her or his obsessions and compulsions and how CBT is used to reduce these symptoms.

• Another technique is called cognitive therapy, which involves helping patient identify and correct problematic thinking style that lead to anxiety.

The two most powerful techniques in CBT are called exposure and response prevention (ERP) (Abramowitz, 2005). The root of ERP is in learning theory and it is considered to be a form of counter-conditioning and extinction.

• Exposure means gradually confronting the situations and thoughts that trigger obsessional fear.

• Response prevention means that you practice staying in the situation until the anxiety decreases on its own, rather than escaping by doing rituals.

Post test

In the post test again the selected sample administered Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) (Goodman et al, 1989), to find out the severity of obsession, compulsion symptoms.

Data analysis

In order to analyses the differences between the two groups repeated measure analysis of variance was used to compare the mean scores of the subjects in pre-post treatment regarding to the different interventions.

Results

Tables 1 and 2 present the Mean pre and post scores of SD and CBT groups on emotional, cognitive and behavioural component scores of BDI-II and results of repeated measure ANOVA

Table 1: The mean scores in the obsessive; compulsive and obsessive - compulsive symptom of OCD patient before and after the intervention in the two study groups

Variable	Group	Pre test		Post test		Decrease
		Mean	S.D	Mean	S.D	
Yale Brown Obsessive symptoms	SD	11.56	4.06	9.11	3.85	2.44
	CBT	12.89	3.76	5.39	3.09	7.50
	Total	12.22	3.91	7.25	3.92	4.97
Yale Brown Compulsive symptoms	SD	15.17	3.75	9.83	3.90	5.33
	CBT	14.56	1.89	5.72	3.54	8.83
	Total	14.86	2.94	7.78	4.22	7.08
Yale Brown Obsessive and Compulsive symptoms total	SD	26.72	7.21	18.94	7.23	7.78
	CBT	27.44	4.97	11.11	6.57	16.33
	Total	27.08	6.11	15.03	7.88	12.06

Table 2: Results of repeated measure ANOVA on The mean scores in the obsessive; compulsive and obsessive - compulsive symptom of OCD patient before and after the intervention in the two study groups

Variable	Source	Sum of Squares	df	Mean Square	F	Sig.
Yale Brown Obsessive symptoms	Decrease	6825.014	1	6825.014	270.516	.000
	Decrease * group	25.681	1	25.681	1.018	.320
	Error (decrease)	857.806	34	25.230		
Yale Brown Compulsive symptoms	Decrease	903.125	1	903.125	227.033	.000
	Decrease * group	55.125	1	55.125	13.858	.001
	Error (decrease)	135.250	34	3.978		
Yale Brown Obsessive and Compulsive symptoms total	Decrease	2616.056	1	2616.056	334.943	.000
	Decrease * group	329.389	1	329.389	42.173	.000
	Error (decrease)	265.556	34	7.810		

Repeated measure analysis of variance was used to compare the mean scores of the subjects in pre-post treatment regarding to the different interventions.

Yale Brown Obsessive symptoms: An overall decrease in the mean obsessive symptoms irrespective of the groups was observed from pre to post test situation, which was found to be highly significant (F=270.516; p=.000). On the whole in the pre test the mean score was 12.22 which has been decreased to 7.25. The mean decrease of 4.98 scores was found to be highly significant. However, when these decrease in obsessive symptoms was verified across groups, F value revealed a non-significant difference (F=1.018; p=.320), indicating that the decrease in obsessive symptoms are same for both SD and CBT groups. We find a mean decrease of 2.44 for SD group as against 7.50 for CBT group which are statistically the same.

Yale Brown Compulsive symptoms: In the case of compulsive symptoms, repeated measure ANOVA indicated significant F values both for total and groups. On the whole in the pre test the mean compulsive symptoms was 14.86 which has been decreased to 7.78, with the difference of 7.08 scores, which is found o be significant (F=227.033; p=.000). Further, when these decrease in compulsive symptoms was verified across groups, F value revealed a significant difference (F=13.858; p=.000), indicating that the decrease in compulsive symptoms is significantly more for CBT group than SD group. From the mean table it is clear that SD group had a decrease of 5.33 scores (pre=15.17; post=9.83), whereas CBT group had a decrease of 8.83 scores (pre=14.56; post= 5.72).

Yale Brown Obsessive and Compulsive symptoms total: Repeated measure ANOVA indicated a significant decrease for both the groups from pre to post test situation in total Obsessive and Compulsive symptoms, as the obtained F value found to be highly significant (F=334.943; p=.000). In the pre test the total symptom scores were 27.08, which have been decreased to 15.03 with the decrease of 12.06. Further, group-wise comparison revealed a differential reduction in the total symptom scores (F=42.173; p=.0000), where we find that CBT group was more effective (mean reduction 16.33) compared to SD group (Mean reduction 7.78).

Conclusion

Major findings of the study are:

• CBT was found to be more effective than SD in reducing compulsive symptoms among OCD patients

• CBT was found to be more effective than SD in reducing total obsessive and compulsive symptoms among OCD patients

• Both CBT and SD techniques are equally effective in reducing obsessive symptoms among OCD patients

According to research findings and with regard to effectiveness of therapy, it is clear that CBT and SDI both techniques reduced obsessive compulsive symptoms of OCD patients, but this decrease of severity of symptoms of OCD symptoms is different for CBT and SDI techniques, having CBT proving better than SD technique. This means that the effectiveness of the different methods in reducing OCD symptoms will take a different outcome; that according to result study of Beech and Vaughn, (1978) and Cooper, Gelder, and Marks,(1965) indicate that only about 30% of clients profited from SDI technique, whereas , Stanley & Turner,(1995) reported that success rate for CBT with focus to ERP drops to 63% . According to this findings, it is suggested given the positive impact of CBT on treatment of OCD its need to study about that why some OCD patients don't give positive response to CBT technique, for example according to Stanley & Turner (1995), approximately 20% to 30% of OCD patients refuse to begin CBT or terminate treatment prematurely. There is a need to study that what is the difference between SDI and CBT techniques,

that SDI only about 30% of clients profited, where as in CBT technique only about 20% to 30% don't give suitable response to CBT or refuse.

Systematic desensitization, as well as operant-conditioning procedures aimed at blocking or punishing obsessions and compulsions were used in OCD with limited or no success. The first real breakthrough came in 1966, when Meyer (1966), described two patients successfully treated with a behavioral therapy program that included prolonged exposure to distressing objects and situations, combined with strict prevention of rituals - exposure and ritual prevention (EX/RP). Meyer and his colleagues continued to implement EX/RP with additional OCD patients, and found that the treatment program was highly successful in 10 of 15 cases, and partially effective in the remaining patients. Moreover, 5 years later, only two of the patients in the case series had relapsed (Meyer, Levy, Schnurer, 1974). All patients were hospitalized during their EX/RP treatment. Over 40 years of published research has led to the wide consensus among researchers and clinicians that CBT is an effective treatment for OCD (NICE, 2006; Greist et al, 2003). Exposure-based treatments have the largest evidence base to support their use for OCD. EX/RP which includes processing appears to be most effective, whereas exposure without processing and CT produced equivalent improvement. Based on the large empirical evidence for EX/RP it is recommended as the first-line treatment for OCD, with CBT as an alternative.

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