# Efficacy of Cognitive Behavior Therapy in Treatment of the Obsessive-Compulsive Disorder

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Issue: Special Issue on Mathematical Computation in Combinatorics and Graph Theory in Mathematical Statistician and Engineering Applications	Abstract The current study aimed to assess the effectiveness of Cognitive Behavior Therapy in the treatment of Obsessive-Compulsive Disorder OCD. The sample consists of 48 OCD patients ages ranged 16-50 years. The sample
Article Info Page Number: 262 - 269 Publication Issue: Vol 71 No. 3s3 (2022)	was divided into four groups; Group A= received cognitive behavior therapy, Group B= received psychotherapy in combination with medicines, group C received medicines and Group D= served as a control group and received neither psychotherapy nor medicines. Data were analyzed by using t-test and ANOVA. Results revealed a significant negative correlation between CBT and OCD symptoms.
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# 1. Introduction

Obsessive-compulsive disorder (OCD) is defined as a pattern of recurrent thoughts (obsessions) that leads people involve in repetitive actions (compulsions) including washing hands and checking and counting items to the extent that their educational, professional, and personal relationships are severely disturbed [5].

The DSM-5 defines obsessions as "recurrent and persistent thoughts, urges, or images that are experienced as intrusive and unwanted" and compulsions as "repetitive behaviors or mental acts that an individual feels driven to perform in response to an obsession or according to rules that must be applied rigidly" [1].

OCD is a serious psychological problem that is categorized into three components: Obsessions, compulsions, and avoidance of obsessions and their related compulsion.

In addition to these two primary components, individuals with this disorder also engage in extensive avoidance to prevent the provocation of obsessions and their associated compulsions.

In the DSM-IV-TR [1] OCD was placed in anxiety disorder. Still, in the DSM-5 [1] OCD has been classified separately and placed in a new section titled Obsessive-Compulsive and Related Disorders.

However, "there are close relationships between the anxiety disorders and some of the obsessivecompulsive and related disorders (e.g., OCD)" that's why OCD is placed after anxiety disorders [1].

According to the International Statistical Classification of Mental Disorders tenth edition (ICD-10), obsessions are defined as involuntary and uncontrollable stereotyped thoughts that when entering a person's mind, disturb his/her daily activities and compel him/her to perform stereotyped behavior (e.g., washing hands, checking, counting). The person is unable to resist these thoughts (World Health Organization).

Obsessive-compulsive disorder (OCD) is an intolerable disorder characterized by disturbing obsessions and related compulsions. Almost 2% of the population is suffering from chronic symptoms which cause serious impairment in their lives. OCD disturbs every aspect of human behaviour and leads to poor quality of life, thus, OCD is considered one as one of the ten leading causes of disability ([9-6]).

Therefore, it is crucial to use an effective treatment strategy to improve the quality of life of OCD patients. Cognitive behavior therapy (CBT) is thought to be very effective in treating OCD symptoms, the objective of CBT is to decrease the disturbing thoughts which compel the person to specific repetitive behavior [10] Exposure and Response Prevention (ERP) is the most documented and applicable psychotherapeutic technique for treating OCD [6].

A quasi-experimental study was conducted to assess the relationship between the efficacy of CBT and OCD symptoms. The sample consists of 75 Iranian women aged 20-45 years). Out of these 75 women 30 were diagnosed as OCD patients by using Y-BOCS, they were divided into two groups; the experimental group (n=15) and the control groups (n=15). Obsessive Beliefs Questionnaire (OBQ) was used for measuring the pre and post-symptoms of OCD. Results indicated lower symptoms of OCD in the experimental group as compared to the control group [8].

Another study assessed the correlation between the treatment strategy of CBT and OCD symptoms among 120 clinical patients in the age range of 21-38. Forty patients were selected according to the given diagnostic criteria out of which 29 were female and 11 were male patients. The sample was divided into experimental (n=20) and control groups (n=20). Weissman and Beck's dysfunctional attitude scale (1978) was used to test pre and post-OCD symptoms. Results showed a negative correlation between CBT and symptoms of OCD disorder.[3]

Researchers have also examined the effectiveness of CBT in the clinical population. The sample consisted of 120 OCD patients whose ages ranged from 18-70 years. OCD symptoms were measured by Yale-Brown Obsessive Compulsive Scale [11] Pre-test and post-testing were conducted to assess the effectiveness of CBT. Results revealed the effectiveness of CBT.[2]

The significant aspect of the present study is to measure the effects of different treatment methods including cognitive therapy, medication, and a combination of medication with psychotherapy (techniques other than cognitive components).

# **Current Study**

The effectiveness of CBT in the treatment of OCD symptoms has been supported by a wealth of research [12].Previous studies found a negative correlation between cognitive behavior therapy and symptoms of

OCD [2] In the current study, it is also hypothesized that there will be a negative correlation between efficacies of cognitive therapy vis-à-vis obsessive-compulsive disorder symptoms.

# Method

# **Participants and Procedure**

A total sample of the stud comprised of (N= 48) subjects of both genders, all suffering from obsessivecompulsive disorder. The age range of the respondents was between 16 and 50 years. The subjects were divided into four groups (n=12). Group -A= received cognitive behavior therapy, Group B= received psychotherapy in combination with medicines, Group C received only medicines, and Group - D= served as the control group and received neither psychotherapy nor medicines. A comparative treatment strategy design was used.

The researcher randomly selected 2 treatment centers in Peshawar, that provide diagnosis and treatment of psychiatric/psychological disorders; Khyber Teaching Hospital and Psychology Department, University of Peshawar. The subjects were randomly assigned to four groups through the lottery method. The data were collected within 1 year i.e. from May 2002 to April 2003. The OCD diagnoses were made based on DSM-IV and ICD-10 criteria and also by using Patient information form, and other two tests; Yale-Brown Obsessive Compulsive Scale and Human Figure Drawing Test. The three treatments were introduced to three groups of OCD patients. The fourth group served as a control group.

# Analysis

In the current study, the t test was used to measure the pre and post-performance of the subject on the two tests. One way Anova was used to measure the within and between differences among the four groups.

# Measures

*A diagnostic interview:* the diagnostic interview is a clinical tool to measure the mental functioning of patients according to DSM-IV or ICD-10.

*Human Figure Drawing Test:* Human Figure drawing is used to measure an individual's intelligence, personality, aggression, emotional adjustment, and global functioning ([13-15]). HFD is used in a clinical setting, it provides a good indicator of OCD (Burch, 2004).

*Yale-Brown Obsessive Compulsive Scale: Yale-Brown* Obsessive Compulsive (YBOCS) was developed at Yale university school of medicine, Now Haven CT. The scale consists of 10 items rated on four points 0 (No symptoms) to 4 (Extreme symptoms) total range (of 040) [11].

# Results

 

 Table 1: Mean standard deviation and t values showing differences in pre and post-testing scores of Yale-Brown's obsessive-compulsive scale of Group A (12)

Condition	n	Μ	SD	t	р
Pre-testing	12	2.9167	.6686	7.328	.000
Post-testing	12	0.9167	.6686		

df = 22

Note: Read group A as OCD patients receiving cognitive therapy.

This table indicates significant differences between pre and post-testing conditions of group A (t = 7.328,  $p \le .000$ ). it further indicates that OCD patients scored less on Y-BOCS after receiving cognitive therapy.

**Table 2:** Mean standard deviation and t values showing differences in pre and post-testing scores of Yale-Brown's obsessive-compulsive scale of Group B (12)

Condition	n	Μ	SD	t	р
Pre-testing	12	3.333	0.6153	6.092	.000
Post-testing	12	1.7500	0.6216		
22		•		•	

df = 22

Note: Read group B as OCD patients receiving medication and psychotherapy.

This table indicates significant differences between pre and post-testing conditions of group B (t = 6.092, p  $\leq .000$ ). It further indicates that OCD patients scored less on Y-BOCS after receiving a combination of medications and psychotherapy.

**Table 3:** Mean standard deviation and t values showing differences in pre and post-testing scores of Yale-Brown's obsessive-compulsive scale of Group C (12)

Condition	n	М	SD	t	р
Pre-testing	12	3.000	0.7385	4.841	0.000
Post-testing	12	1.8333	0.3892		

df = 22

Note: Read group c as OCD patients receiving medication only.

This table indicates significant differences between pre and post-testing conditions of group C (t = **4.841**,  $p \le .000$ ). It further indicates that OCD patients scored less on Y-BOCS after receiving medications.

**Table 4:** Mean standard deviation and t values showing differences in pre and post-testing scores of Yale-Brown's obsessive-compulsive scale of Group D (12)

Condition	n	M	SD	t	р
Pre-testing	12	2.5000	.5222	1.000	1.000
Post-testing	12	2.5000	.7977	.000	1.000

df = 22

Note: Read group D as OCD patients received no treatment.

This table indicates no differences between pre and post-testing conditions of group C (t =  $0.000 \text{ p} \leq .000$ ).

**Table 5:** Showing total number of subjects, differences in mean scores, standard deviation, standard error, and 95%confidence interval means on postconditions of groups A, B, C and D obtained through YBO

	n	Μ	SD	Std.	95% Confidence		Minimum	Maximum
				Error				
					Interval for	Mean		
					Lower	Upper		
					Bound	Bound		
Cognitive therapy	12	.9167	.6686	.1930	.4919	1.3414	.00	2.00
Medication and	12	1.7500	.6216	.1794	1.3551	2.1449	1.00	3.00
Psychotherapy								
Medication	12	1.8333	.3892	.1124	1.5860	2.0807	1.00	3.00
Waiting Group	12	2.5000	.7977	.2303	1.9932	3.0068	1.00	4.00
Total	48	1.7500	.8379	.1209	1.5067	1.9933	.00	4.00

**Table 6:** One way ANOVA shows differences in scores on Yale-Brown's obsessive-compulsive scale among groups A, B, C, and D

Sources	of	SS	MS	F	Р
Variation					
Among group		15.167	5.056	12.474	.000
Within group		17.833	.403		
Total		33.000			

df = 22

**Note:** Read group A as OCD patients receiving cognitive therapy, group B as patients receiving medications and psychotherapy, group C as patients receiving medication, and group D as patients on the waiting list

This table shows highly significant differences among the four groups (F = 12.474, p<. 000).

**Table 7:** Mean standard deviation and t values showing differences in pre and post-testing scores of Human Figure Drawing of Group A

Condition	n	М	SD	t	р
Pre-testing	12	9.0833	2.2747	4.942	.000
Post-testing	12	4.9167	1.8320		

df = 22

Note: Read group A as OCD patients receiving cognitive therapy only.

This table indicates highly significant between pre and post-testing conditions of group A (t = 4.942, p<.000). it further shows that OCD patients scored less on the HFD test after receiving cognitive therapy.

**Table 8:** Mean standard deviation and t values showing differences in pre and post-testing scores ofHuman Figure Drawing of Group B (12)

Condition	n	М	SD	t	р
Pre-testing	12	6.5833	1.6765	3.145	.005
Post-testing	12	4.500	1.5667		

df = 22

Note: Read group B as OCD patients receiving medication and psychotherapy.

This table indicates significant differences between pre and post-testing conditions of group B (t = 3.145, p <.005).

# Table 9:Mean standard deviation and t values showing differences in pre and post-testing scores on Human Figure Drawing in Group C

Condition	n	М	SD	t	Р
Pre-testing	12	7.3333	0.4246	1.006	0.325
Post-testing	12	6.4167	2.0207		

df = 22

Note: Read group C as OCD patients receiving medication only.

This table shows no significant differences between pre and post-testing conditions of group C. It further indicates that OCD patients scored slightly less on HFD in post-testing.

 

 Table 10:Mean standard deviation and t values showing differences in pre and post-testing scores on Human Figure Drawing of Group D

Condition	n	М	SD	t	Р
Pre-testing	12	7.4167	2.0652	-175	.863
Post-testing	12	7.5833	2.746		

#### df = 22

Note: Read group D as OCD patients received no treatment.

This table indicates no differences between pre and post-testing conditions of group C (t = -175, p<.000).

**Table 11:** Showing total number of subjects, differences in mean scores, standard deviation, standard error, and 95% confidence interval means on post conditions of groups A, B, C and D obtained through

HFD											
	n	Μ	SD	Std.	95% Confider	nce	Minimum	Maximum			
				Error							
					Interval for Mean						
					Lower	Upper					
					Bound	Bound					
Cognitive therapy	12	4.9167	1.8320	0.5288	3.7527	6.0806	3.00	9.00			
Medication and	12	4.5000	1.5667	0.4532	3.5046	5.4954	2.00	8.00			
Psychotherapy											
Medication	12	6.4167	2.0207	0.5833	5.1328	7.7006	3.00	11.00			
Waiting Group	12	7.5833	2.5746	0.7432	5.9475	9.2192	3.00	12.00			
Total	48	5.8542	2.3246	0.3355	5.1792	6.5292	2.00	12.00			

Table 12: One way ANOVA shows differences in scores on HFD among groups A, B, C, and D

Sources of Variation	SS	MS	F	Р
Among group	72.229	24.076	5.829	.002
Within group	181.750	4.131		
Total	253.979			

# df = 22

**Note:** Read group A as OCD patients receiving cognitive therapy, group B as patients receiving medications and psychotherapy, group C as patients receiving medication, and group D as patients on the waiting list

This table shows highly significant differences among the four groups (F = 5.829, p<. 000).

# Discussion

The present study aimed to assess the effectiveness of Cognitive Behaviour Therapy in the treatment of obsessive-compulsive disorder symptoms. Results showed that a significant difference was found among the pre and post-testing of OCD patients after receiving CBT.

Current findings are parallel with the findings of [8]. They also found a negative correlation between CBT and symptoms of OCD. Additionally, the findings of [7] support the present results.

[3] found significant findings which are also in support of current findings.

[2]examined the efficacy of CBT among the clinical population and found a significant negative correlation between OCD CBT and OCD symptoms. Their results are parallel with current results.

# **Conclusion and Limitations**

The results of the current study have contributed to the understanding of specific issues related to obsessive-compulsive disorder. The most important point is related to its treatment strategies. It is concluded that Cognitive behavior therapy serves as an efficient treatment strategy in treating OCD as compared to other methods of medications and psychotherapy.

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