

The Effectiveness of Cognitive Behavioral Group Psychotherapy For Obsessive-Compulsive Disorder



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SUMMARY

Objective: The aim of this study was to determine the effectiveness of cognitive behavioral group therapy (CBGT) in the treatment of the obsessive-compulsive disorder (OCD).

Materials and Methods: The study included 82 patients diagnosed as OCD according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (DSM-IV-TR). In all, 37 patients that had their diagnosis confirmed via the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and agreed to participate were provided group therapy as 14 weekly 90-120-min sessions. The Yale-Brown Obsessive Compulsive Scale (Y-BOCS), Yale-Brown Obsessive Compulsive Scale-Symptom Checklist (Y-BOCS-SC), Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI) were administered to the patients prior to group therapy (baseline) and again after sessions 2, 5, 8, 12, and 14.

Results: In all, 8 patients dropped out of the study for various reasons and 29 completed the group therapy. There were significant reductions in BAI, BDI, and Y-BOCS scores in the patients that completed the group therapy. Additionally, BAI, BDI, and Y-BOCS score did not differ according to age, gender, or level of education.

Conclusions: CBGT was associated with significant improvement in OCD symptoms. Neither demographic characteristics (age, gender, and education level), nor clinical characteristics (disease duration, type of obsession, compulsion type, treatment history, and comorbidity pattern) had an effect on treatment outcome. In light of these findings, we think CBGT is an effective option for the treatment of OCD.

Keywords: Obsessive-compulsive disorder; cognitive therapy; behavior therapy; psychotherapy, group

INTRODUCTION

Obsessive-compulsive disorder (OCD), which is characterized by obsessions and compulsions, is usually a chronic, heterogeneous disorder with a fluctuating course (Sadock and Sadock 2007, Öztürk and Uluşahin 2008, American Psychiatric Association 2000) that if untreated causes marked deterioration in social and vocational functioning (Tükel et al. 2006, Tezcan et al. 1998). According to the World Health Organization (WHO, 1999) OCD is one of the top causes of illness-related disability worldwide. OCD is a heterogeneous disorder with multiple cognitive and behavioral dimensions

(Sadock and Sadock 2007). Many studies report that medical treatment and cognitive behavioral therapy (CBT) are effective in the treatment of obsessive-compulsive symptoms (Houghton et al. 2010; Eddy et al. 2004; Alonso et al. 2001; Abramowitz et al. 1997). From a psychological point of view it is thought that individuals with OCD misinterpret states, objects, and intrusive thoughts as dangerous. CBT aims to change/diminish anxiety-provoking thoughts and symptom-maintaining behaviors via cognitive and behavioral strategies (Türkçapar and Şafak 2012; Antony and Swinson 2001).

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Various pharmacological agents and psychosocial interventions were proposed for the treatment of OCD. Many controlled studies reported that behavioral interventions such as exposure-response prevention (ERP) were effective in treating OCD (Abramowitz 1998, 1996; Foa and Kozak 1996). More recently, ERP has become an important treatment option. Exposure refers to exposure to fear-invoking situations (e.g. touching a dirty object, deliberately making mistakes at school or work, and anxiety-provoking thoughts, words, or images) and response prevention is defined as the avoidance of behaviors that relieve compulsions, rituals, and safety-related behaviors. A meta-analysis consisting of 12 ERP studies and 330 OCD patients reported an 83% response rate among patients (Foa and Kozak 1996). Another meta-analysis consisting of 16 ERP studies and 376 OCD patients reported a 76% response rate and that gains persisted during a mean 2.4 years of follow-up (Foa and Kozak 1996); however, high dropout rates and low adherence to ERP increased the use of cognitive interventions for OCD. Studies on the effectiveness of cognitive therapy suggested that in many cases cognitive therapy was an alternative to ERP (van Oppen 1995, Abramowitz 1998, Cottraux et al. 2001, Houghton et al. 2010).

Although the vast majority of studies on the psychological treatment of OCD presented data obtained from individual therapy, some studies showed that OCD could be treated effectively in a group setting (Himle et al. 2001, Cordoli et al. 2002, Bieling et al. 2006, Anderson and Rees 2007, Jonsson and Hougaard 2009). Group therapies mentioned in the literature include cognitive therapy, behavioral therapy, ERP, and cognitive behavioral therapy in combination, individual therapy plus family member involvement, and supportive group therapy (Black and Blum 1992, van Noppen 1997, Himle et al. 2001, Cordoli et al. 2002, Bieling et al. 2006, Anderson and Rees 2007, Jonsson and Hougaard 2009). A study on ERP and cognitive strategies in a group setting was conducted by Cordoli et al. (2002). Each therapeutic group consisted of a mean 6 patients and 12 sessions; 78% of the patients ($n = 32$) had $\geq 35\%$ improvement in their Y-BOCS score. Another study that included a control group reported a response rate of 69% in the CBT arm, versus 4.2% in those on the waiting list as a control group (Cordoli et al. 2002). A meta-analysis showed that individual therapy was more effective than group therapy in the treatment of OCD (O'Connor et al. 2005). Another study reported that among the OCD patients that completed treatment, 44% of those in the individual therapy arm and 28% in the group therapy arm had OCD symptom improvement; when all participants were considered—including those that dropped out of the study—the improvement rates were 37% and 22%, respectively (Eddy et al. 2004). Another meta-analysis on OCD that used those on waiting lists as control groups observed that group CBT was as effective as individual CBT (Jonsson and Hougaard 2009).

Later research suggested that CBT in a group setting could be performed effectively, but that individual CBT was more effective (Jonsson et al. 2011). Nevertheless, it is difficult to know which CBT modality is more effective in the absence of head-to-head comparison.

There are reports of many confounders affecting the effectiveness of CBT for OCD, including comorbid conditions, symptom overlap, symptom contents, embarrassment due to thought content, symptom alteration, sociodemographic factors such as age, gender, and level of education, clinical features such as symptom duration, avoidance, need for certainty, doubt, and obsessive slowness, and poor insight (Rufer et al. 2006; Mataix-Cols et al. 2002). Another factor that might be a confounder is medical treatment; however, studies on the effects of drugs on CBT have reported inconsistent findings (van Balkom et al. 1994, Abramowitz 1997, van Balkom and van Dyck 1998, O'Connor et al. 1999). These earlier studies suggest that the many factors that might confound the effectiveness of CBT for OCD should be taken into account when examining treatment effectiveness.

The present study aimed to determine the effectiveness of cognitive behavioral group therapy (CBGT) in reducing OCD symptoms, and to determine if treatment outcome differs according to sociodemographic variables (i.e. age, gender, and level of educational) and clinical features (i.e. disorder duration, types of obsessions/compulsions, comorbidity, and treatment history), which can confound treatment effectiveness. Accordingly, the present study's primary hypothesis was that CBGT would be effective in the treatment of OCD and that treatment outcome would not differ according to clinical or sociodemographic variables.

Although CBT is known to be effective for the treatment of OCD and is comparable with individual therapy, to the best of our knowledge the present study is the first conducted in Turkey to examine the effectiveness of CBGT for OCD.

MATERIALS and METHODS

Study sample

The study included 82 patients diagnosed as OCD according to DSM-IV-TR that presented to Ankara Diskapi Y.B. Education and Research Hospital, Psychiatry Clinic, Ankara, Turkey, between January 2011 and November 2011. All participants were fully informed about the study and each provided written informed consent. The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) was administered to confirm OCD and other diagnoses if present. All 82 participants were evaluated for CBGT. Patients were offered group therapy after clinical examination and SCID-I administration.

Exclusion criteria were, as follows:

1. Age >65 or <14 years;
2. A neurological disease or mental retardation;
3. History of or present diagnosis of psychotic disorder or bipolar disorder;
4. A current cognitive mental disorder (dementia, delirium);
5. A current diagnosis of any mental disorder related to substance use;
6. Antisocial personality disorder, borderline personality disorder, or other severe axis-II diagnosis;
7. Level of literacy that precludes completion of the study scales.

Study procedure

The study protocol was approved by the Ankara Diskapi YB Education and Research Hospital Ethics Committee. Data were collected via administration of the following scales: Sociodemographic Data Form, Yale-Brown Obsessive Compulsive Scale (Y-BOCS), Yale-Brown Obsessive Compulsive-Symptom Checklist (Y-BOCS-SC), Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). Then, all the participants underwent a standard clinical evaluation using SCID-I. According to the standard clinical evaluation and SCID-I findings, 37 patients were invited to participate in the study and accepted. In all, 19 patients were excluded due to inadequate literacy, 8 due to a psychotic disorder, 2 due to bipolar disorder, 4 due to antisocial personality disorder, 3 due to substance abuse disorder, 3 due to mental retardation, and 4 due to declining to participate. The patients that were included and excluded were similar in terms of sociodemographic and clinical features (Data were not given). Therapy groups included 8-10 patients. Patients were classified according to their type of obsession and allocated randomly to each therapy group. OCD patients that were taking medicines continued their usual drug treatment and their status was not reported to the therapists.

CBGT consisted of 14 weekly 90-120-min sessions led by 4 different competent and supervised psychotherapists. The therapy protocol was developed by the Diskapi YB Psychiatry Clinic based on the models of David A. Clark (2004) and Gail Steketee (1993) and consisted of psychoeducation, cognitive interventions, behavioral intervention (ERP), and relapse prevention (Türkçapar and Şafak 2012). The first 2 CBGT sessions were devoted to psychoeducation, sessions 3-5 focused on cognitive interventions, sessions 6-8 included cognitive and behavioral interventions (a transitional period), sessions 9-12 were devoted to behavioral interventions, and sessions 13-14 concentrated on relapse prevention (Table 1).

Table 1. The GCBT protocol

Sessions	Main Strategies
Evaluation interview:	To inform the group members about how group therapy works and to understand what to expect To introduce the group norms and rules To designate obsessions, compulsions, neutralizations, and safety seeking behaviors To construct individual treatment goals
Sessions 1-2:	Meet and greet Discuss treatment expectations Review the group norms and rules Psychoeducation; Key terminology and the psychological model of OCD Talk about treatment strategies Homework: Complete measurement scales Reading relevant materials Discuss the potential obstacles
Sessions 3-5:	Review homework. Cognitive Interventions: Explain the cognitive model of OCD Explain cognitive distortions and strategies for coping with them Homework: Thought and cognitive distortions records Practice coping with cognitive distortions using thought records
Sessions 5-8:	Review homework. Cognitive Interventions: Introduce exposure and ritual prevention Cognitive restructuring Behavioral Interventions: Practice exposure and response prevention in-vivo Homework: Continue recording "hot thoughts" Plan an exposure and response prevention experiment
Sessions 9-12:	Review homework Behavioral Interventions: In-vivo exposure and response prevention Homework: Cognitive restructuring Continue recording "hot thoughts" Exposure and response prevention
Sessions 13 & 14:	Review homework Relapse prevention interventions: Discuss the possible symptom triggers and the strategies for coping with them Homework: Practice learned relapse prevention strategies

Y-BOCS, Y-BOCS-SC, BDI, and BAI were administered to the patients prior to group therapy (baseline) and again after sessions 2, 5, 8, 12, and 14.

Instruments

Sociodemographic Data Form

A sociodemographic form was developed by the researchers and included items related to sociodemographic and clinical features, including age, gender, level of education, marital

status, occupation, drug treatment, the presence of stressors at or near the time of the onset of the disorder, alcohol/substance use, and other physical illness.

Clinical Evaluation Interview

Clinical evaluation interviews were conducted by psychiatrists at our psychiatry clinic. Current symptoms (e.g. obsessions, compulsions, neutralization [cognitive], avoidance behaviors, and catastrophic interpretations), OCD history (e.g. onset, duration, functionality, and family history), treatment history (medical treatments, drugs used, and outcomes), and comorbidity (other psychological or physical problems) were recorded.

The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I)

SCID-I is a semi-structured interview used for diagnosing DSM-IV Axis I disorders; it must be administered by a clinician that is competent in its use (First et al. 1997). Özkürkçügil et al. (1999) reported that the Turkish version of the form is valid and reliable.

Yale-Brown Obsessive Compulsive Scale (Y-BOCS)

Y-BOCS measures the severity of and types of obsessive-compulsive symptoms in OCD patients. Y-BOCS was developed by Goodman et al. (1989a, 1989b) and the Turkish version was reported to be valid and reliable by Karamustafalioglu et al. (1993). Although the scale consists of 19 items, only the first 10 are used to measure the severity of symptoms. There are 5 items each for obsessions and compulsions that are scored 0-4 points, for a maximum total score of 40. Total scores indicate different levels of psychopathology, as follows: 0-7: subclinical; 8-15: mild; 16-23: moderate; 24-31: severe; 31-40: very severe.

Yale-Brown Obsessive Compulsive Scale-Symptom Checklist (Y-BOCS-SC)

Y-BOCS-SC was created by Goodman et al. (1989a) to identify obsession and compulsion types (i.e. 8 types of obsession and 7 types of compulsion). The Turkish version was reported to be valid and reliable by Karamustafalioglu et al. (1993) and Tek et al. (1995).

Beck Depression Inventory (BDI)

BDI is a 21-item self-report scale developed by Beck et al. (1961) for evaluating the severity of depression. Each item is ranked on a 5-point Likert-type scale (0-4); the total score varies from 0 to 63. The Turkish version was reported to be valid and reliable by Hisli (1988).

Beck Anxiety Inventory (BAI)

BAI is a 21-item scale developed by Beck et al. (1988) for measuring the severity of anxiety symptoms. Total score varies from 0-63. The Turkish version was reported to be valid and reliable by Ulusoy et al. (1998).

Statistical Analysis

All variables (continuous and categorical) were analyzed using SPSS v.15.0 for Windows. Quantitative data are described as percentage and mean $\pm$ SD. Non-parametric tests (Wilcoxon signed-rank test and Kruskal-Wallis test) were used to compare means because the study sample was small and not all the variables were distributed normally. The following formula was used to calculate the effect size (ES): $R = Z/\sqrt{N}$.

RESULTS

Sociodemographic and clinical data

The sociodemographic features of the patients that received CBGT are shown in Table 2. Among the participants, 28 (75.7%) were female and 9 (24.3%) were male. Mean age, mean duration of education, and mean duration of disorder were 32.13 ± 9.85 years, 10.59 ± 3.58 years, and 8.89 ± 9.09 years, respectively. Mean age at disorder onset was 23.24 ± 5.89 years.

The clinical features of the patients that received CBGT are shown in Table 3. The most common type of obsession was contamination/fear of dirt and the most common type of compulsion was cleaning/washing type. In all, 23 (62.2%) patients had only 1 type of obsession and 14 (37.8%) had 2 types of obsession. Among the patients, 21 (56.8%) had at

Table 2. Sociodemographic features of the patients that received CBGT

Sociodemographic Features	n	Percentage
Gender		
Male	9	24.3%
Female	28	75.7%
Age (years)		
16-24	8	21.6%
25-40	24	64.9%
41-65	5	13.5%
Mean	32.13 ± 9.85	
Level of Education (years)		
≤ 8	12	32.5%
9-11	14	37.8%
≥ 12 years	11	29.7%
Mean	10.59 ± 3.58	
Marital Status		
Married	24	64.9%
Single	13	35.1%
Family History of OCD		
Yes	6	16.2%
No	31	83.8%
Age at Onset of OCD		
Mean (years)	23.24 ± 5.89	
Disorder Duration (years)		
Mean	8.89 ± 9.09	

Table 3. Clinical features of the patients that received CBGT

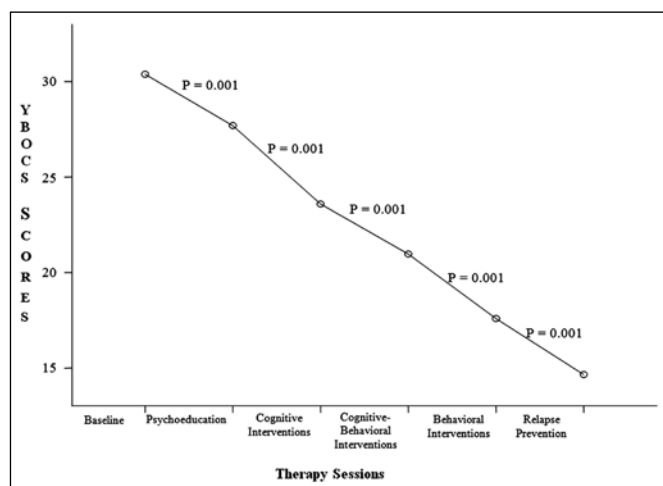
Features	n	Percentage
Types of Obsessions		
Contamination/Dirt	17	45.9%
Religious/Sexual	7	18.9%
Harm/Aggressiveness	5	13.5%
Doubt	4	10.8%
Exactness/Symmetry	4	10.8%
Types of Compulsions		
Cleaning/Washing	17	45.9%
Repeating	9	24.3%
Checking	6	16.2%
Mental Operations	5	13.5%
Comorbidity		
No	16	43.2%
Depression	9	24.3%
Dysthymia	4	10.8%
Social Anxiety Disorder	4	10.8%
Generalized Anxiety Disorder	3	8.1%
Panic Disorder	1	2.7%
Drug Usage		
Yes	20	54.1%
No	17	45.9%

the CBGT attended most of the sessions (mean number of sessions attended: 12.89 ± 1.08). As compared to baseline, BAI ($P = 0.001$; $z = -3.73$; $R = 0.69$), BDI ($P = 0.001$; $z = -4.19$; $R = 0.77$), and Y-BOCS ($P = 0.001$; $z = -4.70$; $R = 0.87$) scores decreased significantly after the 14th CBGT session in each of the 4 therapy groups (Table 4).

Using a more conservative method to determine the effectiveness of the treatment the last BDI, BAI, and Y-BOCS scores obtained from the patients that dropped out of the study were carried forward (last observation carried forward [LOCF]); accordingly, mean BDI ($P = 0.001$; $z = -4.19$; $R = 0.77$), BAI ($P = 0.001$; $z = -3.61$; $R = 0.67$), and Y-BOCS ($P = 0.001$; $z = -5.08$; $R = 0.94$) scores decreased significantly in all 4 therapy groups. The CBGT included sessions devoted exclusively to psychoeducation, cognitive interventions, behavioral interventions (ERP), and relapse prevention. As compared to baseline, Y-BOCS scores were significantly lower following each stage of the therapy in each of the 4 therapy groups ($P = 0.001$ for each group) (Figure 1).

Table 4. BAI, BDI, and Y-BOCS scores in the patients that completed CBGT

Scale Scores	Numbers	Mean	SD Deviation	P	z	R
BAI, Baseline-Post CBGT	29	8.65 (20.37-11.72)	9.98	0.001	-3.73	0.69
BDI, Baseline-Post CBGT	29	7.37 (21.31-13.93)	6.37	0.001	-4.19	0.77
Y-BOCS, Baseline-Post CBGT	29	15.72 (30.37-14.65)	6.04	0.001	-4.70	0.87



least one additional Axis-I disorder; depression was the most frequent comorbid disorder.

CBGT findings

In all, 8 patients withdrew from the study for various reasons; 3 because of a reported lack of time to participate, 3 because they couldn't tolerate exposure interventions, and 2 because of a lack of perceived improvement. Patients the completed

To determine if treatment outcome differed according to drug usage the patients were divided into drug users and non-users. Y-BOCS scores at baseline were similar in both groups, and both groups of patients had significantly lower scores post treatment ($P = 0.001$) (though the difference between the 2 groups was not significant). Baseline Y-BOCS scores were similar in the male and female patients, and both male and female patients had significantly lower scores post treatment ($P = 0.001$), although the difference between the genders was not significant.

To determine if CBGT outcome differed according to age groups the patients were divided into 3 age groups (16-24 years, 25-40 years, and 41-65 years). Changes in Y-BOCS scores did not differ significantly between age groups, whereas in each age group the difference between baseline and post treatment scores was significant ($P = 0.001$ for each group). The patients were likewise divided into 3 level of education groups (≤ 8 years of education, 9-12 years, ND ≥ 13 years). Changes in Y-BOCS did not differ significantly between the 3 age groups, whereas in each age group the difference between baseline and post treatment scores was significant ($P = 0.001$ for each group). The patients were also divided in to

4 groups based on duration of disorder (≤ 5 years, 6-10 years, 11-15 years, and ≥ 16 years). Changes in Y-BOCS scores did not differ significantly between the 4 duration of disorder groups, whereas in each duration of disorder group the difference between baseline and post treatment scores was significant ($P = 0.001$ for each group). The patients were also divided into 2 groups based on whether or not they had a comorbid psychiatric condition. Changes in Y-BOCS did not differ significantly between those with and without comorbidity, whereas in both patient groups the difference between baseline and post treatment scores was significant ($P = 0.001$ for the two groups). Lastly, the patients were divided into 5 groups based obsessive symptomatology (contamination/dirt, doubt, exactness/symmetry, religious/sexual intrusions, and harm/aggressiveness) and 4 groups based on compulsive symptomatology (cleaning/washing, checking, repeating, and mental operations). Changes in Y-BOCS did not differ significantly between the 5 obsession groups or between the 4 compulsion groups, whereas in each of the groups the difference between baseline and post treatment scores was significant ($P = 0.001$ for each group).

DISCUSSION

The present findings show that baseline Y-BOCS, BAI, and BDI scores improved significantly after 14 weeks of CBGT ($P < 0.001$, $P < 0.001$, and $P < 0.001$, respectively), indicating that CBGT is effective for the treatment of obsessive-compulsive symptoms, as well as for the symptoms of depression and anxiety in OCD patients, as previously reported (Jonsson and Hougaard 2009; Anderson and Rees 2007; Cordoli et al. 2003; Himle et al. 2001). Moreover, significant improvement was observed in the patients in all 4 of the present study's therapy groups (therapy in each group was led by a different therapist); we think the consistency between treatment groups was due to use of a standard treatment protocol and because treatment compliance was high (mean number of therapy sessions attended by each patient was 12.89 ± 1.08). The treatment dropout rate (21.6%) in the present study was similar to earlier reports (Franklin and Foa 2002).

Decreases in Y-BOCS scores after each therapy stage used in the present study's protocol (sessions 2, 5, 8, 12, and 14) were significant. Based on these data, we think that every intervention used in the CBGT protocol contributed to the treatment's effectiveness; however, more comprehensive studies are needed to determine which interventions are most effective for which particular problems and the effect size of each intervention. Additionally, the effect of 3 categories of factors on CBGT outcome was examined: sociodemographic features (age, gender, level of education), OCD symptom features (disorder duration, types of obsessions, types of compulsions, and treatment history), and comorbidity (DSM-IV-TR

Axis-I disorders, such as depression and generalized anxiety disorder). None of the sociodemographic features examined in the present study (age, gender, and level of education) affected treatment outcome, whereas a limited number of earlier studies reported that some sociodemographic factors affect treatment outcome (Mataix-Cols et al. 2002). Aberrantly in a study conducted in adults with OCD, younger age was found as a positive predictor for CBT treatment outcome in follow up (Benazon et al. 2002). In the present study treatment outcome did not differ between age groups, which is consistent with the literature and cognitive behavioral theory (Abramowitz 1996, 1998; Foa and Kozak 1996).

Gender was reported to have no effect on treatment effectiveness (Benazon et al. 2002; Mataix-Cols et al. 2002; Foa et al. 1983); however, it was reported that male gender was a positive predictor a good treatment outcome (Zohar et al. 1999). Level of education was also not a predictor of treatment outcome in the present study, which suggests that patients with a level of education sufficient for participation in CBGT can benefit from CBGT. In the present study treatment outcome did not differ according to duration of OCD symptoms. According to the literature, there isn't a relationship between the duration of OCD and treatment outcome (Olatunji et al. 2013); however, it was reported that as duration of disorder increases treatment outcome declines (Mataix-Cols et al. 2002). Another study indicated that OCD patients with a shorter duration of disorder were more likely to achieve full remission during 7 years of follow-up (Keijsers et al. 1994).

In the present study Y-BOCS scores post CBGT did not differ significantly between the patients that received CBGT only and those that received CBGT plus pharmacotherapy, which is consistent with data reported earlier (Abramowitz 1997, Eddy et al. 2004). Treatment outcome in the present study did not differ according to current obsessive and compulsive symptoms, although earlier reports on the relationship between current obsessive and compulsive symptoms on treatment outcome are inconsistent (Abramowitz 1997, Eddy et al. 2004). A number of studies that compared patients with hoarding obsessions, religious/sexual obsessions, contamination/dirt obsessions, and symmetry/ordering obsessions reported that hoarding obsessions were a predictor of poor treatment response (Rufer et al. 2005). Another study reported that patients with fear of contamination or ritualistic behaviors benefited more from psychological treatment (Franklin et al. 2000). It was also reported that sexual/religious obsessions were more difficult to treat and were associated with a low recovery rate (Rufer et al. 2006; Alonso et al. 2001). A study that compared patients with washing or checking rituals reported that such ritual behaviors were not predictive of CBT treatment outcome (Foa et al. 1983). Although the present study's sample is too small for generalizing the findings, they do suggest that patients with different

types of obsession or compulsion do not always differ in their response to treatment.

Although some researchers advocate the creation of more homogenous symptom profile groups (O'Connor et al. 2005; Fals-Stewart et al. 1993), we think that diversification of symptom profiles might be more beneficial because therapy group members might observe the similarities as well as differences between the differing symptoms of OCD. The present findings, we think, support this notion; however, to more clearly determine the effect of symptom similarity on treatment outcome more specific studies are needed.

The importance of comorbidity to treatment effectiveness is a contentious issue. One of the most studied comorbidities in OCD is depression, but the findings are inconsistent. Whereas some studies report that there is a strong relationship between depression comorbid with OCD and poor treatment outcome, other studies report no such relationship (Rufer et al. 2006, 2005; Keijsers et al. 1994; Steketee 1993). Only a limited number of studies have examined the effect on treatment outcome of OCD with comorbidities other than depression. A significant relationship was not observed between OCD comorbid with anxiety and treatment response. The role of comorbidity in the treatment of OCD should be evaluated independently of other direct effects, such as poor treatment compliance.

The present study's small sample size and lack of a control group are important limitations. Studies that include larger populations can more effectively identify which factors affect treatment outcome. The primary reason the present study did not include a control group is that OCD has a poor response to placebo treatment; treatment wait lists have been used as control groups in OCD studies, but the spontaneous recovery rate is very low (Foa et al. 2005). The present findings indicate that CBGT is effective in reducing OCD symptoms as indicated by Y-BOCS; psychoeducational, cognitive, and behavioral interventions were all effective for OCD, and treatment outcome did not differ between patients with different sociodemographic and clinical features.

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