Metacognitive Therapy (MCT), Fluvoxamine, and Combined Treatment in Improving Obsessive-Compulsive, Depressive and Anxiety Symptoms in Patients with Obsessive-Compulsive Disorder (OCD)

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Objective: Although treatments with demonstrated efficacy exist for Obsessive-compulsive disorder (OCD); researches on the effectiveness of combined treatment versus psychotherapy or drug treatment are controversial. The aim of this study was to compare the efficacy of Metacognitive therapy (MCT), fluvoxamine and the combination of MCT with fluvoxamine treatment in treating patients with OCD.

Methods: Twenty-one outpatients meeting DSM-IV-TR criteria for OCD without any other axis I and II disorder were randomly assigned to one of three treatment conditions for 10 weeks of treatment: MCT, fluvoxamine, and combined treatment group. The Yale-Brown Obsessive-compulsive scale (Y-BOCS), Beck depression inventory-II-second edition (BDI-II), and Beck anxiety inventory (BAI) were administered at pre-treatment and post-treatment. Group differences were examined using chi-square (for gender and marital status), one-way analysis of variance (ANOVAs) and one-way analysis of covariance (ANCOVAs) statistical procedures on each of the outcome measures using the SPSS-16 statistical package.

Results: Nineteen patients completed this study. All patients in MCT and combined treatment groups showed significant improvement at post-treatment. ANCOVA results showed that MCT and combined treatment lead to a more significant improvement in the severity of OCD symptoms ($p<0.001$), depression ($p<0.001$), and anxiety ($p<0.001$) than fluvoxamine treatment. There were no significant differences between MCT and combined therapy (all $p>0.05$).

Conclusion: It seems that adding drugs to treatment does not increase the efficacy of metacognitive therapy.

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Introduction

Obsessive-compulsive disorder(OCD) is an anxiety disorder characterized by persistent, inappropriate, intrusive, repetitive and distressing thoughts, ideas, images, or impulses that evoke anxiety and subjective resistance (obsessions) and urges the individual to perform overt or covert acts in order to relieve the distress and neutralize obsessional fear according to rigidly applied rules (compulsion) (1,2). The prevalence rate of OCD is high (2-3% in adults; 3,4) and is rated as the 10th leading cause of disability by the World Health Organization (5).

Although treatments with demonstrated efficacy exist for OCD; i.e., exposure and response prevention (ERP; 6-8) and serotonergic medications (9,10), it still remains a challenging condition to treat. Studies show that approximately 30% either refuse ERP or drop out from treatment early (11) and only 25% of patients become asymptomatic (12). Up to 40 to 60% of patients do not have a satisfactory outcome with serotonergic reuptake inhibitors (10,13,14). In treating OCD by medication, the clinician at best will see only alleviation of symptoms, rather than complete remission (10). Clinical evidence demonstrates that a trial of serotonergic reuptake inhibitors for a long period (10-12 weeks) in high doses (often the maximum

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recommended dose) is often required for good efficacy in OCD (15,16).

Meta-analyses have either found no difference between behavioral therapy and SSRIs or a superior outcome for behavioral therapy (17,18). Unlike behavior therapy, up to 80% of patients treated pharmacologically relapsed following treatment discontinuation (17). Researches on the effectiveness of combined treatment versus psychotherapy or drug treatment in OCD are controversial but most researches show more effectiveness by combined treatment (17).

A new brief, more efficient and cost-effective treatment for OCD; i.e., Metacognitive therapy (MCT) was developed by Wells (19). It is based on Wells' metacognitive model of OCD (20-22). Wells (23) defined metacognition as "stable knowledge or beliefs about one's own cognitive system, and knowledge about factors that affect the functioning of the system; the regulation and awareness of the current state of cognition, and appraisal of the significance of thought and memories" (p.302). MCT focuses on modifying thoughts about thoughts to alter patients' relationships with their thoughts as opposed to challenging the actual content of the thought in traditional Cognitive-behavior therapy (CBT). Patients are encouraged to challenge their beliefs about the importance and power of thoughts. A central aim of MCT for OCD is to enable the patient to develop an adaptive plan for processing obsessional stimuli and to guide subsequent behavior (19,21,22,24).

A large number of correlational and experimental studies support metacognitive model of OCD (12,25,26); however, only a few studies have investigated the effectiveness of MCT for OCD. Fisher and Wells (24) in a single case series research on four patients showed significant improvements in obsessive-compulsive symptoms which were maintained at a 6-month follow-up. Rees and van Koesveld (27) applied MCT in a clinical group setting with eight patients. Participants demonstrated improvement on measures of OCD symptoms severity and metacognitions. Results were maintained at a 3-month follow-up.

The aim of this study was to compare MCT with fluvoxamine and combination of MCT and fluvoxamine in improving the severity of OCD symptoms, anxiety and depression. This study is in line with the progressive model of clinical research for psychological treatments (28), as some correlational, experimental, and single case studies support the efficacy of the metacognitive model and metacognitive therapy for OCD; however, comparative trials are needed to compare MCT with other treatments in order to assess its effectiveness in comparison with other approaches. We were interested in exploring changes in the severity of obsessive-compulsive symptoms, depression and anxiety in MCT and compare it with fluvoxamine and combination treatment. Fluvoxamine is a monocyclic selective serotonin reuptake inhibitor (SSRI) that a number of studies have confirmed its efficacy in the treatment of OCD (29-31) and has been found to be as effective as clomipramine but with a more safety profile (30,32).

Materials and Methods

Participants and procedure

In an experimental research design, convenience sampling was used for selecting participants, who were recruited from patients referred to outpatient offices in Tehran, Iran. Participants were informed of the purpose of the study and were asked to sign a consent form. It was stressed that the information gathered during the study would be kept completely confidential, and would only be used for research purposes. Participation and continuation in the research project was voluntary. The study was approved by the Ethics Committee of the Mental Health Research Center, Tehran Psychiatric Institute. The patients fulfilled the following inclusion criteria: (1) diagnosis of OCD according to DSM-IV-TR (2),(2) duration of the illness for at least 1 year; (3) age between 18 to 50 years. Patients were excluded from the study if they were currently suicidal or psychotic, had a personality disorder, neurological disease or substance abuse problem and other comorbid axis I disorders, or had been receiving other psychological treatment or pharmacotherapy during the previous month. Of the 94 patients

who were referred for psychiatric evaluation, 68 met the DSM-IV-TR criteria for OCD. They were then interviewed by a doctoral level clinical psychologist using Structured clinical interview for DSM-IV axis I disorders, patient edition, (SCID-I/P version 2.0; 33) and Structured clinical interview for DSM-IV axis II disorders (SCID-II, 34) to confirm the diagnosis. Those with a comorbid axis I and axis II diagnosis were excluded from the study. Finally, 21 patients who met all the conditions to participate in the study were randomly assigned to one of the three treatment conditions, i.e., MCT, fluvoxamine and combination of MCT and fluvoxamine. Two patients dropped out from the study, one from the fluvoxamine group due to medication side effects, and one from the combined group due to a car accident leading to his hospitalization. After giving written informed consent, the participants completed a demographic form along with other questionnaires.

The total sample consisted of 10 females and 9 males. The mean age was 26.84 years (SD=8.71 years) and the age range was 18-48 years. Eleven participants had a high school diploma, and only 8 of them had collage level education. No statistically differences were found between the groups in terms of age, gender, marital status, and educational level. Duration of OCD ranged from 1 to 11 years. Y-BOCS scores were 16 and above with a mean of 27.10 (SD=6.65). Based on the BDI-II results, the sample can be characterized as moderately depressed (M=20.31, SD = 5.85). BAI scores ranged from 12 to 46. Mean anxiety score (M=25.89, SD=9.78) was in the clinical range. A wide variety of obsessions and compulsions were reported by the participants, including washing, checking, ordering, counting, religious thoughts, sexual thoughts, and violent thoughts.

MCT was based on the manual-guided metacognitive therapy program for obsessive compulsive disorder (19) which was in turn based on the prototype model of metacognitive treatment for OCD developed by Wells (21,22). A Ph.D. clinical psychology (first author) conducted the metacognitive therapy according to the standardized protocol. Supervision was provided by two experienced clinical psychologists with expertise in treating OCD. The treatment consisted of various strategies designed to shift the patient into thinking in a metacognitive mode. This involved the use of strategic Socratic questions and verbal reattribution for challenging the thought fusion beliefs about having intrusive thoughts, ban rituals and changing the stop signals. Psychoeducation, metacognitive case formulation, detached mindfulness techniques, advantages-disadvantages analysis of behaviors such as cognitive self-consciousness and mental events monitoring for presence or absence of intrusive thoughts, and experiential exercises including Exposure and response prevention (ERP) and Exposure and response commission (ERC) were also used to shift patients into the thinking in metacognitive mode. Patients received 10 weekly 45- to 60-minute sessions of treatment. The patients in fluvoxamine group received 50 to 300 mg of the medication for 10 weeks, which was monitored by a psychiatrist. The combination group received both MCT and 50 to 300 mg of fluvoxamine for 10 weeks.

Measures

SCID-I/P and SCID-II are semi-structured interviews with acceptable psychometric properties (35) and are widely used instruments for diagnosing DSM-IV-TR axis I and axis II disorders. Bakhtiari (36) reported a good content validity and test-retest reliability of 0.95 and 0.87 for Persian version of SCID-I/P and SCID-II, respectively. For all participants, the SCID-I/P and SCID-II were administered before treatment.

The following outcome measures were administered at pre-treatment and post-treatment: clinician-rated Yale-Brown obsessive-compulsive scale (Y-BOCS; 37,38), Beck depression inventory-II-second edition (BDI-II, 39), and Beck anxiety inventory (BAI; 40).

The Y-BOCS consists of 10 items for assessing the severity of obsessions and compulsions and is rated on a five-point Likert scale (0 = none, 4 = severe). The total score ranges from 0 to 40. There are five categories for these scores: subclinical= 0-7, mild= 8-15, moderate= 16-23, severe= 24-31

and extreme= 32-40. The items assess the following: (1) duration and frequency, (2) social and occupational interference, (3) distress, (4) degree of resistance, (5) and control over obsessions and compulsions. In the current study the total score was used. The Y-BOCS has demonstrated good interrater reliability, internal consistency, test-retest reliability and convergent validity (41,42). It has good internal consistency with a Cronbach's alpha of 0.89 for the total scale (43). Saboory, Mehryar and Ghareeb (44) reported interrater reliability of 0.98 and internal consistency coefficient of 0.89 on a sample of Iranian patients with OCD.

The BDI-II is a widely used, 21-item self-report rating inventory measuring the severity of depressive symptoms in adults over the 2-week period preceding the assessment. The items in the BDI-II are rated on a 4-point scale with a possible total score between 0 and 63. The reliability and validity of the BDI-II have been well established, with a test-retest reliability coefficient of 0.93 and internal reliability of 0.86. Internal consistency for psychiatric outpatients and college students were 0.92 and 0.93, respectively (39). In a study in Iran, a Cronbach's alpha of 0.91 was reported by Fata et al. (45). The BAI is a 21-item self-report inventory that assesses psychological and cognitive components of anxiety. Ratings are obtained on a 4-point scale with a possible total score between 0 and 63. The BAI has shown good test-retest reliability (α= 0.75, after 1 week following initial administration; 40,46), internal consistency (0.87; 47) and validity (48). Cronbach's alpha has been reported as 0.92 (40). In a study from Iran, a Cronbach's alpha of 0.92 reported for this inventory (45).

Questionnaires were combined in a booklet in a random order. Pre-treatment questionnaires were completed just before the beginning of the first session and post treatment questionnaires were administered at the end of the 10th session treatment.

Data analysis methods

Clinical significance is a method to investigate the effect of treatment (49-51). The criteria for clinically significant change to Y-BOCS as reported by Fisher and Wells (12) were as follows: cut-off point=14, reliable change index=10 points on the Y-BOCS. These criteria have been used in the treatment trials for OCD (12,24,27). Participants who achieve a reduction of 10 points or more on the Y-BOCS are reliably improved, and those who additionally achieve a score of 14 or below may be classified as recovered. Unchanged category indicates that reliable change was not demonstrated. Increase in participant's Y-BOCS score of at least 10 points is considered as deterioration (12). A more stringent criterion for defining recovery is asymptomatic status following treatment. The criterion for asymptomatic status on Y-BOCS is defined as a score of 7 or less (52).

Group differences were examined using chi-square (for gender and marital status), one-way analysis of variance (ANOVAs) and one-way analysis of covariance (ANCOVAs) statistical procedures on each of the outcome measures using the SPSS-16 statistical package.

Results

The participants' demographic data are presented in Table 1. Table 2 presents the mean scores and standard deviations on each outcome measure at pre-treatment. Inspection of the pre-treatment scores shows that most patients had Y-BOCS scores in the moderate to severe range. These scores are approximately similar to those reported in other treatment trials of OCD (24,27). As can be seen from Tables 1 and 2, there were no significant differences between the three groups at pre-treatment with respect to demographic characteristics and pre-treatment measures.

At post-treatment, the Y-BOCS scores in MCT and combined groups were ranged from subclinical to mild and in the fluvoxamine group ranged from mild to moderate.

Clinically significant change

At post-treatment, all the patients in MCT and 5 patients in combined group (83.33%) met Fisher and Wells' (12) standardized recovery criteria on the Y-BOCS. It should be noted that one patient in the combined group attained a score of 14 that reached recovery cut-off but did not met the criteria for reliable change. Only one patient (16.66%) in

fluvoxamine group met the recovery criteria. All the patients in MCT and 5 patients (83.33%) in combined and two patients (33.33%) in fluvoxamine group achieved a reduction of 10 points or more on the Y-BOCS and therefore can be classified as reliably improved. One (16.66%) patient in combined and 4 patients (66.66%) in fluvoxamine groups were classified as unchanged.

Asymptomatic status

Four of the 7 patients in MCT (57.14%) and two of the 6 patients in combined group (33.33%) were classified as asymptomatic at post-treatment follow-up (a score of 7 or less on the Y-BOCS). None of the 6 patients in fluvoxamine group were asymptomatic.

ANCOVA results

Table 3 presents the mean scores, standard deviations and ANCOVA results on each outcome measure at post-treatment. The assumptions of homogeneity of variance and homogeneity of regression were met for each of the comparisons. ANCOVA results using the pre-treatment scores as the covariate showed significant differences between the groups on Y-BOCS, BDI-II, and BAI (all $F>10$, $df=2$, all $p<0.001$). Pair-wise post hoc comparisons of the means of the groups (adjusted for pre-treatment values) indicated significant differences between MCT and fluvoxamine (all $p<0.001$) as well as between combined and fluvoxamine groups (all $p<0.001$). There were no significant differences between MCT and combined treatment group on any measure (all $p>0.05$). Effect sizes using Cohen's d (the difference between adjusted means divided by the pooled standard deviation, 53) were calculated to examine the size of differences between groups. Very large effect sizes were found for differences between MCT or combined treatment group and fluvoxamine treatment group (Table 4) on all of the measures.

Table 1: Proportions, means, standard deviations, χ^2 and F statistics for demographic characteristics-ANOVA (SD within brackets)

Measure	Group			*χ 2, F Statistic*
	MCT	Fluvoxamine	Combined	
Proportion men/woman	4/3	3/3	2/4	χ^2=0.759
Proportion single/married	4/3	3/3	3/3	χ^2=0.090
Age (years)	24.71(5.87)	29.16(9.47)	27 (11.38)	F=0.394
Education (years)	13.28(2.87)	15 (2.00)	13.33(3.20)	F=0.779
OCD duration (years)	3.42(3.5)	4.66(3.72)	3.25(2.99)	F=0.309

All *p*'s>0.05

Table 2: Means, standard deviations and F statistics for pre-treatment outcome measures-ANOVA (SD within brackets)

Measure	Group			*F* Statistic
	MCT	Fluvoxamine	Combined	
Y-BOCS	29 (6.73)	25.83(5.77)	26.16(7.98)	0.424
BDI-II	21.14(5.78)	20.16(4.62)	19.5 (7.73)	0.117
BAI	29 (9.71)	23 (7.48)	25.16(12.30)	0.604

All *p*'s>0.05

Table 3: Means, standard deviations (SD within brackets), and F statistics for post-treatment outcome measures-ANCOVA (using the pre-treatment scores as the covariate)

Measure	Group			*F* Statistic
	MCT	Fluvoxamine	Combined	
Y-BOCS	7(2.38)	16.66(3.20)	8.5(2.42)	39.27*
BDI-II	6.85(4.67)	12.83(1.72)	5.33(4.36)	14.54*
BAI	6.85(2.26)	13.66(4.84)	5.5(4.03)	12.35*

**p*'s<0.001

Table 4: Effect sizes for pairwise post hoc comparisons

Measure	MCT vs. Fluvoxamine	MCT vs. Combined	Fluvoxamine vs. Combined
Y-BOCS	3.71*	0.91	2.91*
BDI-II	1.83*	0.15	2.16*
BAI	2.12*	0.17	1.93*

Note. d = Cohen's (53) effect size (0.2 = small effect, 0.5 = medium effect, 0.8 = large effect), **p*<0.001.

Discussion

The aim of this study was to compare MCT with fluvoxamine and combination of MCT and fluvoxamine in treating OCD patients. Overall, this investigation confirmed that the majority of OCD patients treated with MCT (100%) and combination treatment (83.33%) and the minority of these patients treated with fluvoxamine (16.6%) met recovery criteria on the Y-BOCS. Four patients (57.14%) in MCT, 2 patients (33.33%) in combination treatment and none of the patients in fluvoxamine treatment were asymptomatic at post-treatment.

The results showed that fluvoxamine is effective in treatment of OCD, but its effectiveness is significantly lower than MCT and the combination treatment. The finding that MCT is more effective than fluvoxamine in treatment of OCD is consistent with the findings of Marks et al. (54). Along with these findings, Abramowitz et al. (55) by reviewing randomized controlled trials suggested that effective psychotherapy substantially improves obsessive-compulsive symptoms, and is more effective than pharmacotherapy alone. Similarly, Cottraux et al. (56) and Foa et al. (57) have shown that the effect of the combination of psychotherapy and serotonin reuptake inhibitors (SRIs) for OCD is superior to SRIs alone.

Despite the expectation that the combination treatment would lead to a more pronounced improvement of symptoms and outcome measures (17), in this study the combined treatment was only more effective than fluvoxamin. Very large effect sizes were found for all measures in MCT and combined treatment compared to fluvoxamine. However, there were small effect sizes for all measures in differences between MCT and combined treatment. To some extent, these findings support the results of a meta-analysis of randomized controlled trials by Foa et al. (1) which showed no superior benefit of combined treatment over exposure and response prevention alone, although unlike the present study, their meta-analysis showed no differences between combined treatment and SRIs. Similarly, in a study (57) the effect of combination of psychotherapy (exposure and response prevention) and clomipramine was significantly greater than the effect of clomipramine alone, but not psychotherapy alone. In the present study, no significant differences were noted between MCT and combination treatment in improving the OCD symptoms, depression and anxiety. Furthermore, in terms of the clinical significance, asymptomatic status criteria and drug side effects, it appears that MCT has a more effect on OCD patients and is more cost benefit than the combination treatment.

This study provides evidence that the combining of fluvoxamine with MCT does not increase improvements in OCD symptoms, anxiety and depression in OCD patients without other comorbid conditions. As was mentioned above, the results have clear implications for clinical practice in treatment of OCD patients. Both MCT and combined treatment have proved to be more effective than fluvoxamine in reducing obsessive-compulsive symptoms, depression, and anxiety. Despite the lack of studies that offer more clarifying data, and the fact that a clear superiority of MCT over combined treatment has not yet been proven, absence of drug side effects and higher simplicity of MCT approach compared to combined modality constitute an important advantage for its use in clinical practice. This, along with the findings of some other studies (24,27) seems to suggest that MCT would be the treatment of choice.

Similar to most interventional studies, our research has some limitations. Since the study was carried out on OCD patients without other comorbid conditions, the results of the study may be not generalized to the entire population of OCD patients with comorbid conditions. Small number of participants in each treatment group can reduce the statistical power of the study. Moreover, full therapeutic effect of SSRIs may appear in a longer period than 10 weeks. Because of these, results should be interpreted with caution and further researches on larger samples are needed to replicate these findings.

It is recommended that in future studies, larger samples of OCD patients should be used to confirm the efficacy of MCT versus drug and combined modalities. Also, future studies are needed to determine the rate of recovery and improvement at short- and long-term follow-ups. Comparing MCT with other effective treatment modalities like behavior therapy or cognitive-behavior therapy and the combination of these modalities with pharmacotherapy can also help to confirm the effectiveness of MCT over other modalities.

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