

The Efficacy of Metacognitive Therapy on Patients Suffering from Pure Obsession

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Objective: The present study aimed to examine the efficacy of metacognitive therapy in treatment of patients with pure obsession.

Method: Six patients suffering from pure obsession were selected using purposeful sampling method and were included after meeting the inclusion criteria of the study. Patients were assessed using the structured clinical interview for DSM- IV Axis I disorder – patient edition (SCID- I/P). The patients' main obsessions were present including sexual, aggressive and blasphemous thoughts. In response to these obsessions, all patients used covert rituals and compulsive behaviors. In this study, multiple baseline, a major type of single- subject empirical design, was employed. During the baseline (3-7 weeks) and treatment (14 weekly sessions) and follow-up (3 months) patients filled out the Obsessive Compulsive Inventory (Revised form) (OCI-R), Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Metacognitive Questionnaire (MCQ), Thought Fusion Inventory (TFI) and Beck Depression Inventory- II (BDI-II). To implement metacognitive therapy, Well's therapeutic instruction for OCD was used.

Results: The results indicated that Metacognitive Therapy (MCT) is effective in reducing obsessive – compulsive symptoms and in modifying metacognitive beliefs and thought-fusion beliefs.

Conclusion: Metacognitive therapy is effective in treatment of pure obsession.

Keywords: Cognitive therapy, Obsessive compulsive disorder, Treatment outcome

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Obsessive-compulsive disorder with widespread rate of approximately 1-3% during 6 months (1-3), is considered as a relatively epidemic disorder and classified as the fourth widespread psychological disorder (4). According to the reported statistics by WHO, OCD is deemed as the tenth disabling factor (5) followed by loss of performance and poor quality of life for OCD patients. Mohammadi, et al. (6) reported that prevalence of obsessive-compulsive disorder in Iranian population is 1/8%. Study results show that despite the fact that OCD patients first refer to specialist beyond mental health field; they comprise about 10% of outpatients who refer to clinical centers of psychology (7). The important point lies in the fact that about 80% of OCD patients will not be recovered without receiving professional help, OCD symptoms are rarely treated automatically (8,9). Meta analytic studies indicated that Exposure and Response Prevention (ERP) is considered as an effective therapy for OCD (10-14). Similarly, Research Group of American Association of Psychology classified ERP as an empirically verified therapy for OCD (15). The study results from ERP clinical research suggest that

about 25% of OCD patients do not accept ERP treatment and 3-12% do not complete their recovery period (16, 17). These results reduce ERP effectiveness for OCD patients down to 63%. In other words, 36% of OCD patients achieve 70% reduction in their symptoms after therapy, 27% of these patients are recovered at the medium level (31-69% reduction of symptoms), and 7% have no access to any significant treatment (18). Moreover, it should be noted that in outcome research on ERP, the majority of OCD cases have compulsive washing and checking, while there are few findings about ERP effectiveness for other subtypes of OCD such as doubt, hoarding, ordering, slowness, and obsessions. ERP is usually appropriated for those who suffer from overt compulsions while it is not so effective for those suffering from obsessive thought without overt compulsions (pure obsession); ERP instruction is essentially varied for such patients (19-21). Thus, behavior therapists sounded for some effective interventions to treat obsessive thought without overt compulsions, including thought stopping, paradoxical intention, habituation (satiation) training and audiotaped habituation training

techniques. In the meanwhile, thought stopping and habituation (satiation) training were more prevalent interventions for treating obsessive thoughts. Despite the extensive use of thought stopping technique by clinicians to deal with obsessive thoughts of the OCD patients, the efficacy of the procedure remains doubtful (22, 23). The results of some studies which investigated the effectiveness of thought stopping (24-27) indicate that this technique is relatively ineffective in producing sustained reductions in obsessive thoughts. In summation of effectiveness studies on thought stopping, Salkoskis and Westbrook (28) concluded that obsessive thoughts reduce in 46% of patients, and only 12% reported a decrease in distress intensity of their obsessive thoughts. The other intervention used to treat obsessive thoughts is habituation (satiation) training. The results of few studies conducted on effectiveness of this technique indicate that obsessive thoughts are reduced during sessions; but there are no evidences for signifying change and treatment of symptoms during the sessions (29-32). This fact drew attention of clinicians and researchers further when the epidemiological studies revealed that 20-25% of OCD patients suffer from obsessive thoughts without overt compulsions (33). Despite the various existing therapeutic interventions patients with pure obsession show high resistance against therapy(34, 35).It seems high resistance of this group of OCD patients is associated with the specific features of this subtype such as concealment, ego-dystonic, rumination, online processing, metacognitive beliefs, thought- fusion beliefs and dysfunctional, thought control strategies .

A brief review on study findings indicates that in spite of ERP's effectiveness in treatment of OCD, employing this therapeutic intervention for pure obsession has not been followed by remarkable results (36). For this reason, conceptualization and treatment of pure obsession have drawn the attention of clinical researchers in this field. Theory, research, and treatment within the cognitive-clinical stream of psychology focus on thoughts, appraisals, and content of beliefs that characterize psychopathological conditions. Cognitive conceptualizations were purposed to understand the role of cognitions in development and maintenance of OCD (37, 38).This perspective has had a much great impact on the treatment of OCD. During the extension of OCD cognitive models in 1980's and 1990's, Wells described a new model of cognitive theory for emotional disorders which is known as metacognitive model (39, 40). According to this model, metacognitive beliefs and processes are considered as effective factors in development and maintenance of OCD ; identification of these factors leads to comprehensive conceptualization of OCD. Wells asserts that intrusive thoughts escalate into obsession when metacognitive beliefs about meaning of intrusive thoughts are activated. Wells also clarified two domains of these beliefs: 1)Metacognitive beliefs about

meaning and consequences of intrusive thoughts and emotions which are classified into three types: Thought- Action Fusion (TAF), Thought- Event Fusion (TEF), and Thought- Object Fusion (TOF) ; 2) Metacognitive beliefs concerning the necessity of doing rituals and negative consequences of failure to carry out these rituals. Activation of metacognitive beliefs gives rise to this interpretation that obsessive thoughts are deemed harmful and create feeling of fear, anxiety, guilt and distress. In turn, these feelings are served as a sign of risk along with intrusive thoughts. Following these cognitive processes, certain strategies (e.g., thought suppression, neutralizing, rumination, threat monitoring) are setup to cope with perceived risks. Namely, these strategies never give any opportunity to the patient to examine their beliefs and validate them.

The results of the conducted researches (41-48) on elements and assumptions in this model signify the role of metacognitive factors in development and maintenance of OCD and verification of Wells' metacognitive model. Similarly, the results of studies done by Fisher Wells (49) and Rees and Koesveld (50) indicate that metacognitive therapy is an effective approach in reduction of OCD symptoms. The important point in these studies is that patients who suffer from obsessions without overt compulsions benefited from metacognitive therapy as much as patients with other OCD subtypes. This finding is consonant to this principle of metacognitive model that MCT is effective for all OCD subtypes. The results of the study by Andouz (51) also denotes the effectiveness of MCT on pure obsession .

The present study was designed to examine the effectiveness of MCT in treatment of obsessions without overt compulsions. Hypotheses of this study are as follows: 1- MCT reduces obsessive – compulsive symptoms; 2- MCT reduces severity of OCD; 3- MCT changes metacognitive beliefs of patients with obsessive thought; 4- MCT changes thought- fusion beliefs of patients with obsessive thought.

Materials and Method

The current study was carried out benefiting from a single- case empirical design of multiple baseline type. In this study, universe population included all OCD patients who lived in Tehran and the target population consisted of those OCD patients who referred to two psychology and psychiatry clinics. The sample group included six OCD patients chosen based on purposeful sampling. Trend of sampling was in such a way that at the first step, it a scertained diagnosis of OCD in patients. For this purpose, a clinician who had no information about the aim of the research carried out Structured Clinical Interview for PSM- IV Axis I Disorder (SCID- I). Then, the patients were examined in terms of inclusion criteria: 1- OCD diagnosis as "principle diagnosis"; 2- Lack of history of any

psychological treatment for OCD; 3- Passing at least one year from the start of drug therapy in the case of taking medications; 4- Having no severe depression ($BDI > 36$); 5- Having an educational level of at least a high school diploma. After choosing the patients, every two patients made a pair randomly and individually entered into the baseline, treatment and follow-up stages. In the current study, the following tools were used for data collection:

1- *Structured Clinical Interview for DSM- IV Axis I Disorder (SCID- I)*: It is a flexible interview prepared by First, Spitzer, Gibbon and Williams (52). Reliability coefficient among raters has been reported acceptable for SCID and at 60%. After translating SCID into Persian, Sharifi, Asadi, Mohammadi, et al. (53) implemented it on a 229- people sample. Rate of diagnostic agreement was between average and good for most of specific or general diagnoses ($>60\%$ Kappa coefficient of agreement) while the obtained total agreement was at good level as well (For current diagnoses: $\kappa = 52\%$ & for longevity diagnoses: $\kappa = 55\%$).

2- *Obsessive Compulsive Inventory; Revised form (OCI-R)*: New version of (OCI) was introduced in 2002 (54). Like the original version, this copy was prepared for evaluation of symptoms of obsessions and compulsions. The revised version of this questionnaire has 18 items and includes 6 subscales each of which having 3 items: Washing (items 5, 11, 17), mental obsession (items 6, 12, 18), hoarding (items 1, 7, 13), ordering (items 3, 9, 15, checking (items 2, 8, 14) and neutralizing (items 4, 10, 16). Each item is rated on a 5 point scale ranging from 0 (not at all distressing) to 4 (extremely distressing). Total scores range from 0 to 72. Internal Consistency reported to be 81-93% for the total scale and 65-90% for subscales; and the rate of test- retest reliability was between 57% and 91%. This questionnaire has been validated by Mohammadi, et al. (55) in Iran.

3- *Yale- Brown obsessive- compulsive scale (Y-Bocs)*: This scale has been prepared for evaluation of intensity in symptoms of obsessions and compulsions within patient's current conditions (56) in 1989. In this scale, obsessions and compulsions are rated on a 4 point scale by a clinician. This scale has 10 items and its total score varies between 0 and 44. The primary result obtained from reliability among the raters (6 clinicians) was situated within the spectrum (0.7-1.5) and a primary study on convergent validity reported the rate of correlation as 0.72 among scores of Yale- Brown Scale and Madzeli Questionnaire. This scale has been translated into Persian and is highly valid and reliable (57).

4- *MetaCognitive Questionnaire (MCQ)*: This questionnaire has been designed for the first time by Wells & Cartwright and Hatton in 1997 for evaluation of metacognitive elements sharing in pathology of emotional disorders (58). Short form of this questionnaire was codified with the same objective in 2004. Metacognitive questionnaire has 30 items

evaluating meta-cognitions individually in 5 subscales. These 5 subscales are as follows: 1- Positive beliefs about worry; 2- Negative beliefs about worry focusing on uncontrollability and danger; 3- Negative beliefs about cognitive confidence; 4- Negative beliefs about necessity to control thoughts; 5- Positive beliefs about cognitive self- consciousness. This questionnaire is a self- reporting tool and its items are rated on a 4 point scale. Cronbach coefficient of its scales varies between 0.72 and 0.93. Retest correlation within 22-118 days was 0.75 for the total scale and this value was as follows for subscales respectively: 0.79, 0.59, 0.69, 0.74, and 0.87 (59). In Iran, by the aid of Cronbach coefficient, ShirinZadeh Dastgiri reported the internal consistency of this questionnaire as 0.91 for the total scale and within range of 0.71-0.87 for its subscales. Further, he obtained the test- retest reliability to be as 0.73 for the total scale and within range of 0.59-0.83 for the subscales (60) within a -four week- period.

5- *Thought Fusion Inventory (TFI)*: This questionnaire is a self- reporting device designed by Wells, G-William and Cartwright- Hatton in 2001 (61). TFI is aimed to evaluate individual beliefs about meaning of thoughts and their consequences. This questionnaire has 14 items and includes three subscales; namely, Thought-Action Fusion (TAF), Thought-Event Fusion (TEF) and Thought-Objec Fusion (TOF). Items of this questionnaire are rated on a 10 point Scale. Wells, et al. (61) reported a favorable validity and reliability for this questionnaire. In Iran, ShirinZadeh Dastgiri has reported the internal consistency of 0.89 for the total scale and 0.76-0.84 for the subscales. Similarly, the rates of correlation for subscales with each other and with the total scale was between 0.44 and 0.88, so this signifies that rates of validity and reliability are acceptable for this questionnaire (60).

6- *Beck Depression Inventory (BDI-II)*: This questionnaire is the revised version of Beck Depression Questionnaire that had been codified for evaluation of intensity of depression symptoms in 1961 (62). This questionnaire includes 21 self- reporting items rated on a 4 point scale. Total score varies in 0-63. Coefficient of internal consistency (Cronbach Alpha) and raters' reliability have been reported with the ranges of 0.69-0.91 and 0.85-0.93 in this questionnaire, respectively. Psychometric features of revised form of this questionnaire have been obtained by Ghasemzadeh, et al. (63) in Iran. The results indicate high validity and reliability for this questionnaire.

To implement metacognitive therapy, Wells' therapeutic instruction for OCD was used (64). The structure of treatment is scheduled according to general principles of metacognitive therapy which include preparing the patient by presenting the treatment rationale, training techniques of detached mindfulness, changing the patient's metacognitive beliefs about intrusive thoughts and necessity of thought control, change of thought fusion beliefs, changing patient's metacognitive beliefs about rituals and stop signals, introducing exposure and response

commission (ERC), design and execution of behavioral experiments by emphasis on exposure and response prevention (ERP), devising new processing plans (metacognitive processing mode) and relapse prevention from its recurrence. Six patients with a primary diagnosis of OCD were included in the study. Their main obsessions were present including sexual thoughts, aggressive thoughts and religious thoughts. In responses to these obsessions, they used covert rituals and compulsive behaviors. Demographical characteristics and clinical symptoms of patients are presented in table 1. Then, patients were paired randomly, and each time two patients entered simultaneously into the baseline, treatment and follow-up phases. Patients A and B entered into the baseline phase at the same time and were maintained at this stage for three weeks. Then, treatment sessions were simultaneously implemented for both patients. After passing five baseline sessions, patients C and D entered into the treatment phase simultaneously by holding the third session of treatment for patients A and B. This way, patients E and F passed seven sessions at the baseline phase and their treatment sessions were simultaneously started with the fifth session of treatment for patients A and B and third session of treatment for patients C and D. In first, third, fifth and seventh sessions at the baseline phase, patients filled out Obsessive- Compulsive Inventory (OCI-R), Yale-Brown Obsessive Compulsive Scale (YBOCS), Beck Depression Inventory (BDI-II), Metacognitive Questionnaire (MCQ), and Thought Fusion Inventory (TFI). Treatment sessions were held in 14 weekly sessions (for 50 minutes). All patients filled out OCI-R, YBOCS, BDI-II in the first, third, fifth, seventh and last sessions at the treatment phase, and completed MCQ and TFI in the first, fifth, tenth and last sessions of the treatment. After completion of the treatment step, patients were followed for three months and at the end of first, second and third months, they filled out OCI-R, YBOCS, BDI-II, MCQ and TFI again. In this study, graphical representation and visual inspection were used to analyze the data. Furthermore, pre, post and follow – up scores on outcome measures are plotted, coupled with the percentage improvement made by each patient on each measure. The following formula was used to calculate percentage improvement (65):

$$\Delta\%A = \frac{A_0 - A_1}{A_0}$$

A₀: Kurtosis problem (cut-off scores) at first session of treatment

A₁: Kurtosis problem at last session of treatment

Δ%: Percentage improvement

Results

Patients' scores on OCI-R (obsession subscale), Y-BOCS, BDI-II, MCQ and TFI are demonstrated in table-2. Baseline mean in OCI-R for patients A, B, C, D and E, F is their scores in 2, 3, 4 sessions,

respectively. Treatment mean in OCI-R for all patients is their scores in 5 sessions. Follow up mean in OCI-R for all patients is their scores in 3 sessions. Findings of study about OCI-R indicated all patients have acquired significant overall recovery (60%) that increased largely at follow- up (70%). Six patients scored significantly high on obsession subscale at baseline. Patient A achieved a significant recovery (75%) at the last session and this level of recovery has still been maintained at follow up (75%). Patient B obtained a relative recovery (42%) at the last session and this trend has been increasing at the follow up (58%). Patients C, D, F have achieved significant recovery (67%, 58% and 67% respectively) at the last session and this trend has been increased during the follow up at a significant level (75%, 70% and 82% respectively). Rate of recovery for patient E was at medium level at the last session (50%); however, this trend has been increased at the follow up and reached to 60% which is a significant level recovery. Regarding obsessive-compulsive symptoms, all patients showed significant improvement on OCI-R from pre-to post treatment and pre treatment-follow-up. Baseline mean in YBOCS for patients A, B; C, D and E, F is their scores in 3, 5, 7 sessions, respectively. treatment mean and follow up mean of all patients is mean of their scores in 5, 3 sessions, respectively. The scores obtained from Y-BOCS scale suggest that overall patients achieved high recovery (68%) and rate of recovery was increased at the follow up (74%). Inspection of the baseline scores shows that patients' score on Y-BOCS is relatively high and stable in during of baseline sessions. All patients obtained substantial and relatively rapid reduction on Y-BOCS over the course of treatment, and changes were largely maintained at the 3-months follow-up. Fisher and Wells reported that a change of at least 10 point on the Y-BOCS was required to reach a reliable change index of at least 1.96 and recovery cut- off of 14 on the Y-BOCS, with post-treatment or follow-up scores at or below this level. By this criterion, all patients achieved clinically significant change. In addition, with regards to depressive symptoms, all patients showed significant changes on BDI-II and their reduction remained stable at 3-months follow-up. Rate of recovery in patient B, of course, was lesser than other patients (59%). At follow up, recovery trend was still continued in six patients and increased significantly. Baseline mean in MCQ for patients A, B; C, D and E, F is the mean of their scores in 2, 3, 4 sessions, respectively. Treatment mean and follow up mean of all patients is the mean of their scores in 4, 3 sessions, respectively. Patients' scores on MCQ showed that obtained recovery in the last session of treatment is significant and acceptable (59%), and therapeutic achievements maintained after 3- months and increased to 64%. High scores of this questionnaire at baseline implicate high ascription to dysfunctional metacognitive beliefs. Except for patient B at the last session, the trend of patients' recovery was significant and almost identical.

Table 1. Demographic and clinical characteristics of the patients

Feature Patient	Age	Gender	Education	Marital status	Duration of OCD (year)	Co morbid diagnosis	Treatment history	Content of obsession
A	23	Female	BA	Single	4	Depression, GAD	-	sexual
B	25	Female	BA	Single	6	Depression, GAD	Drug Therapy	aggressive
C	34	Male	BA	Married	7	Depression	Drug Therapy	sexual
D	24	Female	MA	Single	4	Depression, GAD	-	sexual
E	24	Male	MA	Single	6	Depression	-	blasphemous
F	35	Female	BA	Married	5	Depression	Drug Therapy	blasphemous

Table2. Mean scores on OCI-R¹, Y-BOCS², MCQ³, TFI⁴ and BDI-II⁵ for all patients during baseline, treatment and follow up in addition to recovery percentage

Measures	Baseline (M)	Treatment (M)	Follow up (M)	Treatment recovery percentage	Follow up recovery percentage
Patient-A: OCI-R	12	8	2.33	75%	75%
Patient-B: OCI-R	12	9	5.66	42%	58%
Patient-C: OCI-R	11.66	7.8	3.33	67%	75%
Patient-D: OCI-R	11.66	8.6	4	58%	70%
Patient-E: OCI-R	11.5	8.6	4.33	50%	60%
Patient-F: OCI-R	12	8.4	2.66	67%	82%
Patient-A: YBOCS	37.5	26	8.66	76%	82%
Patient-B: YBOCS	39	29	14.33	59%	64%
Patient-C: YBOCS	39.33	24.6	9	74%	79%
Patient-D: YBOCS	39.33	26.4	10	68%	76%
Patient-E: YBOCS	38.5	26.4	12.66	63%	66%
Patient-F: YBOCS	38.5	23.8	9.33	70%	76%
Patient-A: MCQ	100	64	33	67%	69%
Patient-B: MCQ	105	80.75	45.66	51%	58%
Patient-C: MCQ	93.33	66.5	37	62%	64%
Patient-D: MCQ	104.33	71.75	38	57%	65%
Patient-E: MCQ	103	77.25	38.66	55%	62%
Patient-F: MCQ	100.5	70.25	33.33	63%	66%
Patient-A: TFI	82.5	56.25	18.66	76%	82%
Patient-B: TFI	94.5	69.25	24	64%	77%
Patient-C: TFI	79	47.75	10.33	81%	88%
Patient-D: TFI	88.33	57	17	71%	85%
Patient-E: TFI	87.5	61.75	25.66	67%	71%
Patient-F: TFI	79.25	51	11.66	78%	89%
Patient-A: BDI-II	35.33	22	8.66	69%	77%
Patient-B: BDI-II	38.33	28	15	54%	59%
Patient-C: BDI-II	36.8	24.8	10	71%	69%
Patient-D: BDI-II	37.2	26.4	12	58%	69%
Patient-E: BDI-II	37	25.8	11.66	63%	66%
Patient-F: BDI-II	36.42	24	9	66%	74%

1. obsessive compulsive Inventory-Revised ;2. Yale- Brown obsessive compulsive scale; 3 . Metacognitive Questionnaire; 4- Thought- Fusion Inventory; 5. Beck Depression Inventory-II .

The score of patient B at baseline is higher than other patients and his rate of recovery was lesser than them (51%). With respect to metacognitive beliefs³, all patients achieved a significant change on five dimensions of dysfunctional metacognitive beliefs in the MCQ and they maintained it during the 3-month follow-up. Baseline mean in TFI for patients A and B, C and D , E and F is mean of their scores in 2, 3, 4 sessions, respectively. treatment mean and follow up mean of all patients is the mean of their scores in 4, 3 sessions, respectively. The obtained results from TFI indicate that patients have acquired high overall

recovery at last session of treatment (73%),and this trend was increased at follow up and approached to a very high level (82%). Patients' scores on TFI at baseline showed dysfunctional beliefs about thought fusion. Despite the existing remarkable differences in rate of recovery for patients, they all acquired good and significant recovery at the last session. Rate of recovery in patients B and E was lesser than other patients (64% and 67% respectively). After three months, all patients maintained their changes and their trend of recovery increased remarkably. However, the rate of recovery in patients B and E was still low at the

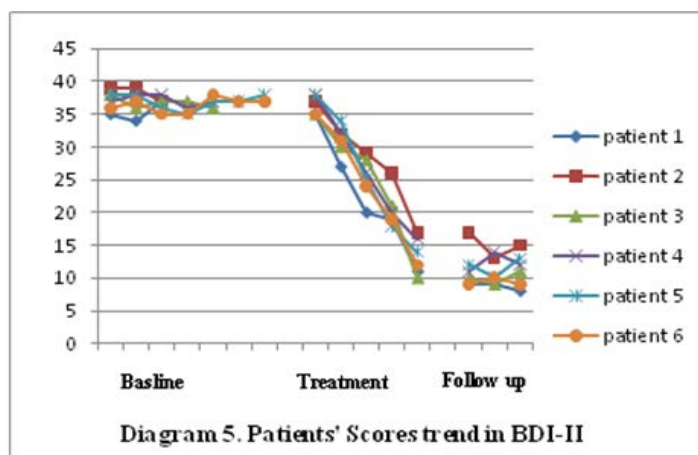
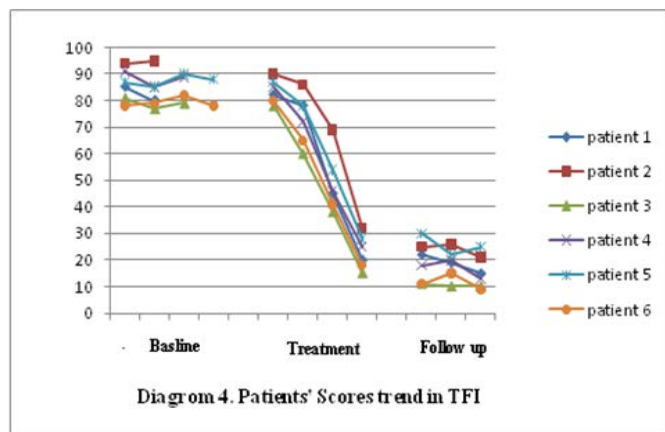
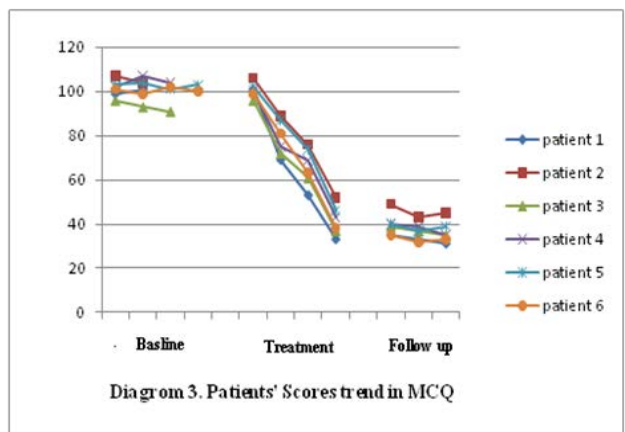
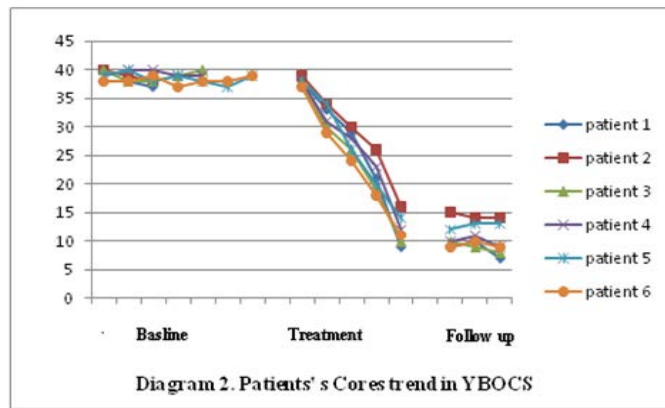
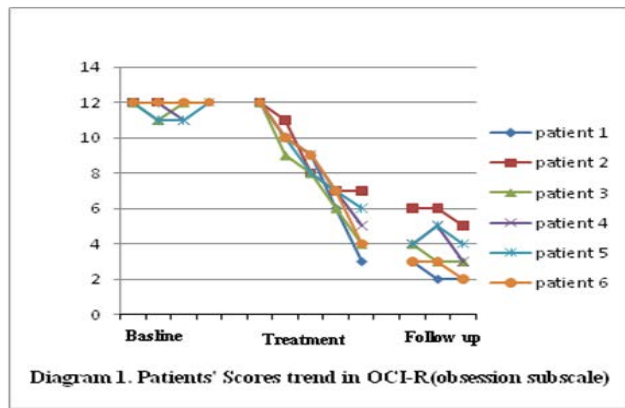


Figure 1. Patient's score on all outcome measures during baseline and treatment phases and follow-up

follow up. However, like other patients, their recovery trend was increased and stayed at an exceptionally suitable level (77% and 71% respectively).

In relation to thought-fusion beliefs, significant improvements occurred on dysfunctional beliefs about fusion for all patients. Each patient's score on all outcome measures during baseline and treatment phases and follow-up are shown in diagram 1-5.

Discussion

Review of results in the present study indicates that Metacognitive Therapy (MCT) has been effective in

reducing symptoms in patients suffering from pure obsessions with covert compulsions. This finding is consistent with Fisher and Wells (49), Rees and Koesveld (50) and Andouz (51) who found clinically significant improvement for all OCD patients treated with metacognitive therapy. Wells argues that MCT is an equally effective treatment for patients with a variety of OCD presentation and this study has also revealed that MCT is an effective treatment for obsession subtype. Salkoskis and Westbrook (28) stated that achieving 50% recovery in reducing OCD symptoms after treatment is the appropriate recovery parameter

for treatment effectiveness. Thus, in the present study, achieving 60% of overall recovery in reducing OCD symptoms among patients may be considered as an acceptable criterion for effectiveness of MCT.

Ingram, Hayes and Scott (66) introduce six criteria for evaluation of effectiveness of psychological treatments, which are used for explanation of findings in this study and examination of MCT effectiveness on treatment of pure obsession.

1-Magnitude of change: (to what extent change occurred in treatment of major objectives?) Wells (67) argues that the dysfunctional metacognitive beliefs of OCD patients are considered an important predictive factor in response to therapy. The results from several studies conducted by Myers, et al. (47), G-William, et al. (41), Solem, et al. (45), and Sica, et al. (48) indicated that change in metacognitive beliefs determines the major role of variance in obsessive-compulsive symptoms variation; namely, change of metacognitive beliefs impact on rate of recovery and clinical results. On the other hand, result of studies done by Rees and Koesveld (50) and Fisher and Wells (43, 49) showed that during the treatment process, change of two metacognitive beliefs; “need to control thoughts” and “positive beliefs about worry” independently predict the intensity of post-treatment symptoms and change in these dysfunctional metacognitive beliefs plays an essential role in modification of obsessive-compulsive symptoms.

A comparison between rate of reducing symptoms in patient B and other patients shows that patient B has achieved lesser overall recovery in reducing symptoms. This weak result may be due to less change in metacognitive beliefs of patient B in general, and two metacognitive beliefs (“need to control thoughts” and “positive beliefs about worry”) specifically. Also, according to the metacognitive approach (44), thought fusion beliefs play an essential role in etiology and prediction of OCD symptoms independently of metacognitive beliefs. Wells (67) recognizes that intensity of thought fusion beliefs is a very crucial and determinant factor in negative appraisal of intrusive thoughts and activation of other metacognitive beliefs relating to rituals and stop signals. Thus, during the metacognitive therapy process, change in thought fusion beliefs is directly related to reduction of symptoms. With regard to high score of patient B in TFI and lower rate of recovery in this variable than other patients, such poor therapeutic result is expectable for that patient. This finding is consistent with the result of Rassin, et al. (68) since their study indicated that higher scores in thought-action fusion (TAF) may have an affect on the low rate of therapeutic effectiveness. Accordingly, Shafran and Rachman (69) argue that studies should be designed only to examine the effectiveness of techniques related to fusion beliefs. Concerning patient E, it seems that duration of OCD, patient’s motivation and therapeutic expectations have played an essential role in the therapeutic results (70). Recovery trend and therapeutic

results in patients B and E increased at the follow up. Patient D achieved a high score in MCQ and TFI at baseline, but she passed a better recovery trend at the end of treatment and follow up, due to doing the home works perfectly and completely. Kazantzis and Abate (71) claim that home works are one of the foremost elements in cognitive therapy that increase the efficacy of treatment. Kazantzis, Deane and Ronan (72) also reported that home works are significantly correlated to reducing symptoms and results of treatment.

A comparison between reducing symptoms and change of metacognitive beliefs and thought fusion beliefs in patients A, C and E shows that the trend of changes was oriented toward the same direction; however, this does not necessarily mean that the rates of reduction of symptoms and change of metacognitive factors are the same. In other words, some parts of reduction in symptoms may not be interpreted by variation in metacognitive and thought fusion beliefs. As Fisher and Wells (43) and Myers, et al. (44) noted metacognitive factors play a major role in development, maintenance and change of OCD symptoms, but no one can obtain a causality relation by the existing relationship between reduction of symptoms and variation in metacognitive factors. In general, patients’ overall recovery in reduction of obsessive-compulsive symptoms (OCI_R) and intensity of disorder (YBOCS), in addition to change of metacognitive beliefs (MCQ) and thought-fusion beliefs (TFI) indicate that metacognitive therapy was effective in treatment of OCD.

2-Universality of change: (How many patients changed and how many did not?) The rate of recovery shows that with respect to baseline, all patients achieved a tangible and significant change in therapeutic goals at the end of treatment and follow up. Despite the difference among patients’ recovery and fluctuations in trend of recovery, it seems that rate of overall recovery among patients A, C and F was higher than in patients B, D and E.

3-Generality of change: (How much change occurred in family and occupational positions?) The obtained results at the end of treatment and follow up show reductions of OCD symptoms and simultaneous changes in metacognitive and thought fusion beliefs among patients. The main complaint of patients at the first session was worry, distress, lack of concentration, disturbed attention in doing daily activities, lack of motivation, despair, and low self-esteem. They also performed poorly in educational, occupational and family domains due to continuous preoccupation with obsessive thoughts and incessantly being engaged in carrying out rituals to control such thoughts and their harmful consequences. Patients’ reports at the last session of treatment and follow up expresses that in parallel with achieving therapeutic goals, these variables also clearly and significantly changed and patients’ performance improved in occupational, social and family fields. Studies indicated a relationship among OCD, depression, family, educational and

occupational performance and positive changes in these factors can be observed by reduction in OCD symptoms. (73-75)

4- *Acceptability rate*: (to what extent did the patients participate in the treatment and complete it?) Kazdin (76) indicated that the most important factor that impact therapeutic results is dropping out prematurely. The current study demonstrated a high level of acceptability with all of the six patients who attended the first session as they continued the treatment until its completion. This is in sharp contrast to the usual attrition rates reported in traditional CBT, particularly when patients are required to under take exposure exercises. Furthermore, treatment appeared to be tolerated well by patients and it has the advantage of using only brief exposure, which may be easier to implement, plus MCT appears to be a relatively time efficient treatment for OCD.

5- *Safety*: (were participant's mental and physical health reduced due to treatment?) In 1966, Bergin used "Regressive Effect" term to refer the damage that may inflict patients due to treatment (77). Since there is no need to tolerate anxiety via exposures and direct challenge with the contents of obsessive thoughts in MCT, so patients have not been suffered from more conflict and pain during treatment process. Additionally, the obtained results at the end of treatment and follow up shows that each of patients had varied in therapeutic goals, to certain extent and the rate of recovery is significant clinically and statistically. At the same time, the comorbid diagnoses of patients, particularly depression have been improved.

6- *Stability* (how long did the treatment achievement last?): The results of the follow up phase indicated that rather than maintaining the positive outcomes of therapy, patients still followed the recovery trend and even obtained more success. Probably one of the reasons for such increase is the self- helping nature of cognitive- behavioral therapies (78). The main objective for cognitive- behavioral therapies is the patients' ability to employ treatment skills and techniques after treatment. In addition, one can attribute therapeutic achievements to change of patients' metacognitive beliefs as they play an important role in appraisal and interpretation of intrusive thoughts.

The main goal of this study was to answer one question: could MCT be an effective treatment for pure obsession? The result of this single case provided a preliminary evidence for effectiveness of MCT based on Well's model of OCD. Substantial reductions were obtained on main outcome measures including obsessive – compulsive symptoms, severity of OCD, meta cognitive beliefs and thought – fusion beliefs. Every patient achieved recovery at post – treatment and 6- month follow – up.

There were several limitations to this preliminary study: 1) a main criticism often made of a single case research is that the observed effects may attributable to factors other than the hypothesized active ingredients

of treatment; 2) outcome assessment relied heavily on self – report measure Y-BOCS. Therefore, the study did not have an independent assessment of treatment outcome; 3) the small number of patients included in the study limits generalizability of the results. However, the patients were representative of patients seen in clinical practice as no one was excluded on the basis of comorbid disorder as this is often the case in randomized controlled trials; 4) the six month follow – up period in this study was not optimal; 5) treatment was delivered by only one therapist and this may limit the generalizability of the results. It seems a controlled evaluation of the efficacy of MCT for OCD is needed. At the next step, it is suggested that a randomized controlled trial be conducted to compare MCT and ERP or CT. Moreover, replication with other therapists is also suggested. Finally, it is suggested that studies utilizing longer term follow – ups be conducted.

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