

# Effectiveness of Brief Metacognitive Therapy versus Cognitive-Behavioral Therapy in a General Outpatient Setting

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This study aimed to assess the effectiveness of brief metacognitive therapy when applied to a representative sample of treatment resistant patients in a clinic setting. Patients were typically heterogenous with a range of comorbid diagnoses and the majority had failed to respond to medication. They were randomly assigned to treatment as usual ( $n = 13$ ; TAU), or metacognitive therapy ( $n = 15$ ; MCT). TAU consisted of cognitive-behavior therapy. Improvements in depression, anxiety, and worry were observed in both treatments. Patients receiving MCT showed significantly greater levels of improvement in anxiety and worry than those receiving TAU. It is tentatively concluded that MCT can be safely and effectively delivered as a brief treatment in a heterogenous clinical practice setting.

Cognitive behavioral therapy is a well-supported evidence-based treatment for anxiety, depression, and other psychological disorders (Butler, Chapman, Forman, & Beck, 2006). CBT has become the recommended practice for the treatment of anxiety and depression in health-care systems (e.g., National Institute of Clinical Excellence, 2004) and constitutes a common treatment now offered in mental healthcare settings.

In recent years there have been new forms of CBT developed and alternative approaches that show varying degrees of commonality with earlier methods based on the principles of Beck and colleagues (Beck, Rush, Shaw, & Emery, 1979). These newer approaches include Mindfulness based cognitive therapy (Segal, Williams, & Teasdale, 2002), Acceptance and Commitment Therapy (Hayes, Strosahl, & Wilson, 1999) and Metacognitive Therapy (Wells, 1995).

So far, few studies have examined the effectiveness and safety of these treatments in the heterogenous patient samples normally treated in community mental health settings. The present study aimed to assess the effects of metacognitive therapy in this

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context. Metacognitive therapy may be well suited for effective delivery in heterogeneous samples because it is based on a model of a core set of factors that are supposed to cause most forms of psychological disorder. The use of a single set of treatment strategies that might be applied irrespective of diagnosis could be valuable for increasing access to psychological treatment and limiting the costs that are incurred.

## METACOGNITIVE THERAPY

Metacognitive therapy (Wells, 2000) is based on the Self-Regulatory Executive Function (S-REF) model (Wells & Matthews, 1994). According to this approach psychological disorder is linked to the activation of a pattern of thinking and self-regulation called the Cognitive Attentional Syndrome (CAS). This syndrome consists of reacting to negative thoughts and emotions with perseverative processes in the form of worry and rumination and monitoring the internal or external environment for threat. In addition, it consists of overt and covert behaviors such as avoidance, reassurance seeking, and thought suppression that contribute to dysregulation and the maintenance of negative beliefs and emotional distress. This syndrome leads to a persistence of negative thoughts and emotions and an eventual loss of flexibility in cognitive control over thinking.

The CAS is the result of metacognition acting on thinking. Wells and Matthews (1994; see also, Wells 2009) differentiate between two types of metacognition at the knowledge level: procedural metacognitions and declarative metacognitions. The former are plans or programs for controlling thinking and can be likened to metacognitive skills, whilst the latter are propositional forms of information. Declarative metacognitions are further divided into categories of negative beliefs and positive beliefs. Negative beliefs are erroneous beliefs about the uncontrollability and danger of thoughts (e.g., persistent worrying is a sign that I'm out of control). Positive beliefs concern the need to engage in the processes that constitute the CAS such as rumination and worry (e.g., I must analyze my feelings to discover ways of preventing my depression) and threat monitoring (e.g., If I try to notice all symptoms of chest pain I'll be safe).

Metacognitive therapy consists of formulating the CAS and the associated metacognitions in psychological disorders. Empirically tested disorder-specific models have been developed to facilitate the accurate targeting of the specific instances of these basic processes and structures (e.g., Wells, 2009). Once formulated, treatment is focused on reducing worry, rumination, and threat monitoring and eliminating coping behaviors that interfere with in-built self-regulation processes and the correction of maladaptive knowledge. Treatment normally involves exercises that help the patient become aware of the flexible control they have over thinking and it focuses on challenging negative and positive metacognitive beliefs. Unlike other forms of CBT, it does not focus on reality testing of specific negative thoughts and the more general beliefs about the self and the world. These are seen much more as the triggers or consequences of other processes (the CAS) which is postulated to be the direct cause of disorder.

Metacognitive therapy has been evaluated in a range of studies that have used single-case, uncontrolled and controlled methodologies. These studies have examined the effects of full treatment (e.g., Wells & King, 2006) as well as individual techniques such as Attention Training (e.g., Papageorgiou & Wells, 2000), and metacognitively delivered exposure (Fisher & Wells, 2005). Preliminary evidence suggests the treatment is effective in generalized anxiety disorder (Wells and King, 2006; Fisher, 2006), major depressive disorder (Wells, Fisher, Myers et al., in press), obsessive compulsive

disorder (Fisher & Wells, 2008, Simons, Schneider & Herpertz-Dahlmann, 2006) and Post-Traumatic Stress disorder (Wells & Sembi, 2004; Wells, Welford, Fraser, et al., 2008). However, these studies focus on selected samples and use the disorder-specific variants of treatment. Wells and Matthews (1994) argue that it should be possible to use a generic treatment that can be applied to most disorders, and then if necessary use more specific metacognitive treatment modules to deal with residual issues. Such a generic treatment has recently been described by Wells (2009). The present study examined the effects of a generic treatment aimed at treating the CAS. This effectively is the treatment for generalized anxiety disorder (Wells, 2000) with the addition of attention training (Wells, 1990).

In the current study the effectiveness of MCT was compared with treatment as usual (cognitive-behavioral therapy) in a diagnostically heterogeneous group typical of the outpatients treated in mental health settings. The aim was not to evaluate MCT under the most favorable and well controlled circumstances but to address an important pragmatic question: How does a generic form of MCT perform in the natural clinic setting and how does it compare against a well-established method of treatment?

## METHOD

### Participants

The participants were 30 patients referred to a psychiatric university clinic for outpatients, and they were consecutively referred for cognitive-behavioral therapy. All patients had received drug treatments previously, without lasting clinical effects (26 patients had been treated with one or more types of SSRI/SNRI for over 6 months before the start of the trial). In addition, most of them had received various forms of psychological treatments. Of the sample 61% were female and 39% male. Mean age overall was 36.1 years ( $SD = 11.3$ ). All participants were Caucasian and lived in a relatively large city in Norway. Simple T-tests and Chi squares analyses did not reveal any differences in age, gender, diagnosis or levels of anxious or depressed symptoms or worry levels. The most common ICD-10 diagnoses were major depressive disorder, recurrent (50%) and anxiety disorders, such as GAD (42%). The prevalence of one or more personality disorder was 39%. Characteristics of the group subsamples are summarised in Table 1.

We used the following exclusion criteria in this trial: acute psychosis or suicidal behavior, severe borderline personality disorder, substance addiction or somatic illness. There were two patients allocated to the CBT group, who dropped out from the treatment. The reasons were ( $n = 1$ , low motivation for more treatment;  $n = 1$ , moved to another city). Seventy-five percent of the patients were still using SSRI/SNRI at the start of the trial. The patients who were on medication (SSRI/SNRI) had been so for 6 months or longer and they did not change their dosage or specific medication during the trial.

### Measures

Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988) consists of 21 items that measure levels of depression during the last week. The items are scored on a

**TABLE 1 Means, Standard Deviations and Sum of the Patient's Age, Gender and Distribution of Diagnoses**

	CBT	MCT	Total
<i>n</i>	13	15	28
Age, <i>M</i> , ( <i>SD</i> )	34.9 (12.3)	37.2 (10.7)	36.1 (11.3)
Gender: male	5	6	11
Diagnosis ( <i>n</i> )			
Anxiety disorder	11	14	25
Affective disorder	8	11	19
Eating disorder	1	1	2
Personality disorder	6	5	11
Total diagnoses	26	31	57

Note. Each patient could receive more than one diagnosis.

4-point scale and the range is from 0-63. The BDI has been shown to be a reliable and valid measure of syndrome depression severity in both clinical and nonclinical populations (Beck et al., 1988).

Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Stern, 1988) is a 21-item self-report measure designed to assess the level of symptoms of anxiety in the previous week. Items are scored on a 4-point scale with a range from 0-63. The BAI is established as a valid and reliable measure and is recommended as a companion measure to the BDI, in particular for individuals with co-morbid depressive and anxiety symptoms (Beck & Steer, 1993).

Anxious thoughts Inventory (AnTI; Wells, 1997). The AnTI is a 22-item self-report measure designed to assess three dimensions of worry; social worry, health worry, and meta worry. The items are scored from 1 (almost never) to 4 (almost always) and it ranges from 22-88. The scale and the subscales have good psychometric properties (Wells, 1997) and it is demonstrated that it is responsive to treatment effects. In this study the meta-worry subscale was of specific interest as an index of change in dysfunctional metacognitive appraisals. Meta-worry assesses worry about worrying and is indicative of negative beliefs about the uncontrollability and danger of worrying.

## Procedure

Patients' were assessed on ICD-10 diagnoses and they all completed our standard measures of symptom pathology and were assessed on cognitions, emotional distress, and general health. The diagnoses were based on the ICD-10 manual (WHO, 1992) by the author or his clinical assistants (psychologists in clinical training). By drawing envelopes, the patients were randomly allocated to either CBT or MCT before commencement of treatment. No re-diagnosing or clinical reassessment was conducted by the end of the treatment.

## Design

A two-group between-within pre-post test design was used. There is no follow-up data in the present study, because most of the patients went on to receive different forms of

group treatments during the follow-up phase of this study. This was the normal route of care for patients with long term chronic and recurrent conditions.

## Treatments

Metacognitive therapy followed the treatment manual by Wells (2000) and a generic treatment was offered based on the original model and treatment of GAD (Wells, 1997) combined with the procedure of Attention Training (Wells, 1990). Treatment consisted of the practice of attention training (ATT) at each treatment session and was scheduled for practice for homework. It also consisted of identifying and challenging negative metacognitive beliefs about worry and rumination and positive beliefs about the need to worry and ruminate. Patients were trained to use detached mindfulness in conjunction with worry-postponement to deal with their beliefs about the uncontrollability of worry and rumination. This technique was mainly used as a homework assignment throughout the therapy. The mean number of sessions of MCT were just above 7 ( $M = 7.46$ ,  $SD = 4.03$ ).

CBT was the treatment as usual (TAU) and followed the methods of Beck, Rush, Shaw, and Emery (1979) for depression and Beck and Emery (1985) for anxiety. Patients were instructed in activity scheduling, identifying and challenging negative automatic thoughts, and underlying schemas. A variety of techniques were used to challenge beliefs and to test them with behavioral experiments. The therapist gave the patient assignments to self-monitor automatic thoughts or schemas both within and between the therapy sessions. Homework consisted of completing thoughts diaries and generating responses to negative thoughts and engaging in daily activities. The mean number of sessions of CBT were 10 ( $M = 10.18$ ,  $SD = 4.11$ ).

The treatments were similar in the way in which they were structured, using an agenda and targeting change in cognitions and behavior. All the patients were provided homework assignments and plans for activity between sessions. The main difference was the type of cognitions targeted and the use of different techniques to modify them. For example, in CBT level of conviction in negative thoughts was challenged but this did not occur in MCT. In MCT patients were instructed in attention control and beliefs about the uncontrollability and danger of worry or rumination were challenged, this was not part of CBT.

## RESULTS

Means and standard deviations on age are presented in Table 1. In addition, the distribution of gender and diagnoses shows there were no significant differences between the groups on any of these variables. Outcome measures at pre- and posttreatment are presented in Table 2. There were no significant differences on any measure at the outset of treatment. Posttreatment outcome was assessed using one-way ANCOVA controlling for pretreatment levels on each of the respective outcome variables. The results of this were as follows: After adjusting for pretreatment anxiety there was a significant difference between the MCT and TAU groups on BAI,  $F(1,23) = 4.35$ ,  $p = .05$ , eta squared = .16. There was a large relationship between pretreatment and posttreatment BAI scores (eta squared = .12). After adjusting for pretreatment meta-

worry there was a significant difference between the interventions in posttreatment meta-worry,  $F(1,23) = 6.20, p = .02$ , eta squared = .21. The relationship between pre- and posttreatment meta-worry was large: eta-squared = .11. The difference in depression (BDI) at posttreatment was non significant  $F(1,23) = 1.02, p = .32$ , eta squared = .04. The relationship between pre- and posttreatment BDI was small to moderate (eta squared = .04).

A between-within ANOVA was used to analyse the overall change from pre to posttreatment and differences in within-group change. For the BAI there was a significant main effect for time: Wilk's Lambda = .21,  $F(1,24) = 93.27, p < .0005$  and the group x time interaction approached significance: Wilk's Lambda = .86,  $F(1,24) = 3.89, p = .06$ . For meta-worry the overall effect of time was significant: Wilk's Lambda = .38,  $F(1,24) = 38.65, p < .0005$  and so too was the group x time interaction: Wilk's Lambda = .73,  $F(1,24) = 8.82, p = .007$ . The time effect for the BDI was significant: Wilk's Lambda = .45,  $F(1,24) = 29.56, p < .0005$ . However, the group x time interaction for this variable was nonsignificant: Wilk's Lambda = 1.00,  $F(1,24) = .004, p = .952$ .

Thus the results showed that both treatments did well in the pre-post effects on depression, anxiety and level of worry. However, there were significant differences between the groups in level of anxiety and meta-worry favoring MCT, but no significant differences between the treatments on the post level of depression

## Effect Sizes and Benchmarking of Treatment Effects

In interpreting the results it is necessary to compare the effects of CBT against the effects obtained in similar studies of this treatment with similar samples to ensure that any group differences are meaningful and not simply a result of poor implementation of CBT. Table 1 contains the start and end scores on the BAI and BDI for all patients treated with CBT in routine clinical practice reported by Westbrook and Kirk (2005) in their Severe patient subgroup.

The posttreatment uncontrolled ES (Cohen's  $d$ :  $M1-M2/SD1$ ) show very large effects for both the MCT and TAU conditions with MCT showing the highest overall ES. The pretreatment means on the BAI show that the present sample was more anxious before treatment than the severe group reported by Westbrook and Kirk (2005) but the pretreatment depression score across studies was similar. Posttreatment ES on the BDI and the BAI in the current CBT sample were higher than those obtained by Westbrook and Kirk. These data suggest that the CBT implemented in the current study returns effects that are consistent (perhaps slightly better) than those obtained after CBT in other similar heterogenous clinic samples. Thus, the CBT offered as TAU in the current study seems to provide a reasonable benchmark against which to examine the potential effects of MCT.

## DISCUSSION

The results of this study provide evidence that CBT is associated with improvements in anxiety, depression, and meta-worry when applied to treatment resistant heterogenous patients in a day-center clinical setting. It should be noted that there was no

**TABLE 2. Means, Standard Deviations (in parentheses), and Effect Sizes (ES) for Each Intervention and Comparative Data From Westbrook and Kirk (2005)**

	BAI			BDI			Meta-worry		
	Pre	Post	ES	Pre	Post	ES	Pre	Post	ES
MCT	31.87 (7.75)	14.40 (5.07)	2.25	20.27 (5.10)	13.60 (5.07)	1.31	18.80 (2.18)	13.40 (3.04)	1.78
TAU	29.92 (6.68)	18.27 (6.05)	1.74	23.77 (6.67)	15.73 (2.90)	1.21	17.63 (2.06)	15.73 (2.69)	0.92
Westbrook & Kirk	22.50 (10.30)	12.90 (9.10)	0.94	22.00 (8.40)	12.40 (9.30)	1.15	—	—	—

check of treatment fidelity and so no data on how well the TAU represented CBT is available. However, the results show that the treatment produced effects of the magnitude reported in other CBT centers and this treatment was delivered by the author who has formal training in CBT and 15 years of clinical experience in delivering it.

This is the first study to evaluate the effects of a nonspecific form of MCT. The results showed that this form of treatment was associated with reductions in depression of a magnitude matching CBT. Furthermore, the results of the ANCOVA revealed that MCT was associated with greater improvements in anxiety and meta-worry than CBT. The effect in the mixed-model ANOVA for BAI just failed to reach significance and the significant effect in the ANCOVA for this variable is likely to be a function of the greater power obtained from this procedure. The posttreatment effect sizes for MCT were very large and support the continued evaluation of MCT in severe and enduring mental health problems. The effects are especially interesting because the author at the time of conducting this study had no specific training in the delivery of MCT but simply followed the techniques as outlined in available manuals. Moreover, the GAD model and treatment may not present the optimal form of generic MCT. More recent work (Wells, 2009) suggests a generic treatment similar to the approach used here but also includes additional work on threat-monitoring and practicing new strategies for processing thoughts that was not included in the present study.

In conclusion, this study set out to address a practical question: Can a short treatment consisting of a generic form of MCT help patients with resistant and mixed presentations of anxiety and depression? The time available to deliver the intervention was brief as patients waited for allocation to other forms of continuous care. A short course of generic MCT seems to be effective in clinical practice, it was not associated with adverse outcomes, and was associated with large improvements in anxiety, depression, and meta-worry. There was no opportunity to collect follow-up data in order to see the long term effects of CBT or MCT in this study as the patients went on to additional scheduled treatment in groups consisting of different treatment modalities. The aim here was to demonstrate a possible effect and feasibility of a generic MCT when applied to chronic and complex cases. The data are promising in this respect but the full effects of MCT with these patients are not known as this depends on training the therapists in MCT, providing more sessions, and utilizing a wider array of meta-cognitive treatment techniques more specifically adapted to the patients' problems.

There are limitations with this study meaning that the results need to be interpreted with caution. There were no treatment adherence ratings and there is a lack of independent assessment of the diagnoses with a sole reliance on self-report of symp-

tom levels. These factors show that this is very much a preliminary study of the effects of MCT against CBT. However, the results suggest that MCT when delivered as a single transdiagnostic treatment compares favorably against CBT.

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