

GROUP METACOGNITIVE THERAPY FOR
OBSESSIVE-COMPULSIVE DISORDER:
FINDINGS FROM A PRELIMINARY TRIAL

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Preface

This thesis was completed using data collected by the Anxiety Disorders Service (ADS) between 2011 and 2014. The data consisted of psychometrics and demographics of individuals who received treatment at the ADS, as part of a study investigating the effectiveness of a group metacognitive therapy for OCD. The principal investigator of the study, Colette Woolcock, designed the treatment manual, which was then implemented by a team of clinicians at the ADS to five groups of participants. I was not involved in the development, nor delivery of the treatment. My contribution to this study was to evaluate the efficacy of the treatment; which included all data preparation and checking, data analyses, literature research, and my conclusions – all of which form the basis of this thesis. All writing contained herein is my own work, along with revisions suggested by my supervisors: Janet Carter, Colette Woolcock and Jenny Jordan.

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Abstract

Obsessive-compulsive disorder (OCD) is a psychological disorder with debilitating impacts on many aspects of daily functioning, including relationships and quality of life. OCD is characterised by the presence of distressing, ongoing obsessional intrusions, and/or compulsions, which are extremely intrusive and time-consuming. There is accumulating evidence to suggest that higher-order thinking processes and beliefs (“metacognitions”) underlie many of the processes implicated in the formation and maintenance of OCD. Metacognitive models for OCD have been proposed, with debate as to whether such models are an expansion of CBT, or a separate entity. Metacognitive therapy (MCT) for OCD aims to modify the maladaptive metacognitive beliefs and processes implicated in the disorder, in order to alleviate symptoms. The current paper reports the outcomes of a preliminary trial, in which twenty-two adult outpatients with OCD received group MCT at the Anxiety Disorders Service in Canterbury (New Zealand). The results were promising, with significant decreases in OCD and depression symptoms, which were maintained at a three-month follow-up. The improvement in Yale-Brown Obsessive Compulsive Scale (Y-BOCS) scores between baseline and follow-up were large ($d=1.3$), comparable to the outcomes of well-established treatments. Similarly, as predicted, metacognitive beliefs were found to be correlated with OCD symptoms at baseline and follow up; and demonstrated large decreases from baseline to follow-up. Furthermore, this decrease in metacognitive beliefs throughout the study was significantly correlated with the decrease in OCD symptoms. These encouraging results add to the early empirical support for the efficacy of MCT as an OCD treatment approach, as well as reinforcing the role of metacognitions underlying this disorder. A large-scale, controlled trial is warranted, to enable firm conclusions about the efficacy of MCT and investigate the causal mechanisms of change.

Introduction

Obsessive-Compulsive Disorder (OCD): Overview

OCD is a psychological disorder characterised by the presence of repetitive, time-consuming obsessions and/or compulsions, which cause significant impairment and distress to those with the disorder (American Psychiatric Association [APA], 2013). In addition to the obsessions and compulsions characterising the disorder, those with OCD often start to avoid situations which may trigger an obsession or a compulsion, compounding the impact of the disorder on many aspects of daily functioning (APA, 2013). Until recent changes in the classification of OCD in the DSM-5 (APA, 2013), in which it was given its own diagnostic category, OCD has been diagnosed and treated as an anxiety disorder for many decades and is still regarded as having a “close relationship” with anxiety disorders (APA, 2013).

It is now accepted that OCD is not caused by the presence of obsessional intrusions per se; rather, it is the way these intrusions are mentally appraised that leads to, and maintains, OCD symptoms (Grøtte et al., 2015). In fact, numerous studies have shown that around 90% of the general population experience unwanted intrusions (e.g. Rachman & de Silva, 1978; Purdon & Clark, 1993), making them a ‘normal’ occurrence for most people. The content of intrusions is largely the same for those with and without the disorder, the difference lies in the frequency, distress, appraisal and response to the intrusion (Whittal & McLean, 1999). As will be discussed in the following sections, for those who develop OCD, the intrusions are misinterpreted; appraised as significant and harmful, which leads to the formation and maintenance of the cycle of OCD.

Diagnostic features. Obsessions include intrusive thoughts, images, or impulses, which are experienced as inappropriate, unwanted and outside of the control of the person experiencing them (APA, 2013). The experience of unwanted intrusions in OCD is associated

with significant anxiety, and is often ‘neutralised’ or suppressed using an associated compulsive ritual. Common obsessions include those of contamination (such as from shaking hands or touching objects such as doorknobs), recurring doubts (such as whether they remembered to lock the front door, or if they might have run over someone in their car) or harmful impulses (such as to jump in front of a train, or to hurt a family member).

Compulsions (or ‘rituals’) are repetitive, rigid acts that a person feels compelled to execute, in response to an obsession or internal ‘rules’ which must be followed (APA, 2013). Compulsions may take the form of overt behaviours, such as counting, washing or ordering, or ‘covert’ mental rituals, such as distraction, avoidance or the repetition of a calming thought. Compulsions are undertaken with the goal of reducing anxiety produced by an unwanted intrusion, or to prevent a feared event or situation from occurring; even though the compulsive behaviours may not be realistically linked to the event or situation they are intended to prevent or neutralise (APA, 2013). For example, an instance of a ‘magical thinking’ compulsion may be to avoid stepping on cracks to prevent loved ones from getting sick. However, even when compulsions are connected in a realistic way to the outcome they are intended to prevent (e.g. handwashing in response to fears of becoming contaminated) they are performed to an excessive extent, leading to impairment.

Most people with OCD experience both obsessions and compulsions, as compulsive behaviours are often undertaken in response to unwanted obsessional intrusions, in order to alleviate the anxiety and distress caused by their presence (APA, 2013). Although it is possible to have either one in isolation and still meet the diagnostic criteria (APA, 2013), those presenting with only obsessions often partake in covert mental rituals which are not immediately evident, but are still present (Rees, 2009).

A large-scale New Zealand mental health survey (NZMHS; Oakley Browne, Wells, & Scott, 2006) found that although OCD had a low prevalence rate compared to other anxiety

disorders (general population: 12-month prevalence = 0.6%, lifetime prevalence 1.2%), it had the highest interference with life (combining home, work/study, intimacy, and social life) of all anxiety disorders. It should be noted that the NZMHS (Oakley Browne et al., 2006) utilised a measure of OCD that has since been revised due to underestimating prevalence, so it is possible that mild cases were unable to be detected in this sample (J. Wells, 2006).

In contrast to the pattern for other anxiety disorders, where reported prevalence rates are much higher for females than males, the NZMHS (Oakley Browne et al., 2006) found no significant sex difference in prevalence of OCD (lifetime prevalence: female = 1.4%, male = 1.1%). Internationally, there is a pattern for females to have a slightly higher prevalence rate than males in adulthood, with the reverse gender pattern evident in childhood (APA, 2013). Fifty percent of those with the disorder reported an onset during childhood or adolescence (<18 years), with three-quarters reporting their OCD started by the age of 26 (Oakley Browne et al., 2006). Onset after the age of 35 is uncommon, although can occur (APA, 2013).

If left untreated, OCD generally follows a chronic course, with the onset of symptoms typically being gradual (although acute onsets linked to a trigger are also possible) (APA, 2013). The course of the disorder is often complicated by the presence of comorbid psychopathology, with only around 15% of those with OCD having no lifetime comorbidity (Clark, 2004). Around 76% of adults with OCD will also have a lifetime diagnosis of another anxiety disorder (such as panic disorder, generalised anxiety disorder, or social phobia), with around 63% having a lifetime diagnosis of a depressive or bipolar disorder (APA, 2013).

Current Practice

Despite theoretical and clinical progress in the field of anxiety disorders, OCD remains challenging to treat effectively (Rees & van Koesveld, 2008; Fisher, 2009). According to best practice guidelines for OCD treatment (APA, 2007) cognitive-behavioural therapy (CBT),

with exposure and response prevention (ERP) as a key component, is the recommended first-line psychotherapeutic treatment for OCD, and may be combined with pharmacotherapy for more severe cases.

Cognitive-behavioural therapy (CBT). CBT encompasses a broad “family of interventions” (Hofmann, Amundson, & Beck, 2013) which utilise both cognitive and behavioural techniques in the treatment of psychopathology. The application of CBT to the treatment of OCD began largely with the work of Salkovskis (1985) who proposed a cognitive-behavioural model of OCD. The model proposed that whilst intrusive thoughts were very common in the general population, the tendency to appraise these intrusions as dangerous or threatening leads to the formation, and subsequent maintenance, of OCD. The model has been refined by numerous theorists, mostly differing on the proposed primary faulty appraisal underlying the disorder; for example the need to control thoughts (Purdon & Clark, 1993), the overestimation of danger (van Oppen & Arntz, 1994), or an appraisal of personal significance (Rachman, 1993).

To consolidate the cognitive understanding of OCD, the Obsessive-Compulsive Cognitions Working Group (OCCWG; 1997) assessed all the belief domains implicated in the disorder, and came up with six key cognitive OCD beliefs: inflated responsibility, over-importance of thoughts, the importance of controlling one's thoughts, overestimation of threat, intolerance of uncertainty and perfectionism. Inflated responsibility refers to faulty appraisals about excessive personal responsibility, such that a person perceives themselves as responsible for preventing imagined harmful events (OCCWG, 1997). Over-importance of thoughts refers to the faulty appraisal that the mere presence of a thought signals that it is significant (OCCWG, 1997) and is linked to metacognitive ‘fusion beliefs’ (discussed below). Following from beliefs about responsibility and over-importance of thoughts, beliefs

about the importance of controlling thoughts posit that thoughts can and should be controlled, as they are significant, and can cause harm (OCCWG, 1997; Purdon & Clark, 1993).

Overestimation of threat refers to the tendency to overestimate the likelihood and severity of harmful events occurring (OCCWG, 1997). Intolerance of uncertainty and perfectionism are related dysfunctional beliefs; referring to concerns about doing things perfectly, and eradicating any doubt or uncertainty about a situation, in order to prevent negative events from occurring (OCCWG, 1997; Woolcock, 2011).

CBT focusses on challenging dysfunctional cognitive appraisals across these key belief domains, using various cognitive and behavioural techniques. These include identifying and assessing cognitive distortions (e.g. inflated responsibility), then reality-testing these distortions with techniques such as probability or responsibility pie charts (e.g. Rees, 2009). By definition, CBT includes a behavioural element, which is often ERP.

Exposure and response prevention (ERP). ERP is a behavioural therapy technique developed by Meyer (1966), following the basic learning theory process of extinction of the OCD fear/anxiety response, via classical conditioning. It is commonly used as the behavioural component of CBT. The goal of ERP is to habituate anxiety: to expose a client to a feared stimulus (in this case, a distressing obsession) and prevent the client in engaging in the coping methods (i.e. compulsions) usually utilised to reduce the anxiety invoked by the intrusion. In this way, clients learn that anxiety naturally abates over time, even when they do not engage in their coping rituals. Before embarking upon ERP, the client and therapist must work out a detailed ‘fear hierarchy’ in which the client works up to the most anxiety-producing situation through moving through a number of gradually-increasing steps.

Efficacy. CBT is undoubtedly efficacious, with decades of research supporting its use in the treatment of OCD. Treatments with an exposure component (mainly ERP) are supported

by the largest evidence base (Foa, 2010), and may be delivered as a component of CBT, or as a stand-alone treatment. The superior efficacy of ERP as a treatment technique depends on it being delivered in a consistent, optimal manner (Fisher & Wells, 2005b; Foa, 2010). This is less likely to be the case outside of rigorous research studies: a survey of psychotherapists found that less than half of those interviewed felt experienced enough or well-trained to use ERP themselves, despite its effectiveness (Kulz et al., 2009).

A meta-analysis, investigating the current efficacy of OCD psychotherapy, compared CBT, ERP alone, and cognitive therapy (without a behavioural element) (Eddy, Dutra, Bradley, & Westen, 2004). Of all treatment completers, only two-thirds responded with symptomatic improvement (Eddy et al., 2004). Intention-to-treat analyses, taking into account attrition, found that only half of all patients receiving current OCD psychotherapies improve (Eddy et al., 2004). Furthermore, the mean Y-BOCS score at post-treatment was 12.70 ($SD=2.29$), which represents a substantial decrease from baseline, but does not reach sub-clinical levels of symptoms (Eddy et al., 2004). Another meta-analysis of exposure-based CBT reported an average pre-post OCD symptom reduction of 48% across 17 controlled studies (Abramowitz, Franklin, & Foa, 2002). However, these figures obscure several limitations: the majority of those treated with ERP remain symptomatic after treatment; its aversive nature leads to high refusal and attrition rates (around 20%, Foa, 2010); and there is a large minority of completers (also around 20%; Foa, 2010) who are non-responsive (see Fisher, 2009; Foa, 2010 for reviews).

A Metacognitive Approach

Metacognition, or “thinking about thinking” (Flavell, 1979) is gaining increasing interest in the field of OCD research and practice (Rees & Anderson, 2013; Wells, 2013). Metacognitive approaches to OCD emphasise the significance of maladaptive, higher-order

thinking processes and beliefs (“metacognitions”) in the formation and exacerbation of OCD.

Models of metacognition. The first, explicitly metacognitive model of OCD, is that of Wells (2000; and Matthews, 1994), whose Self-Regulatory Executive Function (S-REF) model ascribes a metacognitive basis to all emotional dysfunction. Wells developed, adapted and coined a number of key terms and techniques used in MCT (e.g. ‘detached mindfulness’) and developed a prototype MCT treatment model for a number of disorders, including OCD (2000).

The S-REF model is based around the existence a perseverative thinking style, the ‘cognitive attentional syndrome’ (CAS; Wells & Matthews, 1994) which underlies emotional disorders, and consists of worry and rumination, maladaptive attentional style and counterproductive methods of coping. Applied to OCD (Wells, 1997; 2009), this model emphasizes the role of three types of metacognitive thoughts, which are implicated in the formation and maintenance of the disorder: thought-fusion beliefs, positive beliefs about rituals, and ‘stop’ criteria which signal a ritual can be ended. Wells (1997) adapted Rachman’s (1993) concept of ‘thought-action fusion’, originally conceived as a cognitive bias, into ‘thought-fusion beliefs’; a metacognitive construct comprised of thought-action fusion (the belief that a thought can provoke action), thought-event fusion (the belief that thoughts can cause events to happen) and thought-object fusion (beliefs that thoughts can be passed into objects). In this model, the activation of thought-fusion beliefs precedes appraisals of intrusions: for example, a thought of harming a loved one is appraised as very significant and dangerous only if one holds the faulty metacognitive belief that thinking something can make it happen (Solem, Myers, Fisher, Vogel, & Wells, 2010).

Another approach to metacognition is that of Clark (2004), whose appraisal model, and treatment manual influenced the current study. Clark has proposed a key role for

metacognitions in OCD from early on (e.g. Clark & Purdon, 1993; Purdon & Clark, 1999) advocating for their inclusion in the six main underlying OCD beliefs discussed above (OCCWG, 1997). Clark's model of OCD (2004) upon which the current treatment manual was partly based, is not an explicitly metacognitive model, rather uses the language of 'appraisals'. However, examination of Clark's model, as well as his treatment plan, reveals a key role for faulty metacognitive beliefs.

Clark's model (2004, p.90; Figure 1) suggests that a trigger causes an obsessional intrusion to occur, which (in those with OCD) activates a metacognitive appraisal of the intrusion as significant and dangerous. Once this appraisal has occurred (i.e. metacognitive beliefs are activated) a compulsive ritual is undertaken, in order to attempt to control or neutralise the intrusion. In the short term, 'getting rid of' the intrusion decreases anxiety, and increases feelings of perceived control over obsessional intrusions. In the long term, however, the faulty appraisals of intrusions, combined with the attempts to control them, have the effect of increasing the salience and frequency of the intrusions. This increased frequency of intrusions is subsequently appraised as a failure of control, which increases anxiety, and sparks heightened compulsive control strategies. Thus the anxiety-producing cycle of intrusions and compulsions is perpetuated and exacerbated. Metacognitive beliefs about the control and importance of thoughts feature prominently in this model, and must be modified in order for patients to 'let go' of their obsessions (Clark, 2004).

Clark (2004) asserts that the modification of metacognitive beliefs (especially those regarding control of thoughts) is an essential component of an effective CBT programme, and must be addressed alongside faulty cognitions. He discusses "recurring cognitive themes" (Clark, 2004), which are made up of cognitive and metacognitive beliefs, and underlie the faulty appraisals at the core of the disorder. As illustrated by Clark, these "themes" (Clark,

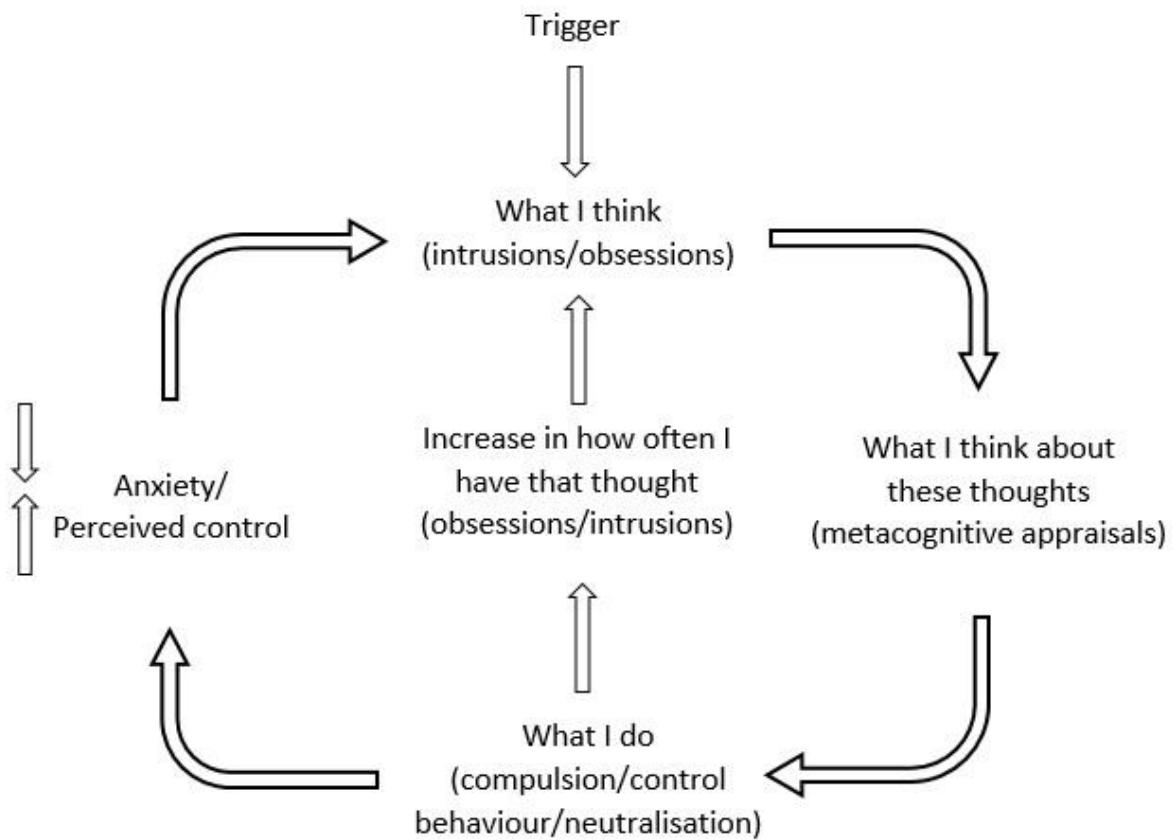


Figure 1. Appraisal Model of OCD, adapted from Clark (2004, p.90). Permission for use in this document obtained from David Clark.

2004, p.261) largely align with the six core OCD beliefs posited by the OCCWG (1997).

Differing from a traditional CBT perspective, Clark recommends rising above the idiosyncratic content of these faulty beliefs to identify and challenge the recurring, overarching themes of the disorder, allowing the client to let go of the obsession. He also suggests that CBT which targets interventions at both levels of appraisal, instead of a narrower focus on cognitive dysfunction, will have the best therapeutic outcomes. In this way, Clark's treatment model is consistent with a "soft" approach to MCT (discussed below), even though he describes it as CBT; supporting an overlap between the approaches.

Metacognitions: A separate approach or extension of the existing field? Despite the overlap between approaches mentioned above, there is not yet consensus as to whether the metacognitive approach is an extension of the current cognitive-behavioural field, or a separate entity (Rees & Anderson, 2013; Dobson, 2013). Although Wells is explicit in calling his approach (1997; 2000; 2009) a ‘metacognitive theory’, there have been aspects of metacognition in cognitive-behavioural models of OCD for a number of years (e.g. Salkovskis, 1985; Purdon & Clark, 1993; Emmelkamp & Aardema, 1999). In fact, the appraisal of intrusive thoughts which underlies the disorder is an inherently metacognitive process (Rees & Anderson, 2013). As mentioned above, a core role for metacognitive beliefs and processes in OCD was recognised at the at the cognitive working group conference (OCCWG, 1997), which spawned several measures of metacognitive beliefs (such as the OBQ-44), and is reflected in the inclusion of metacognitions in the key six OCD ‘cognitive’ belief domains agreed upon by these theorists.

It has been suggested (e.g. Fisher, 2009; Solem et al., 2010) that dysfunctional cognitive beliefs do not need to be addressed in the treatment of OCD, as they are a by-product of faulty metacognitive beliefs. Such arguments do not deny the role of dysfunctional cognitive-level beliefs in OCD, nor the importance of modifying them, but argue that eliciting metacognitive-level change will have a sufficient flow-on effect on these dysfunctional cognitive beliefs. However, Wells (2009) has differentiated between “hard” and “soft” forms of metacognitive theory, the former in which a focus on modifying faulty metacognitions should *replace* the modification of dysfunctional cognitions (which is consistent with the argument of Fisher, 2009, above). Conversely, in his discussion of a “soft” form of the theory, Wells (2009) proposes metacognitions may also exist *alongside* cognitive dysfunctional beliefs. Thus treatment may “retain a component of challenging traditional beliefs” (Wells, 2009, p. ix) as long as co-existing metacognitions are also dealt with, which

is consistent with the treatment model of Clark (2004). The current study follows this latter metacognitive perspective, delivering a more comprehensive treatment by addressing both faulty metacognitions, as well as dysfunctional cognitions which play a well-documented role in OCD.

Metacognitive therapy (MCT). Based on the key role of faulty metacognitions in OCD, MCT focusses on challenging the relationship clients have with their thoughts, impulses and beliefs, rather than challenging the specific content (as is the case in standard cognitive therapy). Therefore when the validity of thoughts are tested in treatment, metacognitive thoughts are the target (e.g. “thinking something means that it is true”). This allows clinicians to bypass the time-consuming process of cataloguing and challenging each specific obsession or compulsion, as well as making it applicable across OCD subtypes and presentations (Fisher, 2009; Rees & van Koesveld, 2008). As described by Rees (2009), the metacognitive approach reshapes clients’ relationships with their thoughts, focussing on the idea that “thoughts are not facts, and therefore do not need to be engaged with” (p.108). MCT can thus be seen as more acceptance-based than change-focussed (Rees & Anderson, 2013), the goal of treatment not being to eliminate symptoms (including intrusive thoughts) per se, but to accept their occurrence and change the way they are experienced (Rees, 2009).

To achieve this, MCT utilises psychoeducation to normalise the experience of intrusions, Socratic dialogue to keep people in a metacognitive mode of processing, and skills and techniques such as ‘detached mindfulness’ and behavioural experiments (Fisher & Wells, 2005a) to alter maladaptive metacognitive beliefs about the disorder.

Key strategies of MCT.

Detached mindfulness (DM). DM, conceptualised by Wells (2000; and Matthews, 1994), is a state of meta-awareness, in which clients relate to their thoughts in an objective, detached

way. DM is central to metacognitive theory, as it facilitates the key goal of being conscious of thoughts, but not engaging with them or giving them undue attention, because of the understanding that thoughts are not facts, but just mental activity (Wells, 2005).

Subsequently, when operating in a DM manner, there are no attempts to control, suppress or engage in behaviours in response to thoughts (Wells, 2005). The goal in MCT is to teach DM to patients using neutral thoughts to begin with, slowly getting them to utilise it for their OCD cognitions.

There are a number of techniques which aim to increase DM, including free association tasks, suppression counter-suppression tasks and the ‘attention training technique’ (ATT; Wells, 1990; 2000; 2009), which was used in the current study. ATT, introduced by Wells (1990), assists in the facilitation of DM by interrupting perseverative self-focussed attention, expanding cognitive flexibility and allowing participants to practice not engaging with the inner “noise” of intrusions (Wells, 2009). ATT is taught in an auditory manner, requiring participants to engage in selective attention, attentional switching and dividing attention between various external sounds. The procedure takes about 10-15 minutes, and is designed to be demanding on attentional resources (similar to the effect of intrusions), so that clients learn flexibility and attentional control in a context that is non-threatening, and non-self-referent (Wells, 2000). This skill – increased metacognitive control over the allocation of attention – allows attention to be less “bound” to intrusions when they occur (i.e. ‘detached mindfulness’), and leaves more processing capacity available for the modification of faulty metacognitions (Wells, 2000).

DM is utilised to promote and facilitate metacognitive change within a treatment programme: it is not used as a coping method, and needs to be carefully delivered so that clients do not use DM as a means to regulate their emotions or neutralise perceived threats (Wells, 2005). Instructions are given during the task that the aim of ATT is not to suppress or

escape thoughts, but to practice focusing attention (Wells, 2005); instructions also advise that if an intrusion occurs, to not react or engage with it, but rather to refocus attention to the sounds, as per instructions. From an S-REF model perspective, DM can be seen as the direct opposite to the CAS – in which thoughts are fixated and ruminated upon, attention is focussed and used to monitor for threats, and maladaptive methods of coping are activated in response to intrusive thoughts (Wells, 2005). Similarly, in regards to Clark's model, DM and ATT can be conceptualised as a way of disrupting the OCD cycle, by improving the ability to detach attention from intrusions, and allowing for the modification of the faulty metacognitive appraisals of these intrusions.

Behavioural experiments. While not specific to MCT (see, for example, Whittal & McLean, 1999 for a discussion of the use of behavioural experiments in CBT), behavioural experiments are one of the key exposure techniques used in MCT, instead of prolonged ERP exposure procedures (Fisher & Wells, 2008; Wells, 2009; Fisher, 2009). The key difference between exposure from an MCT perspective and an ERP perspective is the goal of the exposure. As explained earlier, the goal of ERP is to habituate the client to anxiety, through preventing the completion of a mental or behavioural ritual. The reduction in anxiety required for the ERP to be effective can take around 60-90 minutes (Fisher & Wells, 2005a) which is part of the reason it is so aversive. In contrast, exposure under a metacognitive rationale is brief (5 minutes), and is designed explicitly to challenge and disconfirm faulty metacognitive beliefs. This is because from a metacognitive perspective, it is faulty metacognitive beliefs that maintain the disorder, and lead to distress (Fisher, 2009). As such, the modification of these beliefs will result in reduced anxiety, thus clients do not have to struggle through lengthy ERP procedures to habituate their anxiety behaviourally (Fisher & Wells, 2005a).

Response prevention in MCT behavioural experiments thus serves to allow new metacognitive knowledge to develop, as clients learn that it is their faulty metacognitive

beliefs and subsequent appraisals of intrusions at the root of the disorder, and that performing their rituals is not stopping feared obsessional outcomes, but rather reinforcing them (Fisher & Wells, 2005a; Fisher, 2009).

As both ERP and behavioural experiments are exposure-based behavioural techniques, the distinction between them is not always be obvious. An example from the current study - worry postponement - demonstrates the key difference. In the current study, the concept of “worry postponement” is utilised to build on DM skills, as well as challenge dysfunctional beliefs about the uncontrollability of worry, and the belief that worrying thoughts should be engaged with. Participants are asked to ‘postpone’ their worry, by registering a worrying thought, then detaching from it, telling themselves that they will come back to this thought later. A small amount of time is set aside once a day to deal with worried thoughts, if participants still feel the need to address them. This behavioural exercise tests metacognitive beliefs about worry, utilising DM to temporarily postpone worry, rather than requiring participants to sit with their worry or anxiety and wait for it to abate. In this way, there is a clear distinction in the rationale of behavioural experiments in MCT-based therapy, and ERP used in CBT.

Empirical support for the role of metacognitions in OCD. There are a growing number of studies supporting the role of metacognition in the development and persistence of OCD symptoms (see Rees & Anderson, 2013 for a review). A range of metacognitive beliefs, such as thought-fusion beliefs, and beliefs about the perceived danger of thoughts, have been found to be significantly correlated with OCD symptoms and their improvement. The metacognitive belief about the over-importance of thoughts was first linked to obsessional rumination in a clinical population, in which the majority of the patients (84%) endorsed the statement “thinking about something means it is true” (Freeston, Ladouceur, Letarte &

Rheaume, 1994). Prospective studies with non-clinical samples have demonstrated that metacognitions, such as thought-fusion beliefs and beliefs about the significance of thoughts, have a causal role in the aetiology of OCD (Myers, Fisher & Wells, 2009; Myers & Wells, 2013).

There is evidence that behavioural techniques delivered in MCT can be more effective than the currently-recommended behavioural technique of ERP. In a test of the metacognitive model, Fisher and Wells (2005a) compared ERP with brief metacognitively-delivered behavioural experiments, finding that the behavioural experiments were more effective than ERP in reducing anxiety, thought-fusion beliefs and the desire to neutralise intrusions. Similarly, Solem, Håland, Vogel, Hansen and Wells (2009) found that the therapeutic benefits demonstrated by ERP were actually explained and predicted by changes in metacognitive beliefs.

Furthermore, there is increasing evidence that improvement of OCD symptoms is better explained by underlying metacognitive processes than factors from other dominant theories. Regression analyses from a clinical study (Solem et al., 2009) showed that change in metacognitions not only accounted for a large portion (22%) of the variance in post-treatment symptoms, but also that metacognitions emerged as the only independent predictor of symptomatic change, over and above cognitive factors (responsibility and perfectionism). Similarly, meta-cognitive thoughts have been shown to mediate the relationship between responsibility appraisals and symptoms (Gwilliam, Wells, & Cartwright-Hatton, 2004).

Application of metacognitive therapies to OCD. Despite the growing theoretical and empirical support for metacognitive theory, described above, the practical application of metacognitive therapy to the treatment of OCD is still in preliminary stages, with only a small handful of studies.

There has only been one previous group MCT treatment for OCD (Rees & van Koesveld, 2008). Their study (N=8) followed a treatment manual (Rees & van Koesveld, 2006) based on Wells' (2000) MCT treatment model for OCD. There were 12, 2-hour group sessions, and then a follow-up at 3-months. The group attained encouraging results: at follow-up, the average improvement on the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) was 61%.

A case series test of MCT conducted by Fisher and Wells (2008) also supports MCT's efficacy in the treatment of OCD. After a 3-4 week no-treatment period to establish a stable baseline, the participants attended 12-14 individual one-hour MCT sessions, with a 3 and 6-month follow up. All four of the participants demonstrating large treatment gains, with an average improvement of 70% on the Y-BOCS.

Shareh, Gharraee, Atef-Fahid and Eftekhar (2010) conducted a small (N=19 completers) study comparing individual MCT, fluvoxamine or a combined MCT/fluvoxamine condition. Their MCT protocol was drawn from Wells (2009), which is in turn, based on the prototype model of MCT for OCD in Wells (2000). After 10 weekly sessions, the MCT condition demonstrated large treatment gains, with a 76% drop in Y-BOCS scores, which was significantly more successful than the fluvoxamine treatment.

A limitation of both Fisher and Wells (2008) and Rees and van Koesveld (2008) studies was that the primary outcome measure, the Y-BOCS, was administered by the same clinicians running the group treatment, which has the potential to artificially inflate the level of improvement by eliciting socially-desirable responding from the participants. This is potentially also the case for Shareh et al. (2010) who do not state who administered the Y-BOCS in their study. For Fisher & Wells (2008) this limitation is mitigated somewhat by also having participants complete self-report measures, which showed a similar pattern of results to the clinician-administered tests. The current study utilised self-report measures, not administered by the clinicians running the groups, which may reduce bias. However, the

clinicians were present while the measures were completed, the effect of this on participant responses is unable to be determined, as there appears to be no literature addressing this situation.

Fisher and Wells (2008) and Shareh et al. (2010) also employed relatively strict inclusion criteria, which further limits the generalisability of their findings. In addition to a primary diagnosis of OCD, some of Fisher and Wells (2008) required participants: to be experiencing *both* obsessions and compulsions; to have had OCD for over a year; to not be receiving any psychological treatment concurrently; to not have received cognitive or behavioural treatments in the past two years; show no sign of psychosis or medical condition underlying the anxiety; and be either taking no medication, or be taking medication that has been stable for three months. Shareh et al. (2010) had similar criteria, also excluding those with any other comorbid Axis-I disorders, personality disorders or substance abuse disorders; limiting the sample to between the ages of 18 and 50; and excluding anyone who had received psychological or pharmaceutical treatments in the past month.

Other iterations of MCT are not as comparable to the current study, but also provide support for the clinical utility of MCT for OCD. A randomised controlled trial (RCT), comparing individual MCT and ERP for children and adolescents with OCD, found that MCT was also highly effective in that population (Simons, Schneider, & Herpertz-Dahlmann, 2006). The study utilised techniques by Salkovskis (1999) and Wells (1997, 2000), adapted for use with children and adolescents, as well as an adapted version of the Y-BOCS (CY-BOCS; Scabhill et al., 1997), and found that MCT was highly effective, even though it was delivered in fewer sessions than the ERP condition (9 compared to 13; Simons et al., 2006). At post-treatment, the MCT condition had improved by 75%, and the ERP condition by 89.7%; although the participants in the MCT condition had significantly higher CY-BOCS scores than the ERP condition at baseline. The ‘MCT’ condition blended CBT and MCT

techniques, taking a “soft” metacognitive approach (Wells, 2009); supporting the perspective that combining MCT and CBT techniques can be effective in the treatment of OCD.

Other applications of MCT have been a preliminary study via videoconference (N=3; Fitt & Rees, 2012) and an electronic self-help programme, ‘MyMCT’ (N=86; Moritz, Jelinek, Hauschmidt, & Naber, 2010) which incorporated a range of cognitive and metacognitive elements. Both of these studies achieved significant reduction in OCD symptoms, as measured by the Y-BOCS, but will not be discussed due to the key methodological differences between them and the current study.

Group Therapy

There are several advantages to delivering OCD treatment in a group format; including beneficial therapeutic factors, and cost-effectiveness in utilising a limited amount of skilled therapists in an efficient manner (Himle, van Etten, & Fischer, 2003). The dynamics of a cohesive group helps to foster peer support, encouragement and modelling from the other members, as well as to normalise and destigmatise OCD symptoms - a crucial foundation of the MCT approach (Rees & van Koesveld, 2008). A highly cohesive group is linked to higher attendance, empathy and self-reflection, all of which contribute to treatment success (Yalom & Leszcz, 2005). In a self-reinforcing loop, treatment success then further increases the engagement, intimacy, and disclosure of the group (Yalom & Leszcz, 2005). Rees (2009) suggests that realising they are not alone in their OCD experience is one of the most powerful influences of being in a group setting for participants, helping to counter feelings of shame and being ‘different’. Furthermore, working alongside others who face similar challenges, and seeing them improve can instil hope in other group members (Yalom & Leszcz, 2005), as well as allow members to detach from their own OCD experience, and take a more objective stance towards the treatment.

From a practical perspective, delivering treatment to a group also has the benefit of time-efficiency. Treating several clients at a time not only means clients may have a shorter wait-time before receiving treatment, but it also means that the overall contact hours per client is significantly reduced (Himle et al., 2003). This also translates into cost savings, as time-intensive treatment is delivered to multiple clients at one time.

Despite the many benefits of group psychotherapy, there are also some challenges. Just as the therapeutic relationship is the foundation of success in individual therapy, group cohesiveness is essential for other therapeutic factors to be effective (Yalom & Leszcz, 2005). Even the most skilled psychotherapist will experience client dropout, but the loss of members in a group setting can be particularly harmful to the group milieu and cohesion (Yalom & Leszcz, 2005). In the current study, three of the participants who dropped out were from the same group; although it cannot be confirmed, it is possible that these dropouts influenced group cohesion, and further drop outs. Another risk of group treatment is that individual members might not receive adequate attention from the therapist (Whittal & McLean, 1999), although this might be more of an issue in therapeutic modalities with highly individualised content (i.e. CBT, or ERP), rather than MCT, which has been suggested to be conducive to delivery in a group format (Rees & van Koesveld, 2008).

It has been suggested that a well-matched group is key to treatment success (Yalom & Leszcz, 2005). Clinical observations suggest that a group that has a member (or members) with higher severity than the rest can have mixed results (Whittal & McLean, 1999). Less-severe group members may be motivated to not become like the more severe member, and thus work harder in therapy, but it can also cause them anxiety (Whittal & McLean, 1999). Similarly, the higher-severity client may become discouraged that they are not ‘keeping up’ with the improvement of the other members of the group. In this situation, encouraging

clients to compare their treatment progress only to themselves (rather than to other group members) is important (Whittal & McLean, 1999).

There is not yet any research comparing group and individual MCT treatment, due to the emerging nature of the field. However, there is increasing evidence of the excellent performance of other group-based therapies for OCD (Anderson & Rees, 2007; Jónsson & Hougaard, 2009). A systematic review and meta-analysis of group OCD treatment (CBT with or without ERP) (Jónsson & Hougaard, 2009) found an average pre-post treatment effect size of 1.18 across 13 eligible studies. All of these studies utilised the Y-BOCS (either clinically-rated or self-report version), with an average pre-post decrease of 7.5 points. The authors concluded that more research into the efficacy of group therapy, vis-à-vis individual therapy is needed, however that group-based treatment is certainly effective. A later study by the same authors (Jónsson, Hougaard, & Bennedsen, 2011) found that, although the pre-post effect sizes seemed larger for individual treatment, the difference was not statistically significant, which is in line with previous findings (e.g. Anderson & Rees, 2007).

The Current Research

The aim of the current study was to implement a new treatment protocol of MCT for OCD, and support the efficacy of using MCT to treat groups of clients with OCD using new cohorts of participants. The current study took a metacognitive approach combining models and treatment protocols of Clark (2004) and Wells (2009). The study, in a naturalistic outpatient clinical service for adults, aimed to replicate the findings of Rees and van Koesveld (2008); adding to the fledgling research in this area, as well as enhancing OCD treatment services in Christchurch. This study extends Rees & van Koesveld's (2008) study by going beyond pre-post treatment analyses and looking at the relationship between metacognitive belief change and symptom change. The current study also builds on the

current literature by delivering the same treatment manual to several cohorts, with different therapists conducting the groups, thereby increasing the generalisability of the findings.

The main hypotheses of the current study were:

- As found by Rees and van Koesveld (2008), OCD symptoms and depressive symptoms will decrease significantly from baseline to post-treatment and follow-up.
- Metacognitive beliefs will also decrease significantly from baseline to post-treatment and follow-up.
- Metacognitive beliefs will be positively correlated with OCD severity at baseline and follow-up.
- Change in metacognitive beliefs will be significantly correlated with change in OCD symptoms.

Method

Design

This study was an open trial of group metacognitive therapy for adult outpatients with OCD. Participants were assessed at multiple time points: pre-treatment, during treatment and at three monthly follow-up sessions. Ethical approval was granted by the Upper South Regional Ethics Committee (Appendix A), and all participants were supplied with a detailed description of the study (Appendix A), before giving their signed, informed consent (Appendix B).

Participants

Five groups of adults with a primary diagnosis of OCD were consecutively recruited between 2011 and 2014, as part of an ongoing OCD group treatment study at the Anxiety Disorders Service, a referral-based outpatient service of the Canterbury District Health Board (New Zealand). Participants were assessed to ensure their suitability for group treatment, before being invited to join the treatment group. Participants were not excluded if they were taking prescribed psychoactive medication. Exclusion criteria were: the presence of a significant substance use disorder; posing a significant risk of harm to self or others; and the presence of a significant cognitive impairment. Twenty-seven participants were accepted into the treatment programme, with 22 completing the programme; one withdrawing before the study and four participants withdrawing during the study. Each group consisted of between two and six participants (completers).

Measures

At baseline, clinicians saw each participant separately for two hours, completing a detailed diagnostic and behavioural analysis. Self-report information about demographics

(age, gender, ethnicity, education, occupation, relationship status and medications) was collected at baseline and the following self-report measures were completed at baseline, during treatment and at follow up:

Obsessive-compulsive symptoms.

Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Self-report version; Baer, 2000).

The Yale-Brown Obsessive-Compulsive Scale, Self-Report is a participant-completed version of the “gold standard” (Antony, 2001) Y-BOCS (Goodman et al., 1989), a clinician-rated measure of OCD symptoms, severity and treatment response.

This study utilised the 10-item severity scale portion of the Y-BOCS, with each item being rated on a 5-point scale from 0-4. Five questions pertain to obsessions, and five to compulsions, with clients asked to answer based on their experience in the past seven days. Questions are general, not focussing on particular subtypes of OCD, rather measuring degree of impairment with questions relating to distress, interference and frequency of symptoms. Total scores range between 0 and 40, with a higher score reflecting higher OCD severity. Severity rating cut-off scores are as follows: 0-7=sub-clinical, 8-15=mild, 16-23=moderate, 24-32=severe and 33-40=extreme.

The self-report version has demonstrated strong convergent validity with the clinician-administered version, as well as superior internal consistency and one week test-retest reliability ($\alpha=.82-.88$; Steketee, Frost, & Bogart, 1996). There is good correlation with other measures of OCD for both the subscales and Y-BOCS total score (Antony, 2001). It has been suggested that the Y-BOCS has poor discriminant validity, due to high correlations with scales measuring anxiety and depression (Goodman et al., 1989; Antony, 2001). However, it is sensitive to change following treatment, and has thus become the scale of choice for measuring improvement in OCD symptoms in treatment studies (Antony, 2001).

Padua Inventory–Washington State University Revision (PI-WSUR; Burns, Keortge, Formea, & Sternberger, 1996). The Padua Inventory – Washington State University Revision (PI-WSUR) is a 39-item, self-report scale of obsessions and compulsions, consisting of five subscales: ‘Obsessional thoughts to harm self/others’, ‘Obsessional impulses to harm self/others’, ‘Contamination obsessions and washing compulsions’, ‘Checking compulsions’ and ‘Dressing/grooming compulsions’. Clients answer each question on a 5-point scale based on the level of disruption or impairment caused by each particular thought or behaviour (from 0 = “not at all” to 4 = “very much”). The total score – a sum of all 39 items – can range from 0 to 156. Burns et al. (1996) reported a mean score of 54.93 (SD = 16.72) for an OCD sample.

The PI-WSUR total score has been shown to have excellent internal consistency ($\alpha = .92$), with the subscales ranging from fair ($\alpha = .77$ for ‘obsessional thoughts to harm self/others’) to good ($\alpha = .88$ for ‘checking compulsions’) for a normative sample (Burns et al., 1996). Test-retest reliability for the total PI-WSUR score on the same sample was .76, with correlations ranging from .61 (‘obsessional thoughts to harm self/others’) to .84 (‘obsessional impulses to harm self/others’) for the subscales (Burns et al., 1996).

The PI-WSUR has better psychometric properties than the original Padua Inventory (PI; Sanavio, 1988), including being better at discriminating OCD symptoms from worry than its predecessor; sharing only 12% of its variance with the Penn State Worry Questionnaire (Meyer, Miller, Metzger & Borkovec, 1990), compared to 34% for the PI (Burns et al., 1996).

Obsessive-Compulsive Disorder Scale (OCD-S, Wells, 2009). The OCD-S is a four-item, self-report scale, included to supplement existing assessment measures. The items measure the level of distress caused by obsessions, the frequency of OCD coping behaviours and avoidance behaviours, and degree of agreement with a number of metacognitive belief

statements. The scale is designed to be used weekly, as a measure of metacognitive-relevant response to treatment.

The first item measures how distressing and disabling obsessional thoughts or urges have been in the past week, on a 9-point scale (from 0 = “not at all”, to 8 = “extremely, the worst they have ever been”). The second item requires frequency ratings for nine different behaviours used to cope with obsessions in the past week (from 0 = “none of the time” to 8 = “all of the time”), including behaviours such as checking, thought-control and reassurance-seeking. Using the same rating scale, the third item measures the frequency of six avoidance behaviours in the past week, including avoidance of certain thoughts, social situations or uncertainty. The final item in the scale measures degree of agreement with 10 different metacognitive beliefs about obsessions and rituals (from 0 = “I do not believe this at all”, to 100 = “I’m completely convinced this is true”). Examples of these metacognitive beliefs/statements are “obsessional thoughts could change me as a person”, “some thoughts must always be controlled” and “something bad will happen if I don’t perform my rituals”.

In this study, the score for each item was calculated, creating subscales scores for ‘distress’, ‘coping’, ‘avoidance’ and ‘beliefs’. A summed total score was not used. There are no validation data available for this scale.

Depressive symptoms.

The Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996). The BDI-II is a 21-item, self-administered survey of depressive symptoms experienced over the past two weeks. The items are summed to give a single total score, with a higher score indicating greater severity of depressive symptoms. Each item is answered on a 4-point scale (0-3), with the exception of two items (items 16 and 18) which are answered on a 7-point scale, to reflect a decrease or increase in sleep and appetite. The cut-offs for severity categories are as

follows: “minimal” = 0-13, “mild” = 14-19, “moderate” = 20-28, “severe” = 29-63 (Beck, Steer, & Brown, 1996). The BDI-II is a well-established measure of the intensity of depressive symptoms, with high test-retest reliability, internal consistency and agreement with other depression scales (Beck, Steer, & Brown, 1996).

A comprehensive review of the BDI-II (Wang & Gorenstein, 2013) used in various clinical and non-clinical samples found it had high internal consistency (average $\alpha = .90$; range = .83-.96; Beck, Steer, Ball, & Ranieri, 1996), superior to the previous versions of the scale (BDI: Beck, Ward, Mendelson, Mock, & Erbaugh, 1961, BDI-A: Beck & Steer, 1993).

It also has good to excellent one-week test-retest reliability, between $r = 0.73$ and 0.96 (Beck, Steer & Brown, 1996). There is good convergent validity with other major depression scales ($r = 0.66-0.86$) but also significant overlap with anxiety scales ($r = 0.37-0.83$), although this is likely due to overlapping symptoms, as well as high comorbidity rates between anxiety and depression (Wang & Gorenstein, 2013)

Procedure

Pre-treatment assessment. Before beginning treatment, participants attended a two-hour individual session with a clinician, in order to collect information about the history and details of their OCD, gather baseline psychometrics and demographic information. This session was also used to establish individualised goals for each participant to work towards during treatment, based on their particular symptoms. An overview of the OCD model was presented and participants’ ability to comprehend the concept of appraisals and metacognitions was assessed; this being a vital prerequisite for them to be able to adequately engage with the treatment. Participants were also advised to remain on their prescribed medication throughout the treatment, keeping it stable whenever possible or noting any

changes in their weekly diary. They were also encouraged to compare their treatment progress against themselves at baseline, not to the other members of the group.

Treatment sessions. Treatment consisted of nine, weekly, 4-hour group MCT sessions; followed by three, monthly, 1-hour follow-up maintenance sessions. Treatment followed the manual *OCD Group Treatment: Facilitator's Guidelines* (Woolcock, 2011, unpublished manuscript). This manual for the treatment protocol was informed by rationale and structure of treatment in Wells (2009), Rees (2009) and Clark (2004) and followed a specific structure:

Session 1: Psychoeducation, normalisation and motivation

Session 2: Connections between thoughts, emotions and behaviour: Introduction to metacognitions

Session 3: Detached Mindfulness, Attentional Training and Control of Thoughts

Session 4: Behavioural Experiments; Thought Postponement

Session 5: Halfway point 'check in': Review of material and practice of strategies learned to date

Session 6: Exploring OCD metacognitions; Intolerance of Anxiety, Perfectionism

Session 7: Over-estimated Threat; Thought-Action Fusion

Session 8: Inflated Responsibility; Over-Importance of Thoughts

Session 9: Blueprint & future planning, Relapse Prevention

Treatment sessions were comprised of guided learning, goal-setting, discussion and relevant activities to learn and practice key skills, including behavioural experiments. The treatment manual sets out clear themes, messages, and tasks for each session, as well as the best ways to deliver the information. This includes the use of helpful metaphors to

demonstrate concepts, and the use of Socratic dialogue to engage the participants in the treatment.

At the start of each session, participants completed the self-report psychometrics. A basic appraisal model of OCD (Clark, 2004; see Figure 1) was then drawn on the board to help participants keep the OCD process in mind, and assist them in identifying underlying appraisals. This is key, as clients often struggle with the identification of important appraisals, because they are distracted by the content of their intrusions (Whittal & McLean, 1999). Key messages were reiterated throughout the treatment, to consolidate the concepts and facilitate understanding. One of these key messages is that intrusive thoughts are a part of life, and that the goal of the treatment is not to eradicate them but to change the relationship with them.

Worksheets with summaries of key messages, examples and techniques were handed out for participants to use, and take notes on. For example, participants were given a sheet with common unhelpful metacognitions (such as “because I had this thought, it must be true”) as well as some helpful metacognitions to replace them with (such as “thoughts are not facts”), with space for them to add their own unhelpful and new helpful metacognitions to the list as they identified them. There were also worksheets for each session theme (such as “thought-action fusion” or “over-importance of thoughts”) which included definitions, examples, summaries of experiments completed during class to challenge these appraisals (including the rationale behind the experiment), with space for participants to note down what they learnt from these experiments during the group brainstorm at the end of each session.

Homework was given after each session, with the instruction that the skills learned in sessions were to be practiced and implemented by participants outside of the group setting. The importance of completing homework was highlighted, as a key part of strengthening skills and learning to self-direct their improvement. The homework included a diary template

for participants to record their obsessions and compulsions during the week, what triggered them, as well as their thoughts and feelings about them. After the introduction to the concept of metacognitions in session, the diary included space for participants to note down metacognitive beliefs and meanings associated with their obsessions and/or compulsions. Other tasks completed for homework were practicing the techniques of DM, ATT (using a CD), completing additional behavioural experiments and metacognitive thought records, as well as surveys, for example asking people they know about non-OCD experiences of intrusions.

At the end of each session, there was a summary brainstorm guided by the clinician, with participants discussing and taking notes on the main points of that session. The following session would begin with a recap of the previous week's main points, clarification of any concepts not understood by participants, and a review of the homework completed since the previous session.

The final weekly session (session 9) consisted of creating 'blueprints' of participants' OCD, including what triggered it, the metacognitions that maintained it, and alternative 'helpful' metacognitions. It also included a discussion of helpful behavioural experiments, and what they learnt from completing them during treatment and in their own environments, and how they can continue to build on this learning. Finally, a relapse-prevention framework was utilised, helping participants realise the potential triggers of setbacks, recognise the signs of increasing anxiety, and practical strategies of how to deal with setbacks if they occur.

Follow-up maintenance sessions. The three monthly follow-up maintenance sessions were designed to review how participants were managing to utilise the skills they learned during treatment; to help to deal with any challenges participants may have been facing; and to anticipate future difficulties, using a relapse prevention framework. Participants also

completed psychometric assessments at each follow-up session. The last maintenance session also included a final review of participants' individual goals.

Therapists: Training and Experience

Over the duration of the study, three clinical psychologists and one specialist trained nurse delivered the treatment groups in pairs. Clinician experience in treating anxiety disorders ranged from 3 to 25 years. All of the therapists had prior training and experience in delivering CBT, as well as experience in conducting group CBT for anxiety disorders, and individual treatment of OCD. Therapists received MCT education from a supervisor and an experienced clinical psychologist colleague, who had both attended MCT workshops by Adrian Wells. All of the therapists were well-versed in key CBT and MCT constructs, also working from the detailed treatment manual (Woolcock, 2011), which included a breakdown of each session into key components, so that the groups were run in a consistent manner.

Data Analyses

Data were analysed using IBM SPSS Statistics (Version 22.0) for Windows.

Baseline data from all five groups was compared to see whether there were any differences which would prevent the data being analysed together. A one-way ANOVA detected no significant differences between groups in age, severity of OCD symptoms (Y-BOCS and PI-WSUR) or severity of depressive symptoms at baseline. The data was thus analysed as one group to increase power.

The data was checked to ensure it met the normality assumptions of a paired-sample t-test; which was confirmed statistically through inspection of skew and kurtosis scores as well as checking standardised difference scores for any outliers. The data was deemed to meet the assumption of normality, and no other assumptions about the data were violated.

Repeated-measures t-tests were used to analyse the differences between pre, post and follow-up scores for the outcome measures. Effect sizes were calculated using a calculator derived from Morris and DeShon's (2002) method for calculating the effect sizes of repeated-measures data, which takes into account and corrects for the correlations inherent in data drawn from dependent samples. This allows the effect sizes to be compared with effect sizes from between-subject designs.

A regression analysis was also completed to see which baseline factors predicted Y-BOCS follow-up scores, using common variables known to influence treatment response: gender, OCD chronicity, level of depression at baseline, OCD severity at baseline and comorbidity. However, this analysis yielded no significant results.

Bivariate correlations were then carried out to investigate the relationship between metacognitive beliefs and key symptom variables at baseline and follow-up. This was completed using means, and change scores (the mean difference between baseline and follow-up).

Finally, an independent samples t-test was conducted to compare the Y-BOCS results of the current group MCT for OCD with the results of Rees and van Koesveld (2008).

Missing data. There was a small amount of missing data from the study. Where this occurred for main outcome measures (Y-BOCS, PI-WSUR or BDI-II) which were measured at each session, a 'last observation carried forward' (LOCF) method was utilised. The majority of the missing data points were from the final follow-up session (session 12). In this case, data from another follow-up session (session 10 or 11) were carried forward to use as a 'follow-up' measure. If anything, the LOCF yields a conservative estimate of the true figure, especially given the trend for our sample was to continue to experience symptom improvement between post-treatment and the final follow-up session. In total, 6.5% of the

data was carried forward in this manner. Key outcome data were collected at each session, which allows confidence in the LOCF method, as the ‘last observation’ was generally carried forward only one session. For other measures (i.e. the OCD-S) which were unfortunately not completed at every session for all participants, instances of missing data were unable to be carried forward, and the participant was excluded for that particular analysis. This was the case for only two participants (9.1%). For one participant, baseline measures were incomplete; therefore data collected before the participant’s first treatment session (session 2) was used as pre-treatment data.

Clinical significance. In the current study, the use of the ‘Reliable Change Index’ (RCI; Jacobson & Truax, 1991) as a measure of clinically-significant change and “recovery” was considered, in addition to statistical significance. However, despite the standardised nature of the method, as well as its extensive use in other fields of research, the RCI has been inconsistently applied in the OCD literature. The reason for the inconsistencies in applying the RCI is that the criteria and cut-off figures change based on which data is used to provide normative data. Its use is also limited by the lack of normative data from non-clinical populations for OCD.

Two scores on the Y-BOCS are required to apply the RCI method of significance: firstly a pre-post change score, which designates the magnitude of symptomatic improvement required to reach “clinically significant” change; secondly a cut-off point, below which post-treatment scores are deemed to indicate “recovery” (Fisher & Wells, 2005b). A small selection of studies utilising RCI criteria for OCD (using the Y-BOCS) demonstrates the discrepancies in its application:

“*Reliable change*” scores: 5 (van Oppen et al., 2010), 6 (Whittal, Thordarson, & McLean, 2005), 7 (Simpson et al., 2013), 10 (Fisher & Wells, 2005b; Rees & van Koesveld, 2008).

Cut-off “recovery” scores: 12 (Whittal et al., 2005), 14 (Simpson et al., 2013; Fisher & Wells, 2005b; Rees & van Koesveld, 2008), 16 (van Oppen et al., 2010).

Ultimately, the decision was made to not include the RCI as an additional measure of significance in the current study, as its inconsistent application in the literature makes the designation of “reliable change” and “recovery” unable to be compared across studies, and therefore limits the utility of this method. Furthermore, the current study utilised the self-report version of the Y-BOCS, which Fisher & Wells (2005b) deemed an exclusion criteria for their calculations of the RCI for the Y-BOCS – as the validity of the use of the self-report version of the scale for RCI calculations is unknown.

Results

Demographics

Table 1 contains the demographics of the treatment completers. The sample consisted of eight males and 14 females, with ages ranging between 18 and 64 ($M=30.8$, $SD = 12.6$ years). The majority of participants identified as New Zealand European (81.8%), although other ethnicities represented were Maori, Australian European, American New Zealander and Afghan/Indian (all 4.5%; one participant each). There were seven students, seven part/full-time workers, five who were unemployed, one retiree and two who declined to answer. Six participants (27.3%) were receiving a sickness benefit from the government. The education level of the sample ranged from 1-4 years of high school (27.3%), 5-6 years of high school (31.8%), trade/technical certificate (4.5%), Bachelor degree or diploma (22.7%) and a postgraduate degree (13.6%). The majority of the sample (59.1%) reported their relationship status as ‘single’, with a smaller proportion married or in a committed relationship (27.3%).

The average age of onset of OCD symptoms, as recalled by the participants, was 19.8 years (range 5-44 years), with over half of the participants reporting symptoms since childhood (22.7%) or adolescence (31.8%), the rest (40.9%) reporting onset in adulthood. There was a lot of variation in the chronicity of OCD, with the mean length of the disorder being 11.0 years (range 0.5-47 years). Many participants (63.6%) were experiencing current psychological comorbidity, which increased to 77% when taking into account lifetime comorbidity. Of those with current comorbidity, 78.6% had at least one comorbid anxiety disorder, and 50% had at least one mood disorder. Around two thirds (63.6%) of the participants were taking psychotropic medication during the treatment; all of whom were taking some form of anti-depressant. Over a third (35.7%) of those on psychotropic medication were taking anti-psychotics (prescribed at low doses for anxiolytic purposes) and

Table 1

Completers' Demographics and Baseline Characteristics

Variable	N (%) or M (SD)
N	22
Gender	
Female	14 (63.6%)
Male	8 (36.3%)
Age, years (SD)	30.8 (12.6)
Range	18-64
Ethnicity	
NZ European	18 (81.8%)
Maori	1 (4.5%)
Other	3 (13.6%)
Occupation	
Full/Part-time student	7 (31.8%)
Full/Part-time worker	7 (31.8%)
Retired/not working by choice	1 (4.5%)
Unemployed	5 (22.7%)
Other	2 (9.1%)
Sickness Benefit	6 (27.3%)
Education	
1-4 years of high school	5 (22.7%)
5-6 years of high school	7 (31.8%)
Trade/Technical certificate	1 (4.5%)
Bachelor degree/Diploma	5 (22.7%)
Postgraduate degree	3 (13.6%)
Relationship Status	
Single	13 (59.1%)
Married/committed relationship	6 (27.3%)
Other	3 (13.6%)
Current comorbidity	14 (63.6%)
Anxiety Disorder	12 (54.5%)
Mood Disorder	9 (40.9%)
OCD Onset (mean age, years (SD))	19.8 (10.16)
Childhood (<13 years)	5 (22.7%)
Adolescence (13-18 years)	7 (31.8%)
Adulthood (>18)	9 (40.9%)
Chronicity (years (SD))	11.0 (12.1)
Taking Psychotropic Medication	14 (63.6%)

Note. Incomplete demographics information for one participant.

14.2% were taking anti-anxiety medication. Pre-treatment scores (Table 2) show that the sample had OCD symptoms in the “moderate” severity category (based on Y-BOCS total score) and fell just below the “moderate” cut-off for depression, putting the sample at the high end of “mild” depressive symptoms. The sample fell slightly below average severity of clinical OCD samples for the Y-BOCS (20.6 vs 21.9) and the PI-WSUR (52.0 vs 54.9; Antony, 2001). Attendance rates were good, with 40 percent attending all 12 sessions (9 treatment sessions and 3 follow-up sessions), and the majority of those missing sessions only missing one. Average attendance for all participants was 10.8 (of 12) sessions (89.8%).

Completers vs. Non-completers

At pre-treatment, there were no significant differences between completers (N=22) and non-completers (N=4) in age, education or baseline depression. Non-completers had significantly higher OCD symptom scores at baseline than completers, as measured by both the Y-BOCS (Non-completers: M=29.0, SD=8.4; Completers: M=20.8, SD=4.0; $t(24)= 3.17$, $p=.004$) and PI-WSUR (Non-completers: M=75.8, SD=32.1; Completers: M=49.8, SD=20.6; $t(24)= 2.13$, $p=.04$). The mean for non-completers was over two standard deviations higher in Y-BOCS total score than the mean for completers. This difference at baseline is such that those who did not complete the group treatment programme were in the “severe” category, whilst those who completed the treatment were in the “moderate” severity category (based on Y-BOCS total scores).

Outcome Measures

Table 2 presents the means, standard deviations and change scores for the key obsessive-compulsive and depression measures at pre-treatment, post-treatment and follow-up. Subscale data for the Y-BOCS, PI-WSUR and OCD-S subscales are presented in Table 3.

Table 2

Mean Y-BOCS, PI-WSUR and BDI Scores at Pre-Treatment, Post-Treatment and Follow-Up

Measure	M (SD)			Change					
	Pre	Post	Follow-up	Pre - post			Pre - Follow-up		
				t	d	%	t	d	%
Y-BOCS	20.6 (3.7)	16.3 (5.2)	14.5 (5.8)	4.18**	0.9	20.7	5.64**	1.3	29.8
PI-WSUR	52.0 (21.2)	34.5 (20.6)	30.2 (21.0)	4.97**	1.1	33.7	6.37**	1.4	41.9
BDI-II	19.4 (10.2)	14.6 (12.0)	13.3 (11.0)	3.58*	0.8	24.4	4.26**	0.9	31.5

Note. * significant at p<.01; ** significant at p<.001. ‘Y-BOCS’= Yale-Brown Obsessive Compulsive Scale.

‘PI-WSUR’ = Padua Inventory–Washington State University Revision. ‘BDI-II’ = Beck Depression Inventory II

Obsessive-compulsive symptoms. Following the hypotheses, there was a significant decrease in total Y-BOCS score from pre-treatment to post-treatment, which was further improved at follow-up. The effect size for the pre-post ($d=0.9$) and pre-follow-up ($d=1.3$) improvements were both very large. The average Y-BOCS score for the sample at follow-up puts the group in the “mild” symptom severity category, which decreased from the “moderate” category at baseline. By follow-up, no clients remained in the ‘severe’ symptom category. Each of the Y-BOCS subscales also showed significant improvement from pre-treatment to follow-up, with symptom reductions of both rituals ($d=0.9$) and obsessions ($d=1.0$) reaching large effect sizes.

There was also a significant decrease in total PI-WSUR score from pre-treatment to post-treatment, which was further reduced at follow-up. Large effect sizes were found at both post-treatment and follow-up. Four of the five subscales demonstrated significant decreases, with *obsessional thoughts to harm self/others, contamination obsessions and washing compulsions, checking compulsions and dressing/grooming compulsions* all improving significantly between pre-treatment and follow-up, with large effect sizes ($d=0.9-1.2$). The largest decrease was observed in the *dressing/grooming compulsions* subscale, with reported symptoms in this category being reduced by more than half from pre-treatment to follow-up.

Table 3

Subscale Means at Pre-Treatment and Follow-Up

Measure	M (SD)		Change		
	Pre	Follow-up	t	d	%
Y-BOCS					
Rituals	9.5 (3.8)	6.6 (3.91)	3.98**	0.9	30.1
Obsessions	11.1 (2.0)	7.8 (3.19)	4.45**	1.0	29.5
PI-WSUR					
Thoughts of harm to self/others	10.3 (5.9)	5.2 (4.0)	4.54**	1.0	27.5
Impulses to harm self/others	4.0 (4.8)	3.3 (4.1)	0.88 (ns)	0.2	17.0
Contamination obsessions/ washing	14.0 (10.7)	9.1 (7.6)	3.73**	0.9	35.1
Checking compulsions	19.5 (10.3)	10.7 (9.8)	5.58**	1.2	45.1
Dressing/grooming compulsions	4.3 (4.2)	2.0 (2.5)	3.71**	0.9	53.7
OCD-S					
Distress	4.8 (1.2)	3.7 (1.8)	2.93*	0.7	24.0
Coping Behaviours	18.0 (7.6)	11.1 (8.1)	5.52**	1.2	38.2
Avoidance Behaviours	38.8 (12.5)	23.1 (15.6)	6.63**	1.5	40.4
Beliefs	476.6 (173.9)	243.3 (184.9)	6.40**	1.4	49.0

Note. * significant at $p<.01$; ** significant at $p<.001$; 'ns' = non-significant. 'Y-BOCS' = Yale-Brown Obsessive Compulsive Scale. 'PI-WSUR' = Padua Inventory – Washington State University Revision. 'OCD-S' = Obsessive Compulsive Disorder Scale.

No significant pre-follow up change was found for the *obsessional impulses to harm self/others* subscale, although this subscale was already low at baseline.

Similarly, there was significant reduction in scores for each of the four OCD-S items, with demonstrable improvement in scores for distress, coping behaviours, avoidance and beliefs. The reduction in distress reached a medium effect size, with the other three subscales demonstrating large effect sizes. Notably, the scores for the *beliefs* subscale decreased by almost half between the beginning and end of the treatment programme.

Depressive symptoms. As predicted in the hypotheses, the sample also experienced decreases in depressive symptoms, with BDI-II scores decreasing significantly from pre-

treatment to the end of treatment. This decrease was maintained at follow-up. Large effect sizes were found between pre-treatment and post-treatment ($d=0.8$) as well as follow-up ($d=0.9$). At follow-up, the mean BDI-II score puts the sample in the “minimal” depression category, the lowest severity designation.

Metacognitive beliefs. Also consistent with the hypotheses, a large correlation was found between OCD severity (Y-BOCS) and metacognitive beliefs (OCD-S ‘Beliefs’ subscale) at both baseline ($r=.61, p= .003, N=22$) and at follow-up ($r=.70, p=.001, N=20$). Similar results were attained with the PI-WSUR total score, with a significant correlation with metacognitive beliefs at follow-up ($r=.56, p=.01, N=20$) although not at baseline. These findings from two separate OCD measures suggest that faulty metacognitive beliefs are strongly associated with OCD severity, with higher endorsement of metacognitive beliefs being associated with higher Y-BOCS score. In addition, utilising change scores between baseline and follow-up, the correlation between Y-BOCS and metacognitive beliefs indicated that a reduction in faulty metacognitive beliefs was significantly associated with symptom improvement during the treatment period ($r=.58, p=.007, N=20$). There was also a moderate correlation between metacognitive beliefs and BDI-II at follow-up ($r=.46, p=.04, N=20$).

Taken together, these findings suggest that those with higher faulty metacognitive OCD beliefs at follow-up also experience higher severity of OCD and depressive symptoms. However, the conclusions able to be drawn from this finding, although significant, are limited by the lack of validation data for the OCD-S.

Comparison with Rees & van Koesveld (2008). Table 4 presents a comparison between the current study and Rees and van Koesveld’s (2008) study. Rees & van Koesveld’s (2008) sample had a slightly higher baseline severity than the current study, although this difference did not reach significance ($p=.10$). There were no significant differences between

Table 4

Comparison between Current Study and Rees & van Koesveld (2008)

	Rees & van Koesveld (2008)	Current Study
N	8	22
Referrals	Consecutive	Consecutive
Setting	Outpatient	Outpatient
Dropouts	0	5 (18.5%)
Group size	8	2-6
Treatment sessions	12	9
Follow-up sessions	1 (3 months)	3 (monthly, for 3 months)
Treatment session length	2 hours	4 hours
Psychotropic medication use	1 (12.5%)	14 (63.7%)
Baseline depression †	19.2	19.4
OCD chronicity	3-28 years	0.5-47 years
OCD severity (Y-BOCS)* Pre:	23.2 (SD=3.9)	20.6 (SD=3.7)
Post:	[moderate]	[moderate]
Follow-up:	14.1 (SD=6.2)	16.3 (SD=5.2)
	[mild]	[mild]
Y-BOCS change: Pre – Post: M	9.1	4.3
t	4.5, p=.00	4.2, p=.00
d, %	1.8**, 39.2%	0.9, 20.7%
Pre – Follow-up: M	14.2	6.1
t	6.5, p=.00	5.6, p=.00
d, %	2.4, 61.4%	1.3, 29.8%

†Note – Rees & van Koesveld (2008) utilised the original BDI (Beck et al., 1961) in their study, the current study utilised the updated version, the BDI-II (Beck et al., 1996). There is no conversion information between these two particular versions of the scale, therefore, scores may not be directly comparable.

*Note – Y-BOCS was clinician administered in the Rees & van Koesveld (2008) study, and was self-reported in the current study.

**Note – in their paper, Rees & van Koesveld (2008) used a method of obtaining an effect size that did not use the pooled standard deviation (and assumes equal standard deviation for the two samples, which was not the case). The effect size here has been updated using the same method of calculation as the current study, to allow for direct comparison. This yielded lower effect size estimates than reported by Rees and van Koesveld (2008) in their research paper.

the groups immediately post-treatment ($p=.34$), although there was a significant difference between the follow-up results of the two studies. At follow up, Rees and van Koesveld's (2008) sample demonstrated significantly higher improvement than the current sample ($t(1,28)=2.24$, $p=.03$), with a mean difference between the studies at follow-up of 5.5 points on the Y-BOCS (95% CI [0.47-10.44]). Between baseline and follow-up, participants in the current study improved by 29.8%, compared to 61.4% in the Rees & van Koesveld study.

Discussion

Previous research has provided preliminary support for the role of metacognitions in the aetiology and maintenance of OCD. Most of these studies test certain aspects of the metacognitive approach, however there are very few studies which apply MCT to the treatment of OCD (Fisher & Wells, 2008; Rees & van Koesveld, 2008; Shareh et al., 2010). In response to the growing empirical evidence for MCT in OCD and a number of different disorders (see Wells, 2009 for a review), and the success of Rees & van Koesveld (2008), the current study aimed to test the efficacy of MCT of OCD in a group setting, only the second time this has been attempted. It also aimed to extend the field by investigating the relationship between metacognitive beliefs and OCD symptoms in a naturalistic, clinical setting.

These aims were achieved by recruiting five groups of participants, through consecutive referrals, to participate in a new MCT treatment for OCD (Woolcock, 2011). Through a combination of semi-structured interview (baseline assessment only) and self-report measures, participants' levels of OCD symptoms, depressive symptoms and faulty metacognitive beliefs were gathered at baseline, at the end of the 9-session treatment programme, and at a 3-month follow up period.

Summary of Findings

It was predicted that at post-treatment and follow-up, OCD symptom severity would be significantly improved compared to baseline severity. This was borne out in the results, with significant reductions in both Y-BOCS and PI-WSUR scores. The reduction in Y-BOCS scores was large for both post-treatment and follow-up, with an improvement of just under 30% by the 3-month follow up period. The mean severity score decreased from the "moderate" symptom category to "mild" by follow-up. This pattern of results was the found

for both obsessions (29%) and compulsive rituals (30%), both reducing significantly by follow-up.

The improvement in OCD severity was supported by the PI-WSUR results, in which OCD symptoms decreased by just under 42% by follow-up, denoting a large effect size. This result was comprised of significant improvement in four of five subscales: ‘obsessional thoughts to harm self/others’ (28%); ‘contamination obsessions and washing compulsions’ (35%); ‘checking compulsions’ (45%) and ‘dressing and grooming compulsions’ (54%). The ‘obsessional impulses to harm self/others’ subscale experienced a 17% decrease, but did not reach significance. However it is likely that this is due to a ‘floor’ effect – this particular subscale has a possible range of 0-32, with the sample having a low baseline mean of only 4; indicating this sample did not experience these particular impulses to a high degree to start with.

As expected, there was also a significant decrease in depressive symptoms by the post-treatment (24%) and follow-up time points (31%). The improvement in depressive symptoms reached a large effect size, and signified a shift from the high end of “mild” (on the border of “moderate”) to the low end of mild (on the border of “minimal”).

Also in line with predictions was the significant decrease in faulty metacognitive beliefs, as measured by the OCD-S. By the 3-month follow up, the extent of endorsement of these beliefs had almost halved (49%) compared to baseline. The predicted relationship between metacognitive beliefs and OCD symptoms also emerged: Y-BOCS total and OCD-S beliefs were significantly correlated at baseline, as well at follow-up, so that those participants endorsing more faulty metacognitive beliefs (such as “some thoughts must always be controlled”) also had higher OCD severity. Furthermore, the change scores in these two measures were also significantly correlated: a larger reduction in metacognitive beliefs from baseline to follow-up was significantly related to larger reductions in OCD severity (as

measured by the Y-BOCS). In addition, a significant, positive relationship between depressive symptoms and metacognitive beliefs at follow-up was also found.

In addition to these hypothesised effects, possible predictors of outcome were explored in a regression analysis. The factors, which are commonly implicated as predictors of treatment outcome (APA, 2007), were gender, OCD chronicity, level of depression at baseline, OCD severity at baseline, comorbidity. However, surprisingly none of these baseline factors emerged in the current study as significant predictors of OCD severity at post-treatment or follow-up.

A comparison between the primary results of the Rees and van Koesveld (2008) group treatment, and the current study was also undertaken. This revealed that the current study had a slightly lower baseline Y-BOCS than the Rees and van Koesveld (2008) sample (although this was not statistically significant), and also yielded significantly less Y-BOCS improvement at follow-up than their sample. Possible reasons for this finding will be discussed below. It is important to note that despite these differences, clinically both groups fell into the ‘moderate’ severity category at baseline, and the ‘mild’ category at follow-up, which puts the statistically significantly different results into perspective.

An initial t-test also revealed that although those who completed the treatment, and those who dropped out did not differ significantly on demographic information or baseline depression, non-completers had significantly higher OCD symptoms at baseline (Y-BOCS and PI-WSUR), which put them in the “severe” symptom category, compared to the “moderate” symptom category of the completers. This is a limitation of the current study, which will be discussed below.

Interpretations and Implications of Current Research

The principal implication of the current study is the demonstration that group metacognitive therapy is an effective treatment for OCD, which replicates the findings of the only other study of this kind in the literature (Rees & van Koesveld, 2008). This lends weight to the conclusions that MCT for OCD is both effective, and able to be successfully delivered in a group setting. The efficacy of group MCT for OCD has now been successfully demonstrated in outpatient settings in two locations, with different cohorts, treatment manuals, and therapists. The current study also represents a different metacognitive approach than the Rees & van Koesveld (2008) study; building on the current field. These promising preliminary findings justify further replication and research to lend further support to the efficacy of group MCT for OCD, suggestions for which will be discussed below.

A comparison with the existing literature on OCD group treatments (CBT and ERP) shows that the current study's treatment effect sizes are favourable. Jónsson and Hougaard's (2009) meta-analysis of group OCD treatment found a pre-post Y-BOCS ES range of 0.78 to 1.89, with a mean of 1.18. The pre-post ES for the Y-BOCS in the current study was 0.92, and further improvement over the three month follow-up period gave a pre-follow-up ES of 1.29. Given the application of MCT to OCD is only in the preliminary stages, obtaining results comparable to well-established, recommended treatment modalities is encouraging. It is also encouraging that these results were found in a group treatment format, the implications being that not only is MCT effective, but it can also be delivered in a way that allows many people to benefit at the same time; maximising cost-effectiveness and the use of therapist time. The findings of this study also indicate that a metacognitive approach can be implemented effectively, independent of the developers of these therapies.

The findings demonstrate that the treatment can effectively reduce both aspects of the disorder: obsessions and compulsions, with large pre-treatment to follow-up reductions in Y-

BOCS scores for both of these subscales. This is supported by the PI-WSUR subscale results, showing reductions with large to very large effect sizes for obsession and compulsion-based subscales. It is also supported by the OCD-S subscales measuring coping behaviours and avoidance behaviours, although the conclusions to be drawn from this scale are limited given that psychometric and normative data are not available. This is an important preliminary finding for MCT, especially given that previous treatments were seen to be more effective for compulsions (behavioural therapies) or obsessions, but not both (Whittal, Woody, McLean, Rachman & Robichaud, 2010).

Another promising result was the significant decrease in depressive symptoms. This is significant because it demonstrates that the treatment impact is not limited to OCD symptoms. This is consistent with the finding that depressive symptoms largely develop after OCD symptoms, arguably in response to the debilitating disorder (Clark, 2004). It is also consistent with a transdiagnostic perspective of underlying commonalities between many emotional disorders (e.g. Clark, 2009), particularly faulty metacognitive processing and appraisals, such as the CAS (e.g. Wells & Matthews, 1994).

In light of the pattern of results, it is surprising that distress, measured by the OCD-S, had the smallest pre-follow-up change of all the significant results. However, it was still a statistically significant decrease, with reported distress levels dropping by just under a quarter, with a medium-large effect size. Possible explanations for this are that as an unvalidated scale, the OCD-S is not sensitive to change in distress over time, or that distress did not decrease as much as other symptoms, due to the fact that some symptoms still remained at the final time point – causing residual distress. Another possible explanation, discussed by the therapists during the treatments, is that as the treatment progressed, the participants were gaining increased insight about the impact of their OCD on their lives; which may have contributed to this finding.

Consistent with theories of metacognition in OCD, one of the largest pre–follow-up changes was the decreasing endorsement of metacognitive beliefs, as measured by the ‘beliefs’ subscale of the OCD-S (Wells, 2009). This reduction, as well as the significant correlation between metacognitive belief change and OCD symptom change is consistent with the literature emphasising the role of maladaptive metacognitive beliefs in the persistence of OCD symptoms. This finding suggests that the focus on the modification of maladaptive cognitive beliefs in the treatment was successful, and influenced OCD symptoms.

However, it is possible that the drop in metacognitive beliefs was simply a co-effect of the drop in OCD symptoms, rather than having a causal role. Given the design of this study, it is not possible to test this alternate explanation. However the weight of research presented in support of the role of metacognition in the disorder suggests that faulty metacognitive beliefs are implicated in both the aetiology and the maintenance of OCD symptoms (e.g. Fisher & Wells, 2005a; Myers, Fisher & Wells, 2009). Given that modification of metacognitions was a central facet of the treatment programme, the large decreases in metacognitive beliefs in the current study suggests a specific treatment effect which drove the improvement in OCD and depressive symptoms, rather than the other way around. However, confirming that metacognitive beliefs are the mechanism of therapeutic change is something that needs to be explored in future research, with an adequate comparison group.

Given the current treatment demonstrated lower symptomatic improvement than the study on which it is based (Rees & van Koesveld, 2008), it is important to compare the two, and examine which factors in the current study could potentially account for this finding. It is possible that differences in the application of metacognitive approaches between the current study and Rees and van Koesveld (2008) play a role in the different treatment outcomes; representing “soft” and “hard” metacognitive approaches respectively. Rees & van Koesveld

followed Wells (2000) directly, implementing his prototype model for OCD, whereas the current study combined aspects of the metacognitive approach of Wells (2009) with elements of CBT from Clark (2004). It is not possible with the current data to investigate whether the blended approach taken in the current study contributed to the lower symptomatic improvement than observed in the Rees & van Koesveld (2008) study. Even if clinical and empirical experience has demonstrated the efficacy of certain treatment elements, it is not desirable to add these elements to a new treatment if they are not useful or necessary. Therefore it is something that is worth investigating in future research, so that the application of MCT remains evidence-driven.

There were also several other differences between the two studies which may have played a role (see Table 4): the current sample had a much higher rate of psychotropic medication use (63.7% vs 12.5%); the current group programme only included 9 ‘treatment’ sessions, and then three monthly follow-up sessions, whereas Rees & van Koesveld (2008) had 12 weekly sessions with only one follow up; our treatment sessions were much longer (4 hours, compared to 2 hours); as well as the possibility of socially-desirable responding in the Rees & van Koesveld (2008) study due to Y-BOCS interview being conducted by the same person leading the group. The current study utilised self-reporting, which may limit this bias; however this cannot be confirmed, as the clinician leading the group was still present in the room whilst psychometrics were completed. It is important to reiterate that, despite the significant difference at follow-up between Rees and van Koesveld (2008) and the current study, both group means were in the “mild” symptomatic category.

A question posed by Myers and Wells (2013), in response to the increasing evidence for the role of metacognition in OCD, is whether different emphases and techniques of treatments aiming to modify metacognitions may have different outcomes. As an emerging theoretical and clinical field, there are still aspects that need discussing and refining at the

juncture of theory and practice. For example, whether “hard” MCT, or “soft” MCT, blended with elements of CBT is more effective in the treatment of OCD, or exactly which elements can be successfully combined. Wells (2005) speculates that the inclusion of certain cognitive techniques, such as thought records, may be counterproductive, in that noting down instances of obsessional intrusions is likely to increase monitoring and meta-awareness of intrusions; which is ultimately contraindicative. However, both the current study, and Rees & van Koesveld (2008) utilised metacognitive thought records, and both achieved significant reduction in symptoms. Similarly, both the current study, and Simons et al. (2006) combined treatment aspects of CBT and MCT and achieved significant improvement in symptoms. As the boundaries of MCT are still up for debate, as well as whether MCT represents a broadening of CBT, or a separate entity; this will be a question that comes up again as more theoretical and empirical literature is added to the field.

Strengths and Limitations

The use of a naturalistic clinical sample is a strength of the current research, with much OCD research being limited by the use of non-clinical samples (Grøtte et al., 2015). In addition, the participants were selected consecutively through contact with mental health services, meaning they are representative of the target audience of the treatment. The current sample, not excluded on the basis of psychological comorbidities or use of medication, is also a strength; and gives our findings more external validity than those with more strict exclusion criteria (such as Fisher & Wells, 2008; Shareh et al., 2010) who likely found more inflated results than would be found in a more representative sample.

Another key strength of the current study, especially for application to practice, is that there was only an average of 13.6 contact hours per participant (which would be 10.5 hours if each group had six members). Compared to individual therapy, it therefore represents a very

time efficient, cost-effective way of delivering OCD treatment. In addition, the treatment programme was highly acceptable to clients, with feedback and session ratings on the themes ‘relationship’ ‘goals and topics’ ‘approach or method’ and ‘overall’ being very high (average rating 90%).

The current study also has several limitations. As an open trial, there was no control group against which to compare results. Without a control group, it cannot be ruled out that the significant symptomatic improvement is due to factors other than the treatment – for example the mere effect of seeking treatment, or natural course across time. However, a spontaneous symptomatic improvement of this magnitude would be unlikely, given the persistent, chronic nature of OCD. A comparable group study employing a wait-list control design found that OCD symptoms remained quite stable over a 3 month period (McLean et al., 2001). Similarly, the large reduction in metacognitive beliefs evidenced by the sample highly aligns with the content and goals of this particular treatment. This strongly suggests that the findings are a product of this specific treatment, however a follow-up study with a comparison group is necessary to confirm this.

Another limitation is that apart from the initial assessment at baseline, all data were self-reported. It is possible that this method of administration, especially within a group setting, with the clinician present, impacted the way that participants completed the various questionnaires (Bowling, 2005). However, other MCT trials (i.e. Rees & van Koesveld, 2008; Fisher & Wells, 2008) had limitations due to the clinician administering and scoring the measures being the same clinician running the treatment, which potentially also introduced biased responding. There is also evidence in the literature comparing self-reported and clinician-administered Y-BOCS scores, which found a slight discrepancy between the two; the clinician-rated score was slightly higher than the score self-reported by participants (Steketee et al., 1996). Also in regards to psychometrics, the use of the OCD-S, a new scale

which has yet to be validated, limits the conclusions that can be drawn from the findings from this particular scale.

There was a dropout rate of 18.5%, which although is average for group treatments for OCD (Jónsson & Hougaard, 2009), is still larger than desirable. The four participants who dropped out after the treatment started did so in the first few sessions, potentially representing a failure to engage. Those who completed treatment became engaged with the treatment in the early stages and remained committed to the treatment until the end. It is problematic that those who dropped out in the early stages of the study had significantly more severe symptoms at baseline than those who completed the treatment. This is a limitation firstly due to the non-random nature of these dropouts, but more importantly that individuals who probably needed the treatment might not receive it. However, the current study is not unique in having difficulty treating the more severe clients, with baseline severity being a well-established predictor of poor treatment response (Farrell and Boschen, 2011). To mitigate the impact of stopping group treatment before it was finished, participants who dropped out were offered individual treatment instead.

The current study only had a 3-month follow-up, which is another limitation (although is common in the literature). It would be prudent to include longer follow-up times in future research to get a better picture of patterns of symptoms and recovery over time. Another limitation is that the size of the groups in the study varied, due to patterns of recruitment and attrition. Due to attrition, one group was left with only 2 participants, compared to other groups with 4-6. It is possible that such a small group does not experience the same therapeutic benefits of group therapy (discussed earlier) as a larger group, and it is also possible such small groups would also feel the impact of dropouts more intensely.

Considerations for Future Research

There are a few adjustments that future adaptations of this treatment protocol might observe in order to improve the conclusions that can be drawn from the findings. Firstly, a comparison group or waitlist-control design should be employed so that any results can be attributed to the treatment. Building on this, and addressing the identified gap in the current literature, it would be useful to include “soft” and “hard” MCT conditions, so that the effectiveness of delivering treatment based on these different approaches can be compared.

Secondly, a better-validated measure of metacognitions (such as the MCQ-30) would allow for more confident conclusions about the relationship between metacognitive beliefs belief change and OCD symptom improvement. This would also make it more comparable to other studies investigating the role of metacognitions in the disorder. Future research would also benefit from including a measure of insight, as a potential predictor of treatment outcome.

As is often the case in studies like this, a longer follow-up period would be optimal, and would be useful in future research. This would allow a look at how treatment effects are maintained in the long-term. Future studies should also utilise larger samples, so that statistical effects may be better detected (e.g. the non-significant result in the current study regarding predictors of outcome).

Participants in this study were given weekly homework to complete between sessions (including keeping a diary, and practicing techniques and experiments learnt in the sessions). This homework is key to transferring concepts and techniques learnt in sessions into participants’ daily lives. Despite discussing the previous week’s homework at the beginning of each session, there was no measure of homework compliance utilised in the current study. Given the amount and importance of homework tasks assigned to the participants, future

studies would benefit from including a measure of homework completion or compliance. Studies measuring general homework completion (Whittal et al., 2005) and degree of adherence to ERP homework assignments (Simpson et al., 2011) have found that homework compliance significantly predicted treatment outcome, in that those with a high degree of homework compliance had lower Y-BOCS scores at the end of treatment. Simpson et al. (2011) used an adherence measure with excellent psychometric properties, and found that a one-point increase in adherence (range= 0-7) predicted a drop in Y-BOCS score of between 4.3 and 6.5 points. Therefore the importance of encouraging and measuring homework compliance should not be underestimated.

Another possibility in future studies would be to alter the session structure. According to the APA (2007) the length or number of sessions required to attain the best treatment outcome has not yet been established, but evidence suggests that between 13-20 weekly sessions is effective for most OCD patients (although this relates largely to CBT studies). It is common to have 12 treatment sessions in MCT (e.g. Wells, 2005; Rees & van Koesveld 2008; Wells, 2013), whereas the current study only had 9 (followed by 3 follow-up sessions). Although each of our sessions was longer than these previous MCT studies (at 4 hours), there is the possibility with such demanding tasks and content, it would be better to spread the sessions out more, rather than to cover too much in one session. In fact, the sessions in the current study were substantially longer than the average length of a group therapy session for OCD in a meta-analysis (Jónsson & Hougaard, 2009), in which the majority fell at the 2-hour mark, with several at 1.5 hours, and only one study having sessions longer than 2 hours (2.5 hours). Thus the number of sessions and their length would be something to consider before conducting further group treatments.

Conclusions

As a therapy which is proving to be both effective and acceptable to clients (Wells, 2013), MCT has the potential to address some of the limits identified in current OCD treatment, including the aversive nature of ERP, and a plateau in regards to efficacy. The current treatment demonstrated significant decreases in OCD symptoms, depressive symptoms and endorsement of faulty metacognitive beliefs between baseline and post-treatment, as well as follow-up. With encouraging findings, high acceptability ratings, and excellent cost and time efficiency, the treatment would be a feasible clinical option for the treatment of OCD.

Taken alongside the small handful of existing studies, the large treatment effect sizes found in the current study show that metacognitive therapy, delivered in a group format, is certainly effective, and is a very promising avenue for future research and practice. Questions remain as to whether delivering MCT alone, or alongside well-established CBT techniques, is the most effective method for treating OCD. Theoretical questions also remain about the positioning of MCT as a stand-alone therapy, or an update to the existing CBT field. There is now enough evidence of the viability of MCT for OCD to warrant a controlled, large-scale examination of MCT, which can elucidate the mechanisms of change, as well as the best approach to use in the delivery of MCT.

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Appendix A



ANXIETY DISORDERS UNIT

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Telephone: (64) 03 364 0421

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Office Hours: 8.30am – 5.00pm Monday – Friday

Effectiveness, predictors of outcome, and mechanisms of change in Group Metacognitive Therapy for Obsessive Compulsive Disorder.

Principal Investigator: Colette Mary Woolcock, Clinical Psychologist, Anxiety Disorders Unit

Welcome to the Anxiety Disorders Unit

Invitation To Participate In Study

You are invited to take part in a study of the Group Metacognitive Therapy for Obsessive Compulsive Disorder (OCD) conducted by clinicians at the Anxiety Disorders Unit. The aim of this study is to look at predictors of outcome (who this treatment works best for) and the pattern and process of therapeutic change.

Metacognitive Therapy is a form for Cognitive Behaviour Therapy for OCD. There has been some research in this area but we still have limited information about the predictors of outcome and the mechanisms of therapeutic change. Most of the research has also been in overseas specialist research centres whereas this study involves clients of a specialist clinical service here in New Zealand.

What The Study Involves

We aim to collect data from our treatment groups over the next 5 years. We would anticipate recruiting up to 6 patients per group and running 4 groups per year, giving a total of 120 patients over the 5 year period. We would evaluate outcomes using self report questionnaires before, during, and after treatment (immediately following the completion of the group, then 1 and 3 months post group).

Benefits And Risks

This study aims to evaluate and potentially improve the treatment delivered at the Anxiety Disorders Unit. The things we are looking at will hopefully enable us to identify who benefits most from this treatment and which would be of benefit for clients of Anxiety Disorders Unit as well as the delivery of the service.

We do not anticipate any physical risks involved with participation in this study. Regarding the psychological effects, the effects of completing the questionnaires are not anticipated to be harmful. If any issues were to be raised these would be addressed in the course of therapy.

General

The study involves Group Metacognitive Therapy. At the end of the treatment your clinical needs will be discussed with you as part of your routine clinical care.

Results

This study is being conducted over 5 years from 2012. We would anticipate that the results will be used to educate and inform professionals and the public about anxiety disorders and their treatment. This information will be in the form of publication in journals and presentations.

Confidentiality

We will use the results collected in this research to educate professionals and the public about anxiety disorders. No material that could identify you will be used in any reports. Your individual data remains confidential to the Anxiety Disorders Unit.

Ethical Approval

This study has received ethical approval from the Upper South Regional Ethics Committee. Ethic reference number: URA/12/EXP/010

Please feel free to contact Colette Woolcock (telephone contact 364 0421 or by letter to Anxiety Disorders Unit, P.O. Box 800, Christchurch 8140) if you have any questions about this study.

If you would like any feedback from your questions, or if you have any difficulties, please ask your co-ordinator to go over them with you. If you are in any way concerned about being asked to complete these questions, please discuss this initially with a team member. You may wish to talk with someone not directly involved with your care. These include:

Unit Manager, Anxiety Disorders Unit, P.O. Box 800, Christchurch 8140

Phone: (03) 364 0421 or Fax: (03) 337 7822

An Independent Health & Disability Advocate

Free Phone: 0800 555 050

Free Fax: 0800 2SUPPORT (0800 2787 7678)

If you wish to talk with a Pukenga Atawhai (Maori mental health worker) please contact your case manager to arrange this.

Appendix B

Effectiveness, predictors of outcome, and mechanisms of change in Group Metacognitive Therapy for Obsessive Compulsive Disorder.

Consent Form

I, _____ **(print full name)**

of _____ **(address)**

_____ **(phone)**

understand the reasons for this evaluation, as outlined above, understand participation is voluntary and that if I do not complete these questionnaires it will not affect my treatment from this service in any way. Similarly, I can withdraw from this information gathering process at any time, for any reason, without adversely affecting my present treatment, or any future treatment. I understand that my questionnaires will be kept in a locked cabinet and that data used from these questionnaires will not be identifiable in any way.

Signed: _____ Date: _____

Clinician/Witness _____