Short communication: Cognitive therapy for compulsive checking in obsessive-compulsive disorder: A pilot trial

Adam S. Radomsky[1], Martha Giraldo-O'Meara[1], Shiu F. Wong[1], Michel J. Dugas[2], Laurie A. Gelfand[1], Stanley Rachman[3], Sarah Schell[1], Jessica M. Senn[1], Roz Shafran[4], & Maureen L. Whittal[5]

[1]Department of Psychology, Concordia University, Montreal, Canada

[2]Département de Psychoéducation et de Psychologie, Université du Québec en Outaouais, Gatineau, Canada

[3]Department of Psychology, University of British Columbia, Vancouver, Canada

[4]Institute of Child Health, University College London, London, United Kingdom

[5]Department of Psychiatry, University of British Columbia, Vancouver, Canada

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Corresponding author: Adam S. Radomsky, Ph.D., Department of Psychology, Concordia University, 7141 Sherbrooke West, Montreal, QC, H4B 1R6, Canada; email: Adam.Radomsky@concordia.ca

Abstract

We evaluated a novel, empirically-based cognitive therapy for compulsive checking – a common form of obsessive-compulsive disorder. Twelve adults completed 12 sessions of the therapy. Significant reductions in checking-related symptoms were found pre- to post-treatment, and pre-treatment to 6-month follow-up (moderate to large effect sizes). Participants reported high treatment acceptability after the third session, which was maintained at post-treatment. This pilot trial provides preliminary support for treating compulsive checking using this novel cognitive approach.

Keywords: Obsessive-Compulsive Disorder; Compulsive Checking; Cognitive Therapy.

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1. Introduction

Obsessive-compulsive disorder (OCD) is a highly heterogeneous psychiatric disorder with varying clinical manifestations (McKay et al., 2004), with one of its most common and incapacitating presentations being compulsive checking (Foa et al., 2005; Rachman & Hodgson, 1980). According to the cognitive model proposed by Rachman (2002), compulsive checking results from overestimates of the probability and seriousness of harm/misfortune, as well as an inflated sense of personal responsibility for preventing this misfortune. Compulsive checking also persists due to a self-perpetuating mechanism wherein repeated checking is performed to achieve certainty about harm not occurring, but paradoxically increases uncertainty, feelings of responsibility, and erodes memory confidence.

Despite the strong empirical evidence supporting the components of Rachman's (2002) model (e.g., beliefs about inflated responsibility and memory; e.g., Alcolado & Radomsky, 2011; Arntz, Voncken, & Goosen, 2007; Radomsky, Gilchrist, & Dussault, 2006; van den Hout & Kindt, 2004), the recommended psychological treatment for compulsive checking (and most other forms of OCD) remains largely behavioural (Franklin & Foa, 2011), namely Exposure and Response Prevention (ERP). ERP is moderately effective (Öst, Havnen, Hansen, & Kvale, 2015), but a large proportion of patients find it unacceptable (Milosevic & Radomsky, 2013) and either refuse the treatment or drop out (19.1% of patients drop-out from ERP vs. 11.4% drop-out from traditional cognitive therapy). This is likely because ERP involves repeated and prolonged exposure to the patient's most feared stimuli while encouraging them to refrain from performing their compulsions, which can be extremely difficult.

More acceptable, empirically-based alternatives are clearly needed to improve our treatment of OCD. The aim of the current study was to examine the feasibility and acceptability,

and preliminary effectiveness of a new cognitive therapy for compulsive checking (Radomsky, Shafran, Coughtrey, & Rachman, 2010) based on Rachman's (2002) model. We hypothesized that the treatment would lead to significant, marked, and sustained improvements in participants' self-reported OCD symptoms, symptom severity, and time spent engaging in compulsive checking. We also expected that participants would find this therapy to be acceptable and that few would refuse or drop out of the treatment.

2. Method

2.1. Participants

Recruitment was conducted through local advertisements and flyers in and around Montreal clinics, as well as via online ads. Of those who responded to the ads, 12 individuals passed a phone screen to assess inclusion/exclusion criteria and confirmed their eligibility (DSM-IV diagnosis of OCD and significant checking symptoms lasting at least one hour each day) with an in-person assessment conducted by trained assessors using the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS; Goodman et al., 1989) and the Anxiety Disorders Interview Schedule (Brown, diNardo, & Barlow, 1994). These individuals were then enrolled in the current study (mean age = 32.25, *SD* = 11.25, range = 19 – 56 years, 5 females, 58.7% Caucasian).

Exclusion criteria were the presence of psychotic disorders, bipolar disorder, acute suicidality, and current substance abuse. Of the 12 participants, 1 was discontinued from treatment at the sixth session due to alcohol abuse that began after the commencement of treatment (this individual stated that they could not guarantee their ability to arrive sober to each session). They were included as part of the final 12 participants considered for intent-to-treat analyses. Participants received financial compensation for the assessment sessions they attended (i.e., pre-treatment, post-treatment, and 6-month follow-up). Only 4 participants had previously received

treatment for their OCD, specifically cognitive-behavioural therapy, and no participants reported taking any medication at the beginning and/or during the study. The study was approved by the institution's ethics board, and participants provided informed consent to participate in the study.

2.2. Measures

The severity of participants' obsessions and compulsions were measured using the Y-BOCS (Goodman et al., 1989) and the Vancouver Obsessional Compulsive Inventory (VOCI; Thordarson et al., 2004), which includes a subscale on checking behaviour. The Y-BOCS and VOCI were administered during the pre- and post-treatment assessments (1 week following the final treatment session), and at 6-month follow-up. From the date of the pre-treatment assessment until the date of 1 month following the end of treatment, participants were also asked to make daily ratings of the time spent checking (TSC). Mean daily ratings for TSC were calculated between the pre-treatment assessment and the first treatment session (baseline), between the last treatment session and the post-treatment assessment, and between the post-treatment assessment and 1-month following this. Treatment acceptability and adherence were measured using the Treatment Acceptability and Adherence Scale (TAAS; Milosevic & Radomsky, 2013) and the Endorsement and Discomfort Scales (EDS; Tarrier, Liversidge, & Gregg, 2006). The TAAS and EDS were administered immediately following the third treatment session and at the post-treatment assessment.

2.3. Intervention

The treatment followed a 12-session format, with each session being 50 minutes in length. The structure and content of the treatment is described in greater detail elsewhere (Radomsky et al., 2010; Radomsky et al., in press). In general, the treatment emphasized the use of (usually brief) behavioural experiments, with the explicit absence of prolonged exposure. These

behavioural experiments addressed beliefs about responsibility, memory, threat, and those related to the personal significance of checking symptoms (Rachman, 1997, 1998, 2003; Radomsky et al., 2010).

2.4. Statistical analysis

Intent-to-treat analyses were conducted and are reported below. Within-subjects repeated measures analysis of variance (ANOVA) with planned contrasts were used to compare the primary outcome measures (i.e., Y-BOCS, VOCI total, VOCI checking subscale, and TSC) between pre-treatment (baseline for TSC) and post-treatment, and between pre-treatment and 6-month follow-up (1 month following treatment for TSC).

In addition, the Y-BOCS was used to define treatment response and recovery in our participants. Using the international consensus criteria defined by Mataix-Cols et al. (2016), treatment response is at least 35% reduction of the participant's pre-treatment score on the Y-BOCS and remission as response plus a post-treatment score of 12 or less.

3. Results

3.1. Treatment feasibility

All participants received the treatment and attended each session, including the excluded participant prior to being discontinued for alcohol abuse. Over the course of treatment, both OCD relevant beliefs (see Radomsky et al., in press) and symptoms declined. Post-treatment, and 6-month follow-up data were collected from 11/11 (100%), and 10/11 (91%) of participants, respectively. There were no treatment refusers. It is debatable whether or not the individual discontinued for substance abuse be considered to have dropped out of treatment.

3.2. Intervention outcome

Results are summarized in Table 1. Between pre-treatment and post-treatment, and between pre-treatment and 6-month follow-up, statistically significant reductions were observed for Y-BOCS, VOCI, and VOCI checking subscale scores with moderate to large effect sizes. Between baseline and post-treatment, and between baseline and 1-month following the end of treatment, we also found significant reductions in TSC. Immediately following treatment, based on Y-BOCS scores, 8/12 participants were treatment responders and 7 of these were in remission. At 6-month follow-up, 5/12 participants were treatment responders and 3 of these were in remission. Following the third session, participants on average reported high treatment acceptability scores on the TAAS and on the EDS. These ratings of acceptability were maintained following treatment.

4. Discussion

This pilot trial is the first to provide support for the feasibility and acceptability, and preliminary effectiveness of a new empirically-based cognitive therapy for compulsive checking. Overall, the current trial found significant improvements in checking-related symptoms and participants experienced the therapy as highly acceptable. The effect sizes from our brief and cognitively-focused approach were comparable to traditional ERP for OCD, as reported by a recent meta-analysis by Öst et al. (2015). Our treatment also resulted in lower drop-out rates compared to ERP (8% vs. 19.1%), but it should be noted that the use of attrition as a metric is largely uninformative for developing prevention strategies, and regular assessment using tools such as the TAAS and the EDS is recommended.

Although limited by a small sample size and limited measurement points, the current study is an important step in advancing treatments for OCD. In addition to targeting a wider range of OCD presentations in large traditional randomized controlled trials, a strong single-case

experimental design or a hybrid randomized controlled trial with relatively smaller groups incorporating *multiple* measurement points and analyzed using hierarchical linear modelling could also allow us to more confidently conclude whether the current treatment provides any benefit over traditional treatments for OCD (e.g., ERP), either in terms of symptom reduction or treatment acceptability.

Conflict of interest

The authors declare no conflicts of interest.

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Table 1

Overall and Individual Means, Standard Deviations, and Contrast Test Statistics between Assessment Periods on OCD Self-Report and Treatment Acceptability Self-Report Measures, and Daily Monitoring Data (N = 12)

	Assessment Period			Contrasts			
	Pre-treatment *M* (*SD*)	Post-Treatment *M* (*SD*)	6-Month Follow-Up *M* (*SD*)	Pre-treatment vs. Post-Treatment *F* (1, 11)	η_p^2 / Hedges' *g*	Pre-treatment vs. 6-Month Follow-Up *F* (1, 11)	η_p^2 / Hedges' *g*
Y-BOCS	24.08 (4.62)	13.58 (6.65)	15.67 (8.34)	28.15***	0.72 / 1.68	12.69**	0.54 / 1.12
VOCI	84.67 (37.98)	59.17 (47.77)	63.33 (50.84)	8.68*	0.44 / 0.53	6.12*	0.36 / 0.41
VOCI-CHK	20.00 (5.26)	11.25 (8.48)	12.17 (8.72)	13.99**	0.56 / 1.12	13.16**	0.55 / 0.95
	Baseline	Post-Treatment	1 Month Following Treatment	Baseline vs. Post-Treatment		Baseline vs. 1 Month Following Treatment	
TSC	90.66 (76.36)	28.44 (27.90)	25.92 (25.48)	7.70*	0.41 / 0.98	8.15*	0.43 / 1.04
	Session 3	Post-Treatment					
TAAS	59.92 (4.60)	60.25 (5.55)					
EDS	74.25 (10.91)	77.50 (8.13)					

Note. Means, standard deviations, and contrast test statistics are based on intent-to-treat analyses. OCD self-report measures: Y-BOCS = Yale-Brown Obsessive Compulsive Scale; VOCI = Vancouver Obsessional Compulsive Inventory; VOCI-CHK = Vancouver Obsessional Compulsive Inventory – Checking Subscale; Daily monitoring outcomes: TSC = Time spent checking in minutes; Treatment acceptability self-report measures: TAAS = Treatment Acceptability and Adherence Scale; EDS = Endorsement and Discomfort Scales. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.