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Internet cognitive behavioural treatment for obsessive compulsive disorder: A randomised controlled trial

Alison E.J. Mahoney [a, *], Anna Mackenzie [a, b], Alishia D. Williams [a, b], Jessica Smith [a], Gavin Andrews [a, b]

[a] Clinical Research Unit for Anxiety and Depression (CRUfAD), St. Vincent's Hospital, Level 4 O'Brien Centre, 394-404 Victoria Street, Darlinghurst, Sydney, New South Wales, 2010, Australia
[b] School of Psychiatry, UNSW Medicine, University of New South Wales, Sydney, NSW, 2052, Australia

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ABSTRACT

Internet-based cognitive behaviour therapy (iCBT) is becoming increasing accepted as an efficacious and effective treatment for the anxiety and depressive disorders. However few studies have examined the efficacy of iCBT for obsessive compulsive disorder (OCD). This randomised controlled trial compared technician-administered iCBT ($n = 32$) to a treatment as usual (TAU) control group ($n = 35$) in patients with OCD. The primary outcome measures were the Dimensional Obsessive-Compulsive Scale (DOCS) and the Obsessional Beliefs Questionnaire (OBQ-20) administered at pre- and post-treatment (or matched time points). The iCBT group was followed-up at 3-months post-treatment when diagnostic status was assessed at clinical interview. The iCBT program was more efficacious than TAU in reducing maladaptive OC beliefs as well as symptoms of OCD, distress, and depression, with large within- and between-groups effect sizes found (>.78). Adherence was high (75%) and gains were maintained at 3 month-follow-up with 54% of treatment completers no longer meeting diagnostic criteria for OCD at follow-up. These results are comparable to outcomes obtained by clinician-administered face-to-face and internet-based programs and suggest that iCBT for OCD is efficacious when administered by a clinically-supervised technician. Future research is now needed to evaluate how effective iCBT for OCD is in routine clinical settings.

Individuals with obsessive compulsive disorder (OCD) experience persistent, intrusive, and ego-dystonic obsessions (recurrent thoughts, urges, or images) and/or compulsions (repetitive behaviours or mental acts performed to relieve distress) (American Psychiatric Association [APA], 2013). The disorder has an estimated annual prevalence of 0.6–1.8% and is associated with substantial psychiatric comorbidity, disability, and economic costs (APA, 2013; Andrews, Henderson, & Hall, 2001; Crino, Slade, & Andrews, 2005; DuPont, Rice, Shiraki, & Rowland, 1995). Although cognitive behaviour therapy (CBT) and antidepressant medications are established evidence-based treatments (Fineberg, Reghunandanan, Brown, & Pampaloni, 2013; National Institute for Health and Clinical Excellence, 2005; Olatunji, Davis, Powers, & Smits, 2013), many individuals with OCD remain untreated, receive inappropriate treatment, or delay seeking treatment for many years (Andrews et al., 2001; Marques et al., 2010).

Internet-based cognitive behaviour therapy (iCBT) aims to reduce the barriers associated with accessing traditional face-to-face treatment; barriers such as cost, inconvenience, social stigma, and personal embarrassment (Marques et al., 2010; Wootton, Titov, Dear, Spence, & Kemp, 2011). Andrews, Cuijpers, Craske, McEvoy, and Titov (2010) found that iCBT for anxiety and depressive disorders demonstrated comparable efficacy to face-to-face CBT in their meta-analysis of 22 randomised controlled trials (RCT). However, the evidence base for iCBT for people with OCD is limited. Baer and colleagues developed the first comprehensive computerised behaviour therapy program for OCD, *BT Steps* (Baer & Greist, 1997). Initially the program was delivered via a standardised workbook and a telephone-based automated interactive voice-response system. The largest RCT ($N = 218$) evaluating *BT Steps* found that the program (within group $d = .84$) was marginally less effective than clinician-guided behaviour therapy ($d = 1.22$) but more effective than relaxation therapy ($d = .35$) in improving

* Corresponding author. Tel.: +61 2 8382 1407; fax: +61 2 8382 1402.
E-mail addresses: amahoney@stvincents.com.au (A.E.J. Mahoney), alishia.williams@unsw.edu.au (A.D. Williams), Smith@svha.org.au (J. Smith), gavina@unsw.edu.au (G. Andrews).

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symptoms of OCD (Greist et al., 2002). *BT Steps* is now available online and clinical trials are currently underway.

Andersson, Enander, et al., (2012) conducted the first RCT of internet-based CBT for OCD; they compared iCBT to an attention control condition (online supportive therapy). Their 10-week iCBT program comprised psycho-education, treatment rationale, cognitive restructuring for metacognitions (e.g., thought-action fusion), and daily *in vivo* exposure and response prevention (ERP), and was delivered online via a 100-page self-help manual with therapists providing regular support and feedback regarding homework exercises. Patients completed a mean of 7.28 iCBT modules and improved more than those in the control group with respect to OCD symptoms (post-treatment between groups $d = 1.12$), global functioning ($d = .57$) and depression symptoms ($d = .19$). Gains were maintained at 4 months post-treatment. These results were largely consistent with this team's previous open trial with the 15 module version of the program (Andersson et al., 2011). A second RCT conducted by Wotton, Dear, Johnston, Terides, and Titov (2013) compared iCBT against bibliotherapy (bCBT, the iCBT program in book format) and a waitlist control group. The content of the iCBT course was similar to that of the Andersson, Carlbring, et al. (2012) and Andersson, Enander, et al. (2012) program, but was delivered via 5 online lessons over 8 weeks. Completion rates across the CBT conditions were the same ($M = 4.3/5$ lessons completed). Outcomes were not significantly different in the therapy conditions, however, both therapies were superior to the waitlist group in terms of reducing OCD symptoms ($d = .63–1.57$) and improving symptoms of depression ($d = .26–.56$). There were some losses in gains following the 3 month follow-up period; participants meeting criteria for clinically significant change fell from 47% at post-treatment to 27% for the iCBT group and from 40% to 20% for the bCBT group. An earlier open trial of the 8-lesson version of the program reported similar outcomes (Wootton et al., 2011). Klein, Meyer, Austin, and Kyrios (2011) conducted an open trial with their fully-automated self-help online CBT program (*OCD STOP!*). They reported that the program was effective in reducing OCD symptoms ($d = .83$) and improving quality of life ($d = .87$) with 63% of patients completing the 12 week course. However, the study was small ($N = 17$) and the measures employed to assess patient progress were not established. An RCT for this program is currently underway. The most recent iCBT OCD RCT involved an online writing-based ERP protocol completed in 14 sessions over 8 weeks (Herbst et al., 2014). Compared to waitlist control, the program resulted in significant reductions in OCD ($d = .82–.87$) and depression ($d = .56$) symptoms with 88% of participants completing the course. Gains were maintained 6 months post-treatment.

The outcomes of iCBT appear to be comparable to those attained in traditional face-to-face CBT. In a recent meta-analysis of 16 RCTs, Olatunji et al. (2013) found that the mean pre to post treatment effect size superiority of face-to-face CBT compared to control conditions was 1.39 (Hedges *g*) on OCD symptom measures and .51 on depression symptoms measures. Indeed recent studies report no significant differences between the efficacy of guided iCBT and face-to-face CBT for a range of anxiety disorders and depression (Andersson, Cuijpers, Carlbring, Riper, & Hedman, 2014; Andersson et al., 2013; Andrews et al., 2010; Mewton, Smith, Rossouw, & Andrews, 2014; Wagner, Horn, & Maercker, 2014). However, iCBT programs typically require much less therapist time per patient to administer (2–4 h in total, Andersson, Carlbring, et al., 2012; Andersson, Enander, et al., 2012; Wotton et al., 2013, ~9 h in Herbst et al., 2014) compared to face-to-face CBT (approximately 5–23 h in total, Olatunji et al., 2013). iCBT is also likely to be significantly more cost effective than face-to-face CBT (Hedman et al., 2011; Hedman, Ljótsson, & Lindefors, 2012; Titov, Andrews, Johnston, Schwencke, & Choi, 2009; Warmerdam, Smit, van Straten, Riper, & Cuijpers, 2010).

The current study aimed to contribute to the current evidence-base for iCBT for OCD. We employed a RCT design to compare an immediate iCBT treatment group to a treatment as usual (TAU) group. To extend the existing literature, we examined whether a technician could administer the iCBT program with minimal patient contact time and achieve comparable results to existing clinician-administered iCBT and face-to-face CBT programs. Existing studies involving participants with social phobia, generalised anxiety disorder and depression have compared technician- or student-administered iCBT with clinician-administered iCBT and found comparable efficacy across conditions (Andersson, Carlbring, et al., 2012; Robinson et al., 2010; Titov et al., 2010; Titov et al., 2009). As such, we predicted that iCBT would be associated with large treatment effect sizes and would lead to significantly greater reductions in symptoms of OCD, depression, and psychological distress compared to TAU. Moreover, we predicted that the majority of participants would complete the iCBT program, find it an acceptable form of treatment, and that treatment gains would be sustained 3 months post-treatment. Participants allocated to the TAU group were enrolled in the iCBT course after the treatment group had completed the program.

Methods

Participants and recruitment

Power calculations were informed by the literature and based on an anticipated between-group ES of .80. The minimum sample size for each group (alpha set at 0.05, power at .80) was identified as 20, but at least 10% were recruited to hedge against expected attrition. Participants were recruited via the research arm of a not-for-profit clinical and research unit affiliated with St. Vincent's Hospital and the University of New South Wales, Australia. Applicants first completed online screening questionnaires about symptoms and demographic details. Inclusion criteria were: (i) aged over 18, (ii) self-identified as experiencing clinical significant symptoms of OCD (see below for clinical threshold), (iii) prepared to provide name, phone number and address, and the name and address of their local physician, and (iv) had access to a phone, computer and printer. Psychosis, significant drug or alcohol dependence, suicidal ideation or significant cognitive deficits were exclusion criteria. Fig. 1 provides details of participant flow. 124 applicants were excluded after completing initial online screening questions. Excluded applicants received information on alternative services and were encouraged to discuss their symptoms with their physician. 122 applicants met the online selection criteria, provided informed consent, and then participated in a brief phone interview. Trained interviewers administered the Mini International Neuropsychiatric Interview Version 5.0.0 (MINI Sheehan et al., 1998) to confirm whether the applicant met DSM-IV criteria for OCD. 39 individuals were excluded after telephone interview, leaving 86 applicants who met inclusion criteria and were randomised. Randomisation was based on a random number sequence generated at www.random.org. Concealment of allocation was maintained until the applicant met all inclusion criteria and an offer of participation was made. The study was approved by the Human Research Ethics Committee (HREC/12/SVH/239) of St. Vincent's Hospital (Sydney, Australia). The trial was prospectively registered on the Australian New Zealand Clinical Trials Registry (ACTRN12612001306808).