Treatment Outcome and Predictors of Internet Guided Self-Help for Obsessive-Compulsive Disorder

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Internet-guided self-help (iGSH) has amassed significant empirical support for a variety of psychiatric conditions; however, it is not known who responds best to these treatments. This open trial examined the clinical outcomes and predictors of a 17-week iGSH program for obsessive-compulsive disorder (OCD). Therapist support was provided either in person or by phone 9 times for an average of 13 minutes per session. Twenty-four patients initiated treatment, and 17 of these (70.8%) completed. Results of the intent-to-treat sample indicated statistically significant improvements at posttreatment with large treatment effects for OCD symptoms as assessed by the Yale Brown Obsessive-Compulsive Scale ($d = 0.87$), and small to moderate improvements in depression ($d = 0.19$), functioning ($d = 0.53$), and quality of life ($d = -0.18$). These outcomes were largely maintained over a 6-month follow-up. Readiness to reduce avoidance of OCD triggers and attendance to therapist sessions were moderately associated with posttreatment response, and correctly classified the responder status (defined as clinically significant change) of nearly 9 out of 10 patients at posttreatment. These same variables did not predict responder status at 6-month follow-up. These results lend further empirical support to iGSH as a treatment for OCD and provide direction on the development of predictor models to identify patients who are and are not likely to acutely respond to iGSH.

COGNITIVE-BEHAVIORAL THERAPY (CBT) INCORPORATING exposure and response prevention (ERP) is an established first-line treatment for obsessive-compulsive disorder (OCD; Koran, Hanna, Hollander, Nestadt, & Simpson, 2007; March, Frances, Carpenter, & Kahn, 1997). However, many patients do not receive CBT due to barriers such as time, cost, or limited access to qualified therapists (Marques et al., 2010). As a result, guided

self-help (GSH) is gaining acceptance as a way to improve accessibility and cost-effectiveness of treatment for OCD (e.g., Mataix-Cols & Marks, 2006). Meta-analyses have indicated that GSH can be as effective as traditional face-to-face treatment for a variety of disorders, and is most efficacious when delivered via the Internet (Cuijpers, Donker, van Straten, Li, & Andersson, 2010). In addition, patients with OCD view Internet GSH (iGSH) as acceptable, and having certain advantages, including time savings, ability to access treatment without traveling outside the home, lower costs, and privacy/anonymity (Wootton, Titov, Dear, Spence, & Kemp, 2011).

Data are accumulating that support the efficacy of iGSH for OCD with large pre-to-post treatment effects (Andersson et al., 2012; Andersson et al., 2011; Wootton, Dear, Titov, Johnston, & Terides, 2013; Wootton, Titov, Dear, Spence, Andrews, et al., 2011). Improvements in symptoms are sustained up to 24 months (Andersson et al., 2014). In addition, iGSH for OCD has been found to be superior to waitlist (Herbst et al., 2014; Wootton, Dear, Johnston, Terides, & Titov, 2013), online supportive therapy (Andersson et al., 2012), and treatment as usual (Mahoney, Mackenzie, Williams, Smith, & Andrews, 2014). BTSteps is a computerized GSH program for OCD that uses an algorithm to direct the patient through an individualized treatment plan. When the program is implemented using a patient workbook and telephone-based interactive voice response system, patients experience large pre-to-post treatment effects (Bachofen et al., 1999a; Greist et al., 1998; Marks et al., 2003) and outcomes are superior to relaxation therapy (Greist et al., 2002). The BTSteps treatment algorithm has been adapted into a web-based platform (OCFighter); however, to date no studies have investigated the efficacy of the Internet-administered OCFighter program.

While iGSH appears to be efficacious for OCD, it is unknown who responds best to this treatment. This is an important research question given that iGSH is likely to be used as an entry-level treatment in stepped-care models, and developing an algorithm to predict response versus nonresponse could improve treatment efficiency by better matching patients to the optimal level of care. However, the empirical basis for such an algorithm is limited at this time. Research on clinical predictors of CBT for OCD has been largely inconsistent for traditional face-to-face therapy formats. For example, while OCD symptom severity and subtypes have been identified as likely predictors (Keeley, Storch, Merlo, & Geffken, 2008), these measures did not moderate treatment outcome in a recent meta-analysis (Olatunji, Davis, Powers, & Smits, 2013). Other possible predictors of

face-to-face CBT for OCD, albeit with inconsistent findings, include patient motivation and depression severity (Keeley et al., 2008). In addition, very little research has been conducted on moderators of iGSH treatment formats for any disorder, although patient expectancy variables (e.g., motivation, self-efficacy) have shown some promising results as predictors (Bachofen et al., 1999b; Bendelin et al., 2011; Boettcher, Renneberg, & Berger, 2013).

Treatment engagement is perhaps the most robust predictor of CBT for OCD across levels of therapist involvement. In traditional face-to-face therapy settings, between-session adherence to ERP homework can successfully predict outcome of CBT for OCD (Maher et al., 2012; Simpson et al., 2011), although exceptions have also been reported (Woods, Chambless, & Steketee, 2002). In addition, treatment adherence is a reliable predictor of outcome for Internet-delivered CBT (iCBT) for OCD as well as other disorders (Hilvert-Bruce, Rossouw, Wong, Sunderland, & Andrews, 2012). With respect to BTSteps specifically, program use (e.g., number of time accessing the program) and completing self-directed ERP were predictors of outcome (Bachofen et al., 1999a; Greist et al., 2002; Greist et al., 1998; Kenwright, Marks, Graham, Franses, & Mataix-Cols, 2005). However, engagement as measured across an entire course of treatment may not be ideal as an outcome predictor for clinical decision making related to iGSH, given that it is important to identify as early as possible which patients are likely to benefit and which should be referred for an alternative or higher level of care (Shoham & Insel, 2011). Thus, it is important to study novel patient characteristics that may be associated with treatment response. Toward this aim, the current study will be the first to examine the relationship between executive functioning and treatment response for iGSH for OCD. Previous research has not clearly defined a role for neuropsychological functioning in the outcomes of traditional face-to-face ERP (Vandborg et al., 2012). However, executive functioning may be more strongly associated with largely self-directed treatment formats such as iGSH because of the increased initiative, comprehension, and self-regulation required. This research question has important clinical implications given that this is a potentially modifiable patient characteristic (i.e., using cognitive remediation).

In this study we sought to replicate data on the efficacy of iGSH for OCD and contribute new data on predictors of outcome for this treatment modality. Based upon previous research (Andersson et al., 2012, 2011; Wootton, Dear, Titov, et al., 2013; Wootton, Titov, Dear, Spence, Andrews, et al., 2011) it was predicted that there would be large treatment effects for improvement of OCD symptoms and moderate