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Treating Hoarding Disorder in a real-world setting: Results from the Mental Health Association of San Francisco

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ABSTRACT

Hoarding Disorder (HD) is associated with substantial distress, impairment, and individual and societal costs. Cognitive-behavioral therapy (CBT) tailored to HD is the best-studied form of treatment and can be led by mental health professionals or by non-professionals (peers) with specific training. No previous study has directly compared outcomes for therapist-led and peer-led groups, and none have examined the effectiveness of these groups in a real-world setting. We used retrospective data to compare psychologist-led CBT groups (G-CBT) to groups led by peer facilitators using the Buried in Treasures workbooks (G-BiT) in individuals who sought treatment for HD from the Mental Health Association of San Francisco. The primary outcome was change in Hoarding Severity Scale scores. Approximate costs per participant were also examined. Both G-CBT and G-BiT showed improvement consistent with previous reports (22% improvement overall). After controlling for baseline group characteristics, there were no significant differences in outcomes between G-CBT and G-BiT. For G-CBT, where additional outcome data were available, functional impairment and severity of hoarding symptoms improved to a similar degree as compared to previous G-CBT studies, while hoarding-related cognition improved to a lesser degree (also consistent with previous studies). G-BiT cost approximately $100 less per participant than did G-CBT.

1. Introduction

Hoarding Disorder (HD) is a chronic neuropsychiatric disorder that affects up to 6% of the population (Best-Lavigniac, 2006; Frost and Gross, 1993; Grisham et al., 2006; Kim et al., 2001; Samuels et al., 2002; Seedat and Stein, 2002), and is associated with high levels of distress, social disruption, functional impairment, and personal and societal costs (Ayers et al., 2009; Frost et al., 2000a, 2000b; Kim et al., 2001; Tolin et al., 2007a). In one large study, individuals with self-reported hoarding behaviors had an average of 7 work impairment days per month related to psychiatric problems (Tolin et al., 2008b). Cluttered homes due to hoarding behaviors are associated with safety hazards, leading to increased physical morbidity and mortality, and social, financial, and familial consequences. Hoarding also increases the risk of falls, health code violations, fire, eviction, and problems with self-care (Ayers et al., 2009; Frost et al., 2000a, 2000b; Frost et al., 1999; Harris, 2010; Kim et al., 2001; Tolin et al., 2008a; Tolin et al., 2008b; Welfare, 2007). Each year, public service agencies expend tremendous time and financial resources on HD; in San Francisco, more than 6 million dollars per year is spent by service agencies and landlords on hoarding-related issues (not including costs associated with treatment) (San Francisco Task Force on Compulsive Hoarding, 2009).

Because of its chronic nature, HD is similar to other persistent neuropsychiatric disorders in that the goal of treatment is improvement of symptoms rather than remission. Although pharmacological treatments are of use for HD, behavioral approaches are the most commonly used, and a variety of behavioral interventions designed specifically for individuals with HD have been developed and tested over the last 8–10 years (Ayers et al., 2012; Ayers et al., 2011; Frost, 2010; Gilliam et al., 2011; Meyer et al., 2010; Muroff et al., 2012; Steketee et al., 2010; Steketee and Tolin, 2011; Tolin, 2011). These interventions typically include several components, including psychoeducation about HD and its

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treatment, motivational interviewing or similar approaches designed to increase motivation to change, cognitive restructuring, and exercises (both in session and as homework) aimed at improving sorting and discarding, and reducing cluttering and acquisition behaviors (Steketee and Frost, 2006; Tolin et al., 2015). Both group and individual treatment approaches have been examined for efficacy in HD, usually compared to a waitlist control (Ayers et al., 2012; Ayers et al., 2011; Gilliam et al., 2011; Muroff et al., 2012; Steketee et al., 2010; Steketee and Tolin, 2011; Tolin et al., 2012; Tolin et al., 2007). For most, but not all studies, a change in total score on the Saving-Inventory, Revised (SI-R) was the outcome measure (Frost et al., 2004). The SI-R is a self-report measure of hoarding symptoms and their impact on functioning that is widely used in hoarding research. An improvement (change score) of 14 points or more indicates clinically significant improvement, and a change score of 10 points or more indicates a clinically meaningful improvement (Frost et al., 2012). Although there is wide variability in outcomes between the currently published studies, these studies consistently show evidence of overall improvement after treatment. A recent meta analysis by Tolin et al. showed large effect sizes for CBT for HD interventions, regardless of treatment type (group vs. individual) but also noted that SI-R scores typically remained within the HD range (SI-R $\geq$ 42) post-treatment (Tolin et al., 2015).

In part because of the intensive and specialized nature of CBT for HD, and the limited number of trained treatment providers outside of specialty clinics, a number of self-help books have been developed. For example, Tolin, Frost, and Steketee published a book called *Buried in Treasures: Help for Compulsive Acquiring, Saving, and Hoarding*, aimed at providing information, psychoeducation, and practical approaches to reducing clutter and acquisition (Tolin et al., 2007b). This group subsequently developed a facilitator's guide for leading BiT groups, called *Buried in Treasures* (BiT) (Shuer and Frost, 2011). BiT is a workbook-based approach that was designed for use either by individuals working on their own or by individuals in a group context with facilitators who were trained to lead the groups but were not clinicians. Only a few studies examining the efficacy of BiT have been published, where individuals were given the BiT workbook to read, but had no other intervention, as a control arm for a CBT study, two open trials of group BiT, and one examining group BiT compared to a waitlist control (Frost et al., 2011, 2012; Muroff et al., 2012). The meta-analysis by Tolin et al. suggested that CBT groups facilitated by mental health professionals and BiT groups facilitated by non-professionals were similar in outcome, although only two studies using non-professionals were used in the comparison (Tolin et al., 2015). Table 1, which expands upon and updates information provided in the Tolin et al. meta-analysis (Tolin et al., 2015), shows the published studies of both individual and group CBT and BiT for HD, as well as weighted group means and percent change in hoarding symptom severity for each subgroup. Weighted group means were calculated as follows: 1) The mean change score for each study was multiplied by the sample size in that study. 2) These scores were then summed, and divided by the sum of the sample sizes for all of the studies. The data in Table 1 suggest that in a research setting with trained facilitators, group BiT is as effective or more effective than both individual CBT and group CBT conducted by mental health professionals, with mean improvement scores of 14.1 for G-BiT compared to 13.9 for G-CBT and 17.1 for I-CBT including the study incorporating cognitive rehabilitation (Ayers et al., 2014), and 13.6 excluding this study. As expected, individual self-help approaches, whether they were internet-

Table 1
Results of treatment studies for HD.

Study	Type of treatment	Number of sessions	Number of participants	Mean pre- treatment score	Mean SI-R change score	Percent change
Individual CBT						
Tolin et al., 2007a+	I-CBT	26	10	67	18.6	27.8
Steketee et al., 2010+	I-CBT	26	36	61.6	16.9	27.4
Ayers et al., 2011+	I-CBT (strict)	20	12	58.3	11.6	19.9
Turner et al., 2010+	I-CBT+weekly home visits	28–41	6	4.1	N/A	29.8
Ayers et al., 2014	I-CBT+cog rehabilitation	24	11	59.9	22.4	37.4
Weighted mean (SD) and percent change across studies					**17.1 (3.5)**	**28.5**
Group CBT						
Muroff et al., 2009+	G-CBT+2 home visits	16	32	60.5	8.6	14.2
Muroff et al., 2009+	G-CBT (strict)+2 home visits	16	8	64.8	14.3	22.1
Gilliam et al., 2011+	G-CBT (no home visits)	16	45	64.2	17.0	26.5
Muroff et al., 2012+	G-CBT+4 home visits	20	11	63.6	14.8	23.2
Muroff et al., 2012+	G-CBT+4 home visits+non-clinician coach (4 visits)	20	14	61.8	18.5	29.9
Tolin et al., 2012	G-CBT (no home visits)	16	6	50.7	6.4	12.6
Weighted mean (SD) and percent change across studies					**13.9 (4.5)**	**21.4**
Individual self-help, including bibliotherapy						
Muroff et al., 2010	Internet self-help	6 months	100	56.6	6.1	10.8
Muroff et al., 2010	Internet self-help	15 months	23	56.6	8.9	15.7
Muroff et al., 2012	I-BiT	20 weeks	13	59.8	5.4	9.0
Weighted mean (SD) and percent change across studies					**6.5 (1.9)**	**11.8**
Facilitated group bibliotherapy						
Frost et al., 2011 Study 1+	G-BiT	13	17	54.7	14.8	22.7
Frost et al., 2011 Study 2+	G-BiT	13	11	56.3	12.3	21.8
Frost et al., 2012+	G-BiT	13	18	59.8	14.7	23.4
Weighted mean (SD) and percent change across studies					**14.1 (1.4)**	**22.6**

I-CBT=individual cognitive behavioral therapy, G-CBT=group cognitive behavioral therapy, I-BiT=individuals were provided with the Buried in Treasures manual, but no other intervention., G-BiT=Buried in Treasures peer-facilitated bibliotherapy, SI-R=Saving Inventory, Revised. Studies presented here used waitlist controls or were open trials without a control. For studies using a waitlist control, there was no change in SI-R scores for the waitlist group. In Muroff et al. (2012), G-CBT was compared to I-BiT. (strict) indicates that special attention was paid to treatment adherence. *=weighted to account for differences in sample size. +=included in the meta-analysis by Tolin et al. (2015). Note that Turner et al. used the Clutter Inventory-Revised rather than the SI-R, and mean SI-R change scores are not available.