Cognitive-behavioral therapy for geriatric compulsive hoarding☆

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Abstract

This investigation examined response to a manualized cognitive-behavioral therapy (CBT) protocol for compulsive hoarding (Steketee & Frost, 2007) in a sample of 12 adults over age 65. All participants were cognitively intact, not engaging in any other psychotherapy, and had compulsive hoarding as their primary problem. All received 26 sessions of individual CBT over the course of 17 weeks. The primary outcome measures were the Savings Inventory-Revised and UCLA Hoarding Severity Scale, which were administered at baseline, mid-treatment, post-treatment, and 6-month follow-up. Other outcomes included Clinical Global Impression (CGI) scores, depression, anxiety, disability, and clutter image ratings. Results demonstrated statistically significant changes on hoarding severity and depression. However, only three of the twelve participants were classified as treatment responders at post-treatment, and their gains were not maintained at 6-month follow-up. CGI, anxiety, disability, and clutter ratings were unchanged at post-treatment and follow-up. No participants dropped out, but homework compliance was variable and correlated with decreases in hoarding severity. Findings suggest that older adults with compulsive hoarding may require an enhanced or alternative treatment.

Keywords

Hoarding; OCD; Older adults; CBT

Introduction

Hoarding is defined as the acquisition of, and inability to discard, items with apparently limited value (Frost & Gross, 1993). The prevalence of clinically significant hoarding in the general population has been estimated at 4–5% (Mueller, Mitchell, Crosby, Glaesmer, & de Zwann, 2009; Samuels et al., 2008). Although compulsive hoarding was previously considered to be a symptom dimension (e.g., Mataix-Cols, Rosario-Campos, & Leckman, 2005) or subtype (Calamari, Wiegartz, & Janeck, 1999; Calamari et al., 2004) of obsessive-

compulsive disorder (OCD), the weight of recent evidence indicates that it is more accurately conceptualized as a distinct disorder (Mataix-Cols et al., 2010; Pertusa et al., 2010; Saxena, 2007; Saxena, Brody, Maidment, & Baxter, 2007). Formal diagnostic criteria have been developed for a proposed "Hoarding Disorder" to be included in DSM-V (Mataix-Cols et al., 2010).

The clinical course of compulsive hoarding tends to be chronic and progressive, with initial onset around age 12–13 (Ayers, Saxena, Golshan, &Wetherell, 2010; Grisham, Frost, Steketee, & Hood, 2006; Tolin, Frost, & Steketee, 2010) and severe levels starting in the mid-thirties. Evidence suggests that it is more prevalent in older than in younger people (e.g., Marx & Cohen-Mansfield, 2003; Samuels et al., 2008). Moreover, compulsive hoarding may have consequences that are particularly dangerous for older adults, including increased fall risk, fire hazard, food contamination, social isolation, and medication mismanagement (Ayers et al., 2010; Frost & Gross, 1993; Kim, Steketee, & Frost, 2001).

A cognitive-behavioral conceptualization and treatment approach has been developed for compulsive hoarding (Frost & Hartl, 1996; Steketee & Frost, 2007). Cognitive-behavioral therapy (CBT) for compulsive hoarding typically includes components of building insight, increasing motivation, problem-solving training, organizational skill building, cognitive restructuring, decision making, and exposure to acquiring and discarding. The most commonly used manual emphasizes cognitive restructuring relative to exposure and other elements (Steketee & Frost, 2007). Typical time in treatment varies from 7 to 19+ months and includes home visits.

In an open trial of standard CBT in a sample of 10 hoarders, Tolin, Frost, and Steketee (2007) found significant improvements on self-reported hoarding severity measures. At post-treatment, participants had a mean 28% decrease on the Savings Inventory-Revised (SI-R), and 5 of the 10 were rated as "very much improved" on the Clinician Global Impression (CGI) scale. Homework compliance was strongly related to symptom improvement and viewed to be a critical element in treatment success. In await-list controlled trial of 36 hoarders, participants demonstrated an average decrease of 27% on the SI-R, 26% improved according to the CGI, 76% reported themselves as improved, and 41% of completers demonstrated a clinically significant response (Steketee, Frost, Tolin, Rasmussen, & Brown, 2010). The Steketee and Frost (2007) CBT for hoarding manual was developed over the course of that study. Multimodal treatments are also available; Saxena et al. (2002) found a 34.5% decrease on the Yale Brown Obsessive-Compulsive Scale (YBOCS) using a multimodal treatment intervention including CBT, medication, and psychosocial rehabilitation.

Although these studies demonstrate some support for the efficacy of CBT for compulsive hoarding, participants were middle-aged rather than elderly (mean ages of 45, 54, 49; Saxena et al., 2002; Steketee et al., 2010; Tolin et al., 2007). There have been no randomized or open trials of CBT for compulsive hoarding in an older adult population. The geriatric literature is limited to a few case series or reports (e.g., Turner, Steketee, & Nauth, 2010). Although most older adults with compulsive hoarding have had some kind of

psychiatric treatment in their lifetime, most have never sought or received treatment specifically for hoarding (Ayers et al., 2010).

Evidence is mixed for the effectiveness of CBT for geriatric anxiety disorders (Schuurmans et al., 2006, 2009; Wetherell et al., 2009), calling into question its efficacy for other geriatric populations, such as geriatric compulsive hoarders. Given the chronic and progressive nature of compulsive hoarding over the life course and its substantial adverse consequences for older adults, it is important to examine potential treatments in this population. The purpose of this investigation was to examine response in an older adult sample to the standard manualized CBT protocol for compulsive hoarding (Steketee & Frost, 2007) that has thus far been tested only in mid-life samples. We hypothesized that older adults with compulsive hoarding would show clinically and statistically significant decreases in hoarding severity, as well as in mood, anxiety, and disability, at post-treatment and follow-up.

Methods

Participants

Participants were 12 older adults, all over the age of 65, with compulsive hoarding as their most severe or prominent psychiatric condition. Flyers were posted throughout San Diego County for recruitment. Inclusion criteria as determined at an initial clinical interview were: 1) a compulsive hoarding diagnosis using the proposed DSM-V diagnostic criteria (Mataix-Cols et al., 2010), confirmed at a consensus conference including at least two licensed professionals with expertise in compulsive hoarding; 2) a score of 20 or greater on the UCLA Hoarding Severity Scale (Saxena et al., 2007); and 3) a score of 40 or greater on the Savings Inventory-Revised (Frost, Steketee, & Grisham, 2004).

Exclusion criteria were moderate to severe cognitive deficits as indicated by scores below 23 on the Folstein Mini-Mental State Exam (MMSE; Folstein, Folstein, & McHugh, 1975), not meeting criteria on the Hoarding Rating Scale (HRS; Tolin et al., 2010), substance use disorders, psychotic disorders, and bipolar I or II disorder. Other mood and anxiety disorders were permitted as long as compulsive hoarding was the primary (e.g., most severe) problem. Participants were also excluded if they were currently in other forms of psychotherapy, including support groups. All participants were required to remain on stable doses of any psychotropic medications, with no changes for at least three months prior to the baseline assessment and throughout the course of treatment. No participants were excluded based on MMSE screening, one was excluded based on HRS screening, and three refused (two due to cost of driving to treatment and one due to time commitment).

Procedures

This study was approved by the Institutional Review Board at the University of California, San Diego. Each subject completed a 3-h baseline interview. After 26 sessions of treatment, and then again at 6-month follow-up, participants completed a similar 3-h assessment battery. Hoarding severity measures were administered at mid-treatment by the study therapist. An advanced level graduate student and a licensed clinical psychologist administered all baseline, post-treatment, and 6-month follow-up assessments. These trained

raters were not involved in the participants' care. Inter-rater reliabilities were established between the evaluators for all clinical administered assessments prior to the start of the project.

Measures

The following measures were utilized: 1) Mini-Mental Status Examination (MMSE) as a gross screen of cognitive abilities; 2) Hoarding Rating Scale (HRS; Tolin et al., 2010) as a screening tool for hoarding symptoms; 3) Mini-International Neuropsychiatric Interview (M.I.N.I.; Sheehan et al., 1998) as a brief diagnostic interview; 4) Savings Inventory-Revised (SI-R; Frost et al., 2004) as a self-report measure of hoarding severity; 5) UCLA Hoarding Severity Scale (UHSS; Saxena et al., 2007) as a clinician-administered scale that measures the severity of multiple facets of compulsive hoarding; 6) Clutter Image Rating Scale (CIR; Frost, Steketee, Tolin, & Renaud, 2008) as a self-report measure of level of clutter in the home; 7) Clinician's Global Impression (CGI; Guy, 1976) severity (CGI-S) and improvement (CGI-I) to judge overall severity of illness and global response to treatment; 8) Sheehan Disability Index (SDS; Sheehan, Harnett-Sheehan, & Raj, 1996) as a measure of disability in social or leisure, and home life or family responsibilities (work subscale excluded); 9) Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1998) as a measure of anxiety symptoms; and 10) Beck Depression Inventory-II (BDI; Beck, Steer, & Garbin, 1988) as a measure of depressive symptoms. The MMSE and HRS were used only for pre-screening. All other measures were administered at baseline and post-assessment. The SI-R and UHSS were also administered at mid-treatment.

Treatment

Patients were seen in person for 26 sessions of individual psychotherapy delivered over the course of 16 weeks by a licensed clinical psychologist with specialized training in the treatment of late life anxiety disorders and compulsive hoarding (CA). Treatment was conducted according to the CBT manual developed by Steketee and Frost (2007) with stringent controls for adherence. Treatment was somewhat more intensive than outlined in the original protocol; the first 20 sessions were conducted twice weekly, and the final 6 were conducted weekly. Sessions were held twice per week for the majority of treatment because an intensive treatment approach has produced the most significant reduction in hoarding symptoms (Saxena et al., 2002). Additionally, this approach allowed for careful monitoring and assistance with homework compliance, which has proven to be an indicator of treatment success (Tolin et al., 2007). No modifications to the protocol were made based on participant age. Average treatment duration was approximately 17 weeks to accommodate holidays or patient travel. The study was completed over the course of 14 months.

The therapist received ongoing training and supervision in the treatment of compulsive hoarding from authorities in the field of compulsive hoarding and late life anxiety disorders. Additionally, the therapist received ongoing weekly, 1-h psychotherapy supervision throughout this investigation from a senior lab member of one of the CBT for hoarding protocol authors (Gail Steketee, Ph.D.). Another member of the Steketee research group reviewed all 26 sessions of two randomly selected treatment tapes for adherence and competency to the treatment manual and gave a mean adherence and competency rating

score of 96% based on an established scoring system. Refer to Steketee and Frost (2007) for details on protocol content. Approximately 75% of the sessions (19–20) occurred in the therapist's office (60 min) and 25% (6–7) in the patient's home (75–90 min). Daily homework was assigned after each session.

Homework compliance was rated at every session by the therapist, using the method of Tolin et al. (2007): 1 = did not attempt, 2 =attempted but did not complete, 3 =10–25% homework complete, 4 =26–50% homework complete, 5 = 51–75% homework complete, 6 =76–100% homework complete. An average homework completion score was derived for each subject.

Each participant was classified with respect to clinically significant change at both post-treatment and 6-month follow-up based on standards used in OCD samples (Lewin et al., 2010; Pallanti et al., 2002). Additionally, we also included a separate clinician rating of improvement. Therefore, classification as a treatment responder required: 1) a 35% reduction in both primary outcome measures of hoarding severity, and 2) a 3 (minimally improved) or better score on the CGI Improvement.

Data analysis

Descriptive statistics were obtained for all variables and examined for missing values and outliers. Tests of normality of continuous measures were made and data were examined for homogeneity of variance. No significant variation from the normal distribution was found. This was a within-subjects design using repeated-measures analysis of variance (RM-ANOVA) to examine change in hoarding severity ratings scales across baseline, mid-treatment, post-treatment, and 6-month follow-up. RM-ANOVA was also used to test changes for clutter image ratings, disability, depression, and anxiety scores across baseline, post-assessment, and 6-month follow-up. All tests were 2-tailed with a significance level of .05.

Results

All 12 participants completed the entire course of treatment and completed baseline, mid-treatment, and post-treatment questionnaires. Two were lost to follow-up at 6 months; one had died, and one refused because she "hadn't gotten any better." No participants had received additional treatment for hoarding except one participant who attended one hoarding support group session.

The sample included 7 women and 5 men. Average age was 73.66 (SD = 6.54; range 66–87). Ten participants were Caucasian and 2 were Hispanic. They were well educated, with 15.66 (1.55) formal years of education on average. In terms of marital status, 2 were married, 3 were divorced, 2 were widowed, and 5 had never married. Seven participants were taking psychiatric medications for sleep and/or depression. None were taking psychiatric medications prescribed specifically for hoarding symptoms. Patients reported an average of three medical conditions, most commonly hypertension, arthritis, and high cholesterol. Consistent with previous research, all reported childhood onset of hoarding symptoms. Only four participants met criteria for another Axis I psychiatric disorder; two

had one additional disorder, and two had two additional disorders. These diagnoses included major depressive disorder (3), generalized anxiety disorder (1), dysthymia (1), and post-traumatic stress disorder (1).

Mean pretreatment, mid-treatment, post-treatment, and 6-month scores are shown in Table 1. Participants were classified for clinically significant changes at post-treatment and 6-month follow-up. From baseline to post-treatment, only three participants were classified as treatment responders, while two patients experienced an *increase* in hoarding symptoms. The three responders all had received CBT in the past and had very high homework compliance ratings (mean of 5; 51–75% of homework completed) compared to the other participants (mean of 2.5, less than 25% of homework completed). They were also younger on average than the non-responders (mean age of 68 vs. 76). At 6-month follow-up, two of the three participants who were classified as responders at post-treatment had relapsed back to their baseline hoarding severity scores. The other participant who was classified as a responder at post-treatment may also have relapsed, with discrepant scores between hoarding severity self-report forms (reporting low scores) and clinician interview (reporting full relapse of hoarding symptoms). Two participants were rated "minimally worse" on the CGI and reported an increase in hoarding symptoms severity measures, both at post-treatment and 6-month follow-up. Average CGI scores for the entire sample indicated "no change" at post-treatment (4.16) or 6-month follow-up (4.41).

Results showed significant main effects of time on hoarding severity and depression measures, with significant changes in SI-R ($F_{2,22}$ =8.61, p =.002), UHSS ($F_{2,22}$ =7.89, p =.003), and BDI ($F_{1,11}$ =14.36, p= .003) from baseline to post-treatment. Results showed significant main effects of time on both hoarding severity measures, with significant changes in SI-R scores ($F_{3,33}$= 9.17, p =.006) and UHSS scores ($F_{3,33}$= 4.37, p = .011) from baseline to six-month follow-up. At six-month follow-up, SI-R scores had decreased by 20.8% (range +7.7% to −65.0%), and UHSS had decreased by 14.9% (range +26.1% to −59.1%) from baseline ratings. Depression symptoms also improved significantly (BDI-II; $F_{2,22}$ =15.84, p =.001). Pairwise comparisons for the UHSS, SI-R, and BDI-II have been included in Table 2. Changes on the BAI, CIR, CGI Severity, and SDI were not significant at post-treatment or six-month follow-up. Homework (mean=3.14; SD = 1.35) compliance was strongly correlated with decreases in hoarding severity outcome measures at post-treatment (SI-R: r=.74, p = .006; UHSS: r=.71, p = .009) and 6-month follow-up (SI-R: r =.68, p =.014; UHSS: r =.84, p = .001). Age and gender were not significantly correlated with baseline scores or change during treatment.

Discussion

This study represents the first study of any type of treatment for geriatric compulsive hoarding. In this open-label trial of the published CBT manual for compulsive hoarding in a sample of 12 older adults, we found statistically significant but relatively minimal clinical impact on hoarding severity and depression. These statistically significant results were not reflected in global clinical improvement measures. Anxiety, disability, and amount of clutter also remained unchanged at post-treatment and 6-month follow-up. Only three of twelve participants were classified as treatment responders at post-treatment, and their gains were

not maintained at follow-up. Homework compliance varied widely across participants and was strongly correlated with decreases in hoarding severity.

The 14–20% improvement in hoarding severity achieved in this study, while disappointing, is similar to prior findings in middle-aged samples. In published trials of CBT for compulsive hoarding, improvement in hoarding symptoms has ranged from 10 to 21% for group CBT (Muroff, Steketee, Himle, & Frost, 2010; Muroff et al., 2009; Steketee et al., 2000) and 27 to 28% for individual CBT (Steketee et al., 2010; Tolin et al., 2007). Previous studies of individual outpatient treatment may have yielded slightly greater symptomatic improvement because they had longer durations of treatment (28–77 weeks), providing more time for patients to clear out clutter from their homes (Steketee et al., 2010; Tolin et al., 2007). The duration of treatment in this study (17 weeks) was shorter than that of other published studies due to the greater frequency of visits, although the number of sessions was equivalent. We had hoped to achieve better results with a greater frequency of sessions in an effort to provide immediate assistance with treatment barriers and homework compliance. Nevertheless, due to the chronic nature of compulsive hoarding, treatment for older adults may need to be extended.

The lack of significant change in the CGI severity rating in the present study replicates the findings of Tolin et al. (2007); however, our result for CGI global improvement differs. Global improvement and specific symptom severity rating scales may yield quite different assessments of treatment success. Other studies (Steketee et al., 2010; Tolin et al., 2007) reported higher percentages of "treatment responders" using criteria set forth by Jacobson and Truax (1991). Currently there is no consensus on the identification of treatment responders or non-responders in hoarding studies. The ability to identify treatment non-responders early is important given the lengthy and intensive course of intervention typically required for hoarding. Further, it is necessary to know when standard treatments do not work well for subgroups, such as older adults, so treatments may be refined. Establishing a treatment classification or staging system, such as has been done for OCD by Pallanti et al. (2002), is an important next step for hoarding outcome research.

Our results are also consistent with Tolin et al. (2007)'s findings on the importance of homework compliance. Traditionally, homework compliance is viewed as a motivational issue. However, the participants in the present study demonstrated motivation, with no attrition and no delay in treatment completion. Several patients were able to complete exercises in session but had difficulty planning and carrying out the activities at home, despite strong motivation. Rehabilitation of cognitive or skill deficits contributing to homework non-completion may be particularly useful with older adults.

One possible reason that CBT might be less effective for geriatric populations with hoarding or anxiety disorders is that these patients may be more likely to have subtle neurocognitive deficits that impair their ability to engage in or respond to CBT (Mantella et al., 2007). Cognitive performance has been shown to influence response to CBT in older adults with GAD (Caudle et al., 2007). There is evidence that deficits in executive function (EF) in particular predict a poor treatment response to CBT in elderly GAD patients (Mohlman & Gorman, 2005). Compulsive hoarders have been found to have neurocognitive deficits (e.g.,

Grisham, Brown, Savage, Steketee, & Barlow, 2007; Grisham, Norberg, Williams, Certoma, & Kadib, 2010; Hartl et al., 2004; Wincze, Steketee, & Frost, 2007) which might limit their responsiveness to standard CBT approaches.

This study represents the first test of a manualized treatment for geriatric compulsive hoarding. Limitations include the small sample size and use of only one study therapist. The study was uncontrolled, therefore symptom reduction might be due to nonspecific factors such as participant expectations and therapeutic relationship. Further support for nonspecific factors is evidenced by the large reduction in depression scores, despite relatively little decrease in hoarding. Moreover, results may be due to the shorter duration of treatment than is typical in hoarding studies. This study does have several strengths, however, including strict adherence to an established treatment manual and close therapist monitoring, with ongoing supervision and adherence and competency ratings by experts in CBT for compulsive hoarding and a standardized duration of treatment. Additionally, the sample was diagnosed according to the newly proposed DSM-V criteria for Hoarding Disorder and comprehensively assessed by well-trained raters blind to the study objectives.

Results suggest that the current manualized CBT protocol for compulsive hoarding does not produce clinically meaningful or lasting changes in older adults. The study does demonstrate that older people can tolerate a full course of psychotherapy for compulsive hoarding, suggesting that a different behavioral treatment protocol could be implemented with this population. Future research should focus on developing and testing such a protocol, potentially one that deemphasizes cognitive restructuring and focuses on specific, concrete between-session assignments. Given the severe consequences of geriatric hoarding, such an intervention, if efficacious, could have high public health significance.

Acknowledgments

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Table 1

Outcome measures across all time points in a sample of 12 older adults receiving CBT for compulsive hoarding.

Measure	Baseline N = 12	Mid-treatment N = 12	Post-treatment N = 12	6-Month follow-up N = 10	Baseline to post-treatment	Partial eta squared (post-treatment)	% Change from baseline to post-treatment N = 12	Baseline to 6-month follow-up	Partial eta squared (6-month follow-up)	% Change from baseline to 6-month follow-up N = 10
Savings Inventory-Revised	58.25 (9.31)	59.16 (9.59)	46.66 (14.35)	46.08 (15.37)	$F_{2,22}=8.61$, p = .002	.43	19.89%	$F_{3,33}=9.17$, p = .006	.45	20.89%
UCLA Hoarding Severity Scale	27.33 (3.82)	25.08 (5.05)	22.25 (6.09)	23.25 (7.03)	$F_{2,22}=7.89$, p = .003	.41	18.57%	$F_{3,33}=4.37$, p = .027	.28	14.92%
Beck Depression Inventory-II	19.33 (11.46)	Not administered	10.08 (9.80)	10.91 (8.94)	$F_{1,11}=14.36$, p = .003	.56	47.85%	$F_{2,22}=15.84$, p = .001	.59	43.55%
Beck Anxiety Inventory	12.66 (7.93)	Not administered	9.00 (9.43)	8.66 (8.73)	$F_{1,11}=2.88$, p = .117	.20	28.90%	$F_{2,22}=2.64$, p = .123	.19	31.59%
Clutter Image Rating Total	4.41 (1.57)	Not administered	4.11 (1.73)	3.61 (1.46)	$F_{1,11}=.77$, p = .39	.39	6.80%	$F_{2,22}=3.20$, p = .081	.22	18.14%
Sheehan Disability	12.58 (4.03)	Not administered	10.16 (3.99)	9.83 (6.22)	$F_{1,11}=3.79$, p = .08	.25	19.23%	$F_{2,22}=2.70$, p = .110	.19	21.86%
Clinicians Global Impressions – Severity	4.83 (.93)	Not administered	4.75 (.86)	4.70 (.82)	$F_{1,11}=.04$, p = .13	.01	12.42%	$F_{2,22}=.13$, p = .879	.01	5.26%
Clinicians Global Impressions – Global Improvement	Not administered	Not administered	4.16 (.71)	4.41 (.99)	NA	NA	NA	NA	NA	NA

Table 2

Pairwise comparisons of SI-R, UHSS, and BDI.

Measure	Baseline to mid-treatment	Baseline to post-treatment	Baseline to 6-month follow-up
Savings Inventory-Revised	$F_{1,11} = .37$, p = .551	$F_{1,11} = 7.79$, p = .018	$F_{1,11} = 8.79$, p = .013
UCLA Hoarding Severity Scale	$F_{1,11} = 7.74$, p = .018	$F_{1,11} = 11.18$, p = .007	$F_{1,11} = 4.46$, p = .058
Beck Depression Inventory-II	Not administered	$F_{1,11} = 14.36$, p = .003	$F_{1,11} = 30.27$, p = .000