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Hoarding among patients seeking treatment for anxiety disorders☆

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ABSTRACT

The aim of the present study was to examine the prevalence of hoarding symptoms among individuals presenting for treatment of anxiety symptoms. Participants included 130 adults who were seeking treatment at an outpatient anxiety disorders clinic between January 2004 and February 2006. During their initial assessment, participants (31 with panic disorder, 15 specific phobia, 27 social phobia, 36 obsessive-compulsive disorder, 21 generalized anxiety disorder, mean age 37 years, 57% female, 88% White) completed the Saving Inventory-Revised, a self-report measure of hoarding symptoms, and several measures of anxiety symptoms, depressive symptoms, and functional impairment. Approximately 12–25% of anxious patients reported significant hoarding symptoms. Patients diagnosed with generalized anxiety disorder and obsessive-compulsive disorder were more likely to report significant hoarding symptoms than were those with panic disorder or specific phobia. Hoarding symptoms were positively correlated with trait anxiety, depressive symptoms, and functional impairment. These findings suggest that hoarding symptoms may be associated with anxiety disorders other than obsessive-compulsive disorder. The findings further suggest that hoarding symptoms may be underreported by anxious populations since typical intake assessments do not include specific questions about hoarding and individuals with hoarding symptoms may be unlikely to spontaneously report them.

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Hoarding is a poorly understood disorder that consists of acquiring and failing to discard a large number of possessions, resulting in clutter that interferes with the individual's ability to use his/her home (Frost & Gross, 1993; Frost & Hartl, 1996). Estimates of the prevalence of hoarding in the community range from 2% (Iervolino et al., 2009) to 5% (Samuels et al., 2008). In severe hoarding cases, clutter poses a safety hazard, increasing the risk of falling, fire, poor sanitation, and medical problems, especially among the elderly (Kim, Steketee, & Frost, 2001). For some, these safety hazards lead to threats of eviction, or removal of children or elderly from the home by government agencies (Tolin, Frost, Steketee, Gray, & Fitch, 2008). In a large scale survey, individuals with self-identified hoarding reported an average of 7 psychiatric work impairment days per month (Tolin, Frost, Steketee, Gray, et al., 2008), a figure that exceeds that found in most anxiety or depressive disorders, and is comparable to that reported by individuals with bipolar or psychotic disorders (Kessler & Frank, 1997). The majority of surveyed health officials reported receiving at least one complaint of hoarding during a 5-year period, with most of these cases being reported due to unsanitary conditions, and most being reported by neighbors (Frost, Steketee, & Williams, 2000); in three of these cases, hoarding was judged to directly contribute to death due to fire. A recent study by the City of San Francisco (San Francisco Task Force on Compulsive Hoarding, 2009) conservatively estimated that hoarding costs service providers and landlords in that city $6.4 million per year.

To date, most research on the treatment of hoarding has been predicated, explicitly or implicitly, on the assumption that hoarding is a subtype or dimension of obsessive-compulsive disorder (OCD), and therefore will respond to treatments that have proven effective for OCD. This assumption makes some sense based on findings that 18–33% of OCD patients report some degree of hoarding symptoms (Frost, Krause, & Steketee, 1996; Rasmussen & Eisen, 1989). However, treatments based on the assumption of a strong hoarding–OCD connection have yielded limited results. In many OCD trials, those with hoarding show diminished response to serotonergic antidepressants (Black et al., 1998; Mataix-Cols, Rauch, Manzo, Jenike, & Baer, 1999; Stein, Andersen, & Overo, 2007). In one exception, hoarding and non-hoarding OCD patients fared equally well in response to paroxetine (Saxena, Brody, Maidment, & Baxter,

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2007), although both groups demonstrated low rates of treatment response. Similarly, exposure and response prevention (ERP), considered the psychosocial treatment of choice for OCD (Koran, Hanna, Hollander, Nestadt, & Simpson, 2007), has produced less favorable results with hoarding patients, with hoarding symptoms predicting premature termination, poor treatment compliance, and poor treatment response (Abramowitz, Franklin, Schwartz, & Furr, 2003; Mataix-Cols, Marks, Greist, Kobak, & Baer, 2002).

This general failure of effective treatments for OCD to help patients with hoarding warrants a re-evaluation of the hoarding–OCD connection. Although hoarding symptoms and OCD symptoms correlate with one another in both clinical and nonclinical samples (Frost & Gross, 1993; Frost et al., 1996; Frost, Steketee, & Grisham, 2004), accumulating data suggest that hoarding might not be best conceptualized as a subtype of OCD (Pertusa et al., 2010). For example, the prevalence of hoarding is estimated to be equal to or greater than that of OCD (Iervolino et al., 2009; Samuels et al., 2008), as many as 83% of primary hoarding patients do not meet criteria for OCD (Frost, Steketee, Tolin, & Glossner, 2010) and hoarding symptoms correlate less strongly with OCD symptoms than with other symptoms such as depression (Wu & Watson, 2005).

High rates of comorbid major depression have been reported in OCD patients with hoarding, with two out of three studies reporting rates higher than 50% (Lochner et al., 2005; Samuels et al., 2002; Seedat & Stein, 2002). Anxiety disorders including social phobia (14–71%), generalized anxiety disorder (GAD; 23–39%), panic disorder (15%), agoraphobia (14%), specific phobia (26–29%), and separation anxiety (12%) have also been reported as comorbid conditions in OCD patients with hoarding symptoms (Lochner et al., 2005; Samuels et al., 2002). These studies were limited by recruiting participants with OCD who also reported hoarding symptoms, potentially excluding individuals with hoarding behaviors who did not meet criteria for OCD. Studies that have utilized clinical populations of compulsive hoarders support a relationship between hoarding behaviors and symptoms of anxiety and depression. One study (Frost et al., 2010) examined comorbidity in a sample of 217 individuals recruited for hoarding behaviors regardless of OCD symptoms. Results revealed a high prevalence of comorbid conditions including OCD (18%), major depression (53%), generalized anxiety disorder (24%), and social phobia (24%). These findings suggest that hoarding symptoms may co-occur with several types of anxiety symptoms.

Despite their apparently high prevalence, hoarding symptoms may be underreported in clinical settings. Structured and unstructured diagnostic interviews typically do not include an assessment of hoarding symptoms. Furthermore, individuals with hoarding often have poor insight into their problem (Christensen & Greist, 2001; Tolin, Fitch, Frost, & Steketee, 2010) and may be unlikely to spontaneously report these symptoms. Accordingly, assessment of hoarding symptoms in samples seeking treatment for other psychiatric disorders is necessary to help clarify the comorbidity of these problems.

The primary aim of the current study was to assess the prevalence of hoarding symptoms in individuals presenting for treatment of anxiety (but not hoarding) complaints. In addition, we explored whether hoarding symptoms occur more frequently in patients with specific anxiety diagnoses. Given findings of comorbidity in hoarding samples (Frost et al., 2010), we predicted that patients with GAD and social phobia would show higher levels of hoarding than would those with OCD.

Since hoarding symptoms have been associated with greater impairment and poorer prognosis among OCD patients, we also examined the relationship between hoarding symptoms, severity of illness, and level of impairment in anxious populations. Because depression frequently co-occurs with hoarding and anxiety symptoms, depressive symptoms were controlled while examining these relationships. We predicted that the presence of hoarding would be associated with greater illness severity and impairment, and that this association would remain significant when controlling for level of depression.

1. Method

1.1. Participants

Participants included 130 consecutive adult outpatients who presented to the Anxiety Disorders Center at the Institute of Living for treatment of anxiety-related problems (other than hoarding) between January 2004 and February 2006. Individuals who sought treatment at the ADC for hoarding-related problems (i.e., during an initial telephone screen, hoarding was identified as a reason for seeking treatment) were not included in the present analyses.

1.2. Measures

The *Saving Inventory-Revised* (SI-R; Frost et al., 2004) is a 23-item self-report measure with established reliability and validity. Three mutually exclusive subscales assess clutter, difficulty discarding, and compulsive acquisition and a sum of all items yields a total score. Internal consistency, test-retest reliability, convergent and divergent validity have been established (Frost et al., 2004). The measure has also demonstrated specificity in distinguishing individuals with vs. without hoarding behaviors, such that individuals from each group rarely fell within one standard deviation of the mean for the other group (Frost et al., 2004). Internal consistency with the present sample was excellent ($\alpha = .92$).

The *Beck Depression Inventory-II* (BDI-II; Beck, Steer, & Brown, 1996) is a 21-item self-report measure designed to assess symptoms of depression. Internal consistency, test-retest reliability, and concurrent validity have been established. Internal consistency for the current sample was excellent ($\alpha = .92$).

The *Beck Anxiety Inventory* (BAI; Beck, Epstein, Brown, & Steer, 1988) is a 21-item self-report measure designed to assess distress associated with common symptoms of anxiety with established reliability and validity. Internal consistency for the current sample was excellent ($\alpha = .94$).

The *State-Trait Anxiety Inventory-Trait Version* (STAI-T; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) is a 20-item self-report measure designed to assess trait anxiety symptoms. Internal consistency, test-retest reliability, and concurrent validity have been established (Spielberger et al., 1983). Internal consistency for the current sample was excellent ($\alpha = .92$).

The *NIMH Clinician's Global Impression* (CGI; Guy, 1976) is a clinician-rated measure designed to assess severity of global illness. Test-retest reliability ranges from .78 to .81 (Dahlke, Lohaus, & Gutzmann, 1992). Validity of the CGI is demonstrated by strong correlations with clinician-rated anxiety and depression symptoms (Leon et al., 1993).

The *Clinical Global Impression-Self-Report* (CGI-SR) is a self-report adaptation of the CGI. The psychometric properties of the self-report version have not been established. The majority (79%) of patients score within one point of the therapist's ratings, although overall correlations between self- and therapist-rated CGI are moderate. However, the CGI-SR does correlate significantly with other self-ratings of depression, anxiety, and impairment, suggesting its utility as an overall index of patient perception of clinical severity (Hannan & Tolin, 2007).

The *Sheehan Disability Inventory* (SDS; Leon, Shear, Portera, & Klerman, 1992) is a self-report measure designed to assess levels of disability in work, social/leisure, and family life/home functioning. Good reliability and validity have been reported for the SDS (Leon

et al., 1992). Internal consistency for the current sample was fair (α = .63).

The *Anxiety Disorders Inventory Schedule for DSM-IV* (ADIS-IV; Brown, DiNardo, & Barlow, 1994) is a semi-structured interview designed to assess DSM-IV anxiety, mood, and substance use disorders. The ADIS-IV has good to excellent reliability for the majority of anxiety and mood disorders, with kappa coefficients ranging from .56 to .86 (Brown, DiNardo, Lehman, & Campbell, 2001). Raters in this clinic were trained to criterion in the use of the ADIS-IV, with the requirement of 100% diagnostic match and within 1 point clinical severity rating with a previously trained rater on three interviews.

1.3. Procedure

All participants signed an informed consent form prior to the start of the study. Primary presenting complaints were identified during a preliminary telephone screen (typically 15–30 min), conducted by graduate students in clinical psychology. During these calls, prospective patients were asked basic questions about the nature of their concerns, and in-person interviews were scheduled. Participants completed a self-report questionnaire packet at home 1–7 days prior to their diagnostic evaluation at the clinic. Upon arriving at the clinic, they participated in a clinical interview conducted by clinical psychology graduate students or postdoctoral fellows under the supervision of a licensed psychologist utilizing the ADIS-IV. The supervising psychologist also met with participants to confirm diagnostic impressions. After the interview, clinicians rated global severity of illness on the CGI. Diagnoses and CGI ratings required agreement by both assessing clinicians.

Cutoff scores for significant hoarding symptoms on the SI-R were established from an ongoing study (Frost, Steketee, & Tolin, unpublished data) by constructing receiver operating characteristic (ROC) curves distinguishing individuals meeting proposed diagnostic criteria for hoarding (Frost & Hartl, 1996) (n = 74) from a community control sample (n = 58). In each case, the area under the curve (AUC) was significant, clutter (AUC = .975), difficulty discarding (AUC = .947), acquiring (AUC = .915), total score (AUC = .988), all $ps < .05$. We selected scores that maximized sensitivity and specificity (i.e., where sensitivity and specificity meet) for the 3 SI-R subscales as well as the total score. Cutoff scores were as follows: clutter 17 (sensitivity .932, specificity .931), difficulty discarding 14 (sensitivity .919, specificity .862), acquiring 9 (sensitivity .892, specificity .759), and total score 41 (sensitivity .959, specificity .931).

1.4. Data analyses

The prevalence of hoarding symptoms across each diagnostic group was examined by calculating the percentage of each group above clinical cutoffs on the SI-R. Chi square analyses, with *post hoc* examination of standardized residuals, of those scoring above or below cutoff on the SI-R total and subscale scores were conducted. Kruskal–Wallis H tests, with Mann–Whitney U *post hoc* comparisons, were conducted to explore group differences in hoarding symptom severity using the SI-R as a continuous measure. The relationships between hoarding symptom severity and symptoms of anxiety and depression, as well as global severity and functioning, were examined using Spearman's rho (ρ) correlations due to skewed distributions of scores. Due to the large number of correlation coefficients, we conservatively set α = .01. To control for the possibility that depressive symptoms accounted for impairment in functioning, we conducted partial correlations controlling for BDI-II scores to examine the relationship between the severity of hoarding symptoms and global severity of illness and impairment.

2. Results

2.1. Sample description

Mean participant age was 36.4 years (SD = 13.0). The majority were female (56.9%) and White (88.3%). Five diagnostic groups were included based on their primary (most severe) diagnosis: panic disorder with or without agoraphobia (n = 31, 23.8%), specific phobia (n = 15, 11.5%), social phobia (n = 27, 20.8%), OCD (n = 36, 27.7%), and GAD (n = 21, 16.2%). Thirty-seven individuals (28.5%) were diagnosed with one comorbid anxiety disorder and five individuals were diagnosed with two comorbid anxiety disorders. Approximately 19% were also diagnosed with a comorbid depressive disorder.

Examination of the proportion of patients exceeding clinical cutoffs on the SI-R subscales indicated that 17 patients (13.1%) reported significant clutter in their homes, 24 (18.5%) reported difficulty discarding possessions, and 34 (24.6%) had significant acquisition problems (see Table 1). Sixteen (12.3%) scored above the cutoff on the total score. Forty-six (35.4%) scored above cutoffs on 1 or more SI-R subscales, 17 (13.1) on 2 or more, and 10 (7.7%) on all three. Hoarding severity did not correlate significantly with patient age (ρ = .04, p = .587).

Table 1 shows the prevalence of hoarding symptoms across each diagnostic group. Chi square analyses revealed that participants diagnosed with GAD were more likely to report significant hoarding symptoms than were those diagnosed with panic disorder or specific phobia; 29% of GAD patients scored above the clinical cutoff on the SI-R total score, compared to 17% of OCD patients, 15% of social phobia patients, and none of the panic disorder or specific phobia patients. Although OCD and GAD groups were equally likely to exceed cutoff scores on 1 or more SI-R subscale, only 6% of OCD patients exceeded cutoffs on all 3 of the core features of hoarding, compared to 24% of GAD patients.

Group differences in hoarding symptom severity using the SI-R as a continuous measure are shown in Table 2. Results revealed significant group differences in severity of difficulty discarding, clutter, and overall hoarding severity. Follow-up pairwise compar-

Table 1
Number (percentage) of anxiety-disordered patients with significant hoarding symptoms according to the Saving Inventory-Revised (SI-R).

Primary diagnosis	n	SI-R scale				>1 SI-R subscale	>2 SI-R subscales	All 3 SI-R subscales
		Acquisition	Difficulty discarding	Clutter	Total			
Panic disorder	31	6 (19.4%)	3 (9.7%)	2 (6.5%)	0 (0.0%)	9 (29.0%)	2 (6.5%)	0 (0.0%)
Specific phobia	15	1 (6.7%)	1 (6.7%)	0 (0.0%)	0 (0.0%)	2 (13.3%)	0 (0.0%)	0 (0.0%)
Social phobia	27	6 (22.2%)	5 (18.5%)	4 (14.8%)	4 (14.8%)	9 (33.3%)	3 (11.1%)	3 (11.1%)
OCD	36	12 (33.3%)	8 (22.2%)	5 (13.9%)	6 (16.7%)	17 (47.2%)	6 (16.7%)	2 (5.6%)
GAD	21	7 (33.3%)	7 (33.3%)	6 (28.6%)	6 (28.6%)	9 (42.9%)	6 (28.6%)	5 (23.8%)
Total sample	130	32 (24.6%)	24 (18.5%)	17 (13.1%)	16 (12.3%)	46 (35.4%)	17 (13.1%)	10 (7.7%)
χ^2 (4)		5.48	6.40	7.98	12.39*	6.51	8.39	12.19*

OCD = obsessive-compulsive disorder; GAD = generalized anxiety disorder.
* $p < .05$.

Table 2
Mean (standard deviation) scores on the Saving Inventory-Revised (SI-R) for patients diagnosed with anxiety disorders.

Primary diagnosis	*n*	SI-R scale			
		Acquisition	Difficulty discarding	Clutter	Total
Panic disorder	31	4.23 (3.90)	5.45 (4.73)[a]	5.00 (6.21)[a]	19.64 (8.07)[a]
Specific phobia	15	4.53 (3.14)	4.53 (6.38)[a]	3.13 (3.83)[a]	17.27 (8.59)[a]
Social phobia	27	5.52 (5.81)	6.96 (6.48)	8.44 (8.52)[b]	24.19 (17.67)
OCD	36	6.47 (5.51)	9.56 (6.64)[b]	9.78 (9.29)[b]	28.19 (16.39)[b]
GAD	21	8.38 (7.29)	10.57 (8.02)[b]	10.62 (10.74)[b]	32.52 (21.29)[b]
Total sample	130	5.82 (5.47)	7.62 (6.70)	7.73 (8.57)	24.76 (15.96)
Kruskal–Wallis *H* test [χ^2 (4)]		5.90 (p = .206)	14.12 (p = .007)	11.66 (p = .020)	11.30 (p = .023)

OCD = obsessive-compulsive disorder, GAD = generalized anxiety disorder.
Note: within each column, groups with different subscripts are significantly different from one another, $p < .05$.

Table 3
Correlations between anxiety, depression, global symptom severity, and impairment with hoarding symptom severity (n = 130).

Measure	SI-R scale			
	Acquisition	Difficulty discarding	Clutter	Total
STAI	.28**	.30**	.28**	.29**
BAI	.08	−.09	.06	.04
BDI	.34**	.30**	.23**	.33**
CGI (self-report)	.20*	.10	.14	.14
CGI (clinician)	.18	.20*	.19*	.19*
SDS (work)	.17	.05	.28**	.21*
SDS (social)	.20**	.22**	.15	.17
SDS (family)	.34**	.37**	.34**	.35**

SI-R = Saving Inventory-Revised, STAI = Spielberger State-Trait Anxiety Inventory, BAI = Beck Anxiety Inventory, BDI = Beck Depression Inventory, CGI = Clinical Global Impressions, SDS = Sheehan Disability Scale.
* $p < .05$
** $p < .01$.

isons indicated that patients with OCD and GAD reported higher levels of difficulty discarding, clutter, and overall hoarding severity than did patients with panic disorder or specific phobia; in addition, patients with social phobia reported more clutter than did those with panic disorder or specific phobia. Groups did not differ on reported acquiring symptoms.

2.2. Relationships between hoarding, anxiety, and depression

As shown in Table 3, severity of hoarding symptoms was significantly ($p < .01$) and positively correlated with trait anxiety and depressive symptoms, but not with anxiety symptoms as measured by the BAI. There was a general pattern of significant positive correlations of all SI-R scales with social and family impairment; clutter also correlated significantly with work impairment. Global impairment (CGI) rated by participants and by clinicians correlated significantly but modestly with SI-R hoarding symptoms.

Partial correlations controlling for BDI-II scores (see Table 4) revealed that family impairment continued to correlate significantly ($p < .01$) with difficulty discarding, clutter, and total SI-R scores (but not with acquiring) when controlling for severity of depression. Work and social impairment no longer correlated significantly with hoarding symptoms when controlling for depression.

Table 4
Partial correlations between compulsive hoarding symptoms and severity of illness and impairment, controlling for depression (Beck Depression Inventory-II).

Measure	SI-R scale			
	Acquisition	Difficulty discarding	Clutter	Total
SDS (work)	.10	−.02	.16	.10
SDS (social)	−.01	.08	.02	.20
SDS (family)	.14	.26**	.25**	.24**

SI-R = Saving Inventory-Revised, CGI = Clinical Global Impression, SDS = Sheehan Disability Scale.
** $p < .01$.

3. Discussion

Although the present sample of patients seeking treatment for anxiety disorders did not report hoarding as a presenting problem during the initial telephone screen, upon direct questioning approximately 12–25% reported significant symptoms of hoarding, especially acquiring and to a lesser extent difficulty discarding and clutter. This finding suggests that serious hoarding symptoms may go unnoticed among individuals seeking treatment for anxiety disorders. The presence of hoarding symptoms was associated with higher levels of anxious and depressive symptoms, greater illness severity, as well as more impairment in work, social, and family domains. Even when controlling for depressive symptoms, clinic patients with hoarding symptoms continued to report more family impairment and global severity of illness than did those without hoarding symptoms. Thus, comorbid depression does not appear to account for the higher levels of impairment observed in hoarding patients. Reluctance to report symptoms associated with such serious impairment suggests that clinicians should inquire about hoarding in patients presenting with anxiety disorders, not only those with OCD but also those with GAD and social phobia.

The current study is consistent with previous ones (Frost et al., 2010; Lochner et al., 2005; Samuels et al., 2002) that suggest that hoarding symptoms often co-occur with a range of anxiety disorders including GAD, OCD, and social phobia. The high prevalence of significant hoarding symptoms among GAD patients suggests that hoarding symptoms are not uniquely associated with OCD. One potential explanation for the relationship may be that both problems seem to involve some degree of negative problem orientation. Specifically, GAD patients tend to exhibit poor confidence in their problem-solving abilities (regardless of actual problem-solving skill level) and a low sense of personal control over the problem-solving process (Ladouceur, Blais, Freeston, & Dugas, 1998), as well as difficulty tolerating uncertainty (Dugas, Freeston, & Ladouceur, 1997). Similar concerns have been reported among patients with hoarding symptoms (Tolin, Brady, & Hannan, 2008), and comport with the indecisiveness considered by many to be an associated feature of hoarding that interferes with organization and discarding (Steketee, Frost, & Kyrios, 2003; Timpano, Exner, Rief, Brähler, & Wilhelm, 2010).

The present results raise questions about the extent to which hoarding should be conceptualized as a subtype of OCD. On one hand, previous studies have found significant correlations between hoarding symptoms and OCD symptoms in both clinical and non-

clinical samples (Frost & Gross, 1993; Frost et al., 1996, 2004), and some might argue that the doubting, checking, and reassurance seeking when attempting to discard objects are analogous to the obsessions and compulsions seen among those with OCD (Rasmussen & Eisen, 1992). On the other hand, although hoarding and OCD symptoms do correlate with one another, these correlations are weaker than are those seen among the "classic" OCD symptoms such as washing, checking, and ordering (Abramowitz, Wheaton, & Storch, 2008; Wu & Watson, 2005), and are weaker than the correlation between hoarding and depression (Wu & Watson, 2005). The relative failure of OCD-specific treatments such as serotonergic antidepressants (Black et al., 1998; Mataix-Cols et al., 1999; Stein et al., 2007) and exposure with response prevention (Abramowitz et al., 2003; Mataix-Cols et al., 2002) in hoarding patients further highlights the problem of including hoarding and OCD under the same diagnostic umbrella. While there is an unexplored possibility that patients in the present study who endorsed hoarding symptoms also suffered from subclinical OCD symptoms, the same argument could be made that many also suffered from subclinical GAD symptoms.

In general, then, the present results add to a growing body of data suggesting that hoarding "stands apart" from OCD symptoms. One potential solution might be to alter the diagnostic criteria for OCD so that they better account for hoarding symptoms. Another possibility, currently under consideration for DSM-5 (American Psychiatric Association, 2010), is to conceptualize hoarding as a separate condition that frequently co-occurs with several anxiety disorders (Pertusa et al., 2010).

The current study also revealed a relationship between hoarding symptoms and family impairment. Previous studies have demonstrated that familial alienation and frustration are common in hoarding families (Tolin, Frost, Steketee, & Fitch, 2008). One likely explanation is that the presence of excessive clutter in the home becomes a stressor to family members and disturbs relationships. Another is that some isolated and disenfranchised individuals develop excessive attachments to inanimate objects as a replacement for, or a means of avoiding, interpersonal contact. Unfortunately, the available data do not enable us to discern the nature of this relationship.

One limitation of the current study is the reliance upon self-report measures to determine the presence of clutter and other hoarding symptoms. The guidelines that participants use to define significant clutter may vary widely. Therefore, it is possible that some individuals in the current study may have reported that significant clutter even though their homes may be usable because they possess a high standard for defining clutter in their homes. This limitation highlights the importance of including clinical interviews (Tolin, Frost, & Steketee, 2010) and pictorial measures (Frost, Steketee, Tolin, & Renaud, 2008) to improve the detection of true hoarding problems.

Another limitation is the fact that the SI-R, while showing good sensitivity and specificity in distinguishing hoarding patients from community controls, maps imperfectly onto the proposed diagnostic criteria for hoarding which, as noted previously, include not only excessive acquisition, difficulty discarding, and clutter, but also significant distress or impairment in functioning (American Psychiatric Association, 2010; Frost & Hartl, 1996). Future investigations of hoarding symptoms among anxious populations should include questions to clearly determine the amount of distress and impairment associated with hoarding symptoms and the degree to which those symptoms affect functioning and overall severity of psychopathology.

Finally, it should be noted that the present sample was relatively small, and consisted of patients seeking treatment at a specialty anxiety disorders clinic. The extent to which the present results generalize to the larger population is therefore unclear, and awaits examination in epidemiological research using a complete diagnostic interview.

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