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**BEHAVIOUR
RESEARCH AND
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Hoarding, compulsive buying and reasons for saving

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Abstract

Two studies examined hypotheses about compulsive hoarding, compulsive buying and beliefs about saving and discarding derived from the cognitive-behavioral model of compulsive hoarding [Frost, R. O. and Hartl, T. (1996). A cognitive behavioral model of compulsive hoarding. *Behaviour Research and Therapy*, 34, 341–350.]. Study 1 examined the hypotheses in a college student population, while study 2 compared members of a support group for hoarding and clutter-related problems with a nonclinical control. Across studies the hypotheses were supported. Compulsive hoarding was associated with compulsive buying and the frequency of acquisition of possessions discarded by others, suggesting that compulsive acquisition may be a broader construct than compulsive buying among people with hoarding problems. Regarding its association with OCD symptoms, hoarding was most closely associated with the impaired mental control features of OCD. Finally, in a hoarding-related task, hoarding was associated with a greater frequency of reasons to save, but was not associated with fewer reasons to discard a target possession. © 1998 Elsevier Science Ltd. All rights reserved.

Keywords: Compulsive hoarding; Compulsive buying

1. Introduction

Compulsive hoarding has been defined as the “acquisition of, and failure to discard, possessions which appear to be useless or of limited value” (Frost and Gross, 1993, p. 367) and occurs in about one quarter to one third of all OCD cases (Frost et al., 1996). This definition differs from that provided in DSM-IV (APA, 1994) in that it emphasizes the importance of acquisition as part of the phenomena of compulsive hoarding. While there is little research on

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this aspect of hoarding, there is a recent body of literature on compulsive buying which may be related. Compulsive buying has been defined as buying behavior that is ‘uncontrollable’ and ‘significantly distressing, time consuming, or resulting in social or financial difficulties’ (McElroy et al., 1994, p. 242). It has been estimated to occur in approximately 1.1 to 5.9% of the population (Faber and O’Guinn, 1989, 1992) and can lead to severe disruption in the lives of those affected. Compulsive buying has been conceptualized almost exclusively as an impulse control disorder. McElroy et al. (1994) have suggested, however, that compulsive buying is part of a compulsive–impulsive spectrum. In three case studies, they found that compulsive buyers suffered from recurrent and intrusive urges to buy which were accompanied by mounting anxiety. Buying, which occurred in response to these urges, was seen as an attempt to neutralize the anxiety and discomfort experienced by the shopper. This pattern closely resembles the sequence of thoughts and behaviors associated with obsessive–compulsive disorder (OCD), wherein a behavior (i.e. compulsion) is performed in order to neutralize the discomfort associated with an intrusive thought (i.e. obsession). In view of this similarity, one purpose of the present study was to determine whether compulsive buying was associated with OCD symptoms.

In our first series of studies on compulsive hoarding (Frost and Gross, 1993), we found anecdotal and empirical evidence that people who hoard possessions buy extra food, household supplies and toiletries in order never to be caught without them. We have also observed excessive buying of items that are aesthetically pleasing, rather than utilitarian (i.e. gifts purchased with no one in mind to give them to). In light of this and the similarities between compulsive buying and OCD, we hypothesized that compulsive buying also would be associated with compulsive hoarding.

In our recent model of compulsive hoarding (Frost and Hartl, 1996), we hypothesized that a set of beliefs about possessions arises during decision-making that leads the hoarder to save indiscriminately in order to prevent the occurrence of a negative outcome. Beyond this theorizing, however, little is known about the thoughts which accompany hoarding behaviors. In earlier studies, reasons for hoarding were categorized by type of motivation: instrumental or sentimental (Frost and Gross, 1993). Another way to categorize reasons for hoarding is to examine whether they focus on saving or discarding. For instance, compared to non-hoarders, do people who hoard think more about why they should save something, or less about why they should throw it away, or both? We generated an imagery-based technique to study the frequency of ‘saving’ thoughts and ‘discarding’ thoughts and their relationship to hoarding and to intentions to discard. The first study employed an undergraduate sample and the second compared self-identified hoarders to community controls.

2. Study 1

2.1. Methods

2.1.1. Subjects

161 female college students (age range 17–23) completed a packet of questionnaires for which they received a chance to win \$50.

2.1.2. Measures

The measures included the Hoarding Scale, the Compulsive Buying Scale the Magazine/Newspaper Questionnaire and the Padua Inventory. The *Hoarding Scale* is a 24-item scale that assesses agreement (1 = strongly disagree; 5 = strongly agree) with the following types of items: “I have trouble throwing things away” and “I am worried I may throw things away that later I will find valuable” and “I have saved so much stuff that it is too much to manage”. This scale has been found to be a reliable and valid measure of hoarding behaviors in student, community and clinical samples (Frost and Gross, 1993; Frost et al., 1995, 1996).

The *Compulsive Buying Scale* contained 11 items derived from previous research and theoretical models of compulsive buying. Subjects rated how true (1 = not at all, 7 = very much) each of the following types of items was for them: “How often do you buy things you never use?” and “How often do you feel compelled to buy something (e.g. a good bargain) even though you don’t need the object?” and “How often do you feel anxious or depressed when you don’t buy something you really wanted?”. In addition to items concerning compulsive buying, two items were included which reflected the acquisition of free items: “How often do you pick things up that other people have discarded?” and “How often do you look through other people’s trash (e.g. dumpsters) for things to bring home?”. In the present sample the Compulsive Buying Scale had adequate reliability ($\alpha = 0.88$); scores ranged from 12 to 73 with a mean of 35.3 and a standard deviation of 12.4.

The *Magazine/Newspaper Questionnaire* designed for this study measured thoughts that occur in a hoarding-related context. The instructions ask subjects to imagine that they have purchased a magazine or newspaper, kept it for a month (a week for the newspaper) and have read some, but not all, the articles. Subjects are asked to consider whether to keep or discard the magazine or newspaper, as well as the extent to which they are likely to have particular thoughts. Reasons to save included 9 thoughts summed across separate magazine and newspaper parts of the questionnaire. Examples of these items include: “I may lose something important by throwing it away”, “If I throw it away, I might not remember what was there” and “I will feel uncomfortable if I throw it away”. Nine reasons to discard, summed across the two parts of the questionnaire, included items such as: “To keep this would require too much room”, “I can always find something else to substitute” and “If I keep it, it will just clutter up my room”. In addition, subjects indicated the value they were likely to assign to this item (value) and the likelihood they would discard it (intention to discard). All questions contained 7-point response continua. Internal consistency for the present sample indicated that the reason to save ($\alpha = 0.90$) and reason to discard ($\alpha = 0.91$) measures were highly reliable.

The *Padua Inventory* (Sanavio, 1988) is a general measure of OCD-symptomatology containing 4 subscales: impaired control over mental activity, contamination, checking and urges and worries of losing control over motor behaviors. It is a reliable scale and has been shown to have adequate validity (Sternberger and Burns, 1990; van Oppen, 1992).

Because of the number of correlations calculated in this study, we used $p < 0.001$ as the level of significance in the correlational analyses.

2.2. Results and discussion

Although previous research reported associations between the Hoarding Scale and various measures of obsessive compulsive symptoms among college students (Frost and Gross, 1993; Frost et al., 1995), no studies have reported correlations with the Padua Inventory. As Table 1 shows, the impaired mental control subscale showed the largest correlation, followed by the urges scale. The contamination scale and the checking scale were not significantly correlated with the Hoarding Scale. These findings suggest that hoarding may be related to a specific subset of OCD symptoms.

Consistent with the hypothesis that compulsive buying is related to OCD, the Compulsive Buying Scale was significantly and positively correlated with three of the four subscales of the Padua (see Table 1). It too showed the most substantial correlation with the impaired mental control scale ($r = 0.48$, $p < 0.001$). Thus, impaired control over mental activity appears to be most closely associated with compulsive hoarding and buying. Sanavio (1988, p. 172) described this scale as reflecting a lowered “ability to remove undesirable thoughts, [and] difficulties coping with simple decisions and doubts...”. This is consistent with earlier studies and theorizing that have emphasized the role of indecisiveness and decision-making problems in compulsive hoarding (Frost and Gross, 1993; Frost and Hartl, 1996). As hypothesized, the compulsive buying scale was also significantly and positively correlated with the Hoarding Scale ($r = 0.48$, $p < 0.001$).

The two items on the compulsive buying scale that referred to the acquisition of free items were examined separately. The item “How often do you pick things up that other people have discarded?” was significantly correlated with the Hoarding Scale ($r = 0.36$, $p < 0.001$) and two subscales of the Padua (impaired mental control, $r = 0.30$, $p < 0.001$; urges, $r = 0.46$, $p < 0.001$). As might be expected in this population, the item about picking things out of dumpsters showed too little variability to be useful here (88% of subjects selected 1 on the 1 to 7 scale). It appears then, that compulsive acquisition of free things was related to compulsive hoarding as well.

Table 1
Correlations between the Hoarding Scale, Compulsive Buying Scale and MNQ measures and symptoms of OCD on the Padua Inventory for 160 students

	Padua subscales			
	impaired mental Ctl	contamination	checking	urges
Hoarding scale	0.48*	0.20	0.25	0.30*
Compulsive buying	0.48*	0.36*	0.28*	0.24
RS	0.52*	0.38*	0.40*	0.22
RD	0.00	-0.10	0.06	0.12
Value	0.33*	0.33*	0.27	0.02
ID	-0.29*	-0.29*	-0.14	0.00

RS = reasons to save, RD = reasons to discard, ID = intention to discard.

* $p < 0.001$.

Table 2
Correlations among the measures from the Magazine/Newspaper Questionnaire ($n = 160$)

	RS	RD	Value	ID
RS		-0.10	0.72*	-0.68*
RD			-0.18	0.44*
Value				-0.70*

RS = reasons to save, RD = reasons to discard, ID = intention to discard.

* $p < 0.001$.

Correlations among the Magazine/Newspaper Questionnaire measures indicated that reasons to save were not correlated with reasons to discard (see Table 2), but rather were strongly positively correlated with the value assigned to the objects and negatively correlated with the intention to discard the objects. Reasons to discard were not correlated with value but were positively correlated with intention to discard. Not surprisingly, value assigned to the object was strongly negatively correlated with the intention to discard it.

We sought to determine whether intention to discard was accounted for by saving or by discarding thoughts, or by both. We therefore conducted a stepwise multiple regression analysis with intention to discard as the criterion and frequency of reason to save thoughts and reason to discard thoughts as predictors. Both contributed significantly and independently to the equation predicting the intention to discard (save thoughts beta = -0.64 and discard thoughts beta = 0.40), together accounting for 62% of the variance in intention to discard ($F[2, 1441] = 121.0, p < 0.001$).

As the correlations in Table 3 show, the Hoarding Scale was significantly and positively related to reasons to save, but not reasons to discard. The Hoarding Scale was also positively correlated with the value assigned to the objects and negatively correlated with the intention to discard them. A somewhat similar pattern was evident for the compulsive buying scale which was moderately correlated with the reasons to save and the value assigned to the objects.

Finally, the hoarding-task measures were examined in relation to the Padua scores (see Table 1). Reasons to save were positively correlated with 3 of the 4 Padua scores, while the reasons to discard were not. Of note was the substantial correlation between reasons to save and impaired mental control. Ratings of the value of the objects were positively correlated with two Padua scales (impaired mental control and contamination), while the intention to discard was negatively correlated with impaired mental control and contamination. Thus, while both

Table 3
Correlations of the Hoarding Scale and Compulsive Buying Scale with reasons to save, reasons to discard, value and the intention to discard from the Magazine/Newspaper Questionnaire ($n = 160$)

	RS	RD	Value	ID
Hoarding scale	0.63*	-0.02	0.44*	-0.45*
Compulsive buying	0.33*	0.20	0.27*	-0.18

RS = reasons to save, RD = reasons to discard, ID = intention to discard.

* $p < 0.001$.

reasons to save and reasons to discard contributed to the intention to discard, only the reasons to save measure was correlated with the Hoarding Scale and the Padua subscales. It would appear from these data that compulsive hoarders think more about reasons to save things, but they do not think less about reasons to discard them.

Overall, these findings provide support for the hypothesis that compulsive buying is associated with obsessive compulsive symptoms, and for the hypothesis that compulsive hoarding is associated with compulsive buying. It should be cautioned that these findings come from a sample of college females. While previous research has shown relevant findings using these populations (Frost and Gross, 1993; Frost et al., 1995), it is important to establish whether or not these findings extend to more clinical populations. In order to do this, a second study in a more clinical population was undertaken.

3. Study 2

In study 2, members of a self-help organization for people with clutter and hoarding problems were compared to a nonclinical control group. Based on the findings of study 1, we hypothesized that hoarding subjects would score higher on the Padua Inventory, the Hoarding Scale, the Compulsive Buying Scale and the reasons to save measure. They were also expected to place higher value on items in an imagery task and report less intention to discard them.

3.1. Methods

Fourteen self-identified hoarders from a self-help group for people with clutter problems volunteered to participate (4 males, 9 females and one subject who did not complete the gender question). Five of the hoarding subjects reported having received a diagnosis of OCD. The nonhoarding group consisted of 13 non-faculty employees of a small New England college (3 males and 10 females) who were randomly selected from a staff directory. Preliminary analyses indicated that the hoarding group (mean age = 55.7) was significantly older than the nonhoarding group (mean age = 43.5), $F(1, 25) = 8.4$, $p < 0.01$. Consequently, all analyses reported here are analyses of covariance controlling for age. All subjects completed the same battery of questionnaires used in study 1.

3.2. Results and discussion

Analysis of the Hoarding Scale indicated that the hoarding subjects reported significantly more hoarding behaviors than the nonhoarders (see Table 4). The difference between the means on the hoarding scale was nearly 3 standard deviations indicating that the hoarding subjects clearly displayed more hoarding behavior. They also reported significantly higher levels of compulsive buying than the nonhoarders (see Table 4). The hoarding subjects more often picked things up that other people discarded, $F(1, 23) = 8.54$, $p < 0.01$ and showed a trend to report more trashpicking than the nonhoarding subjects, $F(1, 23) = 2.96$, $p < 0.10$.

With respect to OCD symptoms, interestingly, and consistent with the findings of study 1, the hoarders reported significantly more impaired control over mental activity (see Table 4) than nonhoarders but did not differ on any of the other subscales of the Padua (see Table 4).

Table 4
Adjusted cell means and standard deviations ($N = 27$)

	Mean (SD)		ANCOVA	
	hoarder $n = 14$	non-hoarder $n = 13$	F -value	P -value
Hoarding Scale	87.6 (14.2)	48.1 (13.0)	47.8	0.001
Compulsive Buying Scale	44.5 (15.5)	26.4 (11.3)	9.5	0.01
Padua Inventory				
Impaired control over mental activity	19.4 (16.1)	4.6 (6.3)	8.0	0.01
Contamination	6.0 (5.7)	7.6 (5.0)	< 1.0	ns
Checking behavior	6.4 (7.1)	3.2 (2.6)	< 2.0	ns
Urges	1.7 (1.8)	0.7 (1.3)	1.9	ns
Magazine/Newspaper Questionnaire				
Reasons for saving	69.8 (24.1)	42.7 (17.6)	8.4	0.01
Reasons for discarding	62.3 (18.5)	70.2 (28.8)	0.4	ns
Intent to discard	7.7 (3.3)	11.5 (1.8)	7.7	0.01
Perceived value of object	6.7 (2.7)	3.2 (2.6)	7.0	0.02

As hypothesized, hoarding subjects gave more reasons to save than nonhoarding subjects, but they did not give fewer reasons to discard (see Table 4). Hoarding subjects rated the objects as having more value, and they indicated having less intention to discard than nonhoarding subjects.

3.3. General discussion

Findings from both studies supported the hypothesis that compulsive buying is associated with compulsive hoarding. Among college women and people with identified hoarding problems versus a community control, compulsive buying was more prominent among people who hoard. This finding strengthens the argument that acquisition should be considered part of the definition of compulsive hoarding (Frost and Hartl, 1996). In addition to compulsive buying, there was some evidence that the acquisition of free things, in this case things other people have discarded, was also associated with compulsive hoarding. Further research is needed to more carefully explore this component of compulsive acquisition. In our experience, other types of acquisition such as handouts at lectures, free newspapers and unclaimed magazines at the local post office often are acquired by compulsive hoarders. A careful analysis of whether these types of acquisition are different from compulsive buying or whether compulsive buying is but one manifestation of a broader phenomenon of compulsive acquisition is warranted.

These findings provide evidence that compulsive buying is associated with symptoms of OCD. While McElroy et al. (1994) have suggested a link between the two, few studies have examined this hypothesis. In study 1, the compulsive buying measure was correlated with three out of the 4 Padua subscales, providing the first evidence of such a relationship in a college population.

The findings of these 2 studies suggest that both hoarding and compulsive buying are most closely associated with concerns about impaired control over mental activity. Recent studies have reported that hoarding symptoms in OCD form separate factors (Leckman et al., 1997) or clusters (Calamari et al., 1997). The findings of the present study suggest that both hoarding and compulsive buying may relate most closely to one feature of OCD (impaired mental control). Problems with removing unwanted thoughts and decision-making may be one link between OCD and impulse control disorders (McElroy et al., 1994). Frost and Hartl (1996) suggest that problems with decision-making are a central component of hoarding.

Although reasons to save and reasons to discard are both related to the intention to discard an item, only the reasons to save differentiated hoarders from nonhoarders. Hoarders gave more reasons to save an item than nonhoarders, but they did not give fewer reasons to discard it. This suggests that the nature of beliefs which may drive hoarding behavior have more to do with thoughts about saving things than with thoughts about why things should be discarded. This may have implications for cognitive restructuring tasks for compulsive hoarders. Rather than trying to get hoarders to generate more reasons to discard possessions, therapy may need to focus on getting them to reduce their reasons to save.

There was considerable consistency in the findings about hoarding across two relatively distinct populations (college females and people seeking help for hoarding-related problems). Such convergence has been found in other studies on hoarding that have used both student and community/clinical samples (Frost and Gross, 1993; Frost et al., 1996) and supports the conclusions of Burns et al. (1995) about the utility of nonclinical samples in studying OCD-related phenomena.

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