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Written imaginal exposure for hoarding disorder: A preliminary pilot study

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Abstract

Hoarding disorder (HD) is marked by difficulty discarding possessions. Many refuse treatment or dropout, which may be due to treatment's incorporation of in-home decluttering, which is feared and avoided. Thus, strategies to prepare patients for decluttering/discarding are needed. Imaginal exposure (IE), or imagining one's worst fears about discarding, could be one such strategy. This pilot preliminarily tested a short-duration IE intervention compared to a control intervention. Over three days, adults diagnosed with HD ($N = 32$) were randomly assigned to either write about and imagine their worst fears about discarding (IE Condition) or a neutral topic (Control Writing [CW] Condition). The IE Condition showed significant improvements in HD symptoms from pre-intervention to one-week follow-up, with medium to large effects; however, the CW Condition did as well. Comparing change scores between conditions, the IE Condition's improvements were not significantly different than the CW Condition's. Overall, IE was helpful in improving HD symptoms, but this pilot did not indicate that it was more helpful than control writing. This raises important questions about possible demand characteristics, placebo effects, or regression to the mean; and it has implications for the design and methodology of other studies assessing IE's utility.

Keywords: hoarding disorder; imaginal exposure; cognitive behavioral therapy; writing

Written imaginal exposure for hoarding disorder: A controlled pilot study

Hoarding disorder (HD) is a common and debilitating mental illness that causes personal disability and poses significant health and safety risks (APA, 2014; Tolin et al., 2008). It is marked by difficulty discarding possessions, which results in clutter that often makes living spaces unusable (APA, 2014; Tolin et al., 2008). Cognitive behavioral therapy (CBT) improves symptoms of HD for many (Tolin et al., 2015), but a considerable proportion refuse treatment (44%; Steketee et al., 2010) or drop out of treatment prematurely (10-29%; Steketee et al., 2010; Saxena et al., 2011). In addition to primary symptoms around difficulty discarding, people with HD have a host of other concomitant difficulties such as sleep disturbance and poor nutrition (Frost et al., 2012; Mahnke et al., 2021). Research is needed to develop alternative approaches for helping people with HD who are not ready to engage in CBT or who do not have access to it.

Imaginal exposure is an intervention strategy shown to improve symptoms of worry, anxiety disorders, and OCD (Abramowitz, 2018; Robichaud & Dugas, 2015). It involves repeatedly evoking mental images of feared and avoided scenarios for sustained periods to practice tolerating (vs avoiding) uncomfortable emotions and concerns. Imaginal exposure is can be used alongside or as a stepping stone to engaging in in-vivo (i.e., "real life") exposure (Whiteside et al., 2022), in part because it is more tolerable to imagine a feared scenario than to confront one in-vivo. The combination of imaginal and in-vivo can be superior to in-vivo alone (Abramowitz, 1996; Hunt & Fenton, 2007), although expert clinicians advise against stopping with *only* an imaginal exposure when in-vivo is also possible (Gillihan et al., 2012; Emmelkamp, 2004). One situation especially appropriate for imaginal exposure is when the fear is far in the future and cannot logically be disconfirmed (e.g., one is punished for discarding a receipt now needed for their taxes; Gillihan et al., 2012). Thus, imaginal exposure may be useful alongside

gold-standard interventions like in-vivo exposure. Despite suggestions from CBT researchers that imaginal exposure could reduce hoarding behaviors (Tolin, Frost, & Steketee, 2007), imaginal exposure's impact on HD remains unknown.

There are many modalities to facilitate imaginal exposure, including through writing, recording audio, or speaking with a therapist. All of these have elicited significant symptom improvements in anxiety disorders and OCD, as well as in underlying processes (e.g., emotional avoidance; Berman et al., 2021; Foa et al., 1980; Fracalanza et al., 2014). Certain studies have found that *varying* the imagined feared scenario is beneficial (Lang & Craske, 2000), while others have found that consistent exposure to the same feared scenario is preferable (Sloan et al., 2005). It has been suggested that complex mental images (e.g., picturing a several-minute feared scenario) are more amenable to repetition while simple images (e.g., picturing a snake) are more amenable to varied content (Fracalanza et al., 2014); picturing imagined discarding scenario entails more complex mental imagery.

Imaginal exposure is often included as part of evidence-based CBT practices (Dugas & Robichaud, 2007). Only a few studies have examined imaginal exposure as standalone techniques, and the methods used in these studies have varied considerably – from, for GAD, twelve one-hour therapy sessions (Provencher et al., 2004) to five 30-minute writing sessions (Goldman et al., 2007). Indeed, researchers have called for the need to test a range of procedural variants to determine which variation yields the greatest impact (Fracalanza et al., 2014).

A previous non-controlled case series found preliminary evidence in support of imaginal exposure for HD (Fracalanza et al., 2021), which was demonstrated to be feasible, useful, and associated with symptom improvement. This initial case series used the same written imaginal exposure approach described in the present study (i.e., writing about a feared discarding scenario

for 20 minutes per day on three consecutive days), with the exception that this previous study

was administered in an in-person group format rather than remotely. This suggested that

imaginal exposure for HD merited further clinical investigation, with a controlled pilot study

being a sensible next step.

Based on these previous studies, the present study investigates whether written imaginal

exposure yields greater improvement in HD symptoms, particularly self-reported difficulty

discarding, compared to a control writing condition. This study also explores the impact of

imaginal exposure on two underlying HD processes: emotional avoidance and intolerance of

uncertainty, both of which have been associated with HD (Wheaton et al., 2016; Wheaton et al.,

2011). Emotional avoidance is the unwillingness to endure unpleasant internal experiences,

which can lead to attempts to suppress negative affect (Berman et al., 2010), and exposure to

such unpleasant affect via imaginal exposure may help to reduce emotional avoidance.

Intolerance of uncertainty is the tendency to exhibit negative responses to uncertain situations,

which may underlie a difficulty making decisions about which items to discard. Indeed, HD

patients commonly report saving possessions because they are unsure if the items will be needed

in the future (Wheaton et al., 2016). Tolerating the distress of uncertainty via imaginal exposure

may help reduce intolerance of it.

The present study is the first known randomized controlled pilot trial to test imaginal

exposure for HD. If imaginal exposure yields significant symptom improvement that surpasses

that of control writing, this would provide evidence of imaginal exposure as a promising novel

treatment for HD. If it yields non-significant symptom change or change equivalent to that of

control writing, this would fail to demonstrate efficacy of imaginal exposure for HD and could

speak to either exploration of alternative novel approaches, or to the need for future studies of imaginal exposure for HD to use a different instructional approach than that used here.

Method

Participants

Interested individuals were invited to participate if they were over 18; diagnosed with HD via the SCID-5-RV HD module administered by postdoctoral psychologists or psychiatrists (First et al., 2015); reported clinically significant hoarding symptoms (Saving Inventory Revised [SIR] score ≥ 41); and had clutter that impaired living conditions as assessed via clinician-rated videoconferencing (Clutter Image Rating [CIR] score ≥ 4). Participants were excluded if they were at risk of suicide (Columbia Suicide Severity Rating Scale [C-SSRS] ≥ 3; Posner et al., 2011) or currently in CBT for HD. Psychotropic medication was allowed if the dose was stable for at least 4 weeks (8 weeks for fluoxetine) before study start. In total, 64 individuals were screened, and 37 met inclusion criteria. Five people screened dropped out before completing study measures, providing a final sample of 32 adults with HD.

Demographic information about the sample can be found in Table 1. The sample was predominantly female (87%), with a mean age of 52.91 ($SD = 13.79$; range 22-73). The mean SIR score ($M = 62.50$, $SD = 12.45$) of participants in the current study was comparable to that of other clinical HD samples (e.g., Kellman-McFarlane et al., 2019; Tolin et al., 2010). Most were recruited via online advertisements (83%), while others were recruited by invitation if they had participated in a prior study with the lab and indicated interest in additional studies.

Measures

To increase sensitivity to weekly change, all self-report questionnaires instructed participants to reflect on their experiences "in the past week."

HD Measures

The **Saving Inventory Revised** (SIR; Frost et al., 2004) is the "gold standard" self-report measure of hoarding symptom severity, comprised of three subscales: clutter severity, difficulty discarding, and excessive acquisition. It has excellent internal consistency and good test-retest reliability. A single composite score ranges from 0 to 92, with higher scores indicating greater severity. Internal consistency in the present study was good, $\alpha = .93$.

The **Saving Cognitions Inventory** (SCI; Steketee et al., 2003) is a self-report measure of beliefs related to discarding possessions, e.g., over-responsibility for items and reliance on items for memory. It includes cognitions across four subscales: emotional attachment to items, over-responsibility for items, reliance on items for memory, and need for control over items. The SCI has demonstrated good internal consistency (Steketee et al., 2003) and is a significant predictor of hoarding behaviors (Wheaton et al., 2011). A single composite score ranges from 24 to 168. Internal consistency in the present study was good, $\alpha = .96$.

The **Compulsive Acquisition Scale** (CAS; Frost et al., 2002) is a self-report measure of the degree to which one feels compelled to acquire possessions. The CAS has good reliability and discriminates compulsive buyers from controls (Frost et al., 2002, Kyrios et al., 2004). A single composite score ranges from 18 to 126. Internal consistency in the present study was good, $\alpha = .96$.

The **Clutter Image Rating Scale** (CIR; Frost et al., 2008) is a rating of home clutter, administered virtually by independent evaluators. On a scale of 1-9, degree of clutter is matched to one of nine photographs depicting various levels of clutter; this is done for several rooms in the home. A score of 4 or more in a room indicate clinically significant clutter requiring clinical attention. The CIR has demonstrated high internal consistency, test-retest reliability, and inter-

rater reliability (Frost et al., 2008). Here, a CIR Total score was calculated by averaging the room scores of the three types of rooms that all participants had (a kitchen, a living room, and a bedroom), for a composite score that ranges from 1 to 9.

Transdiagnostic Process Measures

The **Intolerance of Uncertainty Scale** (IUS; Buhr & Dugas, 2002) is a self-report measure of distress in the face of uncertainty. It has demonstrated excellent internal consistency, good test-retest reliability, and construct validity (Sexton & Dugas, 2009). A single composite score ranges from 27 to 135, with higher scores indicating greater intolerance. Internal consistency in the present study was good, $\alpha = .98$

The **Acceptance and Action Questionnaire-II** (AAQ-II; Hayes et al., 2004; Bond et al., 2011) is a 7-item measure of emotional avoidance. The AAQ-II has shown good internal consistency, reliability, and convergent validity (Bond et al., 2011). A single composite score ranges from 7 to 49, with higher scores indicating greater emotional avoidance. Internal consistency in the present study was good, $\alpha = .95$

Procedure

Random Assignment to Experimental Conditions

Participants were randomly assigned to the Imaginal Exposure Condition (IE; $n = 17$) or the Control Writing (CW; $n = 15$) Condition. Participants in both conditions wrote for 20 minutes on three consecutive days, based on a meta-analysis showing that 15 or more minutes of writing over three or more days has significant and large positive effects on a range of psychological outcomes, while writing for fewer days has smaller effects (Frattaroli, 2006). Participants were sent writing instructions daily, on the three consecutive days, via a link.

Instructions noted that participants were required to stay focused on their assigned writing topic, write at least 250 words, and that the writing must be timestamped for at least 20 minutes.

Writing Procedures

Imaginal Exposure (IE). The IE writing instructions were similar to those from prior research on written IE for generalized anxiety and worry, wherein participants are asked to write about their worst-case scenario coming true in the first person, present tense, and with reference to their emotional experiences, thoughts, and sensations (Fracalanza et al., 2014; Goldman et al., 2007). Instructions were modified from this prior research to ask participants to write about their worst case scenario related to discarding a possession(s), to ensure relevance to HD concerns specifically. For example, "I donated a jacket that I really like, and now that it's getting cold, I need to spend money that I don't have just to replace it. I'm so anxious about spending money and feel angry at myself for parting with it." Per prior research on optimizing the effectiveness of brief IE (e.g., Fracalanza et al., 2014), participants wrote about the same scenario on all three days. These instructions were also previously used in an initial case series on IE for HD (Fracalanza et al., 2021).

Control Writing (CW). The control group was asked to write about what they would do if they found out that they had a day off. They were asked to write in a factual manner, with no references to emotions or opinions, as per the control procedure in other written imaginal exposure studies (e.g., Frattaroli, 2006; Goldman et al., 2007). For example, "I get up in the morning and check my emails. I respond to the many unread messages. Then I get my things ready and head out to the beach. I decide to walk there." All participants wrote about their assigned topics, as reviewed by two independent evaluators (KF and TA).

Assessments

Participants completed the same battery of self-report questionnaires immediately before writing on Day 1 (pre), immediately after writing on Day 3 (post), and on Day 10, one week after the intervention (follow-up). The battery included HD measures (SIR, SCI, CAS, CIR) and transdiagnostic process measures (IUS, AAQ-II). To examine longer-term impact, pre to follow-up was examined.

Interaction with Study Staff

Study staff first interacted with participants through Zoom during the screening process (at which time study staff explained the study procedures to participants) and whenever participants required assistance with study tasks. Throughout the study, study staff and participants maintained regular email communication.

Results

We tested whether written imaginal exposure (the IE Condition) improved HD symptoms and related processes relative to control writing (the CW Condition). Pre and follow-up scores on all measures, in both conditions, are shown in Table 2.

To test whether these pre to follow-up changes were significant in each of the two conditions, we used paired-sample t-tests. Examining pre to follow-up change scores in HD symptoms in the IE Condition, we found significant improvements in SIR-Total, SIR-DD, CAS, and CIR scores, $ps < .030$, though non-significant improvement in SCI score, $p = .053$. However, unexpectedly, we also found significant improvements in the CW Condition on these measures, including on the SCI, $p = .012$. Examining pre to follow-up change scores in transdiagnostic processes in the IE Condition, we found no significant improvements, $ps > .086$. However, unexpectedly, we found significant improvements in the CW Condition on the IUS and AAQ-II, $ps < .011$. These findings are shown in Table 3.

To compare these symptom changes between conditions, we conducted a one-way ANCOVA to determine if there was a significant difference between conditions (IE vs CW) on the follow-up score for each measure (e.g., the follow-up SIR score), controlling for the pre score for each measure (e.g., the baseline SIR score). We found that improvements did not significantly differ between the IE Condition and the CW Condition on any of our measures. These findings are summarized in Table 3 for all measures and for SIR score specifically in Figure 1.

Discussion

The present study was a pilot to explore whether imaginal exposure – a technique that has shown utility in improving worry and anxiety disorders (Deacon & Abramowitz, 2004; Fracalanza et al., 2014) – could be useful in improving HD symptoms and transdiagnostic processes (e.g., avoidance of emotion) in people with HD. A previous case series had found promising results for this approach (Fracalanza et al., 2021). This is the first study to assess imaginal exposure (IE) for HD compared to a control writing condition.

We found that from pre-to-post in the IE Condition, there were significant improvements in several HD symptoms and related processes (with medium to large effects); however, the same was true in the Control Writing (CW) Condition, and when comparing pre-to-post change scores between conditions, improvements were no greater in the IE Condition than in the CW Condition. Overall, results suggest that although patients in both groups showed symptom improvement, IE worked no better than control writing. We discuss the implications of these pilot findings below.

These general improvements in HD symptoms aligned with previous findings on imaginal exposure for HD (Fracalanza et al., 2021), but results failed to indicate that confronting

the mental imagery of discarding – the core fear in people with HD – and its associated emotions

reduces difficulties discarding any more than neutral, unrelated writing. This is inconsistent with

exposure therapy for anxiety disorders and OCD, which has demonstrated that facing fears –

whether in real life (i.e., in-vivo exposure) or in the imagination (i.e., imaginal exposure) – helps

improve symptoms associated with that anxiety much more than control approaches (Deacon &

Abramowitz, 2004; Foa & McLean, 2016). Surprisingly, IE did not yield significant

improvement on intolerance of uncertainty or emotional avoidance, which had been tested as

potential mechanisms through which IE might work.

      Four interesting possibilities arise from these results. First, the unexpected symptom

reduction in the control group may derive from methodological confounds such as regression to

the mean, demand characteristics, common factors like attention from knowledgeable

professionals, or expectancy effects (Kazdin, 2003; Price et al., 2008). If so, this serves to

reinforce the importance of control groups for methodological rigor.

      Second, it could be that the writing itself, separate from its topic, was helpful for HD.

Clinical trials testing the efficacy of emotion-related writing interventions for other disorders

have sometimes found that control writing conditions improve symptoms as much as the

experimental intervention (e.g., Baikie et al., 2012; see Qian et al., 2020 for review), and the

effects of such interventions are more apparent in studies that included a no writing control

condition. This has led previous researchers to suggest that trials include experimental writing,

control writing, *and* no writing conditions in order to best capture the effects of an intervention

(Qian et al., 2020). The present study's control writing could have been particularly likely to

yield positive results, as participants writing about a day off may have thought about the things

they most enjoy rather than working, which could have elicited positive mood and been briefly

therapeutic. Accordingly, future studies may wish to compare imaginal exposure writing to a no writing control condition.

Third, IE may only be measurably impactful when administered with other approaches, such as within a full course of CBT for HD. Perhaps IE as an augmentation to CBT boosts the potency of the treatment, or perhaps it helps people to engage in in-vivo exposures that they would otherwise refuse because it feels too difficult or overwhelming to do. In clinical practice, this is often how imaginal exposure helps (Moscovitch et al., 2009). IE may also be more effective when verbally administered with a therapist, such as reading aloud a script, and future studies testing its efficacy may wish to use this approach. Indeed, previous researchers have called for the need to test a range of procedural variants to determine which variation of imaginal exposure yields the greatest impact (Fracalanza et al., 2014), and perhaps the version as delivered in the present study is not "high dose" enough.

Fourth, IE may simply not be helpful for HD symptoms. Decades of research have found it helpful for anxiety and OCD, but its benefits for other disorders are less clear (e.g., eating disorders; Butler & Heimberg, 2020). People with HD may not extract expected benefits from imaginally facing their worst discarding-related fears. Indeed, the relationship between hoarding and anxiety is still unclear, with some research suggesting that neither anxiety sensitivity nor intolerance of uncertainty relate to hoarding symptoms (though they may relate to hoarding-related cognitions; Ayers & Dozier, 2015; Grisham et al., 2018). If anxiety is not a core contributor to the maintenance of HD, then imaginal exposure approaches - generally used to address disorders of anxiety - may accordingly not be efficacious for HD. However, more testing is needed before determining this.

There were several limitations to this study, some of which may account for the non-significant difference between conditions. These include the small sample and the limited "dose" of IE; future studies may wish to recruit larger samples and/or to increase duration of the writing. Future studies may further improve the potency of imaginal exposure by increasing the "emotional valence" of the writing, e.g., by encouraging participants to delve deeper into their emotional experience while writing. This could look include practices such as reading the imaginal script aloud repeatedly with a clinician, or voice recording the script and then listening to recordings between sessions. In the present study, writing instructions remained consistent across days, but future studies could have participants write about different feared scenarios on different days. It is also noteworthy that this study was conducted entirely remotely and in the context of the global COVID-19 pandemic, and it is unclear how this may have impacted results, as the consequences of engaging remotely vs in-person are unknown.

Conclusions

Overall, people with HD are an underserved population with high rates of dropout and/or refusal from the gold standard CBT treatment, and thus the exploration of low-investment and low-therapist-intensive interventions for them is of great interest. This study did not find that written imaginal exposure over three days yields greater improvement in HD symptoms than control writing does. At the same time, both IE and control writing conditions showed significant pre to follow-up changes. Thus, these findings support continued exploration of the utility of novel interventions for HD, and the potential of imaginal exposure though using a different approach. For example, virtual reality discarding may offer a more immersive approach to make feared discarding scenarios more real. Or, having a patient do in-vivo discarding (e.g., throw out an old cookbook) alongside imaginal writing about a chain of events that culminate in a core fear

(e.g., forgetting how to cook) may be more effective than applying either approach separately.

Preparing people for in-vivo discarding and re-engaging people who would otherwise refuse

discarding altogether remain important obstacles to tackle.

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Figure Legends and Table Titles

Figure 1. *SIR Score Change from Pre to Follow-up (IE vs. CW Condition)*

Table 1. *Sample Characteristics by Condition (n=32)*

Table 2. *Means and Standard Deviations on HD Symptoms and Processes by Condition (n=32)*

Table 3. *Change Score Comparison Between Written Imaginal Exposure (IE; n=17) and Control Writing (CW; n=15) Conditions*

Figure 1

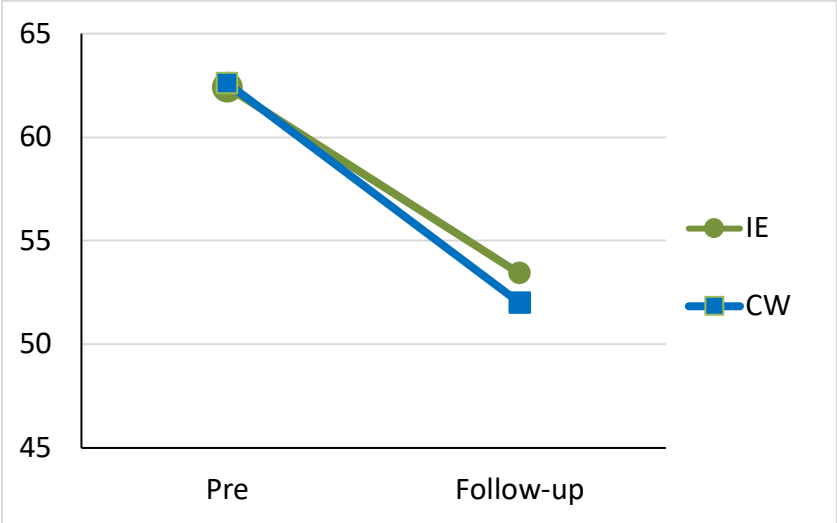*SIR Score Change from Pre to Follow-up (IE vs. CW Condition)*

Table 1

Sample Characteristics by Condition (n=32)

Characteristic	Imaginal Exposure (IE) ($n = 17$)	Control Writing (CW) ($n = 15$)
Age in years [a] - M (SD)	56.94 (10.74)	48.33 (15.71)
Sex - Frequency (%)		
Female	14 (82%)	14 (93%)
Male	3 (18%)	1 (7%)
Race/Ethnicity - Frequency (%)		
White	8 (47%)	10 (67%)
Black	-	-
East Asian	4 (24%)	4 (27%)
Southeast Asian	-	-
Latin American	3 (18%)	-
Mixed Race	2 (12%)	-
Other Ethnicity	-	1 (7%)
Highest Education - Frequency (%)		
High School Diploma	-	3 (20%)
College Diploma	6 (35%)	-
Bachelor's Degree	6 (35%)	10 (67%)
Master's Degree	2 (12%)	-
Doctoral Degree	1 (6%)	1 (7%)
Other	2 (12%)	1 (7%)
Employment Status - Frequency (%)		
Not working (including student)	5 (29%)	2 (13%)
Employed (full or part-time)	9 (53%)	9 (60%)
Retired	3 (18%)	4 (27%)
Marital Status - Frequency (%)		
Single	6 (35%)	9 (60%)
Married/Common-law	9 (53%)	4 (27%)
Divorced	2 (12%)	2 (13%)
Widowed	-	-

Table 2

Means and Standard Deviations on HD Symptoms and Processes by Condition (n=32)

Measure	Time	Imaginal Exposure (IE) (*n* = 17)	Control Writing (CW) (*n* = 15)
Saving Inventory Revised (SIR) Total Score	Pre	62.41 (13.22)	62.60 (11.97)
	Follow-up	53.41 (16.87)	52.00 (14.05)
Saving Inventory Revised (SIR-DD) Difficulty Discarding Subscale	Pre	20.65 (4.46)	20.13 (4.19)
	Follow-up	18.06 (5.52)	17.47 (5.59)
Saving Cognitions Inventory (SCI)	Pre	96.76 (35.47)	99.87 (36.33)
	Follow-up	86.88 (45.04)	77.33 (42.83)
Compulsive Acquisition Scale (CAS)	Pre	62.88 (29.59)	57.93 (27.68)
	Follow-up	56.76 (30.47)	47.47 (23.52)
Clutter Image Rating	Pre	3.88 (1.46)	3.82 (1.72)
	Follow-up	3.39 (1.51)	3.38 (1.55)
Intolerance of Uncertainty Scale (IUS)	Pre	68.47 (31.63)	72.27 (28.86)
	Follow-up	65.06 (33.27)	65.47 (30.21)
Acceptance and Action Questionnaire (AAQ-II)	Pre	24.94 (12.40)	28.33 (10.93)
	Follow-up	22.06 (12.47)	22.13 (11.87)

Table 3

Change Score Comparison Between Written Imaginal Exposure (IE; n=16) and Control Writing (CW; n=15) Conditions

Measure	Condition	Mean % Decrease	Within-Condition Pre- to Follow-up Comparison+	Cohen's d	Between-Condition Comparison
SIR	IE	14.42	$t = 3.84, p = .001$*	0.93	$F = 0.15, p = .697$
	CW	16.93	$t = 3.21, p = .006$*	0.83	
SIR-DD	IE	12.54	$t = 2.64, p = .018$*	0.64	$F = 0.01, p = .934$
	CW	13.25	$t = 2.89, p = .012$*	0.75	
SCI	IE	10.21	$t = 2.09, p = .053$	0.51	$F = 2.01, p = .167$
	CW	22.56	$t = 2.93, p = .011$*	0.76	
CAS	IE	9.73	$t = 2.39, p = .029$*	0.58	$F = 1.14, p = .294$
	CW	18.07	$t = 2.32, p = .036$*	0.60	
CIR	IE	12.63	$t = 3.64, p = .002$*	0.88	$F = 0.04, p = .843$
	CW	11.63	$t = 3.00, p = .010$*	0.78	
IUS	IE	4.98	$t = 1.10, p = .285$	0.27	$F = 0.69, p = .413$
	CW	9.41	$t = 2.96, p = .010$*	0.76	
AAQ-II	IE	11.56	$t = 1.83, p = .087$	0.44	$F = 1.55, p = .222$
	CW	21.88	$t = 3.61, p = .003$*	0.93	

Note. Mean % Decrease = pre to follow-up symptom decrease by condition, as a percentage of baseline score. +Calculated using paired t-tests. IE = Imaginal Exposure; CW = Control Writing; SIR = Saving Inventory Revised – Total Score; SIR-DD = Saving Inventory Revised – Difficulty Discarding Subscale; SCI = Saving Cognitions Inventory; CAS = Compulsive Acquisition Scale; IUS = Intolerance of Uncertainty Scale; AAQ-II = Acceptance and Action Questionnaire; CIR = Clutter Image Rating. * indicates significant change at p<.05.