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Title

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Permalink

<https://escholarship.org/uc/item/0fh7g026>

Journal

Clinical Gerontologist, 44(5)

ISSN

0731-7115

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Publication Date

2021-10-20

DOI

10.1080/07317115.2020.1742833

Peer reviewed



Published in final edited form as:

Clin Gerontol. 2021 ; 44(5): 562–566. doi:10.1080/07317115.2020.1742833.

The Association between Age and Experienced Emotions in Hoarding Disorder

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Abstract

Objectives: Hoarding disorder (HD) is conceptualized as a fear-based disorder and exposure to sorting/discarding possessions is a core part of treatment. However, there has been no investigation of age-related differences in emotional reaction to sorting. The objective of this study was to explore the association between age and affective response during a sorting task.

Methods: Forty-nine adults with HD completed a standardized sorting task. Participants reported their current emotion before and after the sorting task and reported their subjective distress throughout the task.

Results: Older participants reported significantly lower distress ratings. Only 43% of participants reported fear prior to the task and 22% reported fear after the task. The probability of reporting fear before and after the task decreased significantly with age.

Conclusions: Fear may not be the emotion experienced when discarding items, particularly for older adults with HD. Future work should focus on mechanisms of action in HD treatment.

Clinical Implications: Clinicians should not assume fear or anxiety to be the primary emotional response in older adults with HD when engaged in an exposure to sorting/discarding. Older hoarding patients with a more fear-oriented aversion to sorting possessions may require a treatment emphasis on increasing the percentage of items discarded.

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Keywords

Hoarding disorder; affective response; aging; older adults; assessment

Introduction

A central facet of the current theoretical model for hoarding disorder (HD) is that individuals with hoarding experience distress with sorting and discarding their possessions (Frost & Hartl, 1996). Subsequently, current treatments for HD rely heavily on exposure therapy to decrease avoidance of sorting/discarding (Williams & Viscusi, 2016). This is especially true for older adults; the most efficacious treatment for geriatric hoarding to date involves at least 20 sessions of exposure (Ayers et al., 2018b). However, there has been limited investigation of the range of emotions experienced by HD patients while sorting their own possessions and there has been no investigation of age-related differences in emotional reaction to sorting.

Several studies have begun to examine the extent of negative emotions experienced by individuals with HD during sorting/discarding tasks. These tasks typically involve having participants rate levels of negative emotions, including levels of distress (Frost, Ong, Steketee, & Tolin, 2016; Levy, Nett, & Tolin, 2019a), sadness/regret (Levy et al., 2019a; Levy, Stevens, & Tolin, 2019b; Tolin, Kiehl, Worhunsky, Book, & Maltby, 2009; Tolin et al., 2012), fear/anxiety (Levy et al., 2019b; Tolin et al., 2009, 2012), indecisiveness (Tolin et al., 2009, 2012), and “not just right” (Tolin et al., 2009, 2012).

Although these studies increased extant knowledge on the negative affective processes HD patients experience while sorting, none of the tasks mirrored the experience of sorting during treatment. The tasks involved sorting only paper items (Levy et al., 2019a; Tolin et al., 2009, 2012), sorting only up to five items (Frost et al., 2016), or sorting using a computer task (Levy et al., 2019b); furthermore, several tasks took place in fMRI scanners (Levy et al., 2019b; Tolin et al., 2009, 2012). In contrast, typical exposure sessions for hoarding last much longer and involve a wide range of possessions.

Finally, none of the studies explored age-related differences in affective response or examined positive emotions. Hoarding symptoms tend to increase over a person’s lifespan (Cath, Nizar, Boomsma, & Mathews, 2017; Dozier, Porter, & Ayers, 2016), and this increase may be driven by increased difficulty discarding possessions (Cath et al., 2017). Furthermore, there is a body of literature that suggests age differences between younger and older adults in perception and recognition of negative emotions, such that older adults may perceive self-report emotion terms more positively than younger adults (Ready, Santorelli, & Mather, 2017). Within the context of HD, changes over the lifespan may alter a person’s perception of their own symptoms and their emotional response to exposure exercises involving making decisions about one’s possessions. Understanding if age is associated with affective response to sorting would inform treatment development and refinement for geriatric hoarding. Thus, the current investigation aimed to 1) explore age-related differences in affective response and 2) explore the full range of affective response to sorting during a typical exposure used in treatment for HD.

Methods

Participants

The current study utilized a subset of baseline data from 49 participants enrolled in an ongoing treatment study for veterans diagnosed with HD. Participants ranged in age from 26 to 83 (mean age: 60.55, $SD = 10.94$) and were mostly male (65%), White (59%), and currently single (67%). Study procedures were approved by the local Institutional Review Board and all participants provided written informed consent. Participants received 20 USD in compensation for completing the assessment. Participants were required to have a primary diagnosis of HD and were excluded if they had a psychotic or substance abuse disorder, reported a history of neurodegenerative disease, had active suicidal ideation, or were receiving psychotherapy for HD or exposure therapy for any disorder. Hoarding disorder was diagnosed using the Structured Interview for Hoarding Disorder (SIHD; Nordsletten et al., 2013).

Procedure

Items for the sorting task were gathered during the home visit portion of the baseline assessment with the assistance of the assessor. The sorting task was administered during the second part of the baseline assessment, which took place at the VA hospital. The assessor explained that the purpose of the task was to sort the items, one at a time, until all of the items were sorted or fifteen minutes had elapsed, whichever came first. Subjective Units of Distress (SUDS) ratings were explained to the participant and the assessor assisted the individual in filling in five idiographic anchor points on a SUDS hierarchy. The assessor prompted the participant to rate their SUDS from 0 (“least amount of distress”) to 100 (“most amount of distress”) every 60 seconds for the duration of the sorting task.

Prior to and following completion of the sorting task, participants were asked to identify their current emotional state. To facilitate awareness of the range of possible emotions, participants were presented with a sheet of paper with seven commonly recognized emotions (i.e., Anger, Contempt, Disgust, Fear, Joy, Sadness, Surprise; Matsumoto & Ekman, 2008). Participants were allowed to report multiple emotions and/or to report a different emotion word than the ones presented to them. The emotion words reported by participants were grouped into superordinate emotion categories by the first author (e.g., “happiness” was re-coded as “joy” and “anxious” was re-coded as “fear”) in order to facilitate analysis.

Data analysis

All analyzes were performed using Stata version 13.0 (StataCorp, 2013). For SUDS scores, within-session habituation (WSH) was calculated as the difference between the peak and the final distress scores (Kozak, Foa, & Steketee, 1988). Because of previous studies’ focus on levels of anxiety and distress, *t*-tests were conducted to examine differences between participants who reported feeling a fear-related emotion prior to the sorting task and participants who reported an emotion not related to fear. Age differences in emotional response to the task was analyzed using a zero-order correlation between age and Peak SUDS reported during the task and logistic regression analyzes in which age was entered

as a predictor of whether or not the participant reporting a fear-based emotion pre- and post-task.

Results

Participants sorted for an average of 9.12 minutes ($SD = 5.17$, range: 1–15) and sorted an average of 5.6 items a minute ($SD = 2.99$, range: 1.50–15). The average peak SUDS was 46 ($SD = 24.84$, range 0–100) was reported most frequently at time zero ($n = 20$; 41%). Participants reported a significant decrease in SUDS (average WSH = 17.78, $SD = 20.52$, range: 0–90; $t(48) = 5.85$, $p < .001$). Participants sorted an average of 47 items during the sorting task ($SD = 33.76$, range: 6–140) and were able to discard an average of 51% of items sorted ($SD = 19.82$, range: 0–100). 39% of items participants sorted were paper (e.g., cards, receipts, old bills) and 78% of participants sorted at least some paper items. Overall, paper items were more likely to be discarded than non-paper items (62% vs. 39%; $X^2(1) = 112.71$, $p < .001$).

Participants reported the following pre-task emotions: Fear ($n = 21$; 43%), Joy ($n = 13$; 27%), Surprise ($n = 4$; 8%), Contempt ($n = 3$; 6%), Anger ($n = 3$; 6%), Disgust ($n = 1$; 2%), and Sadness ($n = 1$; 2%). Four participants listed more than one emotion before the task: Fear + Surprise + Joy, Fear + Contempt, Fear + Anger, Fear + Joy. Eight participants reported words that were not coded as emotions. Participants reported the following post-task emotions: Joy ($n = 24$; 49%), Fear ($n = 11$; 22%), Sadness ($n = 9$; 18%), Surprise ($n = 6$; 12%), Anger ($n = 2$; 4%), Contempt ($n = 2$; 4%), and Disgust ($n = 1$; 2%). Seven participants listed more than one emotion after the task: Sadness + Joy, Sadness + Surprise, Relief + Anxiety + Surprise, Joy + Surprise, Angry + Sadness, Fear + Joy, Contempt + Sadness + Disgust. Three participants reported words that were not coded as emotions. Reporting a fear-related emotion prior to the task was predictive of significantly higher SUDS during the task and a significantly lower percentage of items discarded (p s < .05; Table 1).

Age was significantly correlated with Peak SUDS ($r = -.28$, $p = .048$), such that older adults reported lower levels of overall distress during the task. Older adults were significantly less likely to report a fear-based emotion both before the sorting task ($OR = .92$, $SE = .03$, $Z = -2.56$, $p = .010$) and after the sorting task ($OR = .93$, $SE = .03$, $Z = -2.00$, $p = .046$).

Discussion

Consistent with the conceptualization of HD as a fear-based disorder, fear was the most commonly reported emotion before the task. However, only 43% of participants reported a fear-related emotion prior to the task and 22% of participants reported a fear-related emotion following completion of the task. Older adults reported lower levels of distress and were less likely than younger adults to report fear as an emotion either before or after engaging in the sorting task. The results of the current investigation suggest that fear may not play as dominant a role in HD as previously thought (Mataix-Cols et al., 2010), especially for older adults.

Participants who reported experiencing a fear-related emotion discarded significantly fewer items than did participants who reported an emotion unrelated to fear during a typical exposure session for HD. This is consistent with previous research showing that reporting higher levels of the negative emotions was associated with discarding fewer items within participants with HD (Tolin et al., 2009, 2012). This suggests there may be two etiological paths for the development and maintenance of hoarding disorder: patients who avoid sorting because they are fearful of making the wrong decision and patients who avoid sorting because of other reasons yet to be established. The current study indicates that these potential etiologies may be identifiable through patients' reported affect when faced with the prospect of discarding their possessions. Such identification could lead to separate treatments tailored to patients' reported experience sorting items. This may be especially critical for older adults, for whom there was a decreased tendency to experience fear-based emotions related to sorting.

Fear recognition in general is often lower in older adults compared to younger adults (Abbruzzese, Magnani, Robertson, & Mancuso, 2019). Fear based conditions such as obsessive compulsive, anxiety, and trauma related disorders decrease in prevalence rates across the lifespan (Gum, King-Kallimanis, & Kohn, 2009; Hybels & Blazer, 2003; Karel, Gatz, & Smyer, 2012). However, this is in contrast with findings that HD symptoms increase with age (Cath et al., 2017). Despite these findings, older adults with HD do respond to exposure-based treatments (Ayers et al., 2018b).

There were several notable limitations in the current study. The emotional assessment and SUDS occurred at the initial treatment session of a larger treatment protocol. Therefore, the results may not generalize to non-treatment seeking individuals with hoarding disorder or emotions experienced at the completion of treatment. However, this aspect of the study provides ecological validity as participants reported their emotions and distress while in standard treatment for hoarding disorder. Similarly, participants were allowed to fill their box in a semi-supervised manner, similar to how treatment would proceed. Reactions to sorting may have been different had researchers proscribed participants to bring certain classes of items (e.g., all paper or all emotionally significant items).

In sum, anxiety and fear may not be universal drivers of hoarding symptomology across the lifespan. However, additional research is needed to determine how the affective presentation of older adults is related to treatment outcomes and whether an increased focus on components such as habit learning and cognitive flexibility could increase treatment efficacy. Finally, mechanisms of action in therapy for older adults with HD are poorly understood and should be further explored to optimize treatment.

Funding

This work was supported by the Health Services Research and Development [CLNA-005-14S].

Disclosure statement

This work was supported by the Clinical Science R and D Program of the Veterans Health Administration under a Merit Award (CLNA-005-14S) awarded to Catherine R. Ayers, Ph.D., ABPP. The contents do not reflect the views of the Department of Veterans Affairs or the United States Government. We have no known conflict of interests to disclose.

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Clinical implications

- Clinicians should not assume fear or anxiety to be the primary emotional response in older adults with hoarding disorder when engaged in an exposure to sorting/discarding.
- Older hoarding patients with a more fear-oriented aversion to sorting possessions may require a treatment emphasis on increasing the percentage of items discarded.

Table 1.

Comparison of participants who did and did not report feeling fear prior to sorting task.

	Mean (SD)		t	p
	Reported fear-related emotion (n = 21)	Reported something other than fear (n = 28)		
SUDS				
Peak	59.19 (25.74)	36.43 (19.39)	3.53	.001
Final	34.24 (20.53)	24.57 (18.15)	1.74	.044
WSH	24.95 (24.56)	12.39 (15.21)	2.20	.016
Behavioral				
# of Items Sorted	54.95 (27.83)	40.86 (36.93)	1.46	.075
% of Items Discarded	41.30 (16.76)	57.45 (19.35)	-3.06	.002
Speed of Sorting	5.39 (2.54)	5.69 (3.32)	-.35	.364

SUDS = Subjective Units of Distress; WSH = Within-Session Habituation (change from peak SUDS to final SUDS). Speed of sorting was calculated as items sorted per minute.