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RESEARCH ARTICLE

Anxiety, depression, and rejection towards parents among individuals who grew up in a hoarded home

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BACKGROUND: Limited research has investigated parent-child conflict and mental health among adult children of parents with hoarding problems.

METHODS: Four hundred fourteen participants who reported clinically significant parental hoarding completed assessments of parental hoarding characteristics (clutter, insight, difficulty discarding), feelings of rejection towards their parent, depression, and generalized anxiety.
These latter 3 variables were retrospectively rated across childhood (age 0 to 12), adolescence (age 13 to 20), young adulthood (age 21 to 29), and adulthood (age ≥30 years). Path analyses assessed mediated relationships.

RESULTS: More than one-half of respondents endorsed clinically significant generalized anxiety, and more than one-third endorsed clinically significant depressive symptoms across ages, with highest rates during adolescence. Parental insight was related to rejection across ages, and clutter was related to rejection from adolescence through adulthood. Rejection was significantly positively related to depressive symptoms and generalized anxiety in childhood and adolescence and to depressive symptoms in young adulthood. Poor insight was significantly indirectly related to depressive symptoms through rejection across childhood and adolescence and to generalized anxiety in childhood.

CONCLUSIONS: Results suggest that parental hoarding may be a risk factor for anxiety and depression. Feelings of rejection towards parents may account for the link between parental hoarding and psychological distress, particularly between poor insight and depressive symptoms.

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INTRODUCTION

Hoarding disorder (HD) is a prevalent, impairing psychological condition characterized by difficulty discarding items regardless of their actual value and an excessive accumulation of belongings.[1] Beyond the considerable impact of HD on occupational functioning and safety at home,[2-4] family relationships are among the most affected areas in this population, as HD has been associated with significant family conflict and decreased family functioning.[5-8] Indeed, family members of individuals with HD endorse feelings of rejection towards their family members that are consistent with those described by family members of individuals with schizophrenia and more than those of family members of individuals with obsessive-compulsive disorder (OCD).[8] Children of parents with HD are a particularly vulnerable group, because growing up in a severely cluttered home can have devastating consequences for the safety and emotional health of children, though very little research has addressed this population specifically.[7,9] The goal of this study was to investigate family processes and mental health in adults who grew up with parents with significant hoarding problems.

Only 2 studies have investigated children who grew up with parents with hoarding problems. One study found that, compared with individuals living in a significantly cluttered environment after age 21, those who lived in a hoarded home during childhood report a less happy childhood and more strained relationships with their parents.[8] Further, those with significant clutter in their home prior to age 10 reported a less happy childhood, more difficulty making friends and with social life, and more strained parent-child relationships.[8] In the only other study evaluating adult children of parents with significant hoarding, Park et al[7] found that insight and family functioning were directly related to parent-child attachment relationships, and family functioning significantly mediated the relationship between insight, hoarding severity, and parent-child relationships. Research has not investigated the mental health of children of parents with HD, however. Although research in this domain is limited, parent-child relationships and children's psychological adjustment are negatively impacted in parents with personality disorders[10,11] and depressive disorders,[12,13] which are both prevalent in individuals with HD.[14] Together, this literature underscores the importance of further research into mental health outcomes in individuals who grew up with parents with HD, as well as the specific aspects of hoarding that impact child outcomes.

Several specific factors associated with HD have been linked to family conflict, which may be informative when considering the impact of hoarding on children. Clutter may be particularly important to consider, because clutter due to HD can pose significant health and safety issues, such as rotting food, bacteria, and fire safety hazards.[15] In a survey of >600 family members of individuals with HD, 1.8% of family members stated that the children of hoarding family members had been forcibly removed from the home, likely owing to clutter-related issues.[8] Accordingly, clutter has been associated with feelings of rejection and hostility toward family members with HD, as individuals likely blame them for the unsanitary, less functional, or unsafe conditions in the home.[6,8] It is likely that clutter causes significant family burden as well, because family members of individuals with HD are often unable to use the home or have to miss out on work, social, or leisure activities because of clutter.[6]

Insight into the excessiveness and irrationality of hoarding is another characteristic that could lead to more family conflict, as it has been related to the quality of parent-child relationships in both studies that investigated this question.[7,8] Family informants of individuals with HD have reported that more than one-half have poor or delusional insight and thus may not recognize hoarding as a problem.[16] Family members with poor insight would be less likely to seek help, engage in conversations with family members about making changes, or acknowledge the potential harms hoarding may have on their family members.

Difficulty discarding may be another important factor to consider, as it is a central diagnostic feature of HD, whereas the other diagnostic criteria (clutter, distress, impairment) are consequences of this issue.[17] Only 1 study has investigated difficulty discarding specifically, finding that it was correlated with family accommodation and caregiver burden.[6]

This study seeks to build on prior research by analyzing how growing up with a caregiver with hoarding problems affects children's feelings of rejection towards their parents across different developmental periods and how these variables may influence their mental health. Although individuals who were raised in the home of a parent who hoarded have reported less happy childhoods per a single-item assessment,[8] research has not investigated specific depressive or anxiety symptoms in this population. This may be a particularly important area

to investigate, because adverse childhood experiences (including significant family dysfunction and neglect) have been linked with depression and anxiety later in life.[18,19] Research has also generally focused on either past or current functioning. The present study sought to evaluate the home environment during both childhood and adolescence, as well as parent-child relationships and psychological functioning across multiple stages of development (ie, childhood, adolescence, young adulthood, and adulthood).

The first aim of this study was to provide descriptive information on our sample of adult children of parents with hoarding difficulties. We provided this information across different developmental periods based on a retrospective report (ie, during childhood, adolescence, young adulthood, and adulthood). The impact of who the identified caregiver was (ie, mother, father, another caregiver, or multiple caregivers) on primary outcome measures (parental rejection, depressive symptoms, and generalized anxiety) was also investigated. Next, we evaluated whether children's feelings of rejection towards their parents are associated with different parental hoarding characteristics, including insight, clutter, and difficulty discarding. Finally, we proposed a mediation model to evaluate whether there is an indirect relationship between parental hoarding and children's generalized anxiety and depressive symptoms, which may be accounted for by feelings of rejection towards the parent. We hypothesized that significant relationships would be observed between parental hoarding characteristics (ie, difficulty discarding, insight, and clutter) and child mental health (ie, generalized anxiety and depressive symptoms), both directly and indirectly through feelings of rejection towards the parent.

METHODS

Procedure and participants

Participants were recruited through several websites and media publications intended to raise awareness of HD and support children who were raised by parents with HD (childrenofhoarders.com, the website of an OCD specialty clinic, and the A&E website aetv.com/shows/hoarders). The study was advertised as seeking to understand the experience of being raised in a cluttered home and how it may affect past and current functioning. Responses were collected from September 2011 to January 2012. Each participant was presented with an informed consent page describing the purpose, risks, and benefits of the study and proceeded once they provided their electronic consent by checking a box on the page. This page also listed inclusion criteria, which included that the participant was at least 18 years old and was raised in a self-described hoarded home (this criterion was later validated with cutoffs for problematic hoarding). This study was approved by an institutional review board.

Measures

Clutter. Clutter was assessed with the Clutter Image Rating (CIR).[20] The CIR is an image-based assessment in which respondents are asked to rate clutter in the living room, kitchen, and bedroom of a home. The CIR has shown good internal consistency, test-retest reliability, and interobserver reliability, as well as convergent validity with self-report measures of clutter.[20] Family member ratings on the CIR have shown good to excellent internal consistency,[16] and family member assessment has been used in previous similar research.[7,8] Respondents were asked to rate the average amount of clutter in their home retrospectively during early childhood (age 0 to 10) and adolescence (age 11 to 20). The item assessing clutter on the Hoarding Rating Scale[21] was also included to help inform inclusion in the study, as detailed below.

Insight. Insight was assessed with a single item adapted from item 11 on the Yale-Brown Obsessive-Compulsive Scale,[22,23] similar to prior research.[7,8] The item asked respondents to rate how clearly their family member recognized their problem with hoarding. Responses range from 0 to 4, with 0 describing, "Excellent insight, fully rational. Individual's hoarding behaviors may be bad, but he/she fully recognized that they are a problem," and 4 describing, "Lacks insight, delusional. Individual is convinced that he/she has no problems with acquisition, clutter, or difficulty discarding at all. He/she will argue that there is no problem, despite contrary evidence or arguments." Other responses include "good," "fair," or "poor" insight, along with elaborations of each descriptor. This item has shown convergent validity with a discrepancy score between an informant's perception of another individual's hoarding severity and that individual's perception.[16] This item was not assessed during specific periods but was a broad assessment of participants' parents' insight.

Difficulty discarding. The difficulty discarding item from the self-report version of the Hoarding Rating Scale[21] was also used. The item asked respondents: "To what extent did your hoarding parent have difficulty discarding

(or recycling, selling, giving away) ordinary items that other people would get rid of?" The item is scored on a Likert scale of 0 to 8, with 0 indicating "not difficult," 2 indicating "mild," 4 indicating "moderate," 6 indicating "severe," and 8 indicating "extreme difficulty." This item was used in previous research assessing the experiences of children growing up in a hoarded home and was also used to assess parents' difficulty discarding broadly rather than during specific developmental periods.[7,8]

Rejection of parent. Feelings of rejection toward the identified parent were assessed with the Patient Rejection Scale (PRS).[24] The PRS was originally developed to assess hostile, rejecting attitudes of individuals towards their family members with schizophrenia[24] and has since been used with other populations, including family members with HD.[8] Items are scored on a Likert scale of 1 to 3, with higher scores indicating more rejecting and hostile attitudes. Participants were prompted to consider their attitudes across different ages with the following prompts: "To the best of your recollection, tell us how you felt about your hoarding parent during your [CHILDHOOD (age 0 to 12)/ADOLESCENCE (age 13 to 20)/YOUNG ADULTHOOD (age 21 to 29)/ADULTHOOD (age 30+ years)]." Internal consistency of the PRS across these ratings were good (alpha = .80, .83, .85, and .88, respectively).

Depressive symptoms. Depressive symptoms were assessed with the Patient Health Questionnaire-9 (PHQ-9),[25] a widely used self-report scale to screen for major depressive disorder.[26] Each item is scored from 0 ("not at all") to 3 ("nearly every day"), with higher scores indicating more severe symptoms. Clinical cutoff scores between 8 and 11 have shown similar likelihood ratios in predicting a major depressive disorder diagnosis; in the current study, we chose to use 11 as a cutoff to be as cautious as possible in our interpretation of "clinically significant" symptoms.[26] Respondents were prompted to report on depressive symptoms with the following prompt: "To the best of your memory, during [CHILDHOOD (age 0 to 12)/ADOLESCENCE (age 13 to 20)/YOUNG ADULTHOOD (age 21 to 29)/ADULTHOOD (age 30+ years)], please respond to the following statements regarding your feelings." Internal consistency across age reports were good to excellent in this sample (alpha = .88, .91, .92, and .91, respectively).

Generalized anxiety. The Generalized Anxiety Disorder 7–item scale (GAD-7) was used to assess symptoms of generalized anxiety, including affective (eg, feeling anxious), cognitive (eg, difficulty controlling worry), and somatic (eg, difficulty relaxing) symptoms.[27] Items are scored from 0 ("not at all") to 3 ("nearly every day"). A score of 10 has shown the strongest likelihood ratio of predicting a generalized anxiety disorder diagnosis.[27] Respondents were asked to report on current and retrospective generalized anxiety using the same prompts provided prior to the PHQ-9. Internal consistency across childhood, adolescence, young adulthood, and adulthood responses were excellent (alpha = .93, .93, .92, and .93, respectively).

Other information. Participants were also asked about demographic information, including their age range, race, and gender, as well as certain aspects of their experience living in a hoarded home, including who the hoarding caregiver was (ie, mother, father, other, or multiple caregivers) and involvement from public officials (ie, whether they were evicted or threatened with eviction, whether they lived outside the home because of the clutter, and whether they were removed from the home by Child Protective Services because of the clutter).

Analytic plan

All analyses were conducted with participants who rated their parent as having at least "moderate" difficulty discarding or clutter (score of at least 4 on a 0-to-8 Likert scale) in the home based on items from the Hoarding Rating Scale, indicating clinically significant hoarding, replicating previous similar studies.[7,8] First, descriptive statistics of the sample were evaluated, including the identified hoarding caregiver, demographic information (age, gender, race), and information about involvement from public officials. Parental insight, difficulty discarding, and clutter were also evaluated. We evaluated generalized anxiety and depressive symptoms across periods, including means and standard deviations at each period, as well as the proportion of participants with clinically significant symptoms. Responses were excluded when >2 items were missing from a questionnaire. Mean replacement was used when 1 item was missing.[28]

Bivariate correlations were conducted between hoarding variables (insight, difficulty discarding, and clutter), parent rejection, and generalized anxiety and depressive symptoms. Relationships were evaluated for each developmental period. Correlations between young adult and adult ratings of parental rejection, depressive symptoms, and generalized anxiety were conducted with ratings of clutter in the home during adolescence to evaluate how growing up in a hoarded home is related to later psychological functioning and

TABLE 1
Descriptive information across developmental periods

	Childhood	Adolescence	Young adulthood	Adulthood
GAD-7	N = 258	N = 256	N = 255	N = 212
Mean (SD)	10.9 (6.5)	13.0 (6.0)	11.0 (5.7)	10.0 (6.0)
N (%) clinically significant	140 (54%)	182 (71%)	149 (58%)	104 (49%)
PHQ-9	N = 245	N = 247	N = 242	N = 192
Mean (SD)	8.9 (6.7)	12.1 (7.1)	10.3 (6.8)	10.1 (6.7)
N (%) clinically significant	88 (36%)	135 (55%)	103 (43%)	89 (46%)
CIR	N = 380	N = 366		
Mean (SD)	3.4 (1.9)	4.7 (1.9)		
N (%) clinically significant	125 (33%)	234 (64%)		
		Assessed across ages		
Difficulty discarding[a]	N = 414			
Mean (SD)	6.3 (1.4)			
Moderate, N (%)	116 (28%)			
Severe, N (%)	171 (41%)			
Extreme, N (%)	127 (31%)			
Insight, N (%)	N = 411			
Excellent	13 (3%)			
Good	32 (8%)			
Fair	90 (22%)			
Poor	120 (29%)			
Lacks insight/delusional	156 (38%)			

[a]Moderate was coded as a score of 4 to 5; severe, 6 to 7; and extreme, 8.

CIR: Clutter Image Rating; GAD-7: Generalized Anxiety Disorder 7–item scale; PHQ-9: Patient Health Questionnaire-9 Item.

parent-child relationships. No variable of interest demonstrated skewness or kurtosis beyond -2 to +2 and was determined to be appropriate for parametric analyses.[29] Pairwise deletion was used for correlations.

Path analyses tested the hypothesis that the relationship between parental hoarding characteristics and psychological symptoms would be mediated by feelings of rejection towards the parent.[30] These analyses were conducted using the latent variable analysis (lavaan) package in R.[31] Little's test suggested that data were not missing completely at random (Chi-square [395] = 478.7; P = .002). Thus, a full-information maximum-likelihood approach was used to estimate missing data. Residual error terms were estimated for all endogenous variables to account for variance unexplained by exogenous variables and measurement error. We proposed a model suggesting that children's feelings of rejection towards their parent would significantly mediate the relationship between parental hoarding characteristics (insight, clutter, and difficulty discarding) and offspring generalized anxiety and depressive symptoms. Direct relationships between parental hoarding characteristics and child mental health were estimated only when there were significant bivariate correlational relationships in order to constrain the number of estimated variables in the model. These models were tested across developmental periods (childhood, adolescence, young adulthood, adulthood). Fit was evaluated with the Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the standardized root mean square residual (SRMR). Good fit was considered for values above .95 for CFI and TLI, below .08 for SRMR, and below .06 for RMSEA.[32] Chi-square tests also evaluated whether observed and predicted models differed, with a nonsignificant value suggesting they are not significantly different.

TABLE 2
Correlations of study variables

Childhood						
	PRS	**GAD-7**	**PHQ-9**	**Difficulty discarding[a]**	**CIS**	**Insight**
PRS	–					
GAD-7	.26[b]	–				
PHQ-9	.39[b]	.67[b]	–			
Difficulty discarding[a]	.24[c]	.06	.17[d]	–		
CIR	.20[c]	.13[d]	.19[c]	.25[b]	–	
Insight	.28[b]	.04	0.10	.29[b]	.14[c]	–
Adolescence						
	PRS	**GAD-7**	**PHQ-9**	**Difficulty discarding[a]**	**CIS**	**Insight**
PRS	–					
GAD-7	.18[c]	–				
PHQ-9	.34[b]	.61[b]	–			
Difficulty discarding[a]	.22[c]	.13[d]	.19[c]	–		
CIR	.25[b]	.18[c]	.16[d]	.33[b]	–	
Insight	.24[b]	-.002	.10	.29[b]	.13[d]	–
Young adulthood[e]						
	PRS	**GAD-7**	**PHQ-9**	**Difficulty discarding[a]**	**CIS**	**Insight**
PRS	–					
GAD-7	.060	–				
PHQ-9	.14[d]	.67[b]	–			
Difficulty discarding[a]	.16[d]	.021	.10	–		
CIR	.23[b]	.012	.049	.33[b]	–	
Insight	.34[b]	.037	.058	.29[b]	.13[d]	–
Adulthood[e]						
	PRS	**GAD-7**	**PHQ-9**	**Difficulty discarding[a]**	**CIS**	**Insight**
PRS	–					
GAD-7	-.002	–				
PHQ-9	.13	.68[b]	–			
Difficulty discarding[a]	.25[b]	-.029	.016	–		
CIR	.27[b]	-.10	-.11	.33[b]	–	
Insight	.42[b]	.010	-.013	.29[b]	.13[d]	–

[a]Difficulty discarding was assessed using the item assessing this construct from the Hoarding Rating Scale.
[b]$P < .001$.
[c]$P < .01$.
[d]$P < .05$.
[e]Young adulthood and adulthood generalized anxiety and depressive symptoms were correlated with parental rejection and clutter during adolescence to evaluate whether growing up in a hoarded home can affect later functioning.

CIR: Clutter Image Rating Scale; GAD-7: Generalized Anxiety Disorder 7–item scale; PHQ-9: Patient Health Questionnaire-9; PRS: Patient Rejection Scale.

RESULTS

Sample description

Seven hundred ninety-three individuals opened the survey, with 678 consenting and completing initial demographics items. Four hundred thirty-six answered the first questions relevant to hoarding. Of those, 414 reported clinically significant hoarding in 1 of their parents using a score of 4 on the difficulty discarding or clutter items of the Hoarding Rating Scale.[21] Of these 414 participants, 281 (68%) identified their mother as the primary parent with hoarding difficulties, 45 (11%) identified the father, 77 (19%) identified multiple caregivers, and 3 (1%) identified another caregiver (eg, a grandmother who was

a primary caregiver). Eight participants (2%) did not identify the hoarding caregiver. A series of 1-way analysis of variance tests were performed to evaluate whether there were differences in the primary outcome measures (rejection, depressive symptoms, and generalized anxiety) based on who the identified parent was. No significant differences were found ($P > .24$).

The median age range of respondents was reported to be 35 to 39. Most participants identified as White (n = 386 [93%]) and female (n = 372 [90%]). Four respondents identified as Hispanic (1%), 4 as Asian (1%), 3 as African American (<1%), 2 as Native American (<1%), and 9 identified as Other (2%). One respondent did not list their race.

Of 345 respondents who reported on whether they were evicted from the home, 10 (3%) stated that they were evicted, and 30 (9%) stated that they were threatened with eviction. Fifty-three (15%) reported that they lived outside the home because of the clutter of the 349 who responded to this item. Eight (2%) of 350 who responded to the item about involvement of Child Protective Services stated that they were removed from the home because of the clutter.

Sixty-four percent of respondents identified clinically significant clutter within the family domicile per ratings on the CIR during their adolescent years, while only one-third reported clinically significant clutter in childhood, suggesting that for a substantial portion of the sample, clutter increased across these age periods. Twenty-eight percent endorsed moderate parental difficulty discarding, 41% endorsed severe, and 31% endorsed extreme. More than one-half of parents were rated as having poor/delusional insight. More than one-half of respondents reported clinically significant generalized anxiety across developmental periods per the GAD-7. More than one-third endorsed clinically significant depressive symptoms across developmental periods per the PHQ-9, with more than one-half describing elevated depressive symptoms in adolescence. **TABLE 1** summarizes descriptive information on the sample.

Correlations

TABLE 2 summarizes the correlations of study variables. The PRS was significantly positively correlated with all hoarding-related variables (ie, insight, difficulty discarding, and CIR) at each developmental period and was significantly positively correlated with the GAD-7 and PHQ-9 during childhood and adolescence periods, as well with the PHQ-9 in young adulthood. PHQ-9 scores were significantly positively related to difficulty discarding during childhood and adolescence and to clutter during childhood and adolescence. Responses to GAD-7 were significantly positively related to clutter during childhood and adolescence. Hoarding-related variables were all positively and significantly correlated with each other at each period.

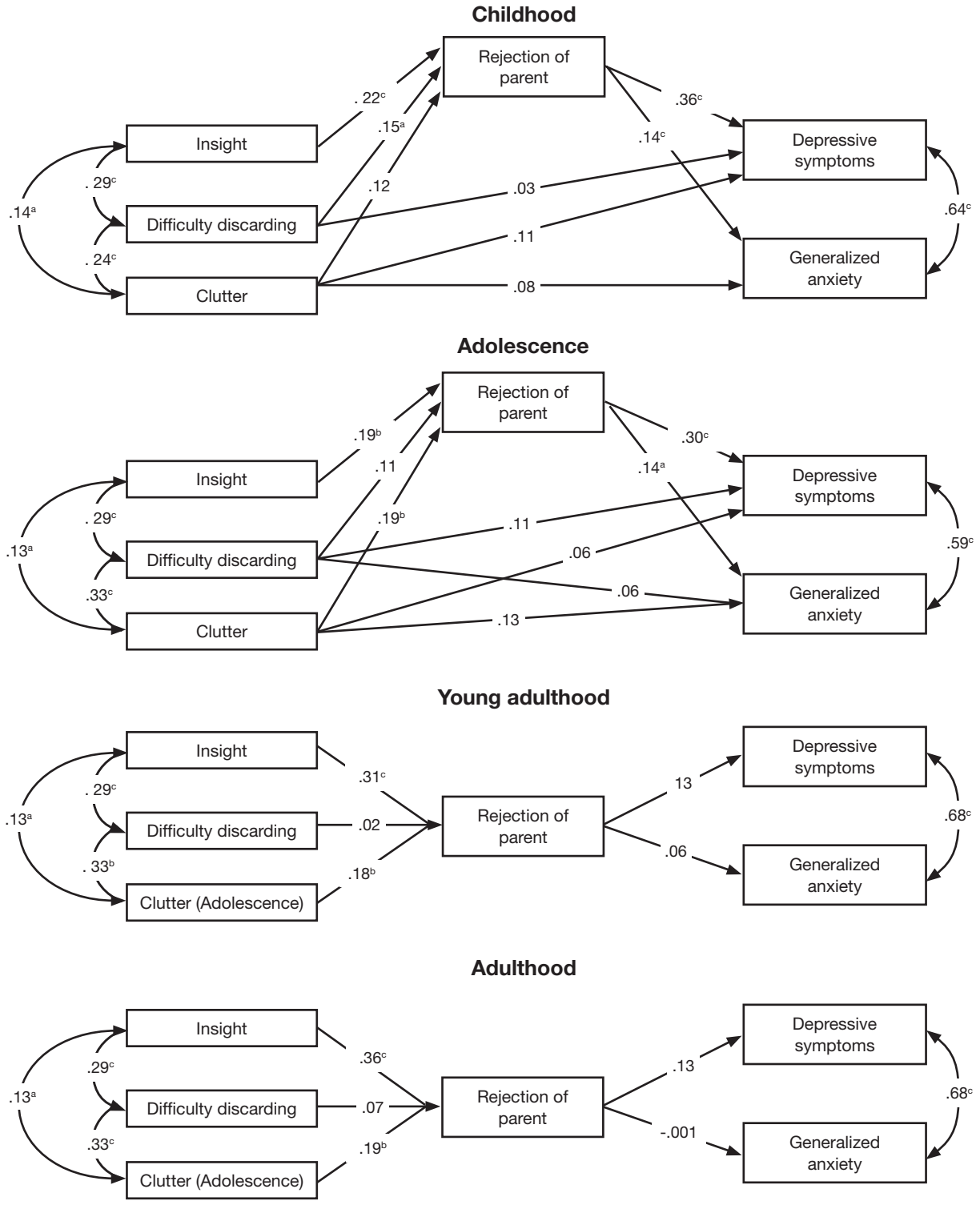
Path analysis

See the **FIGURE** for the path analysis diagrams and fit statistics for each developmental period and **TABLE 3** for a summary of direct, indirect, and total effects of each hoarding variable on depressive symptoms and generalized anxiety mediated by parental rejection.

All fit statistics suggested good fit in the childhood model (SRMR = .025, RMSEA = .048, CFI = .99, TLI = .95, Chi-square [3] = 5.91, $P = .12$). In this model, parental insight and difficulty discarding were significantly positively related to parental rejection. Parental rejection in turn was significantly positively related to both generalized anxiety and depressive symptoms. Insight and difficulty discarding showed significant positive indirect effects on depressive symptoms through parental rejection, while difficulty discarding also showed a significant indirect effect on depressive symptoms (the effect on generalized anxiety was trending, $P = .059$). The total effect of clutter and parent rejection was trending towards significantly predicting depressive symptoms ($P = .055$). No other estimated effects were significant (see **TABLE 3** for a complete summary). The model predicted 17% of the variance in childhood depressive symptoms, 7% of the variance in generalized anxiety, and 12% of the variance in parental rejection.

Fit statistics also suggest good fit for the adolescent model (SRMR = .013, RMSEA < .001, CFI = 1.00, TLI = 1.02, Chi-square (2) = 1.35, $P = .51$). In the adolescent model, clutter and poor insight were both significantly positively related to parental rejection, which in turn was significantly positively related to adolescent depressive symptoms and generalized anxiety. None of the tested direct relationships between hoarding and psychological distress variables were significant. Significant indirect relationships were observed between clutter and depressive symptoms, as well as insight and depressive symptoms, through parental rejection. The total effect of clutter and parental rejection on generalized anxiety was also positive and significant, as was the total effect of difficulty discarding and parental rejection on depressive symptoms. The model predicted 12% of the variance in parental rejection, 6% of the variance in

FIGURE
Path analysis diagrams and fit statistics



[a]*P*< .05.
[b]*P* < .01.
[c]*P* < .001.

generalized anxiety, and 13% of the variance in depressive symptoms.

The young adult model showed good model fit (SRMR = .018, RMSEA < .001, CFI = 1.00, TLI = 1.03, Chi-square [6] = 3.32, P = .77), as did the adult model (SRMR = .029, RMSEA < .001, CFI = 1.00, TLI = 1.01, Chi-square [6] = 5.55, P = .48). In these models, insight and clutter during adolescence were significantly positively related to parental rejection (during young adulthood and adulthood). Parental rejection was in turn significantly positively associated with depressive symptoms in both models. Other associations between parental rejection and psychological symptoms were not significant in the young adulthood or adulthood models. No indirect effects were significant, though the indirect effect of insight on depressive symptoms through rejection was trending (P = .056). Because no significant bivariate correlational relationships were found, no direct effects were estimated in these models. The young adult model accounted for 15% of the variance in parental rejection, <1% of the variance in generalized anxiety, and 2% of the variance in depressive symptoms. The adult model explained 22% of the variance in parental rejection, <1% of the variance in generalized anxiety, and 2% of the variance in depressive symptoms.

DISCUSSION

The goal of this study was to evaluate how growing up with parents with hoarding problems can impact parent-child relationships, anxiety, and depressive symptoms. Adult children of parents with hoarding difficulties reported high levels of generalized anxiety and depressive symptoms across ages, with more than one-half endorsing clinically significant generalized anxiety and more than one-third reporting clinically significant depressive symptoms from childhood through adulthood. Adolescence appeared to be a particularly vulnerable time, with 71% reporting significant generalized anxiety and 55% reporting significant depressive symptoms during that period (retrospectively). Replicating previous research, clutter and poor parental insight were significantly related to more feelings of rejection towards the parent across stages of development,[7,8] which were in turn related to participants' report of anxiety and depressive symptoms during childhood and adolescents. Together, results provide evidence for conceptualizing living in a severely cluttered home as an adverse childhood experience that warrants further research, clinical services, and program development.

Although this was a retrospective study without experimental control, path analyses supported theoretical models linking parental hoarding with their children's feelings of rejection towards their parent, in turn leading to greater depression and anxiety. It appears that the severity of parental hoarding itself may not be directly related to a child's mental health, as direct relationships were not observed between clutter, insight, or difficulty discarding and child mental health in the multivariate path analyses. Indirect relationships through feelings of rejection towards parents were frequently observed, however, supporting the parent-child relationship as a key factor in children's mental health above and beyond parents' problems with hoarding. This appears to particularly be the case in childhood, as supported by significant indirect effects linking parental hoarding insight and difficulty discarding with depressive symptoms and generalized anxiety during that period, as well as adolescence, as clutter and insight were both indirectly related to depression through feeling rejection towards the parent at that time. It is worth noting that adolescence is frequently a time of conflict between parents and children[32]; this finding signals that hoarding may add a unique stressor on parent-adolescent relationships during an already vulnerable time. Because of the cross-sectional, retrospective nature of this study, direct causal links cannot be determined, though it does provide preliminary support for a link between parental hoarding and children's psychological functioning through its impact on their feelings towards their parent. It is also worth considering that direct relationships between parental hoarding and child psychopathology may have been observed in a sample with a wider range of hoarding difficulties as well.

Poor parental insight was the hoarding characteristic most strongly and consistently related to parental rejection, and indirectly, to depressive symptoms and generalized anxiety. Parents with poor insight are likely less open to seeking help or having conversations about how their clutter could be affecting their children. When insight is diminished, children may feel hopeless about their home environment changing as well as anxiety related to health- or safety-related consequences of their parent's clutter. Based on these results, insight is an important feature to consider in clinical work and future research investigating family relationships in individuals with HD.

TABLE 3
Direct, indirect, and total effects of parental hoarding–related variables on psychological symptoms mediated by parental rejection

	Insight			CIR			Difficulty discarding		
Child model									
	Direct	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**
PHQ-9	–	.080[a]	–	.11	.042	.15[b]	.030	.056[c]	.085
GAD-7	–	.053[a]	–	.079	.028	.11	–	.03[b]	–
Adolescent model									
	Direct	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**
PHQ-9	–	.055[a]	–	.056	.057[a]	.11	.11	.032	.14[c]
GAD-7	–	.027	–	.13	.028	.15[c]	.056	.015	.071
Young adult model									
	Direct	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**
PHQ-9	–	.042[b]	–	–	.025	–	–	.003	–
GAD-7	–	.020	–	–	.012	–	–	.001	–
Adult model									
	Direct	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**
PHQ-9	–	.046	–	–	.024	–	–	.009	–
GAD-7	–	< .001	–	–	< .001	–	–	< .001	–

[a]*P* < .01.
[b]*P* < .06.
[c]*P* < .05.

All coefficients are standardized beta weights. Direct effects were not estimated in the models when bivariate relationships were found to be not significant (see TABLE 2).
CIR: Clutter Image Rating; GAD-7: Generalized Anxiety Disorder 7–item scale; PHQ-9: Patient Health Questionnaire-9.

Clutter during adolescence was also significantly related to parental rejection across adolescence, young adulthood, and adulthood, while clutter during childhood was not (when controlling for difficulty discarding and insight). This may be due to the higher rates of severe clutter during adolescence in this sample, reflecting the progressive nature of hoarding.[33] Since clutter can substantially interfere with daily living and social activities and create health and safety issues, children's feelings of rejection towards the parent also appear to be tied to clutter levels, replicating previous studies.[6,8]

Parental rejection was not associated with generalized anxiety or depressive symptoms in adulthood or with generalized anxiety in young adulthood. Similarly, effect sizes were much larger in models predicting psychopathology during childhood and adolescence relative to the young adulthood or adulthood models. These findings may reflect the resilience of many participants in the study; once they were out of the adverse home environment, hoarding and parental rejection were no longer as impactful on mood and anxiety-related concerns. A relatively high proportion of participants continued to report clinically significant symptoms during these periods, however. Other factors not assessed in this study may contribute to the persistent high psychological symptoms in this population during adulthood, including a genetic risk for psychopathology broadly or psychosocial factors such as loneliness, avoidance, their own hoarding symptoms, or difficulties with adulthood relationships. Assessments of family functioning specific to HD may prove to be more reliably associated with psychopathology as well.[6] Future research may also pursue

further assessment of psychological adjustment in this population (eg, posttraumatic stress symptoms, adjustment difficulties).

This study points to several clinical and programmatic needs for children of parents with HD, including early intervention strategies, treatment of clinically significant symptoms related to being raised by parents with HD, and programs to help adult children partner with their parents during treatment. Given the high prevalence of generalized anxiety and depressive symptoms in this population, development of programs that identify and support families where hoarding difficulties occur before there are significant impacts to the mental health of children is crucial. Although there are developing public policy initiatives aimed at serving individuals with HD (eg, Kysow et al[34]), these programs rarely emphasize the importance of providing assessment and treatment for children living in excessively cluttered homes. To this end, collaborations among social work, psychiatry, psychology, fire safety professionals, and other community stakeholders working to design community-level plans to address hoarding should incorporate considerations of child mental health. Therapy directed at this population may incorporate elements of evidence-based therapy for depression, anxiety, and posttraumatic stress while also addressing unique stressors within this population, including social isolation, health- and safety-related issues in the home, as well as parent-child conflict related to hoarding. Integrating therapy with social services that optimize children's safety and security would likely be important, as 2% of participants surveyed in this study were removed from their homes by Child Protective Services because of clutter, and 7% were threatened with eviction. Development of treatment programs for adults with mental health symptoms resulting from childhood adversity due to parental hoarding is also essential. These programs may also inform peer support networks online and in local communities where adult children may already be reaching out. Future research may also investigate whether enlisting family support during individual cognitive-behavioral therapy for hoarding helps further improve outcomes (eg, Muroff et al[35]) both in terms of improving family relationships and reducing hoarding severity.

Limitations

This study had several limitations. First, the use of retrospective report introduces recall bias due to issues with memory, children's lack of awareness of certain family circumstances, and the impact of current mood on retrospective report.[36,37] In light of these limitations, Hardt and Rutter[37] recommend retrospective studies of childhood adversity include as much assessment of operational variables as possible. Thus, only observable or self-reported constructs were assessed retrospectively in this study (ie, clutter, rejection, depressive symptoms, and generalized anxiety), whereas reports of parental internal experiences (insight and difficulty discarding) were assessed broadly without specific retrospective prompts. Regardless, all conclusions in this study should be interpreted with caution because of the potential issue with recall bias. For this reason, we consider our study a preliminary step towards prospective studies of children living in hoarded homes. That said, conducting research with children currently living in severely cluttered homes may prove difficult owing to fears of punishment or ostracization from family members, as well as reluctance of many parents to consent for their children to participate in studies investigating the experience of living with parents with HD. A further limitation was that there was considerable attrition over the course of the survey, and thus data cannot be interpreted as reliably as if there were complete data. The sample that completed questionnaires from this study also likely reflected a self-selected group; individuals participating in online support pages who were interested in participating in research of this nature may have had a particularly difficult time adjusting to this environment. To this end, it would have been important to understand other factors in the family not assessed in this survey, such as other family stressors and relationship characteristics. Family members may also be less reliable reporters of insight than trained clinicians. Further, the demographic makeup of our sample was largely White and female, and respondents primarily reported on mothers with hoarding problems, limiting our ability to generalize findings to other groups. Another limitation is that these data were collected in 2011; although it is unlikely the experience of children with parents with hoarding problems is considerably different now, there is substantially more awareness, research, and treatment of hoarding, and it is possible that more recent data could show different trends. Finally, although mediation models with causal implications were supported, a longitudinal and/or experimental design would be needed for causal conclusions.

CONCLUSIONS

This study suggests that having a parent with HD may be a significant risk factor for anxiety and depressive symptoms. Our sample of adult children of parents with hoarding difficulties reported high rates of clinically significant mood and anxiety symptoms, which were significantly related to feelings of rejection towards their parent during childhood and adolescence. This study extended previous work linking parental hoarding and children's feelings of rejection and hostility towards their parent by suggesting that these feelings may have meaningful implications for their mental health. To this end, we propose conceptualizing living in a severely cluttered home as an adverse childhood experience that warrants further action from communities, service providers, and researchers. Future work should continue to investigate factors that influence the high levels of psychological distress this group experiences into adulthood, develop and test early interventions for this population, and aim to use prospective designs with children currently living with parents with HD to the extent that it is feasible. ■

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