

Portland State University

**PDXScholar**

---

School of Social Work Faculty Publications and Presentations

School of Social Work

---

9-2017

# An Exploratory Investigation of Animal Hoarding Symptoms in a Sample of Adults Diagnosed With Hoarding Disorder

Jennifer E. Ung

*VA San Diego Healthcare System*

Mary Dozier

*VA San Diego Healthcare System*

Christiana Bratiotis

*Portland State University*

Catherine R. Ayers

*VA San Diego Healthcare System*

Follow this and additional works at: [https://pdxscholar.library.pdx.edu/socwork\\_fac](https://pdxscholar.library.pdx.edu/socwork_fac)



Part of the [Experimental Analysis of Behavior Commons](#), and the [Social Work Commons](#)

**Let us know how access to this document benefits you.**

---

## Citation Details

Ung, J. E., Dozier, M. E., Bratiotis, C., & Ayers, C. R. (2017). An exploratory investigation of animal hoarding symptoms in a sample of adults diagnosed with hoarding disorder. *Journal of clinical psychology*, 73(9), 1114-1125.

This Article is brought to you for free and open access. It has been accepted for inclusion in School of Social Work Faculty Publications and Presentations by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: [pdxscholar@pdx.edu](mailto:pdxscholar@pdx.edu).

# An Exploratory Investigation of Animal Hoarding Symptoms in a Sample of Adults Diagnosed With Hoarding Disorder

Jennifer E. Ung,<sup>1,2</sup> Mary E. Dozier,<sup>1,3</sup> Christiana Bratiotis,<sup>4</sup>  
and Catherine R. Ayers<sup>1,2</sup>

<sup>1</sup>*VA San Diego Healthcare System*

<sup>2</sup>*University of California, San Diego*

<sup>3</sup>*San Diego State University/ University of California, San Diego Joint Doctoral Program in Clinical Psychology*

<sup>4</sup>*Portland State University School of Social Work*

**Objective:** The extant research on animal hoarding has a dearth of information on animal hoarding tendencies in adults diagnosed with hoarding disorder (HD). In the present study, we investigated possible recurrent animal hoarding behavioral and symptom patterns in individuals diagnosed with hoarding disorder. **Methods:** Hoarding severity scores from baseline assessments for 65 community-dwelling adults diagnosed with HD were analyzed with respect to their present and past animal ownership characteristics. **Results:** Approximately half of participants reported currently owning pets, and pet owners in the sample reported currently owning an average of two pets. Of the participants who reported currently owning animals, 10% reported having no rules for their pets' behaviors, 51% reported having made at least one sacrifice for their pets, 54% reported having had at least one pet in childhood, and 29% reported that they believed they have a "special ability" to communicate with their pets. The results of the present study suggest that animal hoarding is not necessarily present in individuals diagnosed with HD. **Conclusion:** No significant associations of current pet ownership characteristics with present hoarding severity were observed. Reported maximum number of pets owned in childhood was significantly correlated with present object hoarding symptom severity. © 2016 Wiley Periodicals, Inc. *J. Clin. Psychol.* 73:1114–1125, 2017.

Keywords: hoarding disorder; animal hoarding; assessment

Hoarding disorder (HD) is characterized by urges to acquire and store items, difficulty discarding current possessions, and excessive household clutter (American Psychiatric Association [APA], 2013). Along with these features, HD may be associated with strong emotional attachments to objects and a lack of insight into problematic behaviors (Frost, Patronek, & Rosenfield, 2011; Frost, Steketee, & Williams, 2000). Presently, HD is estimated to be present in about 1.5% to 6% of the population (Nordsletten et al., 2013). Animal hoarding is a "special manifestation" of HD in which animals are hoarded instead of, or in addition to, objects (APA, 2013).

The Hoarding of Animals Research Consortium (HARC; 2002) developed criteria for animal hoarding as the following: an accumulation of an unusually large number of animals and failure to provide minimal care standards. Previous research on animal hoarding suggests that individuals with animal hoarding problems tend to own 30 to 40 pets (HARC, 2002; Steketee et al., 2011). Individuals with animal hoarding have varying degrees of insight into their symptoms

---

This research was supported by a Career Development Award (CSR06-068-10S) from the Clinical Science R & D Program of the Veterans Health Administration awarded to Dr. Catherine Ayers, PhD, ABPP. The contents do not reflect the views of the Department of Veterans Affairs or the United States Government.

Please address correspondence to: Mary E. Dozier, M.S., 3350 La Jolla Village Drive 116B, San Diego, CA 92161. E-mail: maryedozier@gmail.com

(Campos-Lima et al., 2014; Slyne, Tolin, Steketee, & Frost, 2013; Steketee et al., 2011). Compared to individuals with object hoarding, individuals with animal hoarding are characterized by particularly low insight into their hoarding behaviors and more widespread unsanitary living conditions in (American Psychiatric Association, 2013; Frost et al., 2011; Steketee et al., 2011).

Although there is little empirical information about the presentation of animal hoarding as a manifestation of HD, public health guidelines dictate that animal hoarding behaviors are not determined by a threshold number of animals, but rather by an individual's inability to recognize and provide adequate care for the animals and the household (Patronek & HARC, 2001). Animal hoarding introduces costlier interventions to individuals and the community (Campos-Lima et al., 2014; Castrodale et al., 2011; Patronek & Nathanson, 2009). Reports on hoarding cases are often provided by neighbors, police, and fire department officials (Calvo, Duarte, Bowen, Bulbena, & Fatjó, 2015; Frost et al., 2000). Clutter may spread beyond its owners' premises and affect neighboring properties by creating safety hazards, such as fires and blocked exits (Frost et al., 2000). Individuals with animal hoarding problems may be more likely than individuals with only object hoarding problems to create unsanitary living conditions for their neighbors (Frost et al., 2000), including increasing risk of disease exposure and decreasing the surrounding air quality (Castrodale et al., 2011).

Animal hoarding is a public health issue because serious risks to health and welfare affect not only the sufferer but also the animals. The large number of animals in the same home result in decreased sanitary conditions for the animals and human inhabitants alike as the accumulation of feces and urine attract pests and induce the spread of infectious diseases (Castrodale et al., 2011). In one study, approximately 60% of homes affected by animal hoarding had floors covered in urine and feces and 59.3% of the homes had dead animals (Patronek, 1999). Because these conditions can cause increased health risks when compared to object hoarding alone, individuals with animal hoarding problems experience increased impairment in activities of daily living than patients suffering solely from object hoarding (Frost et al., 2011).

Animal hoarding behaviors have been linked to addiction, delusional thinking, and excessive attachment to pets (Patronek & Nathanson, 2009; Steketee et al., 2011). Patients with animal hoarding often deny the existence of a problem and display impaired impulse control. Individuals who report having a special ability to understand and communicate with animals may be displaying delusional thinking (Reinisch, 2008; Steketee et al., 2011). Animal hoarding behaviors may also arise as a response to a combination of intense emotional attachments and inadequate coping strategies (Mikulincer, Shaver, & Solomon, 2015; Steketee et al., 2011). More evidence is still needed before definitive conclusions can be made as to the cause of clinically severe animal hoarding.

The lack of standardized clinical criteria for the animal hoarding subtype of HD has led to a dearth of rigorous data on the prevalence of animal hoarding (Frost et al., 2011). Extant research on the overlap of animal and object hoarding suggests that the majority of people who hoard animals also hoard objects. In a sample of 49 homes, 78% physically assessed for animal hoarding also displayed heavy clutter blocking access to furniture, kitchens, and bathrooms (Patronek, 1999). In a second study, two thirds of 71 animal hoarding cases also revealed hoarding newspapers, clothes, and containers (HARC, 2002). Prevalence of object clutter in animal hoarding cases may result from the increased numbers of animals living at home rather than from issues with acquisition and discarding of objects (Patronek & Nathanson, 2009).

Although there is a dearth of validated statistics of the frequency of animal hoarding, some reports estimate that nearly 3,000 individuals in the United States may display animal hoarding behaviors (HARC, 2002; Patronek & Nathanson, 2009). The limited amount of empirical knowledge on animal hoarding has led to a poor comprehension of how to properly handle and treat the disorder. According to Reinisch's (2008) investigation, at least 50% of individuals with animal hoarding problems relapse into their previous hoarding behaviors shortly after their animals were removed from their residence. Nonetheless, relapse rates continue to be unknown given the lack of treatment outcomes for animal hoarding (Frost, Patronek, Arluke, & Steketee, 2015). The continuous and compulsive acquisition of animals in combination with a tendency to avoid seeking treatment may become categorized as a lifestyle choice, resulting in reluctance from professionals in the fields of mental health, social services, and public law to

assist (Reinisch, 2008). Fear of authorities and legal consequences for possible animal cruelty also become barriers for proper treatment and assistance (Steketee et al., 2011).

Recent investigations of animal hoarding presented consistent demographic characteristics and behavioral patterns. Women have been found to be overrepresented in animal hoarding samples (Patronek, 1999; Steketee et al., 2011). Most self-identified individuals with animal hoarding are middle-aged or older (Slyne et al., 2013; Steketee et al., 2011; Patronek, 1999). Individuals with animal hoarding also present recurrent social patterns of isolation and tend to be widowed, divorced, or single (Calvo et al., 2015; HARC, 2002; Steketee, et al., 2011). Reviews of case reports indicate that individuals with animal hoarding problems may hoard anywhere from 10 to over 900 animals (HARC, 2002), with the median number in one report being 39 (Patronek, 1999).

The primary aim of the current study was to contribute to the characterization of the issue of animal hoarding by exploring the incidence of animal hoarding behaviors in a treatment-seeking sample of individuals meeting Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (*DSM-5*; 2013) criteria for HD. In the present study we defined animal hoarding as the presence of an unusual amount of pets, the inability to provide basic needs to the pets, and the lack of or poor insight of a problem (HARC, 2002). The secondary focus of the current study was to explore the relationship between current and past animal ownership characteristics and hoarding severity in an HD sample. Finally, we looked at various features of animal ownership, including number and type of animals owned, degree of emotional attachment to the animals, and animal raising approach (e.g., number and types of rules assigned, amount of freedom to roam). The identification of behaviors and symptoms particular to animal hoarding is necessary in order to devise suitable preventative methods and interventions to avoid further endangerment of the sufferer, animals, and community.

## Methods

### *Participants*

The current study used scores from baseline assessments for 65 community-dwelling adults from an urban setting in the greater San Diego area who met *DSM-5* criteria for HD. Symptom criteria were determined through a consensus diagnosis supervised by a licensed clinical psychologist using clinician-administered and self-report measures. Subjects were recruited between July 2008 and April 2014 for a group intervention study for HD. In the present sample, the majority of the participants were female (70%) and Caucasian (79%), and the mean age was 58 years ( $SD = 9.42$ , range 29–77). Of the participants, 23% reported being married, 6% living with a partner, 26% being divorced, 10% being separated, 34% having never married, and 2% being widowed. Of the sample, 43% were employed, with either full-time or part-time appointments, and 26% were retired. The majority of participants (95%) reported having completed at least some college.

### *Materials*

Self-reported hoarding severity was measured using the Saving Inventory-Revised (SI-R; Frost, Steketee, & Grisham, 2004), which comprises 23 self-reported items presented in a Likert-type scale. Scores for each item were rated on a scale from 0 to 4 with increasing numbers indicating higher hoarding symptom severity. The SI-R contains three subscales: saving, difficulty discarding, and clutter. The SI-R total and all subscales demonstrated adequate internal consistency (Total,  $\alpha = 0.91$ ; Saving,  $\alpha = 0.83$ ; Difficulty Discarding,  $\alpha = 0.82$ ; Clutter,  $\alpha = 0.93$ ).

The Clutter Imaging Rating (CIR; Frost, Steketee, Tolin & Renaud, 2008), a three-item pictorial assessment of clutter, was used to assess the level of clutter in the participant's home. The CIR includes nine different images of three different rooms of a home (kitchen, living room, and bedroom). The participant was asked to select the photo that most reflects the amount of clutter in the room based on the images provided. Previous studies using the CIR have demonstrated excellent inter-rater reliability between hoarding patients and clinicians (Frost

et al., 2008; Dozier & Ayers, 2015). The CIR demonstrated adequate internal consistency ( $\alpha = 0.82$ ).

The Animal Collecting Questionnaire (ACQ) was designed and used by Steketee et al. (2011) to gather information on characteristics of animal ownership, including number and types of animals owned, strength of emotional attachment to the animals, and animal raising approach, among others. The measure was primarily intended to identify possible origins and maintenance factors for animal hoarding by comparing a sample of individuals who met criteria for HD with a sample of animal owners who did not. A copy of the ACQ is in the Appendix.

### *Procedures*

The Institutional Review Board of the University of California, San Diego and the VA San Diego Healthcare System Study approved protocols. All assessments took place at the VA San Diego Healthcare system facilities. Participation in the study was not monetarily compensated because subjects' participation was entirely voluntary.

### *Data Analysis*

All analyses were performed using Stata version 13.0 (StataCorp, 2013). Descriptive statistics of hoarding severity and items from the ACQ were assessed. Correlations between hoarding severity measures and continuous items on the ACQ were evaluated, including the relationship between hoarding symptom severity and animal ownership characteristics. Univariate differences in demographic factors and categorical items from the ACQ were assessed for hoarding severity and continuous items from the ACQ. Independent sample *t* tests were used to compare hoarding severity scores among individuals based on four pet ownership characteristics: owning a pet, location of pet(s), believing in a special ability to communicate with pets, and having made sacrifices for their pets.

## Results

### *Characteristics of Pet Ownership*

Of the participants, 35 (53.85%) reported currently owning pets. Hoarding severity did not significantly differ by pet ownership, SI-R,  $t(62) = -0.78$ ,  $p = 0.436$ ; CIR,  $t(63) = -0.75$ ,  $p = 0.455$ . Of the 35 participants who reported owning pets, the average number of pets owned was 2.0 ( $SD = 1.04$ , range: 1–4). The number of current pets reported by participants was not significantly correlated with either the SI-R or the CIR (all  $ps > 0.05$ ; see Table 1).

Having reported a "special ability" to communicate with one's pets did not significantly affect hoarding severity, SI-R,  $t(34) = 0.77$ ,  $p = 0.445$ ; CIR,  $t(34) = -0.46$ ,  $p = 0.645$ .

One-half of animal owners reported having made at least one sacrifice for their pets (see Table 2), but having sacrificed for a pet did not significantly affect hoarding severity, SI-R,  $t(32) = -0.36$ ,  $p = 0.717$ ; CIR,  $t(32) = -0.46$ ,  $p = 0.645$ . For a list of the most common sacrifices pet owners had to make refer to Table 2.

### *History of Pet Ownership*

Of the entire sample, 52 (80%) participants reported having at least one pet during childhood. On average, participants reported that they were around 7 years old (mean age: 6.65,  $SD = 3.59$ ) when they had their first pet. The total number of pets owned before age 18 was not significantly correlated with hoarding severity, SI-R,  $r = 0.32$ ,  $p = 0.298$ , CIR,  $r = 0.09$ ,  $p = 0.507$ . The maximum number of reported pets before age 18 was moderately correlated with the participants' overall SI-R scores ( $r = 0.30$ ,  $p = 0.030$ ); participants with more pets reported increased hoarding severity. No significant correlation was found between the maximum number of pets before age 18 and CIR scores ( $r = 0.057$ ,  $p = 0.683$ ).

Table 1

Correlations Between Pet Ownership Characteristics and Hoarding Severity in ( $N = 65$ ) Adults With Hoarding Disorder

	1	2	3	4	5	6	7	8	9
1 SI-R Total	1								
2 CIR	0.569***	1							
3 Number of pets	0.099	0.094	1						
4 Rules for pets	0.171	0.142	–	1					
5 Special ability to communicate with pets	–0.090	0.094	0.370	–0.023	1				
6 Sacrifices due to pet ownership	–0.032	0.134	0.227	0.111	0.231	1			
7 Total number of pets before age 18	0.318	0.094	0.189	0.087	–0.200	–0.127	1		
8 Maximum number of pets before age 18	0.298*	0.057	0.127	0.122	–0.041	–0.130	0.693	1	
9 Pleasure during pet acquisition	–0.036	–0.009	0.317	–0.173	0.150	0.177	0.157	0.199	1

Note. SI-R = Saving Inventory-Revised; CIR = Clutter Imaging Rating.

\*  $p < 0.05$ . \*\*  $p < 0.01$ . \*\*\*  $p < 0.001$ .

The majority (91%) of all present animal owners ( $N = 32$ ) reported some degree of attachment to their pets when growing up (see Table 2).

### Acquisition

Almost every individual (96%) in a sample of 28 pet owners reported experiencing some degree of pleasure when acquiring new pets; the majority (57%) experienced “much pleasure” (see Table 2). Participants in the present sample reported acquiring pets mainly by active means (rescuing animals from shelters or from the streets, through print or internet advertisements, and buying them from pet stores). The most common method of acquisition reported by participants was “brought by others” (41%) and the least common were “looking for strays” (2%) and through “offspring” (2%). Of the sample, 33% reported “Other” methods of pet acquisition, including gifts from others and found animals (see Table 2).

### Discussion

The current study had three primary aims: (a) investigate the incidence of animal hoarding in a treatment-seeking HD sample; (b) understand the associations among past and present animal ownership characteristics and current HD severity; and (c) identify recurrent behavioral and symptom patterns in individuals with HD. In the present study, 65 adults meeting *DSM-5* criteria for HD were examined for features of animal hoarding in individuals diagnosed with HD. Analyses explored the associations between object hoarding symptom severity and pet ownership characteristics. The study also investigated the correlation between past and present animal ownership characteristics of all current pet owners. One of the key findings of the current investigation is the lack of clear evidence for animal hoarding behaviors in a sample of individuals with HD, suggesting that animal hoarding is not synonymous or common with object hoarding.

### Characteristics of Pet Ownership

Almost half (53.85%) of the sample reported owning at least one pet, and no participants reported owning more than four pets. Consistent with previous studies, the present sample of pet owners tended to focus on one species of pet; 63% reported owning at least one cat and 31% reported owning at least one dog (Slyne et al., 2013; Frost et al., 2011). In comparison, the

Table 2  
*Pet Ownership Characteristics in Adults With Hoarding Disorder*

		<i>N</i>	Percentage	
<b>Number of pets owned by all <i>N</i> = 65 participants</b>				
Overall Number	0	32	49.23%	
	1	12	18.46%	
	2	13	20.00%	
	3	3	4.62%	
	4	5	7.69%	
<b>Types of animals owned by <i>N</i> = 35 current pet owners</b>				
Cats	0	13	37.14%	
	1	13	37.14%	
	2	4	11.43%	
	3	3	8.57%	
	4	2	5.71%	
Dogs	0	24	68.57%	
	1	5	14.29%	
	2	4	11.43%	
	3	1	2.86%	
Other	4	1	2.86%	
	0	27	77.14%	
	1	5	14.29%	
	2	3	8.57%	
<b>Locations where pet owners allow their pets (<i>N</i> = 33)<sup>a</sup></b>				
Indoors	No pets allowed	0	0%	
	Pets allowed	33	100%	
	<b>Specific places <i>indoors</i> where pets allowed</b>			
	Free roaming	25	75.76%	
	In one/two rooms	9	27.27%	
	In cages	7	21.21%	
	Other	3	9.09%	
Outdoors	No pets allowed	15	45.45%	
	Pets allowed	18	54.55%	
	<b>Specific places <i>outdoors</i> where pets allowed</b>			
	Free roaming	9	27.27%	
	Kennels or runs	2	6.06%	
	Other	9	27.27%	
<b>Current pet owners' features</b>				
Rules for animals living at home for <i>N</i> = 31 <sup>a</sup> pet owners	Very many rules, highly organized	2	6.45%	
	Many rules, little chaos	4	12.90%	
	Some rules	12	38.71%	
	A few rules, much chaos	10	32.26%	
	No rules, very chaotic	3	9.68%	
Type of sacrifices made by <i>N</i> = 33 <sup>a</sup> pet owners	Money	15	45.45%	
	Employment	0	0%	
	Cleanliness	9	27.27%	
	Social life	5	15.15%	
	Condition of home	10	30.30%	
	Other	2	6.06%	

(Continued)

Table 2  
Continued

		<i>N</i>	Percentage
<b>Characteristics of pet owners in childhood</b>			
Types of pets owned during childhood by <i>N</i> = 3 <sup>a</sup> pet owners	Dogs	27	77.14%
	Cats	19	54.29%
	Birds	9	25.71%
	Reptiles	4	11.76%
	Other	10	29.41%
Attachment to pet when growing up for <i>N</i> = 32 <sup>a</sup> participants	Not at all attached	3	9.38%
	Somewhat	4	12.50%
	Moderately	6	18.75%
	Very much	12	37.50%
	Extremely attached	7	21.88%
<b>Pet acquisition features and methods</b>			
Pleasure when acquiring pets for <i>N</i> = 28 <sup>a</sup> adults	No pleasure	1	3.57%
	Mild pleasure	4	14.29%
	Moderate pleasure	4	14.29%
	Much pleasure	16	57.14%
	Strong pleasure	3	10.71%
Methods of pet acquisition for <i>N</i> = 30 <sup>a</sup> adults	<b>Active methods</b>		
	Looks for Strays	2	6.67%
	Other (shelters, pet stores, newspapers, etc.)	6	60.00%
	<b>Passive methods</b>		
	Brought by Others	12	41.38%
	Offspring	2	6.90%
Other (gift from another person, found animal, etc.)	4	40.00%	

<sup>a</sup>Not all participants answered all questions.

2015–2016 National Pet Owners Survey conducted by the American Pet Products Association, revealed that 65% of households in the United States reported owning a pet; 42.9 million reported owning cats and 54.4 million reported owning dogs (Insurance Information Institute, n.d.). Previously, the 2012 U.S. *Pet Ownership & Demographics Sourcebook* indicated that 36.5% of households in the United States reported owning dogs and 30.4% reported owning cats back in 2012 (American Veterinary Medical Association, n.d.), showing a comparable trend.

All animal owners reported keeping at least some of their pets indoors. Steketee and colleagues' (2011) findings in a sample of individuals with animal hoarding problems reported that 88% allowed their pets free access to the household and did not have any rules for their pets (e.g., no chewing on furniture, no biting). About 6% of these individuals reported having made changes to their living conditions in order to accommodate for their pets. In contrast, almost 39% of pet owners reported having at least "some rules" and approximately 30% said to have made sacrifices in the form of home conditions for their pets.

Half of all animal owners in this study reported making at least one sacrifice for their pet. The most frequently reported sacrifice was money, followed by conditions of the home and cleanliness. Hoarding severity did not differ between pet owners who reported making any of the mentioned sacrifices and those who did not. One third of current pet owners reported having sacrificed the condition of their home for their pets, which is consistent with previous studies where a majority of homes affected by animal hoarding lacked proper sanitary conditions (Castrodale et al., 2011 & Patronek, 1999; Reinisch, 2008). Total pet industry expenditures in the United States between the years of 2006 and 2015 showed an increase from \$38.5 billion in 2006 to an estimated 60.59 billion in 2015. Pet owners in the United States reported surgical

veterinary expenses, routine visits, and food as being the greatest annual expenses for dogs and cats (Insurance Information Institute, n.d.).

Another comparison worth noting is that, as opposed to the 37% of individuals in the current sample expressing “much attachment” toward pets when growing up, only 13% of people meeting animal hoarding criteria in Steketee et al.’s (2011) sample expressed such emotional reactions during childhood. The discrepancy in results can be attributed to the diagnoses of animal hoarding in Steketee et al.’s (2011) study. The sample in the current study was diagnosed as having HD, but not necessarily animal hoarding.

### *History of Pet Ownership*

Secure attachment may be an essential developmental factor for the healthy formation of future interpersonal relationships and self-esteem (Mikulincer et al., 2015). Individuals diagnosed with animal hoarding often present with childhood stories of caregiver abandonment, abuse, neglect, and other traumatic experiences (Patronek & Nathanson, 2009; Reinisch, 2008). Excessive and dysfunctional emotional attachments toward animals may be one byproduct of early inadequate childhood experiences (Patronek & Nathanson, 2009; Steketee et al. 2011).

In the present study, 83% of all participants reported having at least one pet during childhood. The vast majority (91%) experienced some degree of attachment toward their pets when growing up, suggesting that attachment to a pet may not always precipitate the development of animal hoarding symptomatology. Vidović, Štetić, and Bratko’s (1999) sample of 449 Croatian pet owners between the ages of 10 and 15 serve as comparison for the current study. Children who owned pets revealed high levels of attachment; more specifically, girls (55.4%), fourth graders (32.3%), and dog/cat owners (65%) showed higher levels of attachment than their respective counterparts boys (44.5%), sixth graders (34.2%), and other pet owners (35%). This is consistent with pet owners who do not meet criteria for either animal hoarding or HD (Campos-Lima et al., 2014; Steketee et al., 2011).

The maximum number of pets reported before age 18 was significantly correlated with participants’ self-reported hoarding severity, such that as individuals reported having an increased number of childhood pets they were also more likely to endorse higher current object hoarding symptom severity on the SI-R. The maximum number of pets reported in this sample was 20 animals and the average number was four. The maximum number of pets before age 18 was not significantly correlated with current clutter levels. This finding suggests that number of childhood pets is more closely linked to distress or impairment associated with hoarding, than actual clutter levels.

### *Acquisition*

Over half of the pet owners in the current sample reported some degree of pleasure when acquiring a pet. Similar to studies of animal hoarding samples, participants in the current study reported that animals were acquired through both active and passive means (Patronek & Nathanson, 2009; HARC, 2002). In the current study, most active acquisition was done through adoption, whereas most passive acquisition happened when others gifted the participants with animals. Consistent with Patronek and Nathanson (2009), excessive animal acquisition tends to occur as a combination of animals being given without request, failure to neuter animals, and willful intent to obtain additional animals.

### *Limitations and Future Directions*

A major limitation of the current study was the self-report nature of the questionnaires and measures used in the study. Future animal hoarding studies may want to include home visits to corroborate participants’ self-reporting of hoarding symptoms. Participants may have withheld information they viewed as embarrassing or possibly illegal. Home visits or the use of informants (e.g., family members or close friends) may aid in obtaining more complete and objective information regarding the characterization of animal hoarding symptoms.

In addition, the ACQ, the sole assessment of animal hoarding characteristics, is not a validated measure. Future studies should primarily focus on the development of validated diagnostic tools to allow for more robust investigation of the unique features present in individuals with the disorder. A more refined diagnosis may also allow for the differentiation of animal hoarding from cases of animal abuse or neglect. The use of standardized measures can contribute to the development of diagnostic criteria, which in turn can help develop tailored treatments. The present study was cross-sectional and relied on retrospective recall to answer questions regarding participants' past pet ownership. The lack of confirmation for the well-being of the individual and any pets as well as the living conditions of the individual's home are major limitations the current study.

### Conclusion

The present study evaluated 65 adults diagnosed with HD for evidence of animal hoarding. The lack of animal hoarding behaviors in the current sample suggests that animal hoarding may be rare within an urban treatment-seeking sample of individuals with HD. However, clinicians should inquire about the presence of animals in the home, regardless of the number of pets, because the health and safety of both the patient and animal may be compromised when living among excessive clutter.

### References

- American Veterinary Medical Association. (n.d.). *U.S. Pet Ownership Statistics*. Retrieved from <https://www.avma.org/KB/Resources/Statistics/Pages/Market-research-statistics-US-pet-ownership.aspx>
- Calvo, P., Duarte, C., Bowen, J., Bulbena, A., & Fatjó, J. (2014). Characteristics of 24 cases of animal hoarding in Spain. *Animal Welfare, 23*(2), 199–208. doi:<http://dx.doi.org/10.7120/09627286.23.2.199>
- Campos-Lima, A., Torres, A. R., Yücel, M., Harrison, B. J., Moll, J., Ferreira, G. M., & Fontenelle, L. F. (2015). Hoarding pet animals in obsessive-compulsive disorder. *Acta Neuropsychiatrica, 27*(1), 8–13. doi:<http://dx.doi.org/10.1017/neu.2014.29>
- Castrodale, L., Bellay, Y.M., Brown, C.M., Cantor, F.L., Gibbins, J.D., Headrick, M.L., . . . Yu, D. T. (2010). General public health considerations for responding to animal hoarding cases. *Journal of Environmental Health, 72*(7), 14–18; quiz 32.
- Dozier, M. E., & Ayers, C. R. (2015). Validation of the Clutter Image Rating in older adults with hoarding disorder. *International Psychogeriatrics, 27*, 769–776.
- Frost, R. O., Patronek, G., & Rosenfield, E. (2011). Comparison of object and animal hoarding. *Depression and Anxiety, 28*(10), 885–891.
- Frost, R. O., Patronek, G., Arluke, A., & Steketee, G. (2015). The hoarding of animals: an update. *Psychiatric Times, 32*(4), 47–50.
- Frost, R. O., Steketee, G., & Grisham, J. (2004). Measurement of compulsive hoarding: saving inventory-revised. *Behaviour Research and Therapy, 42*(10), 1163–1182.
- Frost, R. O., Steketee, G., Tolin, D. F., & Renaud, S. (2008). Development and validation of the Clutter Image Rating. *Journal of Psychopathology and Behavioral Assessment, 30*(3), 193–203.
- Frost, R. O., Steketee, G., & Williams, L. (2000). Hoarding: a community health problem. *Health & Social Care in the Community, 8*(4), 229–234.
- Hoarding of Animal Research Consortium. (2002). Health Implications of Animal Hoarding. *Health & Social Work, 27*(2), 125–136.
- Insurance Information Institute. (n.d.). Pet statistics. Retrieved from <http://www.iii.org/fact-statistic/pet-statistics>
- Mikulincer, M., Shaver, P. R., & Solomon, Z. (2015). An attachment perspective on traumatic and posttraumatic reactions. *Future directions in post-traumatic stress disorder: Prevention, diagnosis, and treatment* (pp. 79–96) Springer Science + Business Media, New York, NY.
- Nordsletten, A. E., Reichenberg, A., Hatch, S. L., Cruz, L. F. de la, Pertusa, A., Hotopf, M., & Mataix-Cols, D. (2013). Epidemiology of hoarding disorder. *The British Journal of Psychiatry, 203*(6), 445–452. <http://doi.org/10.1192/bjp.bp.113.130195>



6. Are there any rooms in your house that you can't use because of the animals? [Probe for condition of these rooms, including furniture, cleanliness, condition of floors] No Yes

a. If yes, which rooms?

b. Number of rooms unusable due to animals [include bathrooms, kitchen, storage rooms]:

7. Why do/did you keep this many animals? [Probe for emotional attachment, mission/beliefs about animals]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Do/did you know all of your animals by name? No Yes

9. Do you believe you have a special ability to communicate with animals? No Yes

a. If yes, please describe:

\_\_\_\_\_  
\_\_\_\_\_

10. Has caring for this many animals ever caused a problem for you or your family? No Yes

a. If yes, what kind of problem and what did you do about it?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. Has anyone ever complained about your animals? No Yes

a. If yes, who and what did they complain about?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. If yes, do you think their complaints are/were legitimate? No Yes

\_\_\_\_\_  
\_\_\_\_\_

12. Have law enforcement or animal control officials investigated regarding your animals? No Yes

Tell me about that [Probe for hostility]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1 2 3 4 5  
no hostility mild moderate much extreme  
hostility

13. Are you/have you ever been afraid people may try to take some of your animals way? No Yes

a. If yes, can you tell me about that? [Probe for irrational vs. rational concerns]

\_\_\_\_\_  
\_\_\_\_\_

14. Have you made significant sacrifices or gone out of your way for your animals? No Yes  
If yes, what kinds?

Money No Yes

Employment No Yes

Cleanliness No Yes

Social Life No Yes

Condition of Home No Yes

Other \_\_\_\_\_ No Yes

History of Pets

15. How old were you when you had your first pet(s)? \_\_\_\_\_ years

16. What kind of pet(s) did you have? Dogs Cats Birds Reptiles  
Other: \_\_\_\_\_

17. Where did you pet(s) live? Indoors Outdoors Both  
Other: \_\_\_\_\_

18. How did you react the first time a pet died? [Probe for type and strength of emotions, attitudes, and behaviors]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1 very mild reaction      2 mild/some      3 moderate      4 marked      5 extreme/severe reaction

19. In general, how attached were you to your pet(s) when you were growing up (age 6-18)?

1 not at all attached      2 somewhat      3 moderately      4 very much      5 extremely attached

Describe the strongest attachment to a pet:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

20. What was the total number of pets you had before you were 18? Total #: \_\_\_\_\_

21. What was the maximum number of pets you or your family had at one time before you were 18:  
Maximum #: \_\_\_\_\_

22. When did you start keeping multiple pets? Age: \_\_\_\_\_  
Describe circumstances:

\_\_\_\_\_  
\_\_\_\_\_

Acquisition

23. Do you experience special pleasure when you acquire a new animal? No Yes

\_\_\_\_\_  
\_\_\_\_\_

1 no pleasure      2 mild pleasure      3 moderate pleasure      4 much pleasure      5 strong pleasure

24. How do you acquire new animals? \_\_\_\_\_  
\_\_\_\_\_

- a. Looks for and collects strays      No      Yes
- b. Brought by others      No      Yes
- c. Existing animals produce offspring      No      Yes
- d. Other \_\_\_\_\_      No      Yes

25. Is there anything else you'd like to tell me we haven't covered?

\_\_\_\_\_  
\_\_\_\_\_