The Epidemiology of the Proposed *DSM-5* Hoarding Disorder: Exploration of the Acquisition Specifier, Associated Features, and Distress

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Objective: Compulsive hoarding, characterized by the acquisition of and failure to discard a large number of possessions, is increasingly recognized as a significant public health burden. Many facets of the phenomenology, including an understanding of the population prevalence and associated features, are not yet fully understood. There is growing evidence that hoarding may warrant its own diagnosis in *DSM-5*, and it is therefore imperative to investigate the proposed cardinal symptoms along with correlated features that may be diagnostically relevant.

Method: The present investigation examined the point prevalence of hoarding disorder in a nationally representative sample from the German population (N = 2,512). The hoarding definition considered in this study was derived from the Hoarding Rating Scale (HRS) and informed by 3 of the proposed *DSM-5* criteria. Several hypothesized core components of hoarding disorder were also assessed using questions from the HRS and the UCLA Hoarding Severity Scale, including types of acquisition, perfectionism, indecision, procrastination, distress, and impairment. Data were collected from May 16, 2009, to June 19, 2009.

Results: Analyses revealed a current population estimate of 5.8%. Hoarding prevalence did not differ between men and women. Hoarders were significantly more likely to buy items, acquire free things, and steal items they did not need, compared to nonhoarders ($P < .001$). Perfectionism, indecision, and procrastination were all uniquely and significantly associated with hoarding status ($P < .001$). Relationships between the proposed core features and distress/impairment are also detailed.

Conclusions: The current investigation identified the proposed hoarding disorder as a highly prevalent syndrome**;** however, it should be noted that we were not able to fully ascertain the *DSM-5* criteria and that the current estimate may be higher than the actual population rate. Future research on the diagnostic criteria and associated features will be necessary to help clarify etiologic underpinnings, treatment efforts, and diagnostic nosology.

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With the advent of *DSM-5,* several additions to the existing diagnostic nomenclature are being proposed,[1] among them a hoarding disorder. Research over the last decade has identified this syndrome as a severe and substantial public health burden. Clinical hoarding symptoms have been linked with greater rates of chronic medical illnesses, increased psychiatric comorbidity, and substantially reduced functioning.[2] Hoarding is considered a fairly treatment-resistant phenomenon, and it carries many negative repercussions for the individual, his or her family, and communities.[2,3]

Although hoarding has historically been associated with obsessive-compulsive disorder and obsessive-compulsive personality disorder, convincing evidence is mounting that it has distinct phenomenological, genetic, and pathophysiologic elements.[4,5] The proposed draft *DSM-5* criteria for a hoarding disorder have been recently outlined.[1,6] Briefly, a hoarding diagnosis would be warranted if there were a persistent difficulty with discarding possessions (Criterion A); this difficulty were due to strong urges to save items and/or distress (Criterion B); the symptoms result in the accumulation of a high degree of clutter (Criterion C); the symptoms caused significant distress or impairment in important areas of functioning (Criterion D); the symptoms were not due to a general medical condition (Criterion E) and/or another mental disorder (Criterion F). Two specifiers for the diagnosis have been included: with *excessive acquisition* and/or with (good, poor, or absent) *insight*.

Mataix-Cols and colleagues[6] discussed a number of key issues relevant to the *DSM-5* deliberations on whether hoarding should be a discrete disorder. A primary question is to identify the most cogent diagnostic criteria and associated features to include in the *DSM-5*. An additional challenge is to determine the global hoarding disorder prevalence. Several epidemiologic studies[7–11] have been conducted to date (Table 1). The estimated prevalence rate ranges from 2%–5% of the population when the results of these investigations are considered jointly; however, closer examination reveals that the range of estimates is quite large (ie, 2.3%–14%). Direct comparisons are difficult, since studies examined either lifetime or point prevalence estimates and relied on different assessment instruments. In addition, as Mataix-Cols et al[6] noted, no studies have been conducted that specifically considered the proposed *DSM-5* diagnostic criteria. In fact, several of the investigations[7,10,11]

For Clinical Use

- The proposed hoarding disorder represents a more prevalent public health burden than historically anticipated.
- Excessive acquisition is a common phenomenon among individuals with hoarding, and clinicians should assess patients for all 3 primary types, including buying, acquisition of free things, and stealing.
- Because the associated features of hoarding (acquisition, perfectionism, indecision, and procrastination) were all significant predictors of distress and impairment, treatment may need to be focused on these factors, in addition to the core symptoms.

Table 1. Comparison of Epidemiologic Studies of Hoarding

Author	Hoarding Cases, %	Hoarding Measures	Sample Nationality	Sex Difference	Age Difference	Additional Facets Considered
Samuels et al,[7] 2008 (N = 742)	5.3%[a]	Review of clinical interview	United States	Males > females by factor of 2	Older > younger	Personality; comorbidity; GAF; adverse life events
Mueller et al,[8] 2009 (N = 2,307)	4.6%[b]	Saving Inventory Revised	German	Males = females (acquisition only: males < females)	No age difference	Compulsive buying
Iervolino et al,[9] 2009 (N = 5,022)	2.3%[b]	Hoarding Rating Scale	United Kingdom	Males > females by factor of 2	Not examined	Heritability
Ruscio et al,[10] 2010 (N = 2,073)	14%[a]	Adapted Yale-Brown Obsessive Compulsive Scale	United States (NCS-R)	Not examined	Not examined	None
Fullana et al,[11] 2010 (N = 2,804)	2.6%[a]	Composite International Diagnostic Interview	6 European countries	Males = females	No age difference	Sociodemographics; comorbidity; nationality
Present investigation (N = 2,512)	5.8%[b]	Hoarding Rating Scale—mapped on 3/6 proposed *DSM-5* criteria	German	Males = females	No age difference	Types of acquisition; associated features; distress and impairment

[a]Lifetime prevalence. [b]Point prevalence.
Abbreviations: GAF = Global Assessment of Functioning, NCS-R = National Comorbidity Survey Replication.

have relied on measures that have not been well validated for hoarding.[12]

Past investigations have also not considered the prevalence of those individuals meeting criteria for the acquisition specifier. The only extant large studies to examine acquisition either were focused on a population of self-identified hoarders,[13] or did not consider all 3 proposed types of acquisition[8]: buying, acquisition of free things, and/or stealing. Current knowledge about stealing has been limited to anecdotal reports, and little is known about the true extent of this behavior in hoarding populations. Aside from the 3 cardinal symptoms (ie, difficulty discarding, clutter, and distress/interference) and acquisition specifier, very few epidemiologic studies have also considered associated features that may be key phenomenological facets of hoarding, such as perfectionism and indecision.[4,14–16]

The present report aimed to supplement existing epidemiologic studies of hoarding by considering point prevalence rates in a large representative sample within the context of the proposed *DSM-5* criteria. Our second aim was to examine the acquisition specifier, taking into account all 3 proposed types of acquisition. A third aim consisted of examining the relationship between hoarding and several proposed associated features, including perfectionism, indecision, and procrastination. Our final aim was to closely examine the relationship between the symptoms and associated features of hoarding with regard to reported levels of distress and impairment.

METHOD

Participants and Sampling

A cross-sectional survey of a representative sample of the general German population was conducted with the assistance of an independent demographic consulting company (USUMA, Berlin, Germany). Random selection was based on multistage sampling. First, 258 sample points across the country were drawn on the basis of the sampling frame provided by the Association of German Market and Social Research Agencies. Second, households in the respective area were selected using the random route procedure. Third, a target person was selected using the Kish selection grid to give each person in the household an equal chance of being selected. To be included, subjects had to be aged 14 years or older and able to read and understand German. All subjects were personally visited by a trained study assistant, informed about the study procedures, and asked to sign an informed consent document.

Subjects completed a self-report assessment battery and could ask the interviewer for assistance. Data were collected between May and June 2009. An initial attempt was made to contact 4,630 addresses, of which 4,572 were valid; 2,524 subjects agreed to participate. After excluding 12 persons who had not answered major parts of the questionnaires, the final sample consisted of 2,512 participants. A total of 1,401 (55.8%) of the participants were female, and 1,323 (52.7%) had 10 or more years of education (ie, the equivalent

of high school or college). The sample was similar to the general German population with respect to these and other demographic characteristics according to the 2008 population report of the Federal Statistical Office of Germany (http://www.destatis.de).

Measures

Demographic characteristics. Standard sociodemographic variables were assessed, including: age, sex, marital/partner status, education, and income.

German-Hoarding Rating Scale (G-HRS). The Hoarding Rating Scale (HRS)[17] is a 5-item measure of the key hoarding dimensions, and it maps onto the proposed *DSM-5* hoarding criteria A, C, and D, as well as the acquisition specifier. It can be administered in either an interview or self-report format, with similar psychometrics; in the current study, the self-report version was used. Participants are required to answer items using a 9-point Likert type scale, ranging from 0 (none) to 8 (extreme). Items ask about the degree to which clutter results in problems using living space (item 1), the amount of difficulty with discarding possessions (item 2), the degree of difficulty with excessive acquisition (item 3), emotional distress (item 4), and functional impairment (item 5). The HRS has been found to have strong internal consistency, good test-retest reliability, and excellent divergent validity.[13,17]

The German-HRS (G-HRS) is a direct translation of the English instrument. The process of translation and evaluation of the German version will be described in detail in a separate report. Briefly, the HRS items were translated into German by 3 native speakers and then examined for clarity by lay German speakers. After minor grammatical changes, the 5 items were back-translated into English and then compared to the original instrument, with no additional changes necessary. The convergent and divergent validity of the G-HRS are comparable to the English version. In the present investigation, the G-HRS had satisfactory internal consistency ($\alpha = .87$).

Types of acquisition. Three items assessed types of acquisition, including: *buying* (compulsive buying of items that you currently do not need or cannot afford), *free things* (excessive collecting of free items that you do not currently need), and *stealing* (stealing items you cannot afford and do not currently need). All items were answered using a Likert-type scale from 0 (never) to 4 (daily).

Associated features of hoarding. Three items assessed associated features of hoarding, including: *perfectionism* ("Do routine tasks take longer than they should, because of a need to do things perfectly?"), *indecision* ("Do you have trouble making decisions, even about little things other people wouldn't think twice about?"), and *procrastination* ("How much do you procrastinate doing tasks [chores, discarding, organizing, etc]?"). Items were answered using a Likert-type scale from 0 (not at all) to 4 (extreme). All 3 items were adapted directly from the UCLA Hoarding Severity Scale,[18] which measures the severity of various phenomenological hoarding features.

Distress and impairment. We relied on the G-HRS items 4 and 5 (distress and functional impairment, respectively) as measures of *distress* and *general impairment* resulting from hoarding symptoms. In addition, we included 1 item focused specifically on *social functioning* ("To what extent do your clutter and saving behaviors affect your personal relationships?"); answers were rated using a Likert-type scale from 0 (not at all) to 4 (extremely).

Hoarding Classification

DSM-informed classification. Participants were classified as hoarders or nonhoarders by mapping the 5 G-HRS items onto 3 of the 6 hoarding criteria proposed for *DSM-5*. Empirically validated cutoffs for each item were used to determine whether a participant met a given criterion.[13,17] It should be noted that this grouping variable did not include acquisition, which was considered separately, within the context of a specifier.

- Criterion A (*difficulty discarding personal possessions*) was reflected by G-HRS item 2, with a cutoff of 3.
- Criterion B (*difficulty is due to strong urges to save and/or distress*) was not assessed by the HRS.
- Criterion C (*accumulation of a large number of possessions that clutter personal surroundings*) was reflected by G-HRS item 1, with a cutoff of 4.
- Criterion D (*clinically significant distress and/or impairment in social, occupational, or other important areas of functioning*) was reflected by a score of 3 or more on either G-HRS item 4 or item 5.
- Criterion E (*not due to another developmental or mental disorder*) and Criterion F (*not due to physiologic effects of substance or general medical condition*) were not assessed.

To determine which participants qualified for the excessive acquisition specifier (via *compulsive buying, collecting of free items,* or *stealing*), we relied on a composite grouping variable of the 3 acquisition items. Participants were classified as meeting the specifier if they endorsed *buying, free things,* and/or *stealing* at least occasionally (less than weekly). This cutoff was derived from the validated cutoff for the HRS acquisition question (item 3; cutoff of 2 = occasionally, less than weekly).[17]

G-HRS cutoff classification. To compare our findings to those reported in the prior epidemiologic study using the HRS,[9] we applied a total score cutoff of 17 to classify the sample, which is the same methodology used by Iervolino et al.

Data Analyses

Analyses were conducted using the SPSS 16.0 software package (IBM SPSS, Chicago, Illinois). A 2-tailed significance level of .05 was chosen a priori. Demographic variables between groups were compared using *t* tests and χ^2 tests. To understand how acquisition and associated features

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Table 2. General Descriptive Characteristics of the German Population Sample

	Total Sample	Nonhoarders	Hoarders
N (%)	N= 2,512 (100)	n=2,366 (94.2)	n=146 (5.8)
Sociodemographic variables			
Age, mean (range), y	48.8 (14–94)	49.4 (14–94)	49.6 (14–90)
Sex, female, %	51.4	51.4	56.7
Married, %	50.0	50.1[a]	41.2[a]
10+ years of education, %	52.7	50.9	52.8
Hoarding symptoms[b]			
G-HRS total score, mean (SD)	5.3 (6.2)	4.3 (5.1)	21.1 (3.9)
Acquisition specifier, n (%)	744 (29.6)	645 (27.3)	99 (67.8)
Acquisition types, n(%)[b]			
Buying	573 (22.8)	479 (20.3)[c]	94 (64.4)[c]
Free things	542 (21.6)	464 (19.6)[c]	78 (53.4)[c]
Stealing	183 (7.3)	146 (6.2)[c]	37 (25.3)[c]

[a]Significantly different from one another ($P < .05$).
[b]Endorsement of acquisition, more often than occasionally.
[c]Significantly different from one another ($P < .001$).
Abbreviation: G-HRS = German-Hoarding Rating Scale.

were related to hoarding, we generated Pearson correlation coefficients between these predictors and a continuous measure of hoarding severity (ie, the G-HRS). We tested for differences between 2 correlation coefficients using the procedure outlined by Meng et al.[19] We also employed logistic regression to determine how well acquisition and associated features predicted the likelihood of hoarding (yes/no). Univariate analyses were conducted initially, followed by multivariate analyses to determine whether the features contributed independently to hoarding. Finally, to understand the drivers of distress/impairment in the total sample, 3 separate linear regressions were conducted. Step 1 included 2 cardinal symptoms (clutter and difficulty discarding) and acquisition, while Step 2 included the 3 associated features. Models were generated separately for each of the outcomes: *distress*, *general impairment*, and *social impairment*.

RESULTS

Prevalence of Hoarding

On the basis of the *DSM*-informed grouping variable (ie, excluding acquisition), 5.8% of the sample was classified as hoarders. Table 2 summarizes group comparisons for hoarding severity and sociodemographic variables. In contrast to the nonhoarding group, hoarders had significantly higher G-HRS scores ($t = -47.9$, $P < .001$). The mean G-HRS scores for the 2 groups, as well as the item-level scores, are in line with means reported for other clinical hoarding and nonclinical samples.[9,17] Hoarding prevalence did not significantly differ between men (6.4%) and women (5.4%), or by any of the sociodemographic variables assessed. The only exception was that hoarders were less likely to be married than nonhoarders ($\chi^2_{1,2512} = 4.57$, $P < .05$).

Of the total sample, 3.9% (n = 99) were classified as hoarders using the *DSM*-informed grouping variable, and they also met criteria for the acquisition specifier. A significantly greater proportion of hoarders met criteria for the acquisition specifier compared to nonhoarders ($\chi^2_{1,2512} = 108$, $P < .001$). The higher prevalence among hoarders was also found when we considered the 3 types of acquisition separately (see Table 2).

When we applied the total score cutoff of 17, we found a slightly higher proportion of hoarders (6.7%). The overall pattern of group comparisons for hoarding severity and sociodemographic variables between hoarders and nonhoarders was similar to that using the *DSM*-informed grouping variable. For all analyses detailed below, we relied on the *DSM*-informed grouping.

Table 3. Associations With Hoarding Symptom Severity and Hoarding Status

Predictor	G-HRS Total Score, Pearson Correlations, *P* Value	Hoarding Status (yes vs no),[a] Odds Ratio (95% CI), *P* Value
Types of acquisition		
Buying	0.49, < .001	3.8 (3.1–4.8), < .001
Free things	0.44, < .001	3.2 (2.6–3.9), < .001
Stealing	0.28, < .001	2.6 (2.0–3.4), < .001
Associated features		
Perfectionism	0.40, < .001	2.6 (2.2–3.0), < .001
Indecision	0.38, < .001	2.7 (2.2–3.2), < .001
Procrastination	0.39, < .001	2.3 (1.9–2.7), < .001

[a]Hoarding status = *DSM*-informed classification.
Abbreviation: G-HRS = German-Hoarding Rating Scale.

Types of Acquisition

The 3 types of acquisition were all significantly ($P < .001$) correlated to one another: *buying* with *free things*, $r = 0.63$; *buying* with *stealing*, $r = 0.44$, and *free things* with *stealing*, $r = 0.48$. Greater frequency of acquisition for all 3 types was significantly associated with greater hoarding severity (Table 3). Comparing the strength of each of the correlations revealed that *buying* had a stronger association with G-HRS than did *free things* ($z = 3.57$, $P < .001$) or *stealing* ($z = 10.96$, $P < .001$) and that *free things* in turn had a stronger association with G-HRS than did *stealing* ($z = 8.37$, $P < .001$).

Univariate logistic regression revealed that all 3 types of acquisition were significantly associated with hoarding status (see Table 3). In multivariate analyses, *stealing* was no longer predictive of hoarding. However, both *buying* (odds ratio [OR] = 2.6, 95% CI, 2.0–3.6; Wald = 43.8, $P < .001$) and *free things* (OR = 1.6, 95% CI, 1.2–2.2; Wald = 10.9, $P < .001$) remained significant predictors.

Associated Features

As outlined in Table 3, all 3 associated features (*perfectionism, indecision,* and *procrastination)* were significantly associated with greater hoarding symptom severity. There were no significant differences in the magnitude of these correlations.

In univariate logistic regression, all of the associated features were significantly linked with hoarder status (see Table 3). Multivariately, *perfectionism* (OR = 1.7, 95% CI, 1.4–2.1; Wald = 22.3, $P < .001$), *indecision* (OR = 1.6, 95% CI, 1.2–2.0; Wald = 12.2, $P < .001$), and *procrastination* (OR = 1.4,

Table 4. Predictors of Distress/Impairment in Hierarchical Linear Regression, by Hoarding Feature

Outcome	Step 1: Cardinal Symptoms Only			Step 2: Core Features Added		
Distress						
Model Summary	$R^2 = 0.54$; SE = 0.92; $F = 969.6$, $P < .001$			$R^2 = 0.55$; SE = 0.90; $F = 508.9$, $P < .001$		
	Beta	*t*	*P*	Beta	*t*	*P*
Clutter	0.12	7.51	<.001	0.11	6.95	<.001
Difficulty discarding	0.22	12.64	<.001	0.19	10.67	<.001
Acquisition	0.51	30.35	<.001	0.49	28.34	<.001
Perfectionism	…	…	…	0.07	4.12	<.001
Indecision	…	…	…	0.05	2.96	<.01
Procrastination	…	…	…	0.03	1.67	NS
Impairment						
Model Summary	$R^2 = 0.55$; SE = 0.91; $F = 1033.7$, $P < .001$			$R^2 = 0.57$; SE = 0.89; $F = 552.3$, $P < .001$		
	Beta	*t*	*P*	Beta	*t*	*P*
Clutter	0.16	10.19	<.001	0.16	9.92	<.001
Difficulty discarding	0.22	12.63	<.001	0.19	10.75	<.001
Acquisition	0.50	30.05	<.001	0.46	27.59	<.001
Perfectionism	…	…	…	0.10	6.12	<.001
Indecision	…	…	…	0.04	2.07	<.05
Procrastination	…	…	…	0.03	1.68	NS
Social impairment						
Model Summary	$R^2 = 0.22$; SE = 0.51; $F = 237.8$, $P < .001$			$R^2 = 0.35$; SE = 0.47; $F = 226.0$, $P < .001$		
	Beta	*t*	*P*	Beta	*t*	*P*
Clutter	0.13	5.82	<.001	0.09	4.46	<.001
Difficulty discarding	0.08	3.49	<.001	0.01	0.25	NS
Acquisition	0.35	15.64	<.001	0.26	12.73	<.001
Perfectionism	…	…	…	0.21	9.88	<.001
Indecision	…	…	…	0.17	7.62	<.001
Procrastination	…	…	…	0.10	5.21	<.001

Abbreviation: NS = not significant.
Symbol: … = not applicable.

95% CI, 1.1–1.7; Wald = 7.7, $P < .01$) all remained significant predictors of hoarding.

We also examined whether increased *social impairment* would be associated with hoarding status. In univariate logistic regression, we found that an increase of 1 category of social impairment (eg, from *Not at all* to *Mildly*) resulted in a 3-fold higher likelihood of being classified as a hoarder (OR = 3.5, 95% CI, 2.9–4.3; Wald = 156.4, $P < .001$).

Distress and Impairment

The results of hierarchical modeling to identify significant drivers of distress and impairment can be found in Table 4. For *distress*, the overall model explained 55% of the variance; although the inclusion of the associated features increased the amount of variance accounted for by only 1%. The *general impairment* model explained 57% of the variance, with the associated features accounting for an additional 2% of variance. Finally, in the *social impairment* model, the cardinal symptoms and associated features together explained 35% of the variance, with 13% accounted for by the associated features.

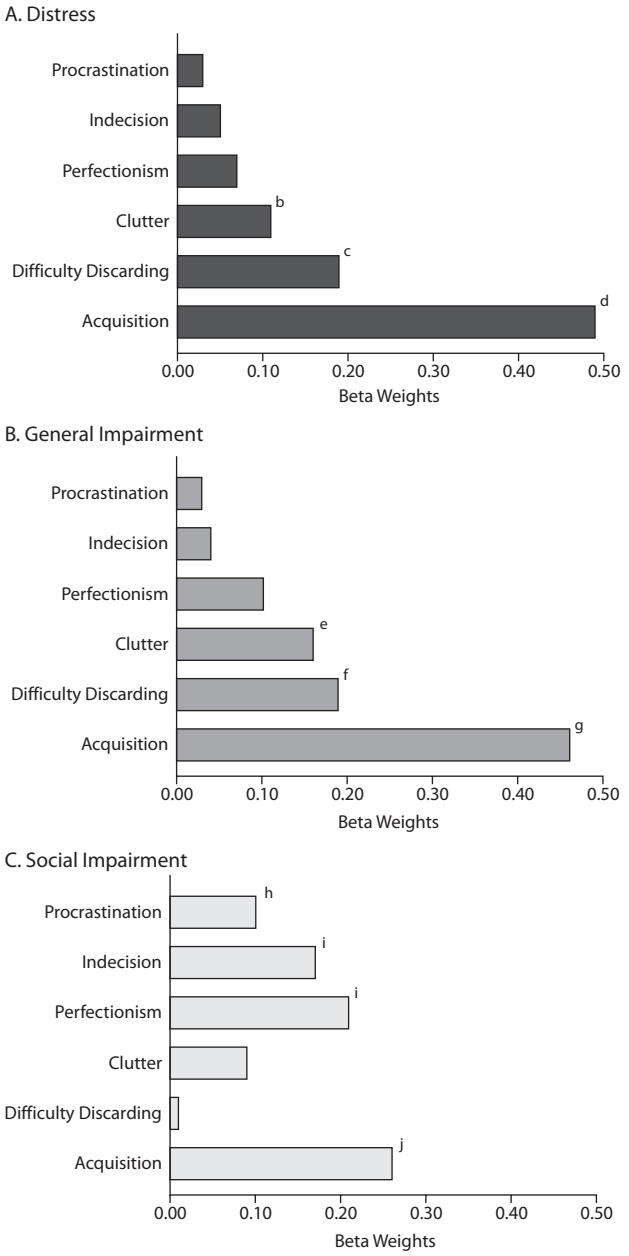
Because the *P* values did not largely differentiate the predictors in this sizeable population, we sought to compare the magnitude of the associations between each feature/symptom and distress/impairment outcome. We used a β coefficient comparison strategy outlined by Cohen et al.[20] Figure 1 provides a graphical summary. For all 3 outcome variables, we found that *acquisition* was a significantly stronger predictor than all other variables considered. For both *distress* and *general impairment*, the 3 associated features did not significantly differ from one another in their predictive ability. Results for *social impairment* differed somewhat, in that 2 of the associated features (*procrastination* and *indecision*) were significantly stronger predictors than the cardinal symptoms (*clutter* and *difficulty discarding*).

DISCUSSION

The present report provides evidence of a population point estimate of 5.8% for the proposed hoarding disorder, which was calculated using methods informed by the proposed draft *DSM-5* criteria. This current prevalence rate is in line with those reported by other studies (see Table 1), although it is higher than that identified in the one other investigation that also used the HRS.[9] We did not find differences in hoarding rates based on age or sex. This is in contrast to 2 studies with British and American samples showing an almost 2-fold greater prevalence of hoarding in males,[7,9] along with greater rates of hoarding in older populations.[7] Two investigations,[8,11] one of which also relied on a German population sample,[8] did not find any sex or age differences, in line with the current study. Sampling differences or cultural variations may account for these discrepancies. Considering the G-HRS cutoff of 17, we identified a prevalence estimate slightly higher than that with the *DSM*-informed grouping variable. This discrepancy most likely arose because the HRS cutoff score includes the acquisition item, whereas the *DSM*-informed grouping variable does not include it and generally represents a more conservative approach.

Given our reliance on self-report methods, we were not able to take into account levels of insight[21,22] or assess the complete set of proposed *DSM-5* criteria. Specifically, the HRS did not allow us to ascertain diagnostic Criteria B, E, and F, and we can therefore not rule out whether the symptoms endorsed are better accounted for by a general medical condition or another psychiatric condition (eg, dementia, depression, or obsessive-compulsive disorder). Given this limitation, our prevalence rate very likely represents an inflated estimate of the actual population rate of hoarding disorder. A related limitation is that the HRS cutoff criteria have not yet been validated in a German clinical sample of hoarders; however, we found that the mean G-HRS scores of the present sample were similar to those reported with

Figure 1. The Predictive Ability of Associated Features (procrastination, indecision, and perfectionism), the Acquisition Specifier, and Cardinal Symptoms (difficulty discarding, clutter, and distress) of Hoarding With Respect to (A) Distress, (B) General Impairment, and (C) Social Impairment[a]



[a]Standardized regression coefficients (beta weights) from 3 separate linear regression models are presented for a graphical comparison of the strength of the association. The models examine the predictive ability of associated features, the acquisition specifier, and cardinal symptoms of hoarding with respect to distress, general impairment, and social impairment. Beta weights were statistically compared to one another within each model.
[b]$P < .05$ compared with procrastination.
[c]$P < .05$ compared with clutter and all 3 associated features.
[d]$P < .05$ compared with all other predictors of distress.
[e]$P < .05$ compared with indecision and procrastination.
[f]$P < .05$ compared with clutter and all 3 associated features.
[g]$P < .05$ compared with all other predictors of general impairment.
[h]$P < .05$ compared with difficulty discarding.
[i]$P < .05$ compared with clutter, difficulty discarding, and procrastination.
[j]$P < .05$ compared with all other predictors of social impairment.

the English HRS.[17] A final limitation is our use of a number of single-item questions. Although this methodology has inherent psychometric limitations, there are practical and theoretical considerations that make these questions more acceptable.[23–30]

Our investigation is unique in that it examines the prevalence of the acquisition specifier in a general population sample. We found that over two-thirds of hoarders qualified for *with excessive acquisition*. This finding reflects the extremely high rate of acquisition observed in clinical samples,[13] as well as in the compulsive buying–focused Mueller epidemiologic investigation.[8] The fact that not all individuals in the hoarding group met criteria for excessive acquisition, as well as the consideration that almost 30% of nonhoarders did meet the acquisition cutoff, underscores the current *DSM* proposal to consider acquisition as a specifier for the diagnosis rather than as a core symptom.[6] It is unclear, however, whether individuals can accurately be dichotomized into acquisition and nonacquisition groups or whether acquisition behaviors are better captured by a continuum—similar to the proposed insight characterization (ie, good, poor, or absent).[6] One question to emerge from our findings is which aspects of acquisition contribute to this symptom's being such a robust predictor of distress and/or impairment. It is also interesting to consider the role acquisition-associated distress may have in referral biases. The rate of acquisition in the current investigation was actually somewhat smaller than that reported in a recent clinical sample.[13] Perhaps the distress/impairment linked with excessive acquisition problems propels individuals to seek help or participate in clinical research.

We found that one-quarter of hoarders endorsed stealing occasionally, compared to only 6% of nonhoarders. These data provide insight into a much understudied facet of acquisition behaviors. Stealing within the context of hoarding has been examined only in several case reports.[31,32] A recent investigation[33] of shoplifting in the general population found the lifetime population prevalence to be approximately 11.3%, which is much lower than the rates of stealing we found in the current sample of hoarders.

Associated features are factors that are often linked with a disorder but are not diagnostically essential.[34] Although the factors we examined are not specific to hoarding, we found on a population level that they were significant predictors of distress and impairment. Also, indecision and perfectionism were more strongly associated with social impairment than either clutter or difficulty discarding (Figure 1). Interpersonal difficulties associated with hoarding have often been mentioned in the literature.[15,35] Together, these findings indicate that the associated features examined are important facets to consider for a holistic understanding of hoarding—from both an etiologic and maintaining perspective.

With regard to clinical implications, although the rate of 5.8% reported in the current investigation may be an overestimate of the actual rate, our findings nevertheless suggest that hoarding is a highly prevalent and significant public health burden. In line with the proposed criteria, our data suggest

that all 3 types of acquisition should be assessed. Finally, consideration should be given to the high degree of social difficulties, and treatment may also necessitate interventions focused on the associated features. Future investigations of this proposed hoarding disorder will be necessary to help clarify diagnostic classification and uncover etiologic underpinnings, thus informing treatment efforts.

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents that is outside US Food and Drug Administration–approved labeling has been presented in this article.

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