Clinical Features and Treatment Characteristics of Compulsive Hoarding in Japanese Patients with Obsessive-Compulsive Disorder

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ABSTRACT

Introduction: Compulsive hoarding has been studied primarily in Western countries. Here we sought to examine compulsive hoarding in Japanese patients with obsessive-compulsive disorder (OCD). The heterogeneous nature of hoarding was also investigated.

Methods: One hundred and sixty-eight OCD outpatients were initially assessed to determine the presence or absence of compulsive hoarding, and whether hoarding was primary or secondary to another symptom dimension for which they had received treatment for 1 year.

Results: *Of the participants, 54 patients were* found to have compulsive hoarding. Hoarders were significantly more likely than non-hoarding patients to have more severe psychopathology including elevated severity of OCD symptoms, poorer insight, higher prevalence of comorbid schizotypal or obsessive-compulsive personality disorder, closer association with symmetry dimension, and poorer treatment outcome. Comparisons of subjects with primary and secondary hoarding found that the former group had more severe clinical features, while the latter group hoarded a wider variety of items, including apparently bizarre ones.

FOCUS POINTS

- The prevalence, severity, and clinical characteristics of compulsive hoarding in Japanese obsessive-compulsive (OCD) subjects was quite similar to those reported in Western countries, supporting the possible trans-cultural consistency of this symptom dimension.
- The distinction between primary and secondary hoarding in OCD should be a clinically useful one and may contribute to the debate about whether hoarding should be a separate diagnostic entity.
- Additional work on larger samples of OCD patients with hoarding, as well as hoarders without OCD are needed to delineate fully the nature of compulsive hoarding.

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Conclusion: The prevalence and clinical characteristics of compulsive hoarding in OCD subjects was similar to those reported in Western countries, supporting its trans-cultural consistency. The distinction between primary and secondary hoarding in OCD is clinically useful, and may contribute to the debate about whether hoarding should be a separate diagnostic entity.

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INTRODUCTION

There is increasing evidence that obsessive-compulsive disorder (OCD) is a heterogeneous condition.[1,2] Recent factor analyses of OCD symptoms assessed using the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS)[3,4] have provided consistent evidence that a limited number of distinct symptom dimensions exist, including contamination/washing, symmetry/ordering, and hoarding.[5] It has been suggested that these symptom dimensions are differentially related to clinical features[1,2,6,7] and may be underpinned by distinctive sets of bio-behavioral mechanisms with different genetic and neuroimaging correlates.[7-9] Data that OCD symptom dimensions are stable across different cultures and ethnic groups[5,10] support the universality of such psychobiological mechanisms.

Compulsive hoarding is characterized by excessive collecting and failure to discard excessive amounts of collected items, which cause the cluttering of living space and significant distress or impairment.[11-13] In OCD, the presence of compulsive hoarding is suggested to exhibit significant associations with increased axis I and II comorbidity, worse insight, greater impairment in activities of daily living and other measures of global functioning, poorer response to standard psychological and/or pharmacological treatments, and distinct genetic and neurobiological profiles.[11-20] Indeed, hoarding has consistently emerged as the most severe and disabling of the different symptom dimensions in OCD.[1,6,10,21-23]

Nevertheless, hoarding in OCD is not homogeneous; hoarding compulsions may be a result of specific hoarding obsessions or may be a consequence of a range of preceding symptoms, including contamination, aggressive, or symmetry obsessions. This suggests that hoarding may also be secondary to other OCD symptom dimensions.[17,19,24] Moreover, it has recently been hypothesized that compulsive hoarding may constitute a syndrome separate from OCD, with a characteristic symptom profile, distinct heritability, unique neurobiology, and differential response to treatment.[5,18,19,25-27]

Even though the structure of OCD symptoms seems rather universal,[5] it has been suggested that the content of obsessions and compulsions can be shaped by social context.[28] To our knowledge, few studies from non-Western countries have focused on compulsive hoarding. In the current study, we sought to examine the prevalence and clinical characteristics of hoarding in Japanese OCD patients. The heterogeneous nature of hoarding compulsions in OCD patients was investigated by specifying whether these were primary or secondary to other OCD obsessions.

METHODS

Subjects and Assessment

Subjects were 168 outpatients who met *Diagnostic and Statistical Manual of Mental Disoders*, Fourth Edition criteria for OCD, and who gave written informed consent to participate in this study. Each subject was diagnosed with the Structured Clinical Interview for *DSM-IV* (patient version) (SCID-P).[29] Information was obtained regarding demographic profile, family and medical history, and clinical features and course. The procedure to assess lifetime incidence of impulsive behaviors such as substance abuse, stealing, self-mutilation, suicide attempts, and destructive behaviors has previously been described.[30] Lifetime comorbidity of major depression was also evaluated for each participant using SCID-P.[29] Comorbid *DSM-IV* personality disorders were assessed using the Japanese version of the SCID personality disorders (SCID-II)[31] by researchers who were blind to the clinical features of each subject. The acceptable reliabilities for each personality disorder diagnosis in OCD subjects obtained by the SCID-II Japanese version have previously been reported.[30] The State-Trait Anxiety Inventory (STAI)[32] and Zung's Self-rating Depression Scale (SDS)[33] were also administered to each subject. Global functioning was assessed using the *DSM-IV* Axis V Global Assessment of Functioning Scale (GAFS).

OCD symptoms in each participant were identified with the Japanese version of the Y-BOCS Symptom Checklist.[3,4,34] The assessment was conducted in a semi-structured interview by two clinicians with extensive training in and experience with the scale. Up to three primary obsessions and compulsions were listed for each subject, and the principal obsession and compulsion symptom categories were determined. The Y-BOCS was then administered to assess current OCD symptom severity. Degree of insight in each subject was evaluated using the insight question of the Y-BOCS.[3,4] The assessments and inter-rater reliability have been reported elsewhere.[35]

Given the ego-syntonic nature of hoarding and associated poor insight,[11,12,15,23] we concurrently performed a face-to-face semi-structured interview with each subject to confirm the presence or absence of compulsive hoarding independently of the Y-BOCS symptom checklist. Symptoms of compulsive hoarding were strictly defined using criteria adopted in previous works[12,13,19]; acquisition of and failure to discard a large number of possessions, a living space sufficiently cluttered in a manner that precludes activities for which the space was designed, significant distress or impairment in functioning caused by hoarding, clutter persisting at least 6 months, and hoarding behavior not caused by other mental disorders. The individual criteria were further confirmed on the basis of information from a hoarding assessment tool,[16] which specified the extent of hoarding. Subjects' hoarded items occupied drawers/cupboards (score=1), multiple box-space (score=2), filled >1 room (score=3), or filled contents of an apartment/house (score=4). Additionally, the OCD obsessions most closely related to hoarding compulsions and the specific items being hoarded were recorded.

The semi-structured, clinician-administered interview by two OCD experts distinguished hoarders from non-hoarders (Kappa coefficient= 0.79). We subsequently divided the OCD patients with hoarding symptoms into primary or secondary hoarders according to the obsessions related to their hoarding compulsions. Primary hoarders were those who considered their hoarding compulsions as the result of a fear that they might need items in the future (intrinsic value) or a strong emotional attachment to the possessions. Secondary hoarders were those with hoarding compulsions related to other OCD obsessions such as contamination fears, magical thinking, or a need for symmetry of possessions (eg, a patient had a room full of a large amount of possessions perceived as contaminated). Those with hoarding could be divided into primary and secondary hoarders with an excellent kappa coefficient (0.84).

After the pretreatment assessments, each subject was treated with a standardized combination of selective serotonin reuptake inhibitors (SSRIs), (ie, fluvoxamine [FLV], or paroxetine [PXT]) and cognitive-behavioral therapy (CBT). Treatment was usually initiated with daily dosages of FLV 50 mg or PXT 10 mg. If the medication was tolerated, dosage was gradually increased over 4 weeks to a maximum of FLV 250 mg/day or PXT 50 mg/day. CBT using exposure and response prevention was subsequently initiated with psychoeducational interventions and behavioral analysis. CBT procedures for hoarding compulsions consisted of both the excavation sessions and the cognitive restructuring proposed by Frost and colleagues.[12] Atypical antipsychotics, such as risperidone, olanzapine, or quetiapine, were added if patients were non-responsive to two SSRIs trials and CBT assessed using Clinical Global Impression Improvement (CGI-I) score was 3 or 4.[36,37] One-year treatment response was evaluated using change in Y-BOCS total score.

Analysis

For the main between-group comparisons, two-tailed group t tests were used. For categorical data, chi-square tests with Yate's correction for discontinuity or Fisher's Exact Test (if the minimum expected cell size <5) were used. Significance levels were set for $P<.01$ in view of multiple testing. All statistical analyses in the study were conducted using the SPSS statistical package (version 14.0).

RESULTS

Table 1 shows comparisons of demographic profiles and clinical features between the hoarding and non-hoarding groups. Fifty-four participants were assigned to the hoarding group. No significant differences in gender ratio, age, age at onset, and the proportion of married subjects or subjects with lifetime comorbidity of major depression were found between the groups. Subjects in the hoarding group were significantly more likely than non-hoarders to have a longer duration of illness (t=2.61, df=166, $P<.001$), a shorter duration of education (t=2.82, df=166, $P<.001$) and a

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lower mean score on the GAFS (t=4.10, df=166, *P*<.001). The hoarding group also had a significantly higher proportion of subjects with poor insight into their OCD symptoms (χ2=19.8, df=1, *P*<.001), and a significantly greater proportion of subjects who had a history of impulsive behaviors (χ2=10.5, df=1, *P*<.01).

Subjects in the hoarding group had significantly higher mean total score (t=3.82, df=166, *P*<.001), and obsession and compulsion subtotal scores (t=2.95, df=166, *P*<.005, t=4.06, df=166, *P*<.001, respectively) on the pre-treatment Y-BOCS than those in the non-hoarding group (Table 2). However, there were no significant differences between these groups in the mean STAI and SDS scores.

Among the 3 clusters of personality disorders, cluster A personality disorders, especially schizotypal personality disorders, were more frequently diagnosed in the hoarding group than the non-hoarding group (χ^2=16.3, df=1, *P*<.001, χ^2=20.1, df=1, *P*<.001, respectively). There were no significant group differences in the prevalence of cluster B or cluster C personality disorders, except for obsessive-compulsive personality disorder (OCPD) which was significantly more prevalent in the hoarding group even when the OCPD criteria regarding 'inability to discard worn-out or useless objects' was excluded from the analysis (χ^2=13.2, df=1, *P*<.001).

Table 3 shows the contents and frequencies of primary obsessions and compulsions other than hoarding in the participants. Symmetry obses-

TABLE 1.
Demographic Profiles and Clinical Features

	Hoarders (N=54)	*Non-hoarders (N=114)*
Gender (male/female)	24/30	34/80
Age*	30.8 (8.9)	30.1 (8.8)
Age at onset*	21.0 (6.7)	23.0 (6.5)
Duration*	9.8 (6.3)†	7.0 (5.5)
Education*	12.2 (2.7)†	13.4 (2.0)
Married (divorced)/ single	17 (2)/35	49 (3)/62
GAFS	45.9 (8.0)†	51.4 (6.3)
Poor insight (%)	63†	27
Lifetime major depression (%)	50	49
History of impulsive behaviors (%)	41†	18

* In years; values are mean (SD).

† *P*<.01 (compared to non-hoarders).

Group means of parametric variables were compared by two-tailed t tests. Comparisons of non-parametric variables were made by chi-square tests with Yate's Correction for discontinuity.

GAFS=Global Assessment of Functioning Scale (Axis V).

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TABLE 2.
Psychomatric Test Results & Comorbid Personality Disorders

	Hoarders (N=54)	*Non-hoarders (N=114)*
Pretreatment assessments		
Y-BOCS*		
Total score	29.8 (4.7)†	26.7 (4.0)
Obsession subscore	14.9 (2.9)†	13.6 (2.1)
Compulsion subscore	14.9 (2.5)†	13.1 (2.3)
SDS*	57.0 (8.6)	54.2 (7.4)
STAI*		
State	61.8 (9.0)	58.6 (8.0)
Trait	64.6 (8.5)	63.3 (7.3)
SCID-II (%)		
Any cluster A PD	24†	3
Schizotypal PD	17†	0
Any cluster B PD	15	8
Any cluster C PD	37	26
Obsessive-compulsive PD	20†	4
After 1-year treatment		
Y-BOCS total score*	21.5 (6.8)†	14.3 (6.0)
Improvement rate of Y-BOCS total score (%)*	27.8 (20.1)†	46.9 (19.0)

* Values are mean (SD).

† *P*<.01 (compared to non-hoarders).

Group means of parametric variables were compared by two-tailed t tests. Comparisons of non-parametric variables were made by chi-square tests with Yate's Correction for discontinuity or Fisher's Exact Tests, if the minimum cell size <5.

Y-BOCS=Yale-Brown Obsessive-Compulsive Scale; SDS=Self-rating Depression Scale; STAI=State-Trait Anxiety Inventory; SCID-II=Structured Clinical Interview for DSM-IV Axis II; PD=personality disorder.

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sions tended to be more prevalent in hoarders compared to non-hoarders (χ^2=4.7, df=1, *P*=.04). The hoarding group was significantly more likely than the non-hoarding group to have both repeating rituals (χ^2=9.2, df=1, *P*<.005), and ordering compulsions (χ^2=9.5, df=1, *P*<.005).

During the 1 year treatment with pharmacotherapy and CBT, there were no significant differences in the distributions or mean maximum dosages of SSRIs between the groups. Twenty-nine hoaders received FLV at a mean±SD dose of 202±46.2 mg/day. Twenty-five hoarders received PXT at a mean±SD dose of 42.3±4.6 mg/day. While 55 non-hoarders received FLV at a mean±SD dose of 189.5±53.9 mg/day. And 59 non-hoarders received PXT at a mean±SD dose of 39.1±5.3 mg/day.

However, a significantly larger number of subjects in the hoarding group (59%) were assessed to be SSRI non-responders (CGI-I score of 3 or 4) and subsequently had atypical antipsychotics added to their SSRI regimen (24%) (χ^2=19.2, df=1, *P*<.001). Moreover, subjects in the hoarding group were significantly more likely than non-hoarders to drop out prematurely from CBT (30% vs 5%, χ^2=19.1, df=1, *P*<.001). In all subjects, mean decrease on Y-BOCS total score was 41.5±21.2% at 1 year after starting treatment. The 1 year decrease in Y-BOCS total score in the hoarding group was significantly lower than the non-hoarding group (t=5.29, df=166, *P*<.001) (Table 2).

TABLE 3.
Prevalence of OCD Symptoms Except for Hoarding Symptoms

	Hoarders N=54	*Non-hoarders N=114*
Obsessions		
Aggressive	14	48
Contamination	29	63
Sexual/religious/ somatic	7	14
Symmetry and exactness	29	41
Miscellaneous	21	40
Compulsions		
Cleaning/washing	29	40
Checking	21	56
Repeating rituals	27*	30
Counting	9	14
Ordering	20*	20
Miscellaneous	16	32

* *P*<.01, compared to non-hoarders.

OCD=obsessive-compulsive disorder.

Comparisons of non-parametric variables were made by Chi-Square Tests with Yate's Correction for discontinuity.

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When the subjects in the hoarding group were divided into subgroups, 21 subjects were included in the primary subgroup and the remaining 33 subjects were assigned to the secondary subgroup. Hoarded items listed by the primary subgroup included wrapping papers, advertising circulars, booklets, worn-out boxes, cardboard boxes, containers or bottles, broken toys or furniture, recorded videotapes, old clothes, textbooks used in grade school, old magazines, letters, notes, or books. Most of the items were seen as valuable or possibly useful in the future, or emotionally meaningful for each individual. Three subjects who collected similar items such as newspapers, books, boxes, etc, were unable to clearly articulate their reasons for collecting. Most subjects in this subgroup reported that their hoarded items filled in at least 1 room (score=3) and the mean score of 'hoarding extent' assessed using the scale by Seedat and Stein[16] was 3.2±0.6.

On the other hand, subjects in the secondary subgroup hoarded items such as bags, clothes, sanitary or disinfectant goods, job papers, and feces (due to fear of contamination), old newspapers or magazines, empty cans, used diapers, lunch box or rubbish (due to fear of losing possessions), old receipts, various papers, religious publications (due to fear of something terrible happening), rotten foods, junk, tableware, household goods (due to symmetry obsessions with magical thinking), health magazines or clipped newspaper articles on health (due to somatic obsessions). While their 'hoarding extent' score varied, the mean score was 3.1±1.1 with no significant difference from that in the primary subgroup.

Table 4 shows the main differences in demographic and clinical features between the primary and the secondary hoarding subgroups. The primary hoarders were significantly more likely than the secondary hoarders to be male (χ^2=18.5, df=1, *P*<.001), to have a shorter duration of education (t=3.10, df=52, *P*<.001), and to have a higher proportion of subjects with poor insight

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(χ^2=15.4, df=1, *P*<.001). They also showed trends toward a younger age at onset (t=2.27, df=52, *P*=.03) and a lower mean score on GAFS (t=2.49, df=52, *P*=.02). The primary hoarders showed significantly higher prevalence of both symmetry obsessions (χ^2=10.3, df=1, *P*<.001) and repeating rituals (χ^2=13.2, df=1, *P*<.001). Similarly, they were significantly more likely than the secondary subgroup to have cluster A personality disorders (χ^2=10.5, df=1, *P*<.001) and schizotypal personality disorder (χ^2=6.9, df=1, *P*<.01), as well as an elevated rate of OCPD (χ^2=4.7, df=1, *P*=.03). There were no significant group differences in mean pretreatment score (primary: 30.6±4.4, secondary: 29.3±4.9) or the 1-year decreased rate on the Y-BOCS (primary: 25.1±19.6, secondary: 29.6±17.7). Subjects in the primary subgroup were significantly more likely than those in the secondary subgroup to drop out prematurely from CBT (52% vs 15%; χ^2 =8.5, df=1, *P*<.01).

TABLE 4.
Main Differences Between Primary and Secondary Hoarders

	Primary n=21	*Secondary n=33*
Demographic features		
Male (%)	81†	21
Age in years at onset*	18.4 (5.6)	22.6 (7.3)
Years of Education*	10.8 (2.8)†	13.1 (2.1)
Poor insight to hoarding (%)	95†	42
GAFS score*	42.2 (9.1)†	48.3 (6.2)
OCD symptoms (%)		
Symmetry obsessions	81†	36
Repeating rituals	81†	30
Personality disorders (%)		
Any cluster A	48†	9
Schizotypal	33†	6
Obsessive-compulsive	33	12

* Values are mean (SD).

† *P*<.01 (compared to secondary hoarders).

Group means of parametric variables were compared by two-tailed t tests.Comparisons of non-parametric variables were made by chi-square tests with Yate's Correction for discontinuity or Fisher's Exact Tests, if the minimum cell size <5.

SD=standard deviation; GAFS=Global Assessment of Functioning Scale.

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Finally, a comparison of secondary hoarders to non-hoarding OCD patients showed few significant differences in demographic or clinical features, with the exception of a significantly poorer treatment response (t=4.13 df=145, *P*<.001) and some trends toward significance, including a lower GAFS (t=2.25 df=145, *P*=.02), and higher prevalence of schizotypal (χ^2=6.0, df=1, *P*=.03) and OCPD (χ^2=4.8, df=1, *P*=.04).

DISCUSSION

Two key findings emerge from this study. First, frequency and clinical correlates in OCD patients with hoarding are similar to those in the West. Second, patients with primary and secondary hoarding differ in a number of important respects.

Approximately 32% of our Japanese OCD patients were assessed to have hoarding compulsions, similar to the 20% to 40% frequencies found in Western countries[12,23,15,19,20,25,27] and South Africa.[38] Also consistent with previous literature, OCD patients with hoarding compulsions were more likely than the non-hoarding OCD patients to exhibit specific and disabling clinical features including longer duration of illness, lower levels of education and global functioning, and more severe psychopathology, such as more severe OCD symptoms, poorer insight, more impulsive features, and more comorbid personality disorders, especially schizotypal or OCPD. Thus it is possible that presence of hoarding symptoms may emphasize the disability and clinical severity in OCD patients through not only the direct effect of hoarding behaviors but the psychopathological features relevant to the symptoms.

They also showed a significant association with symmetry dimension-related OCD symptoms. The prevalence of both repeating rituals and ordering compulsions in the hoarding group was significantly higher than that in the non-hoarding group, consistent with the results of factor analyses which have suggested that both hoarding and symmetry lie on the same symptom dimension or are closely related to each other.[5,21] Moreover, hoarders showed poorer responses to the 1 year standardized treatments with both pharmacotherapy and CBT, again consistent with a number of previous treatment studies.[10,14,15,17,18,20,22,23,27] Higher rates of premature drop out from CBT in the hoarding group is in accordance with the greater severity of symptoms and the lower insight described in

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OCD patients with hoarding compulsions.[11,12,15,23] Taken together, the similarities in prevalence, severity, and clinical characteristics of our OCD hoarders to those in Western patients provide further support to the transcultural consistency of the hoarding symptom dimension in OCD.

OCD subjects with hoarding compulsions could reliably and usefully be divided into primary and secondary hoarding subgroups based on the nature of the obsessions underlying the hoarding. Although there were similarities in the extent of hoarding (the amount of space occupied by hoarded items), the subgroups hoarded different kinds of items. The secondary hoarders hoarded a wider variety of items including apparently bizarre items (eg, feces, rotten foods, or used diapers) or rubbish, corresponding to a varied range of related obsessions. Previous authors have similarly noted that some OCD patients may display hoarding symptoms associated with conventional OCD themes such as magical thoughts, a need for symmetry, or checking rituals related to the fear of losing possessions.[17,19,24] Compared to the secondary subgroup, conversely, the primary subgroup was differentially characterized by a range of demographic and clinical features such as male predominance, lower levels of education and global functioning, a trend for a younger age at onset, poorer insight, greater comorbidity with personality disorder, and a closer association with the symmetry symptom dimension. Although the primary subgroup was significantly more likely than the secondary hoarders to show poorer compliance with CBT, there was no difference in 1 year treatment response. Taken together, these data emphasize the heterogeneity of compulsive hoarding symptoms and support the clinical value of distinguishing between primary and secondary hoarding.

As noted in the introduction, there is ongoing controversy about the nature of hoarding with some authors suggesting that this should be a separate diagnosis unrelated to OCD.[15,18,19,25-27] By carefully delineating primary and secondary hoarding, the data here may shed some light on this debate. Some patients with primary symptoms of hoarding present to OCD clinics. They are more likely to be male, have earlier onset of OCD, more severe symptomatology (including poor insight), and particular patterns of comorbidity (eg, with symmetry symptoms and schizotypal personality disorder or OCPD), consistent with a growing range of data on the specific psychobiology of this symptom dimension.[2,9,10,21,23,25,27,39] In other OCD patients, hoarding is also present but may be better understood in terms of another symptom dimension and as might be expected, these patients have greater clinical overlap with non-hoarding OCD patients. Although our data do not directly address hoarding in patients or subjects in the community that do not meet OCD criteria,[19,40] we would caution that such symptoms need to be carefully assessed to determine that they are not in fact primary OCD obsessions.

A number of methodological limitations to the current study should be emphasized. First, patients in the hoarding subgroups had a relatively lower sample size and statistical power may be inadequate to definitively determine subgroup differences. Second, given the refusal of many hoarders to seek help and the lower insight associated with hoarding, it is important to emphasize the possibility of a sample bias, particularly in the primary hoarders, due to the recruitment of the participants through our outpatient OCD clinic. Third, even though all of the participants were treated by standardized treatments with both pharmacotherapy and CBT, the treatment procedure was not fully controlled.

Additionally, even though hoarding behaviors may have specific imaging, genetic, and familial correlates,[7,8,18,25-27] such neurobiological data were not collected in this study. Notably, hoarding may be a highly familial disorder,[7,15,18,25,27] with ~half of patients reporting a first-degree relative with compulsive hoarding.[19] Finally, whereas other forms of psychopathology such as social phobia, bipolar disorder, Tourette's disorder, and pathological grooming behaviors (skin picking, nail biting, and trichochillomania) may be closely associated with hoarding compulsions,[15-20] no diagnostic assessments of these comorbid axis I disorders were made, with the exception of lifetime major depression.

CONCLUSION

Despite these limitations, to our knowledge, this is the first study to examine the clinical characteristics of OCD patients with compulsive hoarding in an Eastern country. The findings that ~33% of Japanese OCD patients had hoarding compulsions and that patients with hoarding had specific demographic and clinical correlates are consistent with those from the West, support-

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ing the transcultural consistency of this symptom dimension in OCD. In addition, we found that primary and secondary hoarding could be reliably delineated, and that this was a clinically useful distinction. This distinction may shed light on some of the conflicting literature on pathological hoarding, including the extent to which it is related to OCD or a separate syndrome. Additional work on larger samples of OCD patients with hoarding, as well as on samples of hoarders who do not meet criteria for OCD, including the use of neurobiological assessments, should be undertaken to fully delineate the nature of compulsive hoarding. ***CNS***

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