Compulsive hoarding: current controversies and new directions

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Compulsive hoarding is a disabling psychological disorder characterized by excessive collecting and saving behavior. This article reviews four key areas of recent advances in hoarding research. First, we provide an overview of the evolving controversy regarding the diagnostic status of hoarding, highlighting accumulating evidence that it may be best conceptualized as a separate syndrome. Second, we describe advances in our understanding of the epidemiology, course, and demographic features of compulsive hoarding. Third, we review the latest findings regarding possible neuropsychological correlates of the disorder. Finally, we discuss ongoing progress and future directions related to the clinical management of compulsive hoarding.

Keywords: hoarding; obsessive-compulsive disorder; saving; collecting; clutter

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ompulsive hoarding is a syndrome characterized by excessive collecting and saving behavior that results in a cluttered living space and significant distress or impairment. In the past decade, there has been a notable increase in research on hoarding, including its phenomenology, pathophysiology, and treatment approaches. This surge in interest has been coupled with contention regarding key aspects of the disorder. These controversies have led to exciting new research that has deepened our understanding of this complex syndrome. The aim of this article is to describe some of these debated issues, as well as to highlight recent advances in compulsive hoarding research.

Diagnostic status

An obvious example of a current debate within hoarding research is the question of where hoarding belongs within our diagnostic nosology. The uncertainty regarding the most appropriate classification of compulsive hoarding syndrome has had important consequences for our understanding of hoarding, and in some ways has constituted an obstacle to hoarding research. The lack of clear placement within *DSM* has led to an underestimation of the significance of the burden of disease associated with compulsive hoarding, inconsistencies with respect to an appropriate clinical comparison group in hoarding research, difficulties comparing findings across hoarding studies, and misconceptions regarding which assessment and treatment models are most relevant to hoarding.

In the *DSM-IV-TR*, hoarding is described as difficulty discarding items, and is listed as one of the eight diag-

nostic criteria for obsessive-compulsive personality disorder (OCPD). Accumulating evidence, however, suggests that it is misleading and invalid to classify hoarding as part of OCPD. When studies examining the prevalence of OCPD in hoarding samples exclude the criterion describing difficulty discarding, most studies suggest that hoarding is no more associated with OCPD than it is with other Axis II disorders.34 In addition, hoarding has been found to have the lowest specificity and predictive criteria of all eight of the diagnostic criteria for OCPD.5 Based on these findings, Saxena et al⁶ argued convincingly that hoarding should be removed from the diagnostic criteria for OCPD. Nevertheless, there is some evidence to suggest a link between hoarding and OCPD. A recent study of hoarding within a collaborative OCPD genetics study found that hoarders had a greater prevalence of certain OCPD traits, particularly miserliness and preoccupation with details.7 In addition, several previous studies have reported that OCPD is more common in hoarders.8-10 Thus while the consensus appears to be that hoarding is inappropriately classified as a criterion of OCPD, the broader issue of the relation of hoarding to OCPD, as well as to other Axis II disorders, remains unresolved. Despite its placement in the Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV, clinicians and researchers typically consider hoarding a symptom or subtype of obsessive-compulsive disorder (OCD). For example, the Y-BOCS checklist11 lists hoarding obsessions and compulsions, and many investigations into hoarding have involved comparing OCD individuals with and without hoarding. This view of hoarding as part of OCD derived from early findings that approximately one third of individuals with OCD have hoarding symptoms.12-14 More recent studies, however, have found ample evidence that hoarding should not be conceptualized only as an OCD symptom. For example, Wu and Watson4 found that hoarding correlated more weakly with other symptoms of OCD than these other symptoms correlated with each other. Moreover, Saxena et al⁶ found that patients who hoard, compared with other OCD patients, had different functional neuroimaging findings, response to treatment, and clinical profiles. In a large study of hoarding among OCD patients, individuals with hoarding were more likely to have symmetry obsessions and counting, ordering, and repeating compulsions. They also were more likely to have greater illness severity, more difficulty initiating and completing tasks, and problems with indecision.

A recent study by Abramowitz and colleagues¹⁵ provided further evidence that although some individuals with OCD may show hoarding behavior, hoarding is most likely distinct from OCD. Abramowitz and colleagues compared OCD patients, patients with other anxiety disorders, and unscreened undergraduate students. OCD patients scored higher on all OCD symptoms except hoarding, in which the student group scored slightly, but significantly higher than both clinical groups. Similarly to Wu and Watson,4 Abramowitz and colleagues found that the magnitude of the correlations between hoarding and other OCD symptoms was significantly weaker than the magnitude of the correlations amongst all other OCD symptoms. In addition, the hoarding items loaded weakly on a unitary OCI-R factor. In a second study, Abramowitz et al15 found that hoarding was correlated weakly with depression, but not with anxiety. Other OCD symptoms showed at least a moderate association with anxiety. Due to these recent findings, there is a growing consensus that hoarding should not be considered as a symptom of OCPD or OCD, but as a separate clinical syndrome.

Several researchers have also examined whether there are important differences between hoarding behavior seen in the context of OCD and hoarding that occurs without any other OCD symptoms.3,4,16 A recent study conducted by Petrusa et al³ compared individuals with severe compulsive hoarding who met criteria for OCD (OCD plus hoarding group) with individuals with severe hoarding who did not meet criteria for OCD (monosymptomatic hoarding). Individuals in the OCD plus hoarding group differed from the monosymptomatic hoarding group in several important ways. For example, OCD plus hoarding participants were more likely to hoard bizarre items and more likely to report other obsessions and compulsions related to their hoarding than those in the monosymptomatic hoarding group. In addition, the OCD plus hoarding group endorsed more cluster C personality traits than the monsymptomatic hoarding group.

Given that hoarding can occur in the absence of OCD and that it shares some similarity to impulse control disorders (ICDs) such as pathological gambling, pyromania, and kleptomania, it may have a place within behavioral addiction. Although hoarding behavior is sometimes motivated by a desire to reduce anxiety, it also sometimes appears to be driven by anticipation of pleasure and impaired self-regulation. ¹⁶ Since both anx-

iety and approach behaviors may play a role in compulsive hoarding, a common diathesis may underlie both hoarding and certain impulse control disorders. Samuels et al¹⁴ reported a greater frequency of trichotillomania and skin picking among hoarding compared with non-hoarding individuals with OCD. In addition, Frost et al¹⁷ found that pathological gamblers reported significantly more hoarding symptoms than light gamblers.

Although Grant et al¹⁸ found a low prevalence of ICDs overall among individuals with obsessive-compulsive disorder, obsessive-compulsive disorder participants with a lifetime and current impulse control disorder were more likely to report hoarding symptoms. In a recent study, Hayward and Coles¹⁹ examined the relation of hoarding to OCD and ICDs in an undergraduate sample, and found that hoarding behaviors were related moderately to symptoms of compulsive buying, and more weakly related to pathological gambling, trichotillomania, and kleptomania. The possible association between hoarding and ICDs is consistent with McElroy and colleagues' conceptualization of a compulsive-impulsive spectrum, ²⁰ but requires further exploration.

The nosological issues surrounding hoarding will influence its placement in the next edition of the DSM. One position is that compulsive hoarding should be included in our diagnostic system as an independent syndrome, which is sometimes comorbid with OCD. Including hoarding as a separate syndrome has a number of important practical advantages, well-summarized by Rachman and colleagues.²¹ For example, it would expand the boundaries of the hoarding population to be consistent with the data showing a high incidence of hoarding not associated with OCD. It would also encourage clinicians and researchers to use hoarding-specific assessment tools rather than measures designed for OCD, and facilitate the development of new treatment methods for hoarding. Another possibility is that hoarding may be listed in DSM-5 as both a separate syndrome and as an OCD symptom.

Epidemiology

Hoarding researchers also have made substantial progress in understanding the prevalence and manifestation of compulsive hoarding in the population. Until very recently, researchers estimated the prevalence of hoarding as a subportion of individuals with OCD in the

community.²² Similarly, information regarding the burden of hoarding was based on anecdotal evidence and small samples. Recent epidemiological studies, however, suggest that compulsive hoarding may be far more prevalent and burdensome in the community than previously thought. Data from the Baltimore Epidemiologic Catchment Area Follow-up survey suggest that 5% of the general population experiences clinically significant hoarding, while data from the National Comorbidity Survey Replication indicate that the lifetime prevalence of compulsive hoarding may be as high as 14%.23,24 These studies estimated hoarding based upon reports of difficulty discarding, and did not specifically target clutter and excessive acquisition, and thus it is unknown whether cases met criteria for compulsive hoarding as defined by Frost and Hart.11 A recent twin study that utilized a self-report instrument to assess the broad hoarding phenotype found that 2% of its sample reported clinically significant hoarding symptoms.²⁵ As symptom severity obtained by self-report tends to be lower than clinician-rated severity, the current prevalence of clinically significant compulsive hoarding may be somewhere between 2% and 5%.

Importantly, a large proportion of individuals who hoard report having at least one first-degree relative who experiences hoarding problems.^{3,14} In a sample of individuals with OCD, Samuels and colleagues¹⁴ reported that probands of individuals with hoarding symptoms were four times more likely to experience hoarding symptoms than probands of individuals who did not report hoarding symptoms. Genetic factors and unshared environmental factors may explain this familial connection. In a large sample of female twins, genetic factors accounted for approximately 50% of the variance in compulsive hoarding, while shared environmental factors encountered by twins growing up in the same household did not substantially contribute to the other half.²⁵

Recent data suggests that the prevalence of hoarding increases with age. Samuels and colleagues²⁴ reported that hoarding was almost three times more prevalent in individuals over the age of 54 than it was in individuals aged 34 to 44. This finding most likely is due to compulsive hoarding being a chronic and progressive disorder. Hoarding symptoms often develop during childhood or adolescence, and become clinically significant during middle age.^{26,27} Having the means to acquire and accumulate objects as a child may be substantially restricted; therefore, it may take a decade or more for symptoms to

become clinically significant. In such cases, progression of hoarding symptoms may be slow. In other cases, hoarding may have a sudden onset in adulthood, such as after a traumatic life event or brain injury.^{27,28} Fifty-five percent of Grisham and colleagues'²⁷ sample reported experiencing a stressful life event at the onset of hoarding symptoms, and these individuals had a significantly later age of onset than individuals who did not experience a stressful life event.

Clinical studies have demonstrated that hoarding often co-occurs with other psychological disorders. In a large clinical sample, almost all individuals with a hoarding diagnosis met criteria for another Axis I disorder, and these individuals had significantly more co-occurring disorders than nonhoarding individuals with OCD.29 Compared with nonhoarding individuals with OCD, hoarders are consistently more likely to meet criteria for social anxiety disorder, bipolar disorder, and pathological grooming behavior.7,14,29 Hoarders also appear more likely to experience an alcohol-use disorder at some point in their lives.^{24,29} A community study has found that the prevalence of co-occurring disorders differs for men and women. In men, hoarding is associated with generalized anxiety disorder and tics, while among women, hoarding is associated with social phobia, post-traumatic stress disorder, body dysmorphic disorder, nail biting, and skin picking.7 Women and men also may not be affected equally by hoarding symptoms. While clinical samples tend to be predominantly female, 3,30 epidemiological samples have found that hoarding is twice as prevalent in males.^{24,25} The identification of a significant prevalence of men who compulsively hoard, and genderspecific comorbidity differences, presents a significant challenge for developing and engaging all individuals in effective treatment.

A growing body of research suggests that hoarding is associated with a lower quality of life. First, hoarding appears to occur more frequently in the unemployed and poor. Although longitudinal studies are needed to determine if hoarding is a cause or consequence of financial insecurity, a recent Internet study indicated that hoarding may at least contribute to financial insecurity. Five percent of the Web sample reported they had been fired because of hoarding, and on average, employed individuals reported seven psychiatric work impairment days per month. Second, hoarding has been linked to poorer health status. Individuals who hoard are very likely to be overweight or obese and suffer from a severe

medical condition.³¹ Third, several clinical and community studies have reported a low rate of marriage among compulsive hoarders.^{14,29,32,33} Those who are married or cohabitating tend to have a lower degree of hoarding severity.³¹ Fourth, hoarding is associated with high rates of family frustration. Family members who cohabit with hoarders report being embarrassed about the condition of their home, arguing about the clutter, and feeling rejection and hostility toward the hoarder.³¹

In summary, emergent research suggests that the prevalence of compulsive hoarding ranges from 2% to 5%, and men may be more likely to hoard than women. In most cases, hoarding is a chronic disorder. Although some people may experience a gradual rise in symptoms throughout their lifetime, others may develop hoarding symptoms quite quickly after a stressful life event. Men and women who hoard may experience different co-occurring disorders, yet both genders are likely to experience a substantial amount of burden associated with their hoarding.

Neuropsychological impairment

Neuropsychological research into hoarding did not begin to build until the last decade. The initial clues that hoarding was related to frontal-lobe dysfunction came from case reports of pathological collecting and saving that began after a brain injury, typically along with other changes in personality and social functioning.34-36 In the last decade, two papers presented findings suggesting that hoarding is the result of frontal-lobe lesions. In the first report, Hahm and colleagues³⁶ described the case of a 46-year-old Korean man who began unusual collecting behavior after he suffered an injury to his left ventromedial prefrontal cortex and caudate. This man had difficulty with social decisionmaking and judgment processes. In the second report, Anderson et al³⁷ examined compulsive hoarding behavior within a sample of 86 patients with focal lesions, and found that 13 of these participants exhibited abnormal collecting behavior. Magnetic resonance imaging (MRI) showed that all 13 individuals with hoarding symptoms had damage to the mesial frontal region of the brain, including the right polar sector and anterior cingulate. If excessive collecting and saving behaviors can begin after brain injury, individuals who hoard in the absence of lesions may possess similar deficits in neuropsychological functioning or impaired self-regulation that contribute to compulsive hoarding symptoms.

Self-report and laboratory studies of neuropsychological functioning in hoarding have highlighted potential areas of subtle impairment. In a study by Hartl et al, hoarding patients reported increased symptoms of attention deficit-hyperactivity disorder (ADHD). They also have been found to perform worse on certain neuropsychological tasks, including measures of attention and nonverbal intelligence, memory, and decision-making. Deficits in executive function marked by inhibition, planning, and decision-making difficulties may limit hoarders' ability to discard and organize their possessions. Although this is an intriguing and rapidly advancing area within hoarding research, there has been some inconsistency with respect to the specific pattern of deficits associated with hoarding.

There is some evidence that individuals who compulsively hoard demonstrate significant difficulty making decisions. They tend to believe a disproportionate number of their possessions are very important, and feel paralyzed by seemingly commonplace decisions about what items to discard and what items to keep, which items are valuable, and how to organize the items they decide to keep. These decision-making problems have been associated with hoarding in several studies using self-report measures. 42-44 With respect to laboratory studies, however, research has provided mixed results regarding decision-making deficits. Grisham et al³⁹ found that hoarders displayed relatively intact decision making on the Iowa Gambling Task relative to a clinical and community control groups. A recent study in our laboratory has replicated this finding, showing that individuals with compulsive hoarding did not demonstrate decision-making problems on the computerized Cambridge Gambling Task.45

However, Lawrence et al⁴¹ found that hoarding symptoms were associated with specific decision making impairments on the same gambling task and that these deficits were related to the severity of the hoarding symptoms. Lawrence et al⁴¹ suggested that hoarders have difficulty deciding whether to save or discard their possession due to general decision-making difficulties. One important difference between the Grisham et al³⁹ and Lawrence et al⁴¹ studies was the composition of the hoarding group. In the Grisham et al study, the hoarding group comprised participants who met criteria for compulsive hoarding, regardless of whether they had OCD, while the hoarding group in the Lawrence et al study consisted of OCD patients who displayed hoarding behaviors. This difference in the samples may explain the

discrepancy on the decision-making task in the two studies. Future studies may compare hoarding patients with and without other OCD symptoms to nonhoarding OCD patients and community controls in order to clarify the source of the decision-making difficulties.

Another area that remains unresolved is the role of proposed categorization problems in hoarding patients.^{1,46} Compulsive hoarding patients appear to exhibit problems grouping their possessions into categories, which contributes to the disorganization and clutter that are hallmark features of this disorder.1 A few studies have investigated these hypothesized differences in the way hoarding patients categorize. Wincze et al⁴⁷ contrasted hoarding participants, obsessive-compulsive nonhoarding participants and healthy control participants on categorization tasks. The results of this study suggested that categorization problems occur only when compulsive hoarders sort their own possessions. In contrast, Luchian et al48 found that nonclinical hoarders also created more categories when categorizing nonpersonal objects. They also took almost twice as long to sort objects, and found sorting to be more difficult and stressful than did nonhoarding participants. Inconsistencies between this study and Wincze et al⁴⁷ may be due to differences between nonclinical and clinical hoarding participants or because of methodological differences between the two studies. Thus, the circumstances under which hoarders have categorization difficulties remains unknown due to the lack of systematic comparisons between personal and nonpersonal objects.

Despite recent advances in the study of cognitive functioning among individuals who hoard, many key questions remain to be addressed. While there is some indication of deficits in hoarding patients, it is unclear how reliably these deficits can be identified. It is also uncertain whether these deficits are present to varying degrees in all hoarding patients, or a subset of patients. Future research also should provide greater understanding regarding the specific nature of information processing difficulties and/or cognitive impairment. Finally, it will be important as we gain greater understanding of cognitive difficulties to examine whether these difficulties may be remediated in order to improve treatment outcome.

Treatment

Research on the treatment of hoarding also has advanced significantly in recent years. Several earlier studies found that hoarding symptoms are negative

treatment predictors for therapies that have demonstrated effectiveness for OCD. In serotonergic medication trials for OCD, individuals with hoarding symptoms typically have poorer outcomes.⁴⁹⁻⁵¹ Only one that has examined the effectiveness of selective serotonin reuptake inhibitors in reducing obsessive-compulsive symptoms has demonstrated equivalent outcomes for individuals with and without hoarding symptoms.⁵² Although this finding appears promising, the results need to be qualified. The authors only measured obsessive-compulsive symptoms, symptom response was poor in both groups (23% to 24% symptom reduction), and individuals with hoarding symptoms took paroxetine for significantly more days. As with pharmacological approaches, the presence of hoarding symptoms is a negative predictor of cognitive-behavioral treatment outcome for OCD.53,54 Only one third of hoarders with OCD demonstrate clinically significant improvement in response to exposure and response prevention, while one half to two thirds of nonhoarders with OCD demonstrate such improvement.53 In response to these disappointing outcomes, researchers have developed psychological treatments for compulsive hoarding that are based on Frost and Hartl's cognitive-behavioral model.1 Treatments outcomes based on Frost and Hartl's model are encouraging, but suggest that many sessions are required to produce change and that clutter is slow to improve. The first case study reported that approximately 45 sessions were needed to completely reduce clutter.55 After 20 weeks of treatment, Steketee et al56 demonstrated a 16% reduction in Y-BOCS scores, while Saxena et al⁵⁷ demonstrated a 35% reduction in Y-BOCS scores after 6 weeks of daily intensive treatment. Utilizing Steketee and Frost's⁵⁸ cognitive-behavioral treatment manual for compulsive hoarding, Tolin et al⁵⁹ offered 26 individual sessions (in-office sessions and at least one home visit) over a 7- to 12-month period to 14 individuals. On average, treatment completers (n=10)demonstrated 25% improvement in their clutter and difficulty discarding, and 35% reduction in acquiring. Following this open trial, Steketee et al⁶⁰ made minor modifications to the treatment and examined its efficacy in a randomized controlled trial. Findings from this trial indicated that improvements in hoarding symptoms were greater after receiving 12 sessions of cognitive behavioral therapy (CBT) than after waiting for a comparable period. After 26 sessions of CBT, 68% to 76% of patients were rated as improved by their therapists or

themselves, respectively, and 41% of patients met criteria for clinically significant improvement.

Given that changes are slow to occur during the treatment of compulsive hoarding, researchers have been examining alternative delivery models in hopes of increasing the cost-effectiveness of treatment. Using a multiple cohort pretest–post-test design, Muroff and colleagues examined the effectiveness of group CBT using Steketee and Frost's treatment manual.³² After 16 to 20 sessions and two home visits, patients evidenced a mean reduction of 8.6 points on the Saving Inventory-Revised (SI-R), which is less than that produced from individual treatment using the same manual (18.7 or 16.9).^{59,60} After these investigators modified their research procedures to more thoroughly screen group members and utilized a more detailed and structured manual for the group, the mean SI-R reduction in the final group was 14.25.

As access to clinicians trained in CBT for compulsive hoarding is limited, a Web-based self-help group has also been examined for its effectiveness. This Web-based treatment was also based on Steketee and Frost's manual⁵⁸ and required individuals to take active steps to reducing their hoarding behavior within 2 months of membership. After 6 months of memberships, SI-R scores decreased by an average of 6 points. These two group studies suggest that highly structured, in-person groups may lead to greater improvements in hoarding outcomes than less-structured groups. Internet treatment approaches are important because they have the potential to expand significantly the number of individuals with hoarding who receive treatment, and thus, ways to improve outcomes achieved from Internet-delivered therapy are much needed.

More effective treatments are warranted for this common and disabling disorder. Novel pharmacotherapies, such as cognitive enhancers and stimulants, should be evaluated for their utility with hoarding patients. Cognitive enhancers may improve memory, attention, and overall cognitive functioning, while stimulants may improve attention, alertness, and information-processing speed. Only one case report has been published describing the effects of a stimulant in an individual with compulsive hoarding. In this case, a combined treatment of fluvoxamine, risperidone, amphetamine salts, and behavior therapy was used to treat a 56-year old man diagnosed with OCD, compulsive hoarding, ADHD, and schizotypal personality disorder. Although the patient reported that after treatment he procrastinated less, kept appointments better, and was less upset when throwing things away, the patient's clutter did

not significantly decrease.⁶¹ In order to determine if stimulants or cognitive enhancers are effective adjuncts for the treatment of compulsive hoarding, systematic, randomized controlled trials are needed.

Overall, research findings indicate that compulsive hoarders do respond to CBT, although improvements are moderate in comparison with gains observed in nonhoarders with OCD. A number of methodological limitations, however, curtail these findings. First, there is a lack of properly controlled treatment studies that involve random allocation to treatment (CBT or medication) and a placebo group. Also, the lack of specificity of the measures used to index symptoms makes it difficult to determine whether improvements are due to changes in hoarding symptoms or to reductions in nonhoarding OCD symptoms.

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Future directions

Despite the increased research on compulsive hoarding in recent years, several avenues still require exploration. Researchers must continue to unravel the complex story of hoarding's etiology and pathogenesis through additional laboratory studies examining the cognitive, emotional, neural, and behavioral features of the disorder. Future research may also help to establish the relation of hoarding symptoms to OCD, anxiety, ADHD, and ICDs. Finally, further treatment studies investigating the efficacy of cognitive rehabilitation, behavioral interventions, Internet applications, and novel medication treatments are essential for improving clinical outcomes. \square

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Acaparamiento compulsivo: controversias actuales y perspectivas

El acaparamiento compulsivo es un trastorno psicológico invalidante, caracterizado por conductas inadecuadas de acumular y quardar. Este artículo revisa cuatro áreas clave de los avances recientes en la investigación del acaparamiento. Primero, se entrega una panorámica de la controversia que se ha desarrollado en relación con la condición diagnóstica del acaparamiento, destacando la evidencia que se ha acumulado en relación con el hecho que sería mejor conceptualizarlo como un síndrome independiente. Segundo, se describen los avances en la comprensión de la epidemiología, el curso y las características demográficas del acaparamiento compulsivo. Tercero, se revisan los últimos hallazgos relacionados con posibles correlatos neuropsicológicos de este trastorno. Finalmente se discute el progreso actual y las perspectivas futuras en relación con el manejo clínico del acaparamiento compulsivo.

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Collectionnisme compulsif : controverses actuelles et nouvelles orientations

Le collectionnisme compulsif est un trouble psychologique handicapant caractérisé par un comportement d'épargne et de stockage excessif. Cet article analyse quatre points clés des avancées récentes de la recherche sur ce sujet. Nous débutons premièrement par une synthèse de la controverse en pleine évolution sur le diagnostic de ce trouble : les arguments sont de plus en plus en faveur d'une meilleure conceptualisation du trouble comme syndrome à part. Deuxièmement, nous décrivons les avancées concernant notre compréhension de son épidémiologie, de son évolution et de ses cadres démographiques. Troisièmement, nous analysons les derniers résultats des corrélations neuropsychologiques éventuelles du trouble. Enfin, nous discutons des progrès en cours et des orientations futures de la prise en charge clinique du collectionnisme compulsif.

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