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# Nosological status of compulsive hoarding: obsessive-compulsive disorder subtype or independent clinical entity

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**ABSTRACT.** This theoretical study reviews the main research and findings on the nosological status of compulsive hoarding. Specifically, it describes available empirical evidence in order to determine their independence or inclusion within the obsessive-compulsive disorder (OCD), a mental disorder in which it has traditionally been included as one more subtype or dimension. Regarding this issue, the results found in the scientific literature show that persons with compulsive hoarding have distinct characteristics in different external criteria like sociodemographic variables, premorbid personality, degree of insight, neuroanatomical and genetic factors, neuropsychological profile, clinical course, levels of dysfunctionality and finally, treatment outcome. These conclusions are discussed and the proposal for the creation of a new clinical entity called "hoarding disorder" is evaluated.

**Keywords:** Compulsive hoarding, Hoarding disorder, Obsessive-compulsive disorder, Nosological status, Theoretical study

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## Estatus nosológico de la acumulación compulsiva: ¿subtipo de trastorno obsesivo-compulsivo o entidad clínica independiente?

**RESUMEN.** En el presente estudio teórico se revisan los principales hallazgos e investigaciones respecto al estatus nosológico de la acumulación compulsiva. En concreto, se exponen las evidencias empíricas disponibles para poder determinar su independencia o no del trastorno obsesivo-compulsivo (TOC), patología mental donde tradicionalmente ha sido incluida como un subtipo o dimensión más de la misma. En relación a esta cuestión, los resultados recogidos en la literatura científica sostienen que las personas con acumulación compulsiva, a diferencias de "otros" sujetos con TOC, presentan características distintivas en diversos criterios externos, a saber: variables sociodemográficas, personalidad premórbida, grado de *insight*, factores genéticos y neuroanatómicos, correlatos neuropsicológicos, curso y nivel de disfuncionalidad y, por último, respuesta al tratamiento. Dichas conclusiones son discutidas valorando la propuesta de creación de una nueva entidad clínica denominada "trastorno por acumulación".

**Palabras clave:** Acumulación compulsiva, Trastorno por acumulación, Trastorno obsesivo-compulsivo, Estatus nosológico, Estudio teórico

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## INTRODUCTION

From an evolutionary point of view, the tendency for the human to accumulate different types of objects has been a phylogenetically adaptive behavior, allowing for survival of the species in times of crisis or need.<sup>1</sup> Therefore, this activity is inherent to the ontogenetic development of the persons so that most children show some type of hoarding behavior during this initial phase of cognitive development.<sup>2</sup>

Within the psychopathological setting, little clinical attention has been given to compulsive hoarding, and it has only been included in the DSM-IV-TR<sup>3</sup> as one of the diagnostic criteria for obsessive-compulsive personality disorder (OCPD). In the clinical practice, it is a secondary or accessory symptom identified in other mental conditions such as residual schizophrenia, major depression, dementia, pervasive developmental disorders, mental retardation, obsessive-compulsive disorder (OCD) and/or compulsive shopping.<sup>4-7</sup> As a primary or cardinal symptom, its presence has traditionally been associated with OCD, a clinical condition within which it has been listed as a dimension or subtype. This approach has mainly been validated through studies performed with factorial methodology.<sup>8-14</sup>

In this nosological context, many studies have been undertaken that have questioned the inclusion of compulsive hoarding as part of OCD.<sup>7,15-17</sup> Beginning with this thesis, different authors state that compulsive hoarding would be an independent clinical condition that would also have elevated comorbidity (10-52%) with OCD.<sup>18-23</sup> This approach is advocated in the drafts of the future DSM-5, a manual within which its inclusion is advocated under the name of "hoarding disorder."<sup>24</sup> In relation to this, some operative criteria defining this construct with the following characteristics have been proposed:<sup>19</sup> A) Persistent difficulty to get rid of or part with personal belongings, even those having apparently useless or limited value, due to anguish and/or indecisiveness associated to the intense need to keep them; B) The result of the symptoms is accumulation of a large amount of possessions that fill or saturate the house, work place or other personal settings (e.g. offices, vehicles, patios), making normal use of the space difficult. If these vital areas are cleared, it is only due to the efforts of others (e.g. family members, authorities); C) The symptoms cause a clinically significant malaise or deterioration in social and occupational areas or other important functioning areas (including maintenance of a safe setting for oneself and the others); D) The hoarding symptoms are not due to a medical condition (e.g. brain damage, cerebrovascular disease). E) Hoarding symptoms are not limited to the symptoms of another mental disorder (e.g. accumulation of obsessions in obsessive-compulsive disorder, lack of

motivation in major depressive disorder, delusions in schizophrenia or another psychotic disorder, cognitive deficits in dementia, restricted interests in autistic disorder or storing of foods in the Prader-Willi syndrome).

## OBJECTIVES AND METHODOLOGY

Within this general framework, the primary objective of this current theoretical review has been to offer an update of the main advances that have occurred regarding the nosological status of compulsive hoarding. More specifically, it has aimed to determine if significant differences exist between this psychopathology and "other" subtypes of OCD in different external criteria and to provide evidence with it for their inclusion or independence of it. For this purpose, a search was made of the bibliography using PubMed and PsycINFO using the dates from 1990 to February 2013. The descriptive words used were "*hoarding*" and "*obsessive-compulsive disorder*." A total of 117 articles related with this purpose that included theoretic, quasi-experimental and descriptive studies were selected. Most of the investigations selected either included OCD-diagnosed subjects "with" versus "without" compulsive hoarding, or samples of subjects with compulsive hoarding according to the operative criteria proposed. The findings were grouped into the following sections: 1) sociodemographic variables, 2) premorbid personality, 3) degree of *insight*, 4) genetic and neuroanatomical factors, 5) neurocognitive correlates, 6) course and level of dysfunctionality and 7) response to treatment.

## NOSOLOGICAL STATUS OF COMPULSIVE HOARDING

### Sociodemographic variables

Four factors were especially studied in relation to the sociodemographic characteristics of persons with compulsive hoarding: gender, age of onset, civil status and socioeconomic status. Regarding the prevalent gender among these subjects, most of the investigations indicate that women predominate in these samples more than in "other" OCD subtypes.<sup>7,25,26</sup> However, not all of the studies implemented have replicated this finding.<sup>27,28</sup>

In regards to onset age of compulsive hoarding, it has been found that this dysfunctional behavior pattern begins in subclinical levels at the end of childhood or beginning of adolescence,<sup>13,29-31</sup> this indicating that it enters into an earlier range or interval than "other" OCD subtypes.<sup>7,23,28</sup> In addition, some investigators have indicated that compulsive hoarding could following a bimodal onset pattern, the late

cases representing a reaction of maladjustment to stressful life events.<sup>32</sup>

In regards to the civil status of the subjects with compulsive hoarding, there is generalized agreement that indicates that these persons have less likelihood of being married compared with "other" OCD subtypes.<sup>7,23,33-36</sup>

In regards to socioeconomic status, it has been found that the income of persons with compulsive hoarding is lower than that observed in "other" OCD subjects. This has even been confirmed after controlling for potential mediator variables such as gender, age, race and work status.<sup>34,37</sup> Longitudinally, it has not been possible to establish a causality relationship between material deprivation and compulsive hoarding as this lower level of income has only been observed after the development of said psychopathology.<sup>33,38</sup>

In conclusion, persons with compulsive hoarding have different sociodemographic characteristics than "other" OCD subjects, this psychopathology being more prevalent in women who live alone and have limited economic resources.

### Premorbid personality

Personality in subjects with compulsive hoarding has been studied from both a dimensional aspect as well as a categorial approach, providing evidence that can be used to propose a cognitive-behavioral model of this psychopathology.

Regarding the dimensional models, persons with compulsive hoarding have greater harm avoidance or sensitivity to punishment than "other" OCD subtypes.<sup>39,40</sup> Furthermore, a positive relationship has been found between lack of tolerance to uncertainty and severity of hoarding.<sup>41</sup> From a cognitive-behavioral perspective, these personality dimensions could explain the difficulty of some subjects to get rid of possessions that could be useful due to the overestimation of a negative event in the future.<sup>7,42</sup>

As far as the categorial models, a great part of the investigations have indicated that, on the contrary to "other" OCD subjects, subjects with compulsive hoarding have more obsessive-compulsive personality traits.<sup>43,44-47</sup> However, said findings have not always been replicated because a similar presence of obsessive-compulsive traits has been observed in some investigations in persons with compulsive hoarding and "other" OCD subtypes.<sup>7,48</sup> On the other hand, several studies have found a greater number of schizotypal personality traits among subjects with compulsive hoarding than in "other" OCD subtypes.<sup>28,32,49</sup> In relation to this, patients with compulsive hoarding have higher levels of social anxiety,<sup>7,13,16,37,43</sup> and it is harder for them to consolidate stable emotional links from childhood.<sup>15,50-52</sup> From a

cognitive-behavioral point of view, it is argued that some objects possessed by persons with compulsive hoarding could acquire emotional significance for the subject ("object-affect fusion"), in some degree covering these interpersonal deficiencies.<sup>53,54</sup>

In conclusion, subjects with compulsive hoarding tend to have more schizotypal and obsessive-compulsive traits than "other" OCD subtypes.

### Grade of insight

Disease awareness or *insight* has been one of the most widely studied aspects in subjects with compulsive hoarding, it being necessary to adopt a multidimensional and evolutive perspective to evaluate this construct.

In general terms, cross-sectional investigations indicate that persons with compulsive hoarding have less *insight* compared with "other" OCD subtypes.<sup>22,31,55-57</sup> Furthermore, this psychopathology generates less subjective malaise than "other" obsessive-compulsive symptoms.<sup>56,58</sup> As a whole, both findings have suggested that compulsive hoarding could be motivated by an overevaluated idea more than by intrusive thoughts.<sup>59</sup> However, from a longitudinal perspective, half of these subjects admit the severity of this problem in a late phase of its course. This awareness of the problem largely appears due to the negative consequences derived from accumulative deterioration rather than due to assumption of having a mental disorder per se.<sup>25,51,60,61</sup>

In conclusion, subjects with compulsive hoarding have less disease awareness than "other" OCD subtypes.

### Genetic and neuroanatomical factors

Little attention has been given to the evaluation of the neurobiological variables in subjects with compulsive hoarding, investigations on genetics and neurobiology of this psychopathology standing out.

Familial study on OCD concerning the genetic factors have indicated that the compulsive hoarding "dimension" has the highest inheritability index (48-60%) of all of OCD "subtypes."<sup>62-65</sup> Specifically, it has been found that this familial aggregation pattern could be due to polygenic type inheritance, mainly through chromosome 14.<sup>66,67</sup>

Regarding the research on neuroanatomy, it has been observed that persons with compulsive hoarding, on the contrary to "other" OCD subtypes and/or control subjects, have hypoactivation of the anterior dorsal cingulate gyrus and right orbitofrontal cortex hyperactivation.<sup>70</sup> These

results have been seen in both subjects evaluated with the functional magnetic resonance (fMRI) while performing visualization of relevant stimuli versus neutral ones,<sup>68</sup> and in patients at rest using the positron emission tomography (PET).<sup>69</sup>

In conclusion, preliminary neuroanatomical and genetic findings differentiate subjects with compulsive hoarding from "other" OCD subtypes.

## Neurocognitive correlates

In general, neuropsychological studies conducted with persons suffering compulsive hoarding have focused on different executive functions such as decision-making, categorization and attention capacities.

Regarding decision making, subjects with compulsive hoarding tend to have greater response latencies than "other" OCD subtypes in the neuropsychological tests that evaluate this variable.<sup>71</sup> In this regards, the mediator role of obsessive-compulsive personality traits such as indecision and procrastination has been suggested.<sup>72</sup> On the neurobiological level, greater activity has been observed of the anterior cingulate and insular cortex when getting rid of (or keeping) possessed objects and less activity of these structures with objects that do not belong to the subject. These last findings suggest that decision-making difficulties could be stimulus-dependent.<sup>73</sup>

In regards to categorization of stimuli, subjects with compulsive hoarding have more perseverations than "other" OCD subtypes.<sup>71</sup> Thus, they often develop smaller sizes of categories, which suggests that these subjects could have a subinclusive system of categorizing information,<sup>72,74,75</sup> especially regarding objects that are relevant for them.<sup>36</sup> Based on these findings, cognitive-behavior models have postulated that persons with compulsive hoarding would perceive more idiosyncratic characteristics in the objects they possess, which increases the importance of each one of their possessions and difficulty to get rid of them.<sup>51,76</sup>

Regarding attention capacities, subjects with compulsive hoarding have more attention deficits than "other" OCD subtypes,<sup>60,77</sup> although these results have not been replicated in all the investigations.<sup>78</sup> Quantitatively, a positive relation has been observed between severity of hoarding symptoms and attention deficit.<sup>79,80</sup>

In conclusion, differences have been found between the executive functioning of subjects with compulsive hoarding and "other" OCD subtypes, although these findings are more significant when the stimuli used are important (*versus* neutral).

## Course and level of dysfunctionality

In general, the amount of incapacity associated to compulsive hoarding is closely linked to the consequences derived from the natural course of this syndrome. Therefore, both aspects will be dealt with jointly in this section.

Regarding evolutive course of compulsive hoarding, investigations have indicated that this syndrome typically presents a greater tendency to become chronic than "other" OCD subtypes,<sup>25,61,81</sup> thus causing a progressive deterioration as the subject successively accumulates more objects at home.<sup>82</sup> This insidious course means that when the subject comes for treatment for the first time, he/she tends to be older than "other" OCD subtype subjects.<sup>7,28</sup>

Regarding degree of dysfunctionality, there is consensus that compulsive hoarding entails a higher degree of incapacity than "other" OCD symptoms.<sup>13,37,45,83,84</sup> This is specifically reflected in 1) greater emotion expressed by the family members,<sup>31,85</sup> 2) greater social withdrawal,<sup>86</sup> 3) greater risk of accidents or death due to unhealthy conditions<sup>52</sup> and 4) greater risk of financial or legal problems due to compulsive shopping and stealing.<sup>47,87</sup>

In conclusion, compulsive hoarding has a more chronic course that evolves with a greater accumulation deterioration than "other" OCD subtypes.

## Response to treatment

In reference to the interventions implemented in subjects with compulsive hoarding, cognitive-behavior therapies (e.g. exposure with response prevention) and psychopharmacological (antidepressants) usually applied in OCD patients have been used.

As regards psychopharmacological treatment, some of the studies have indicated that persons with compulsive hoarding have worse response to selective serotonin reuptake inhibitors (SSRI) than "other" OCD subtypes.<sup>48,88-90</sup> In contrast, other investigations have found a similar response.<sup>26,91-94</sup> In the cognitive-behavioral psychotherapy setting, the results of these investigations coincide in indicating that compulsive hoarding is a predictor of less adherence and/or worse response to treatment than "other" OCD subtypes.<sup>22,90,95-98</sup>

In summary, there is general agreement that subjects with compulsive hoarding have worse response and adherence to conventional cognitive-behavioral psychotherapies compared to "other" OCD subtypes. These findings have led to changes in the format and techniques used in order to adapt them to the psychopathological profile of these subjects. In the therapeutic setting, the

sessions should be longer and periodical, and some of them should be carried out in the home of the patient per se.<sup>99,100</sup> The following cognitive-behavior techniques used stand out: 1) motivational interview, 2) psychoeducation and/or bibliotherapy, 3) training in organizational skills during the categorization and withdrawal of objects, 4) exposure with response prevention for objects that should be removed and/or not acquired, 5) cognitive restructuring and 6) training in social skills. Through the multiple approach programs, partially satisfactory results have been obtained both in the individual as well as group format.<sup>53,100-106</sup> However, there are methodological limitations that condition the validity of the findings mentioned, mainly reduced sample sizes, high experimental mortality, lack of control group and absence of post-treatment follow-up.<sup>101,105,107-109</sup>

## DISCUSSION AND CONCLUSIONS

The current theoretical study presents a review of the main findings related with the nosological status of compulsive hoarding. In this regards, many studies have been carried out during the last decade in order to determine if this psychopathology is a dimension of OCD or an independent disorder. The most relevant results of these investigations have indicated that compared to "other" patients diagnosed of OCD, persons with compulsive hoarding show: 1) greater prevalence of single women and those with limited economic resources, 2) greater presence of obsessive and personality schizotypal traits, 3) less *insight*, 4) higher degree of inheritability, 5) worse executive functioning, 6) more chronic course and one with greater degree of dysfunctionality and, finally 7) less adherence and response to conventional psychotherapeutic treatment. As a whole, the results presented support defining this as a separate clinical entity, as conceptualized in the so-called "hoarding disorder."<sup>24</sup> In consideration of its nosological location, its inclusion among the obsessive-compulsive spectrum conditions is recommended, given that these subjects generally have familial backgrounds and comorbidity with OCD.<sup>7,28,65</sup>

Apart from its nosological status, research is still being carried out in other study areas in subjects with compulsive hoarding. In terms of its evaluation methodology, instruments that make it possible to determine its possible clinical diagnosis the most reliably as possible need to be developed, completing the information collected with structured interviews and questionnaires.<sup>110</sup> In this regards, photographs of the home provided by the patient and family<sup>111</sup> or, if lacking, the administration of a visual analogue scale<sup>112</sup> are recommended. Research should be implemented to evaluate the prevalence of this "disorder" in the general population regarding epidemiology.<sup>47,113,114</sup>

Carrying out these studies in community samples could make it possible to improve available knowledge on compulsive hoarding, since many subjects only go to the mental health centers when the disease has reached an advanced stage and by initiative of the family or the social services of the area.<sup>7</sup> Research that evaluates the neuroendocrine hypotheses associated to compulsive hoarding is lacking in the etiopathogeny setting. This deficit hinders the development of new psychopharmacological treatments with said subjects, a fact that have special importance in evaluating the lack of response to the SSRIs.<sup>83</sup> Finally, in regards to cognitive-behavioral psychotherapy with subjects having compulsive hoarding, therapeutic adherence manifested by these patients during it must be improved. In relation to this, promising results have been obtained by monitoring the course of these subjects using telematic support.<sup>115</sup> In addition, other treatment modalities, mainly support groups, have been proposed.<sup>116,117</sup>

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