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**Comparison of treatment outcomes for Hoarding Disorder: A
critical review**

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Abstract

Hoarding disorder (HD) is characterized by a persistent difficulty in discarding possessions, leading to an accumulation that congests living areas and compromises daily activities.

Because HD is a newly defined disorder, there are questions about the available treatments and their efficacy. In this dissertation, I propose a review of the studies that have evaluated different treatments and outcomes for HD, with special emphasis on the difference between non-pharmacological and pharmacological treatments. I additionally discuss recommendations for integrating these two types of treatments in clinical practice, and propose some suggestions for future research, highlighting the challenges of treating HD and testing treatment efficacy.

1. Introduction

1.1. Definition of Hoarding Disorder

Hoarding disorder (HD) is characterised, according to the American Psychology Association (2013), by a persistent difficulty in discarding possessions, because of a perceived need to save them, regardless of their value, and a distress associated with discarding them. These symptoms lead the person to accumulate several possessions that congest living areas, even to the extent that their use is compromised. In severe cases, people have “literally been buried alive in their own home by their hoarded possessions” (Hooley et al., 2017, p. 239). HD was first thought of as a symptom of OCD (Hooley et al., 2017), but this categorisation was criticized, and it is now a new disorder, which belongs to a new DSM-5 category called “Obsessive-Compulsive and Related Disorder”. This category includes OCD, body dysmorphic disorder, HD, excoriation disorder, and trichotillomania. This distinction is important because compulsive hoarding occurs in less than half of OCD patients, and neuroimaging research has found that, neurologically, these people may be different from people with OCD who do not show compulsive hoarding (Hooley et al., 2017).

Hoarding conducts may emerge early in life (around 11-15 years), start limiting the individual’s functioning by their mid-20s, and cause clinically significant impairment by their mid-30s (Hooley et al., 2017). It is then possible to see how hoarding increases with age in terms of severity, following a chronic course. Moreover, HD is commonly comorbid with mood or anxiety disorders, being the most common conditions major depressive disorder (up to 50% of cases), social anxiety disorder, and generalized anxiety disorder (APA,2013).

1.2. Overview of available treatments for Hoarding Disorder

According to Pertusa et al. (2010), compulsive hoarding has been increasingly investigated recently because of the realization that these patients are more disabled than people with OCD who do not have compulsive hoarding symptoms. More importantly, individuals with HD have a poorer prognosis for treatment. The aim of the present dissertation is to review and compare the studies that have assessed the different types of available treatments, analyzing the distinct outcomes and possible future research. In general, it is important to note that the non-pharmacological treatments, and the medications typically used to treat OCD are generally not effective in treating people with compulsive hoarding (Hooley et al., 2017). However, some research has been made regarding treatment for people with HD specifically.

From the non-pharmacological side of treatment, Cognitive Rehabilitation and Exposure/Sorting Therapy (CREST) (Ayers et al., 2018; Davidson et al., 2021), Contingency Management (CM) (Worden et al., 2017), and more importantly, Cognitive-Behavioral Therapy (CBT) (David et al., 2021; Rodgers et al., 2021; Steketee et al., 2010; Tolin et al., 2015; Tolin et al., 2019) are the main treatments that have shown some degree of efficacy. Each of these findings will be delved into throughout the present text.

On the other side, studies assessing pharmacological treatments for HD are limited (Brakoulias et al., 2015). As mentioned before, pharmacotherapy for HD in the context of OCD is not very effective, and this has led to studies reporting mixed results (Brakoulias et al., 2015). However, in general, studies have found that some serotonin-reuptake inhibitors (SRIs) have been associated with significant improvement of pathological hoarding

(Brakoulias et al., 2015). Additionally, Grassi et al. (2016) found that atomoxetine, a medication used for treating ADHD, may be effective for HD. Finally, there is only one randomized controlled trial carried out by Amiaz et al. in 2008, which sought to test Naltrexone augmentation in OCD, but it did not lead to significant effects, and was described as a highly limited study by the same authors. Overall, it is not hard to notice the lack of evidence and studies for pharmacological treatment of HD.

1.3. Explanation of the need for a comparison of interventions

As previously mentioned, research on treatment for HD is scarce, and compulsive hoarders are significantly more disabled than people with OCD who do not hoard. In addition, as Saxena et al. mention, these people are also at high risk of having serious health problems (2011). In the same way, HD is associated with significant economic and social burden (Tolin et al., 2008). Family relationships are also damaged (APA, 2013). In this sense, it is crucial to gain insight about what can be done to help people with HD in an effective way. Moreover, many people with HD are unaware of the available treatment options, and about the pros and cons of the different types of treatments (Hooley et al., 2017). Following the same line, many mental health professionals are similarly uninformed or untrained to recommend or provide with more specialized treatments, which makes it difficult to find a well-trained therapist (Hooley et al., 2017).

Even though we already know about some effective non-pharmacological treatments (such as CBT, which is currently leading as the best option), substantial work is still needed. For example, HD's model is still being refined and expanded, including additional factors, such as experiential avoidance, distress intolerance, and uncertainty intolerance, which may need

other types of treatment to be dealt with (Wheaton, 2016). Following the same line, even though CBT and some other models have been associated with improvement in HD patients, they have been associated with poor outcomes, and changes in functioning and quality of life are not routinely assessed (David et al., 2021). In a similar way, medication, even though believed to be easier than to engage in therapy, may lead to unpleasant side effects, limited effectiveness, and higher economic cost (since people tend to stay medicated indefinitely when they do not engage in therapy) (Hooley et al., 2017).

In sum, a critical review covering the different treatments for HD seems necessary in order to gain a better understanding of the effectiveness of different treatments, along with their pros and cons, and therefore provide more accurate options to patients. In the same way, it is important to gain updated information, since HD is a disorder that is still being studied, and thus its definition is volatile, meaning that what was found some years ago may not be enough to cover what HD means today. It is for this reason that, throughout the present dissertation, a review of non-pharmacological interventions will be done, along with a comparison of these with pharmacological interventions, which will allow us to discuss the advantages and disadvantages of each type of treatment and provide recommendations for integrating them in clinical practice. Finally, suggestions for future research in the area will be proposed, mentioning what is missing and what should be done.

2. Non-pharmacological Interventions for Hoarding Disorder

2.1. Review of non-pharmacological treatments for Hoarding Disorder

One way of treating HD is through non-pharmacological therapy. There are different types of therapy that can be used, although these vary in terms of efficiency and complexity. The main treatments found to help HD patients are CREST (Ayers et al., 2018; Davidson et al., 2021),

CBT (David et al., 2021; Rodgers et al., 2021; Steketee et al., 2010; Tolin et al., 2015, Tolin et al., 2019), and CM (Worden et al., 2017). We are going to review each of the above, along with the study/studies found to prove any degree of efficacy.

Firstly, I have found two studies that support CREST as a promising treatment. This therapy incorporates exposure for sorting with compensatory cognitive training aimed to reduce cognitive limitations associated with hoarding (Davidson et al., 2021). Ayers et al. (2018) elaborated a randomized clinical trial (RCT) in which they compared the efficacy of CREST with geriatric case management in a sample of older adults with HD. Both groups received 26 individual sessions in a 6-month period, accompanied by home visits from therapists (CREST) or nurses (case management). In sum, participants who received CREST had significantly greater improvement than those who received case management (38% vs. 25% decrease in symptoms). These gains were maintained for 6 months, according to their follow-up. Another RCT was performed by Davidson et al. (2021) with the purpose of evaluating the perceived helpfulness of CREST by each of the 21 older adults who participated. Most of the therapy modules were rated as helpful. Specifically, using a calendar, making to-do lists, and practicing sorting were considered the most helpful in decreasing functional limitations.

The second and most empirically supported non-pharmacological treatment for HD is CBT. Van Roessel et al. (2023) elaborated the most updated critical review related to HD, with a focus on questions and controversies regarding the disorder. As part of their review, they questioned the effectiveness of CBT for HD. As they found, CBT has shown success in treating hoarding symptoms, with a maintenance of improvements for up to one year. It is important to note that HD involves more than one trait, and CBT may not overcome all of them (e.g., intolerance of uncertainty and perfectionism are associated with poor response to

CBT for HD, as the authors state). The cognitive behavioral model of hoarding disorder proposes that there are three main contributing factors to the learned patterns of collecting, saving, and storing involved in HD: vulnerabilities, information processing deficits, and meaning of possessions. In this sense, CBT tends to target one or more of these factors, and promising results have been found through different studies (Van Roessel et al., 2023). Finally, the mentioned authors expose the addition of in-home uncluttering practice, taking a compassion-focused approach, targeting self-blaming and hopelessness, and virtual reality for uncluttering, in the cognitive-behavioral treatment of HD.

Similarly, David et al. (2021) performed another critical review of CBT for HD, finding that individuals report an approximate of 25% improvement in symptoms on average.

Nonetheless, there are still gaps to be covered, such as the fact that changes in functioning and quality of life are not routinely assessed, and it is not known whether treatment outcomes improve by including strategies to enhance the patients' interpersonal functioning and emotion regulation (mostly in relation to discarding and organizing belongings). Thus, this review found CBT to be effective, but with work still needed. Moreover, Rodgers et al. (2021) did a meta-analysis including 16 studies (which the authors highlight as a limitation), in which they demonstrated that CBT for HD is an effective treatment. However, the authors mentioned that controlled trials are needed.

In relation to this, I have found only one waitlist-controlled trial, performed by Steketee et al. in 2010. The study investigated a multicomponent CBT for HD that included "...office and home visits with motivational interviewing to address low insight and limited motivation, decision-making training to improve cognitive processing, exposure to reduce negative emotions associated with discarding and resisting acquiring, and cognitive restructuring to

alter beliefs” (p. 477). Participants (46 hoarders) were randomly assigned to CBT or waitlist (WL). CBT lasted 12 weeks, and included 26 sessions, and these participants benefited significantly more than WL patients on hoarding severity and mood (large between-group differences in effect sizes).

Additionally, Tolin et al. (2019) performed a randomized trial to investigate the efficacy and mediators of a group CBT for HD, in which they found CBT to be efficacious for the symptoms of HD as compared with the WL group. Specifically, these authors found that saving-related cognitions (but not subjective cognitive impairment), partially mediated treatment outcomes. David Tolin had also elaborated a meta-analysis (Tolin et al., 2015) exploring the overall strength of effect of CBT for HD. In sum, the study found that HD symptom severity showed a significant decrease across studies with a large effect size, mostly for difficulty discarding, clutter and acquiring. This study also concludes that CBT is a promising treatment for HD, although there is still space for improvement in this area. In this sense, we can conclude, in relation to CBT, that it has been found to be the most promising non-pharmacological treatment for HD, although every study that gets to this conclusion mentions the importance of looking for improvement and further research, since effects are found to be good, but with a significant failure rate.

Lastly, another non-pharmacological treatment found to be helpful by Worden et al. (2017) is Contingency Management (CM). The mentioned authors, through an open trial, examined the effectiveness of CM for HD in the context of a cognitive-behavioral group therapy. This means that participants were administered monthly contingency payments based on evaluator-rated reductions in overall in-home clutter, while being on a group CBT (which took place weekly for 16 weeks, each session lasting 90 minutes). The authors announce what

they claim to be one of the largest reported reductions in total SI-R in published treatments for HD to that date, especially on the difficulty discarding and excessive acquisition subscales. In this sense, CM may be a cost-effective way to boost treatment outcomes of CBT.

2.2. Differences between types of treatment

As previously reviewed, we have two main non-pharmacological treatments for HD: CREST and CBT (and CM in the context of CBT). These differ not only in their nature, but also in the type of therapy that is given. According to the revised studies, CREST is mostly used in an individual format. Davidson et al. (2021) and Ayers et al. (2018) both performed RCTs for HD using CREST. This treatment was given through individual sessions, lasting 26 weeks on average, with weekly individual sessions of 60 minutes each. However, Ayers et al. also developed a pilot program of group CREST for HD with the aim of reducing therapist burden and cost (2018). They reported statistically significant reductions in anxiety, depression, and overall severity at post-treatment, suggesting that group CREST can also be considered as effective.

Regarding CBT, many formats and variations have been examined, such as individual CBT, group CBT, bibliotherapy, and others (David et al., 2021). However, most treatments follow the CBT protocol proposed by Steketee and Frost (2007), which provides a framework for addressing the specific challenges of HD through CBT, by including psychoeducation (provision of information about HD), cognitive restructuring (related to hoarding), Exposure and Response Prevention (ERP) (gradual exposure to discarding), skills training (to improve organization), emotion regulation, and relapse prevention. According to the authors, this protocol can be followed through either individual or group therapy.

Some of the reviewed studies used an individual treatment format (Tolin et al., 2007; Steketee et al., 2010), but the protocol has also been translated into a group format showing similar results (Gilliam et al., 2011). Gilliam et al. (2011) state that CBT treatment is labor intensive, and they assessed, through an open trial, the potential effectiveness of group CBT for HD. They also removed home visits by clinicians. The authors found significant improvements in hoarding and depression symptoms, and quality of life. They confirm that these results were comparable to two clinical trials on individual CBT, concluding that group CBT without home visits can work as well as individual therapy. Moulding et al. (2021) proposed a short-term group CBT for hoarding disorder. In their study, they wanted to test if a 12-week group programme based on Steketee and Frost's model would be efficacious. Pre-post analyses indicated a significant reduction of hoarding symptoms after 12 weeks of treatment, concluding that this short-term group CBT model was effective in reducing hoarding and depressive symptoms. Following the same line, Tolin et al. (2019) implemented a brief group CBT and, through their studies, concluded that it is an efficacious and feasible treatment for adults with HD. Finally, Tolin et al. (2017) propose in their therapist's guide a group format of CBT for HD, as it is of lower cost and comparable efficacy, and it even shows benefits over individual CBT (the treatment flows much more effectively through clear socialization, understanding, and destigmatization). Regarding treatment duration, these authors designed a group setup of 16 weekly sessions, with each lasting 90 minutes.

2.3. Discussion of limitations and challenges in using non-pharmacological interventions for Hoarding Disorder

There are several factors that can challenge the treatment of HD through non-pharmacological interventions. First, these individuals present apparent fluctuations in insight

and motivation for change, executive functioning impairments, and high mental health comorbidities (Worden et al., 2017). Specifically, HD is highly comorbid with OCPD, OCD, major depression, generalized anxiety disorder, social anxiety disorder, and ADHD (Van Roessel et al., 2023). These barriers interfere with completion of treatment because individuals struggle in decision-making and discarding tasks (Worden et al., 2017). Second, HD is considered an ego-syntonic disorder (Van Roessel et al., 2023). This means that hoarding-related thoughts are not viewed as intrusive; instead, they are consistent with the individual's self-identity, which makes it difficult for them to become aware of their problem and seek treatment. Moreover, as Van Roessel et al. (2023) state, acquiring episodes do not generate anxiety, but rather elicit joy, whereas distress comes from the restriction from acquiring, which makes it even harder to actively seek treatment. In this regard, Van Roessel et al. (2023) propose that when an individual does not want treatment, a harm reduction approach is the best alternative. In this case, the focus is to manage symptoms with the aim of minimizing risks (e.g., prioritize physical safety), and deemphasizing discarding itself. Therapy, on the other hand, would try to gain trust and alliance, increasing motivation to change.

The main limitation of using non-pharmacological interventions for treating HD is the low efficacy rates found. As Worden et al. (2017) state, “while CBT continues to be the most empirically supported treatment for HD, clearly there is substantial room for improvement in these treatment protocols (...). The rate of clinically significant change (...) is only 35%, with most patients continuing to show significant hoarding behaviors and related impairment at post-treatment” (p. 78). In this sense, we can conclude that even though CBT has proven to be the most effective treatment for HD, it still needs to be improved and further research should be done with the aim of finding a more efficient type of intervention.

3. Comparison of Pharmacological and Non-pharmacological Interventions

3.1. Brief review of pharmacological treatments for Hoarding Disorder

Regarding pharmacological treatments for HD, there is very limited evidence. There is not a specific medicine approved by the FDA for treatment of HD, and studies have shown some promising results, but findings still need replication in RCTs (Van Roessel et al., 2023).

Given the historical relationship of HD with OCD, hoarding symptoms have been treated based on the treatment of OCD. I found only one RCT carried out by Amiaz et al. (2008), which tested naltrexone augmentation in OCD with predominant hoarding, but it did not result in significant effects, and the authors described the study as highly limited. However, more recent studies have addressed certain medications' effect on HD patients specifically.

Kaplan & Hollander (2004) found an association between risperidone (antipsychotic primarily used to treat schizophrenia, bipolar disorder, and certain symptoms of autism) and treatment benefit in one HD case report, when combined with fluvoxamine (SSRI typically used to treat OCD) and a psychostimulant. However, it is important to be cautious with this conclusion. For example, another case report showed a worsening of hoarding behaviors when risperidone was added to clozapine in an individual with comorbid schizophrenia (Chong et al., 1996). Moreover, methylphenidate extended release (medication for ADHD) with an average dose of 50 mg/day for 4 DSM-5 HD patients was found to have a response of 32% and 50% reduction in the Saving Inventory-Revised (SI-R) scale in two of the patients (Rodriguez et al., 2013). Additionally, an open trial testing venlafaxine extended release (SNRI) in 23 DSM-5 HD patients was found to reduce in 32% two measures specific to HD (average dose of 204 mg/day in a 12-week treatment) (Saxena & Summer, 2014). Also, Vilaverde et al. (2017) found through a case report that quetiapine (antipsychotic)

augmenting fluvoxamine was beneficial in one individual. Finally, Grassi et al. (2016) elaborated an open trial with 11 DSM-5 HD patients with atomoxetine at flexible dose (40-80mg) for 12 weeks. This study resulted in a decrease of the Hoarding Severity Scale score by 41.3% on average for the whole group. For this reason, the authors suggested that atomoxetine may be effective for HD. However, further controlled trials are needed.

In sum, studies have most commonly pointed at SRIs, SNRIs, and ADHD medications, but it is crucial to keep in mind that, given the limitations of most of the reviewed studies, more research is needed, with a special emphasis on the need for future RCTs. I will further elaborate on this important point later in the text, but we can state that significant conclusions cannot be drawn yet. As Brakoulias et al. (2015) defend, there is still a need for more studies of pharmacotherapy and for introducing agents that would improve treatment outcomes, because the current evidence is too limited.

3.2. Discussion of advantages and disadvantages of each type of intervention

Regarding non-pharmacological interventions, there are some advantages that we can think about. First, these interventions not only target hoarding behaviors per se, but also the underlying causes and triggers. This brings a greater long-term efficacy. As reviewed, improvements can be maintained for up to one year (Van Roessel et al., 2023). Moreover, non-pharmacological interventions give individuals the possibility of developing practical skills to manage their hoarding behaviors, enhance decision-making, and improve organizational abilities (Steketee et al., 2010). Finally, these interventions may bring a more personalized treatment approach, taking into consideration the unique needs and context of the individual.

However, it is important to consider that, as reviewed, non-pharmacological interventions present many limitations and challenges in treating HD. In fact, they require time and commitment, involving active participation of the individual inside and outside the sessions. This may be difficult, considering that most HD patients have a comorbid diagnosis of depression, and other factors that compromise their motivation to seek and maintain treatment (Van Roessel et al., 2023). Following the same line, these interventions may involve exposure to distressing thoughts, situations, and emotions, which can be challenging for the patients, especially because HD is an ego-syntonic disorder (Van Roessel et al., 2023). Moreover, access to specialized interventions, such as therapists experienced in treating HD, may be limited (Hooley et al., 2017).

With respect to pharmacological interventions, medications can help alleviate symptoms of HD, such as anxiety, depression, or obsessive-compulsive symptoms, which often co-occur with HD (Saxena and Summer, 2014). Moreover, effects are fast-acting when compared to non-pharmacological interventions, which can be helpful if immediate relief of distress is sought. Additionally, in comparison to the difficulty that patients can encounter in finding specialized non-pharmacological interventions, medications are readily available and commonly used in psychiatric practice, which makes them an accessible treatment option that individuals seeking treatment can find through most healthcare professionals.

Nonetheless, as mentioned, pharmacological interventions for HD have very limited empirical support. There is a lack of specificity as no medication is officially approved by the FDA. Moreover, medications may provide relief, but they do not address the underlying cognitive and behavioral factors associated with hoarding, in comparison with non-pharmacological interventions such as CBT. This leads to a limited long-term efficacy, which can make the treatment more expensive in the long term. Finally, the lack of RCTs and

empirically supported evidence makes it hard to know exactly which treatment would be adequate for patients. This adds up to the fact that different individuals may respond variably to medications, which exposes them to undesired side effects, and the possible need to get into a trial-and-error process to find what works for them.

3.3. Recommendations for integrating pharmacological and non-pharmacological treatments in clinical practice

We have reviewed studies describing the efficacy of either non-pharmacological or pharmacological interventions for HD. But what about integrating both treatments in clinical practice? As Saxena (2011) mentions, “No study has yet compared CBT and pharmacotherapy for compulsive hoarding directly. However, the combination of pharmacotherapy and CBT for compulsive hoarding is likely to be more effective than either treatment alone, as has previously been shown for OCD, especially for patients who do not respond sufficiently to either modality alone” (p. 482). Following the same line, Saxena and Summer (2014) found that the combination of anti-obsessional pharmacotherapy and CBT for HD may be even more effective than either treatment alone. Specifically, the results of treatment studies for HD suggest that a combined, multimodal treatment of SRIs and CBT may be more effective (Saxena, 2011).

In accordance with this, I will propose some ideas of recommendations for integrating pharmacological and non-pharmacological treatments in clinical practice. Firstly, taking a multidisciplinary approach is necessary. Encouraging collaboration between psychologists, psychiatrists, and therapists, would ensure an integrated treatment and a holistic understanding of the patient’s needs. In the second place, it has been evidenced that individuals react differently to the different treatment options (psychotherapeutic and

pharmacological). In this sense, an individualized treatment planification and assessment would be important to reach a well-integrated treatment. Each individual's symptoms, comorbidities, and medical history should be taken into consideration to gain insight of the specific needs of the patient. Moreover, as mentioned, pharmacological interventions may be helpful for relieving very distressing symptoms. Therefore, determining whether pharmacological and non-pharmacological interventions should be implemented in a sequential or concurrent manner is important. For example, some patients may need to begin treatment through pharmacotherapy to stabilize symptoms, and then transition or add non-pharmacological interventions for long-term results. Finally, we have learned that most individuals with HD do not usually seek treatment because of HD being an ego-syntonic disorder. An integrated treatment would need to pay special attention to this aspect of the disorder because adherence to treatment and understanding of the disorder could be a challenge, especially if medications are involved. In this regard, providing information to the patients and their families (or support system) about the use of both treatments would be important, as well as encouraging communication and collaboration between the patients and the professionals. As mentioned, when patients do not want to be treated, it is very important to ensure an alliance and trust within the therapeutic relationship.

4. Conclusions

4.1. Summary of research on pharmacological and non-pharmacological interventions for Hoarding Disorder

In conclusion, research on HD treatment outcomes reveals that some non-pharmacological and pharmacological interventions may be effective, providing a baseline of direction for future research, which is highly needed. Non-pharmacological treatments for HD that have been found to be effective are mainly CREST (Davidson et al., 2021; Ayers et al., 2018) and

CBT (Steketee et al., 2010; Tolin et al., 2019), with one additional study that proved the efficacy of CM in the context of CBT (Worden et al., 2017). Overall, non-pharmacological interventions focus on reducing cognitive limitations associated with hoarding, enhancing decision-making, and facilitating discarding possessions. Nevertheless, as all the reviewed studies highlight, RCTs are needed, along with further research on the field.

Furthermore, evidence regarding pharmacological interventions is very limited. The reviewed studies have shown that some medications may be efficient to treat HD, but there is no medicine officially approved for treating this disorder. In sum, risperidone combined with fluvoxamine (Kaplan & Hollander, 2004), methylphenidate (Rodriguez et al., 2013), venlafaxine (Saxena & Summer, 2014), quetiapine with fluvoxamine (Vilaverde et al., 2017), and atomoxetine (Grassi et al., 2016) have shown beneficial results in some HD patients. In this sense, studies mostly point at SRIs, SNRIs, and ADHD medications. This gives us a hint of where to look at in further research, but we should still consider these results with caution, given the several limitations that each study presents, and the lack of RCTs in this regard.

4.2. Suggestions for future research

As mentioned, researchers highlight the importance of further investigation in treatment outcomes for HD. The current studies present many limitations that leave room for improvement. In general, bigger samples should be used, and randomized trials with active control conditions are needed (Wheaton, 2016). Furthermore, HD is a complex disorder with many factors, and research should test if outcomes improve by including strategies to enhance specific aspects of HD, such as interpersonal functioning and emotion regulation in the context of discarding and organizing belongings (David et al., 2021).

Regarding psychotherapy, we have found that CBT is the most effective treatment so far, but results are still not as good as expected, and there are many points that still need to be worked on. Dismantling studies are needed to determine the specific treatment components that contribute to therapeutic gains (Wheaton, 2016), given that CBT is a very wide model. Following the same line, Wheaton (2016) states that, although CBT has been compared to waitlist control groups, RCTs are still needed to further test its efficacy. However, current research advancements are still valuable. As Van Roessel et al. (2023) mention, these studies have traced promising lines of research, which are already being explored. Specifically, research should contribute to the further development of the vulnerabilities and information processing deficits described in the cognitive behavioral formulation of HD to support more effective psychological interventions. Moreover, the focus and approaches that precede treatments are another promising factor for enhancing CBT that needs to be considered (e.g., imaginal exposure or harm reduction) (Van Roessel et al., 2023).

Finally, as previously explained, evidence for pharmacological interventions is limited. There are no FDA-approved medications for HD, and there is a lack of controlled trials. Also, there is a clear need for more effective treatments, given that HD is a common and disabling disorder, with even more negative consequences than OCD (Saxena, 2011). After reviewing the current treatment outcomes studies, I propose that clinicians and patients should consider trials of treatment with SRIs, SNRIs, or atomoxetine. As Van Roessel et al. (2023) mention, comorbid HD conditions, such as depression, OCD, ADHD, or PTSD, may indicate or respond to pharmacological treatment. Still, further research is needed and warranted. Saxena (2011) also proposes that better pharmacotherapies must be identified through clinical trials, which must also test non-SRI medications, and future approaches should target the

information-processing deficits that underly HD, including deficits in organization and decision-making. Specifically, medications that increase anterior cingulate cortex activity (which appears to mediate symptoms and neurocognitive deficits associated with HD) such as stimulants, modafinil, and cholinesterase inhibitors, might be effective for HD (Saxena, 2011). In this sense, pharmacological interventions are also in need of further investigation.

In sum, through the present critical review, I have been able to outline the studies that conform the little existing evidence regarding treatment outcomes for HD. Given the high health-risk and significant distress in these patients, it is important to continue research in this field. Also, HD is a newly defined disorder, which makes it even more important for psychologists and health professionals to stay updated and encourage research that gives light on the ways in which we can help people with HD. Due to the mixed results and the difficulty patients face in seeking and completing treatment, this may not be the easiest task, but at least we have an idea of where to look.

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