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Disorders of impulse control

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Key points

- Describe various features of several of the more commonly occurring disorders of impulse control.
- Provide an overview of the clinical course and treatment of body-focused repetitive behaviors (BFRBs; e.g., trichotillomania, excoriation disorder) and disruptive/impulse control disorders (e.g., IED, pyromania, and kleptomania).

Abstract

Disorders of impulse control are marked by recurrent, repetitive, or ritualistic behavior achieving some level of short-term benefit but at the expense of negative, long-term consequences. The aim of this article is to provide an overview of key facets of several disorders most often subsumed under this nosology: trichotillomania, excoriation disorder, intermittent explosive disorder (IED), kleptomania, and pyromania. These disorders are more prevalent than once believed. The intent of this article is to provide the reader with a description of these disorders and an overview of their clinical course and treatment.

Introduction

Disorders of impulse control are characterized by recurrent behavior that provides short-term benefit at the risk of creating negative, long-term consequences. Difficulty with impulse control is common to many psychiatric disorders. However, what makes impulse control disorders so different is that, in many cases, they violate the rights of others or involve behaviors that bring the individual into conflict with social norms or figures of authority. In the interests of brevity, here we focus on several disorders that provide excellent examples of serious problems with impulse control. These include trichotillomania (which involves hair pulling), excoriation (skin picking) disorder, intermittent explosive disorder [IED], kleptomania, and pyromania. As the discussion pertains to the clinical course/treatment of these mental health concerns, we have chosen to organize our discussion according to two groupings that best reflect the state of the current literature: Body-focused repetitive behavior disorders (e.g., trichotillomania and excoriation disorder) and impulse control disorders (e.g., IED, kleptomania, pyromania).

Classification

Multiple, peer-reviewed papers have provided a comprehensive description of changes to the diagnostic system occurring between the publication of the DSM-IV-TR (APA, 2000) and DSM-5-TR (APA, 2022). In the DSM IV-TR, disorders such as trichotillomania, kleptomania, pyromania, and IED were listed in a separate section of the manual called "Impulse Control Disorders." Excoriation disorder was not given a distinct diagnostic label but was instead considered to be a form of Impulsive Control Disorder Not

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Otherwise Specified—a "catch all" category for disorders that were not listed elsewhere in the DSM. Following a reorganization in the DSM-5, trichotillomania and excoriation disorder were re-classified into the Obsessive-Compulsive and Related Disorders category alongside disorders such as obsessive-compulsive disorder and hoarding disorder, among others. Relatedly, kleptomania and pyromania (as well as IED) were re-organized into the new category of Disruptive, Impulse-Control, and Conduct Disorders, along with disorders such as oppositional defiant disorder and conduct disorder. This restructuring of the diagnostic system has implications for current and future research. In this article we focus on five disorders that all involve difficulties within the domain of impulse control, without regard to their diagnostic classification within the DSM.

Description of body focused repetitive behaviors

Trichotillomania

Trichotillomania (TTM; hairpulling disorder) is characterized by recurrent pulling of one's hair resulting in hair loss (American Psychiatric Association [APA], 2022). Criteria set forth by the Diagnostic and Statistical Manual for Mental Disorders Fifth Edition Text Revision (DSM 5-TR) require multiple attempts to stop or control pulling, and clinically significant distress or impairment associated with pulling (APA, 2022). While the phenomenological characteristics of TTM are heterogeneous, hairs are most often pulled individually using one's hands (Torales et al., 2021). Less frequently, hair may be pulled in clumps and using tools (e.g., tweezers, combs; Torales et al., 2021). Pulling from multiple areas is common; however, many report targeting one site (e.g., scalp, eyebrows, eyelashes, underarms, pubic area) most frequently (França et al., 2019). In addition to pulling, individuals may participate in specific rituals such as playing with hair, chewing hair, or ingesting hair, possibly leading to medical complications including trichobezoars (hair balls; Torales et al., 2021).

Two distinct but frequently co-existing styles of pulling have been described (Flessner et al., 2008). The first style, "focused pulling," occurs within one's awareness. Focused pulling is intentional and may involve actively searching for a specific hair based on physical characteristics (e.g., texture, length, physical sensation) or pulling to relieve negative affective states such as tension or distress (Duke et al., 2010). Alternatively, "automatic pulling" occurs outside of one's awareness, oftentimes when participating in sedentary activities such as watching television, driving, or reading (Duke et al., 2010).

Estimated prevalence rates of TTM range from approximately 1%–3% with slightly higher rates documented for subclinical symptoms (4%–15%; Houghton et al., 2018). Additionally, TTM disproportionately affects females, possibly due to higher levels of distress, impairment, and treatment seeking among females with TTM as compared to males (Gupta et al., 2015). Interestingly, a more equal sex distribution is present among pediatric samples which may reflect an earlier age of onset among males (Grant et al., 2020). While TTM has been reported as young as early childhood, symptom onset typically occurs within adolescence (i.e., 9–13; Ricketts et al., 2019). Across the lifespan, TTM has a significant negative impact on daily functioning.

TTM is associated with impairment across multiple domains including work, school, social, family, and overall quality of life (França et al., 2019). Many affected individuals report avoiding social activities, missing school or work, and attempting to conceal bald spots (Flessner et al., 2008). Additionally, experiences of guilt, shame, sadness, and low self-esteem are common following pulling (Diefenbach et al., 2008). Furthermore, TTM is highly comorbid with other psychiatric disorders including anxiety, depression, obsessive-compulsive disorder, posttraumatic stress disorder, and other body focused repetitive behaviors (BFRBs; excoriation disorder; Grant et al., 2020), which may exacerbate negative sequelae.

Excoriation disorder

Excoriation disorder, or skin picking disorder, is characterized by recurrent picking of the skin leading to significant distress and impairment (APA, 2022). Individuals may pick at healthy skin after experiencing an itchy sensation, or target skin with dermatologic conditions (e.g., acne; Jones et al., 2018; Kwon et al., 2020). Multiple picking sites are often reported with common sites including the face, hands, arms, and legs (Odlaug and Grant, 2008). Most commonly, individuals use their hands to pick but may also use tools such as tweezers (Odlaug and Grant, 2008). Picking is often described as compulsive in nature and may lead to medical complications including lesions, scarring, and infection (Jafferany and Patel, 2019).

Much like pulling in TTM, picking can be focused or automatic with varying levels of awareness reported (Jones et al., 2018). Focused picking may serve to alleviate negative affective states (e.g., anxiety, boredom; Snorrason et al., 2010). Despite the noted short-term relief, picking is associated with high levels of functional impairment in social, academic, and occupational domains (Flessner and Woods, 2006). Many with excoriation disorder report avoiding social situations and well-lit areas, spending time concealing picking sites, and experiencing low quality of life and negative emotions including guilt, shame, and embarrassment due to picking (Snorrason et al., 2010).

Prevalence rates of excoriation disorder are estimated to fall between 1.4% and 5.7% (Grant and Chamberlain, 2020) with a female preponderance and onset typically occurring in adolescence (Machado et al., 2018). Excoriation disorder is highly comorbid with other psychiatric disorders including anxiety, depression, posttraumatic stress disorder, obsessive-compulsive disorder, and TTM (Grant and Chamberlain, 2020).

Description of disruptive/impulse control disorders

Intermittent explosive disorder

Intermittent Explosive Disorder (IED) is characterized by a long-term pattern of abrupt aggressive outbursts (Coccaro, 2012). To meet DSM 5-TR criteria for IED, one must have either engaged in frequent, but minor verbal or physical aggression toward property, animals, or people or committed at least three major acts of physical aggression or property destruction within the period of a year (APA, 2022). In addition, to meet criteria for IED the aggressive acts cannot be premeditated. IED is associated with relationship issues, job loss, legal problems, and negative health outcomes (e.g., heart disease, stroke, lung disease, ulcers, and chronic pain; McCloskey et al., 2010).

Those with IED who exhibit both minor and major acts of aggression have greater impairment and lower quality of life compared to people with IED who only engage in one or the other forms of aggression (Look et al., 2015). They also show deficits in identifying and understanding their emotions (Fahlgren et al., 2019) and are more likely to engage in anger rumination. Both of these traits have been associated with greater aggression in community samples (Fossati et al., 2009). Compared to healthy controls, before and during aggressive outbursts those with IED are more likely to experience negative emotions, aversive physical sensations, and feelings of dyscontrol (Kulper et al., 2015). They are also more likely to feel remorseful after an outburst relative to healthy controls (Kulper et al., 2015).

In the United States, prevalence rates of IED is estimated to be 2.6%, with 1.4% of people meeting criteria for IED in the past (Coccaro and McCloskey, 2019). IED is thought to be more common in men than women, with an estimated odds ratio of 1.4–2.3; however, some studies have found no gender-related differences in prevalence (Oliver et al., 2016). Exposure to interpersonal violence (i.e., experiencing or witnessing abuse) is a risk factor for developing IED in both men and women but seems to be a stronger risk factor for women (Krick et al., 2022).

IED is commonly comorbid with depression, anxiety, substance use, bipolar disorder, post-traumatic stress disorder, antisocial personality disorder, and borderline personality disorder. The age of onset of IED generally precedes the development of these comorbid disorders (Coccaro et al., 2019). In addition, aggression is typically higher in those with IED and a comorbid disorder compared to those with IED alone (Coccaro et al., 2019).

Pyromania

Pyromania is a rare disorder involving fascination with fire and deliberate setting of fires unrelated to external reward. Pyromania is characterized by tension or affective arousal prior to starting fires and relief or gratification during/after (APA, 2022). Despite early research suggesting that pyromania is associated with sexual motives, little evidence supports this claim (Ó Ciardha et al., 2017). In one study, those with pyromania reported experiencing a "rush" during fire setting but none reported experiencing sexual excitement (Grant and Kim, 2007). The most reported triggers for starting fires were stress, boredom, feelings of inadequacy, and interpersonal conflict (Grant and Kim, 2007). Recent research suggests that although pyromania shares phenomenological similarities with other urge-driven disorders, it may have features of compulsivity as well (i.e., cognitive inflexibility; Blum et al., 2018).

The prevalence rate of pyromania is unknown. In the United States, it is estimated that 1% of the population has a history of intentional fire-setting (Vaughn et al., 2010). Among fire setters, it is estimated that anywhere from 0.4%–29% have pyromania, with more support for the lower end of this range (Nanayakkara et al., 2015). In a sample of participants reporting a history pyromania, 61.9% exhibited comorbid mood disorders, 47.6% had major depressive disorder, and 14.3% had bipolar disorder (Grant and Kim, 2007).

The literature related to pyromania suffers from imprecise measures of pyromania and biased samples (Nanayakkara et al., 2015). Furthermore, given the rarity of the disorder, much of the research literature has investigated fire-setting behavior more broadly rather than pyromania specifically. For example, in a study investigating common features among fire-setters (not specifically those with pyromania) the typical profile of a fire setter was Caucasian, low-skilled, young, male, and of low socioeconomic status. Other common characteristics included past experiences of neglect and/or abuse, a limited social network, poor social skills, and low self-esteem (Gannon and Pina, 2010). Higher rates of mental health conditions including schizophrenia, mood disorders (such as anxiety and depression), personality disorders, alcohol abuse, and intellectual disability have also been found in fire-setters (Tyler and Gannon, 2012).

Kleptomania

Kleptomania is a disorder characterized by recurrent inability to resist the urge to steal, even though the stolen items are not needed for personal use or for their monetary value (APA, 2022). Stealing is not premeditated and is preceded by tension and followed by pleasure, gratification, or relief (Klyce, 2017). Patients afflicted with kleptomania describe experiencing thoughts and urges related to shop lifting that seem "out of character" and "uncontrollable" and typically feel remorseful after stealing (Aboujaoude et al., 2004). Kleptomania causes significant distress and is associated with lower quality of life (Grant and Kim, 2005).

Kleptomania is thought to occur in 0.3%–0.6% of the population (APA, 2013) and is three times more prevalent in women than men. Age of onset is also disparate across genders with an average age of onset of 21 in women and 14 in men (Klyce, 2017). A high

percentage of those with kleptomania have been arrested for shop lifting at some point in their lives (approximately 64%–87%), with many having been caught on multiple occasions (Grant et al., 2009b). One pilot study found that those with kleptomania may have decreased white matter microstructural integrity in inferior frontal brain regions—an area of the brain associated with decreased impulse control (Grant et al., 2006). Kleptomania is commonly comorbid with other impulse-control disorders, mood disorders, substance abuse, obsessive compulsive disorder, eating disorders, and personality disorders (Klyce, 2017).

Clinical course/treatment

Body-focused repetitive behaviors

Both TTM and excoriation disorder exhibit a chronic course with waxing and waning severity and functional impairment throughout the lifespan (Snorrason et al., 2012). While much is unknown about the etiology of BFRBs, the high rate of comorbidity between TTM and excoriation disorder as well as several overlapping clinical characteristics (e.g., affective experiences, compulsive characteristics, disorder course, shared risk factors) have led researchers to propose a partially shared etiology between the two (Snorrason et al., 2012). Both TTM and excoriation disorder have been conceptualized using a biopsychosocial framework (França et al., 2019) and are likely maintained via a negative reinforcement cycle. Specifically, unpleasant physical sensations (e.g., itching) or negative affective states (e.g., tension, anxiety, boredom) are replaced with pleasure, gratification, and relief following participation in BFRBs (Snorrason et al., 2012).

Assessment of BFRBs requires both physical examination and the use of interviews or symptom rating scales to assess the frequency, duration, and impairment associated with behaviors (Jafferany and Patel, 2019). Several psychometrically validated assessment tools have been developed to assess TTM (The Trichotillomania Impact Survey (Neal-Barnett et al., 2010), The Massachusetts General Hospital Hairpulling Scale (Keuthen et al., 2007), The Trichotillomania Diagnostic Interview (Rothbaum and Ninan, 1994), The Trichotillomania Scale for Children [TSC; Tolin et al., 2008]) and excoriation disorder (The Milwaukee Inventory for the Dimensions of Adult Skin Picking (Walther et al., 2009), The Skin Picking Impact Scale (Keuthen et al., 2001a), and the Skin Picking Scale (Keuthen et al., 2001b)).

Both behavioral and pharmacological treatments appear to be beneficial in the treatment of BFRBs. Behavioral treatments such as cognitive behavioral therapy (CBT) with habit reversal training (i.e., awareness training, stimulus control, competing response training, social support, and generalization of skills; Woods, 2001) are successful in reducing symptoms of BFRBs and have been shown to be superior to treatment as usual (Adler et al., 2020; Lochner et al., 2017). Additionally, other behavioral therapies including function-based interventions aimed to modify pulling and picking triggers have shown success in reducing symptoms (Franklin et al., 2011). These positive outcomes have led some researchers to propose that behavioral treatment may be the best first line option when treating BFRBs (Jones et al., 2018).

Pharmacological interventions including selective serotonin or serotonin-norepinephrine reuptake inhibitors (SSRIs and SNRIs) and antipsychotics (e.g., Ariprazole, Olanzapine). Glutamatergic modulating drugs (N-acetyl cysteine) have also been used in the treatment of BFRBs; however, results have been mixed. Whereas some studies show significant symptom reduction, others indicate no differences when compared to placebo (Adler et al., 2020). Current pharmacological research in the context of BFRBs is limited by a lack of long-term clinical trials and direct comparisons between behavioral and pharmacological treatments (Lee and Lipner, 2022). It may be that a combination of the two may be most beneficial in the treatment of BFRBs (Jones et al., 2018).

Disruptive/impulse control disorders

Episodic aggressive outbursts can begin in childhood, adolescence, or early adulthood and follow a chronic course (McElroy et al., 1992). Treatments for IED include psychotherapy and medication. CBT in individual and group therapy formats have shown promise in treating IED (Costa et al., 2018). After CBT treatment, the percentage of patients with IED showing reliable decrease on the State-Trait Anger Expression Inventory (Spielberger, 1999) was 80.0% for state anger, 100% for trait anger, 41.3% for anger expression in (i.e., anger directed toward self), 93.7% for anger expression out (i.e., outward aggression), and 59.9% for anger control (Costa et al., 2018). Medications that have been used to treat IED including mood stabilizers, phenytoin, SSRIs, β-blockers, α2-agonists, anticonvulsants (e.g., Carbamazepine; Coskun and Akca, 2018) and antipsychotics. Oxcarbazepine and Fluoxetine have been found to be the most efficacious medications for treating IED (Tahir et al., 2022).

Similar to IED, CBT has also showed promise in the treatment of pyromania (Kolko, 2001). No controlled studies of pharmacological interventions exist for pyromania. Within the context of individual cases, there has been partial or complete remission of symptoms with escitalopram, sertraline, fluoxetine (SSRIs), topiramate (antiepileptic), lithium (mood stabilizer), and olanzapine (neuroleptic) combined with sodium valproate (antiepileptic; Grant & Odlaug, 2011).

Psychotherapy treatment for kleptomania includes cognitive behavioral therapy (CBT) (Christianini et al., 2015), with some evidence that exposure with response prevention (ERP) may be beneficial (Olbrich et al., 2019). The FDA has not approved any medication for kleptomania thus far (Torales et al., 2020). The use of antidepressants, anticonvulsants, and anxiolytics have been reported with mixed results. Naltrexone has been shown to reduce urges to steal, thoughts about stealing, and stealing behavior (Grant et al., 2009a). To our knowledge, only two controlled studies exist for pharmacological interventions for

pyromania (Grant et al., 2009a). Only Naltrexone was shown to be effective; however, results are limited due to a small sample size (Tahir et al., 2022).

Summary

Disorders of impulse control are heterogeneous in their presentation, ranging from the pulling of one's hair to an uncontrollable urge to steal unneeded objects. In recent years, the field has gained a greater understanding of processes that may be, to varying extents, shared or unique to these disorders of impulse control; however, much information eludes the field. Far more research is needed to gain a sufficient understanding of these disorders for purpose of better understanding the course, prognosis, and treatment of these disorders. This is particularly true of disorders such as pyromania and kleptomania whereby few psychosocial and pharmacological interventions have been rigorously tested.

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