

UNDERSTANDING TRICHOTILLOMANIA IN ADULTS: WHAT PSYCHOLOGISTS NEED TO KNOW

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Introduction

Trichotillomania is a mental disorder that refers to an individual's compulsive and repeated hair pulling. Limited research has been conducted on this rare disorder, which has led to differing explanations on the nature, cause, prevalence and treatment of trichotillomania. Sufferers, however, report psychological and physical health detriments that impact their personal, social and professional lives. The most recent diagnostic guidelines have classified Trichotillomania as an obsessive-compulsive related disorder. It is, therefore, no longer categorized as an impulse control disorder. According to the *Diagnostic and Statistical Manual* (5th Edition, DSM-V), the diagnostic criteria for trichotillomania are the following:

"a) recurrent pulling out of one's hair, resulting in hair loss, b) repeated attempts to decrease or stop hair pulling, c) hair pulling causes clinically significant distress or impairment in social, occupational, or other important areas of functioning, d) the hair pulling or hair loss is not attributable to another medical condition, e) the hair pulling is not better explained by the symptoms of another mental disorder"

(American Psychiatric Association, 2013, p. 442).

Hair pulling is divided into two categories; automatic and focused hair pulling (du Toit, van Kradenburg, Niehaus, & Stein, 2001). The most common form of hair pulling, automatic hair pulling, typically occurs inattentively during inactive activities such as watching television, lying in bed, driving or reading (Azrin & Nunn, 1977; Christenson, Ristvedt, & Mackenzie, 1993; Mansueto, Towsley-Stemberger, McCombs-Thomas & Goldfinger Golomb, 1997; Christenson, Mackenzie, & Mitchell, 1994). Focused hair pulling, however, is associated with increased thoughts about hair pulling, intense urges and rising tension. Focused hair pulling occurs in a quarter of people with trichotillomania (Christenson et al., 1994). It is helpful to conceptualize trichotillomania into these two distinct sub categories. However, automatic and focused hair pulling are rarely mutually exclusive. Often, a person with trichotillomania will engage in both automatic and focused hair pulling. Recent research indicates that less than .01% of individuals engage exclusively in focused or automatic hair pulling (Flessner, Conelea, Woods, Franklin, Keuthen, & Cashin, 2008). Furthermore, an individual's hair pulling subtype could determine their treatment outcome and should be considered when choosing the most appropriate treatment modality (Duke, Keeley, Geffken, & Storch, 2010).

Given the limited research in this area, we aimed to collate and synthesize the perspectives and findings of previous research on

trichotillomania. The research presented was sourced from the PsycINFO, PsycArticles, PubMed and Google Scholar databases using the search term "trichotillomania". In this review, we discussed the prevalence and onset of trichotillomania and the difficulties inherent in calculating accurate estimates for each. Finally, we present the aetiological theories proposed thus far and the treatments that stem from those theories and clinical practice.

Prevalence of Trichotillomania

There are significant challenges in calculating the prevalence rate of trichotillomania due to a lack of published epidemiological studies. Although early estimates hinted that trichotillomania was a rare condition affecting a very small portion of the general population (0.5%), recent guidelines suggest a prevalence rate at least four times as high (Duke et al., 2010; Trichotillomania Learning Center, 2011). These rates, however, were acquired from studies that primarily sampled university students and were, thus, not representative of the general population (Christenson, Pyle, & Mitchell, 1991; Rothbaum, Shaw, Morriss, & Ninan, 1993). Furthermore, there are disparities between these studies with regard to how strictly the diagnostic criteria were enforced when recruiting population samples.

Although a single diagnosis has not been directly linked with trichotillomania, it can occur co-morbidly with a number of other disorders. The most commonly identified disorders that occur alongside Trichotillomania are anxiety and substance use disorders (Christenson et al., 1994). Hair pulling was also associated with depression and anxiety in adults and children (Duke, Bodzin, Gelfken, & Storch, 2009; Lewin et al., 2009). Furthermore, a higher occurrence of obsessive-compulsive disorder is apparent in sufferers of trichotillomania with a frequency rate between 13-16% (Christenson, 1995; Swedo & Leonard, 1992) compared to the estimated general population (1-3%; Robins et al., 1984). Additionally, eating disorders (Soriano, O'Sullivan, Baer, Phillips, McNally, & Jenike, 1996), attention deficit disorder and tic disorder were associated with trichotillomania in children (King, Scahill, Vitulano, Schwab-Stone, Tercyak & Riddle, 1995a; King et al., 1995b).

Onset of Trichotillomania

The estimated average age of onset of trichotillomania is 13 years of age (Christenson, 1995; Cohen, Stein, Simeon, Spadaccini, Rosen, & Aronowitz, 1995). A later onset is linked to higher instances of symptom severity (Odlaug, Chamberlain, Harvanko, & Grant, 2012), comorbidity with other psychiatric difficulties and treatment resistance (Duke et al., 2010; Swedo & Leonard, 1992). Incidents of hair pulling have been reported in children as young as 9 months old. However, studies of trichotillomania in children are limited. A study of 59 children seeking treatment for alopecia indicated that 9.8% met diagnostic criteria for trichotillomania (Stroud, 1983). This early onset of trichotillomania is less likely to develop into a long-term illness when compared to hair pulling that begins later in life (Trichotillomania Learning Center, 2011). However, a number of adult sufferers of trichotillomania reported that their illness began before the age of six (Cohen et al., 1995). These preliminary studies indicate the need for longitudinal studies that examine the impact of early onset trichotillomania on lifetime outcomes (Cohen et al., 1995).

Aetiology of Trichotillomania

As with prevalence, the existing understanding of the causes of trichotillomania is also tentative. Evidence suggests that there is no one cause of trichotillomania. Instead, its occurrence has been attributed to an interaction between each individual's biological, psychological and social circles (Duke et al., 2010). Several aetiological theories have been generated on trichotillomania. The first of these theories is genetic in nature. The genetic theory attributes observations of slightly higher rates of trichotillomania across families to the influence of genes (Christenson, Mackenzie, & Reeve, 1992). Additionally, it highlights how monozygotic twins who share a similar genetic makeup tend to share the same diagnosis at a much higher rate than their dizygotic counterparts (38% vs 0%; Novak, Keuthen, Stewart, & Pauls, 2009).

Conversely, the neurological model focuses on the role of three neurotransmitters in trichotillomania. The first of these, serotonin, is implicated in difficulties with impulse control which, when used in the form of a selective serotonin reuptake inhibitor (SSRI), may show treatment benefits and reduced cerebellar neural activity (Stein, Bouwer, & Maud, 1997). This finding has, however, been disputed by others (e.g., Bloch et al., 2007). The second of these, dopamine, is inextricably linked to serotonin (Daw, Kakade, & Dayade, 2002). When a dopamine blocking neuroleptic is accompanied by an SSRI, it may provide symptomatic relief to some sufferers (Stein & Hollander, 1992). Finally, glutamate in the form of acetylcysteine, has been associated with a significant reduction in hair pulling in placebo trials (Grant, Odlaug, & Kim, 2009).

There is a vast degree of uncertainty as to the brain regions responsible for symptoms of trichotillomania. Although the right inferior frontal gyrus has been linked to response inhibition (Hampshire, Chamberlain, Monti, Duncan, & Owen, 2010; Lenartowicz, Verbruggen, Logan, & Poldrack, 2011), cerebral reductions have been observed in the left putamen (O'Sullivan et al., 1997) and in the left inferior frontal gyrus (Grachev, 1997). Perfusion defects in the left parietal lobe also appeared more noticeably in monozygotic twins with more severe symptoms (Vythilingum, Warwick, van Kradenburg, Hugo, van Heerden, & Stein, 2002). Furthermore, the right cuneal cortex and the left amygdalo-hippocampal formation appear enlarged (Grachev, 1997; Chamberlain et al., 2008).

The third theory, pertaining to behaviour, denotes that hair pulling may be a maladaptive coping mechanism which occurs in response to stress and is reinforced when successfully used to reduce tension or bring relief (Diefenbach, Reitman, & Williamson, 2000). The person may therefore be 'conditioned' and the symptoms of trichotillomania may be formed either from habit (Azrin & Nunn, 1973) or as a form of modelling behaviour where the person replicates the behaviour of someone influential to them (Diefenbach et al., 2000). The regulation model, alternatively, simulates a model of homeostatic balance. Similarly to how our bodies regulate basic functions such as temperature through homeostasis, body hair pulling is used to either stimulate or soothe as a form of emotional regulation (Duke et al., 2010; Penzel, 2003).

A number of controversial aetiological theories have emerged to try to explain the causes of trichotillomania. The psychoanalytic model

posits that hair style represents an individual's ideology. Hair pulling, according to this perspective, is viewed as a symbolic expression of conflict or loss in the hair puller's life (Stein, Christenson, & Hollander, 1999). A minority of studies have also implied that sufferers of trichotillomania have experienced childhood trauma. One such study found that 76% of individuals with trichotillomania had experienced a traumatic event (Gershuny et al., 2006). However, one cannot deduce that trauma acts as a causative factor. Another influential theory originated from Swedo (1989), who proposed that trichotillomania symptoms occur as an innate grooming behaviour that has gone awry. This hypothesis initiated from observations of animal behaviour where hair pulling may be a part of self-grooming most noticeable in females (Reinhardt, 2005; Duke et al., 2010). Furthermore, researchers have highlighted the proximity of symptom onset to menarche and observed a worsening degree of symptom severity in women's premenstrual cycles (Keuthen, O'Sullivan, Hayday, Peets, Jenike, & Baer, 1997). As with many of the above models, there is insufficient research to strengthen these hypotheses.

Treatment of Trichotillomania

Our knowledge regarding the effectiveness of various treatments for trichotillomania is unfortunately plagued by a restricted number of studies investigating the topic accompanied by insufficient sample sizes within many of these (Woods et al., 2006). The treatment of trichotillomania thus far has focused on targeting both the biological and behavioural components of the illness. Treatment essentially addresses the impulse to hair-pull, the behaviours implicated in hair-pulling, and the results of such behaviours (Mansueto et al., 1997). Pharmacotherapy and behavioural therapy are viewed as the primary treatment options for reducing hair pulling and associated symptoms. Using both methods conjunctively may also provide a better prognosis for sufferers (Dougherty, Loh, Jenike, & Keuthen, 2006).

The function of pharmacotherapy in the treatment of trichotillomania is to alleviate the compulsivity of hair pulling (Swedo & Rapoport, 1991) as well as treating possible comorbid symptoms of anxiety and depression (Bloch, 2009). There is conflicting evidence as to the efficacy of antidepressant medication in treating hair pulling. Results from two open clinical trials indicate that both individuals with a previous history or present comorbidity of anxiety or depression (Winchel, Jones, Stanley, Molcho, & Stanley, 1992) and individuals with no comorbidity of obsessive-compulsive disorder or depression (Koran, Ringold & Hewlett, 1992) showed significant reductions in hair pulling following treatment with fluoxetine. However, in a double-blind randomized study, fluoxetine shared the same effectiveness as placebo treatment (Christenson, Mackenzie, Mitchell, & Callies, 1991). Citalopram, another selective serotonin reuptake inhibitor, was found to improve symptom severity in a subset of individuals with trichotillomania (Stein et al., 1997), while fluvoxamine was deemed as potentially efficacious (Stanley, Breckenridge, Swann, Freeman, & Reich, 1997). In an older 10-week double-blind crossover trial the tricyclic antidepressant, clomipramine, showed significant improvements in the short-term treatment of obsessiveness in comparison to desipramine (Swedo, Leonard, Rapoport, Lenane, Glodberger, & Cheslow, 1989). A reduction in symptom severity was also reported when treatment incorporated both an SSRI and either dopamine-blocker pimozide (Stein & Hollander, 1992) or olanzapine

(Ashton, 2001; Potenza, Wasylink, Epperson, & McDougle, 1998). Additionally, olanzapine alone has been proposed as an effective and safe medication following a 12-week randomized double-blind placebo-controlled trial (van Ameringen, Mancini, Patterson, Bennett, & Oakman, 2010). Finally, in a small trial regarding the effectiveness of mood stabilisers such as lithium on symptom reduction, 8 out of 10 individuals experienced a reduction in hair pulling which allowed for hair regrowth (Christenson, Popkin, Mackenzie, & Realmuto, 1991). Other pharmacological treatment options for trichotillomania range from glutamatergic agents such as N-acetylcysteine (Grant, Oldaug, & Kim, 2009) to opioid antagonists such as naltrexone (Carrion, 1995) and cannabinoid agonists such as dronabinol (Grant, Oldaug, Chamberlain, & Kim, 2011).

Cognitive behavioural therapy (CBT) is viewed as the preferable psychotherapeutic treatment for trichotillomania in both adults (Ninan, Rothbaum, Marsteller, Knight, & Eccard, 2000) and children (Tolin, Franklin, Diefenbach, Andersen, & Meunier, 2007). There are a number of different treatment approaches that fall under the umbrella of CBT. These include habit reversal training (HRT), acceptance and commitment therapy (ACT), comprehensive behavioural treatment and dialectical behaviour therapy (DBT).

Habit reversal training (HRT; Azrin & Nunn, 1973) has obtained strong experimental support in the treatment of trichotillomania both individually (Elliot & Fuqua, 2000) and in a group setting (Mouton & Stanley, 1996). HRT was also identified as more efficacious than pharmacological therapy with clomipramine or SSRIs in a meta-analysis using mean change in symptom severity as a primary outcome (Bloch et al., 2007). The aim of HRT is to recalibrate an individual's motor habit by tasking the individual with a behaviour that is contrary to the behaviour normally pursued. Further studies have advised incorporating self-monitoring, habit awareness, stimulus control, relaxation training and cognitive restructuring (Lerner, Franklin, Meadows, Hembree, & Foa, 1999). The above steps are carried out over a period of 8 sessions including a first introductory session that allows the treating therapist to identify the sufferer's triggers and level of self-awareness regarding the frequency, timing and circumstances surrounding hair pulling. Following HRT, the individual is advised to use physically prohibitive or visual aids (such as gloves or reminders) to reduce incidences of hair pulling as well as being taught deep muscle relaxation techniques to help cope with stressors. Through cognitive restructuring, the sufferer is asked to challenge negative automatic thoughts and its accompanying negative self-dialogue and address perfectionist beliefs and thoughts regarding symmetry (Lerner et al., 1999). In a final session, the therapist asks the sufferer to visualise him or herself coping and identify that there may be natural lapses in symptoms, which do not necessarily equate with relapse. Although studies reveal that many individuals respond positively to the treatment, these effects tend to deteriorate from one month (Mouton & Stanley, 1996) and three month follow-up onwards (Keijsers, van Minnen, Hoogduin, Klaassen, Hendriks, & Tanis-Jacobs, 2006).

Acceptance and commitment therapy (ACT) has shown some promise in the treatment of trichotillomania. The objective of ACT is to teach individuals to experience urges to pull without the need to act upon them (Trichotillomania Learning Center, 2011). According to

Hayes, Strosahl and Wilson (1999), ACT draws the individual towards accepting an uncomfortable thought or impulse by using techniques which encourage the individual to be mindful of the present moment, separate the stress-inducing thought from the thought-triggering event (cognitive defusion) and become or retain self-awareness of personal values (Hayes et al., 1999). Results from a 12-week randomised controlled trial revealed significant improvement in hair pulling severity and comorbid symptoms in the majority of participants when both ACT and HRT were combined (Woods, Wetterneck, & Flessner, 2006). Furthermore, three out of four individuals retained a lower number of hairs pulled at three-month follow-up (Towhig & Woods, 2004).

The comprehensive behavioural model (CBM) expands on the HRT model and consists of a ten step individualised programme delivered in four stages (Mansueto, Goldfinger Golomb, McCombs Thomas, & Townsley Stemberger, 1999; Mansueto et al., 1997). In phase one, known as functional analysis, the therapist and sufferer identify previous and current circumstances and behaviours that maintain hair pulling. In phase two, the internal and external cues (such as an affective state or location) that contribute to hair pulling are specified. Over the final two phases, the identified cues are targeted and, following evaluation of the treatment, modified where necessary. This behavioural model, however, requires further testing.

Dialectical behaviour therapy (DBT) has been used to enhance CBT in the treatment of trichotillomania in a minority of studies. Although DBT is grounded in a cognitive behavioural approach, it also helps teach individuals how to regulate their emotions, tolerate uncomfortable situations and distress and control impulsive behaviours (Keuthen et al., 2012). Significant improvements in symptom severity, emotion regulation and comorbid symptoms of anxiety and depression were reported when DBT and CBT were integrated (Keuthen et al., 2010; Welch & Kim, 2012). Furthermore, symptom improvement was retained at three and six month follow-up (Keuthen et al., 2011). The effective treatment of trichotillomania may draw from various treatment approaches that may not always be considered exclusively.

Conclusion

Trichotillomania affects a significant portion of our population. Although we are presently unaware of what causes trichotillomania, it can occur alongside other mental conditions. It is imperative for psychologists to spot the early signs of hair pulling as later onset is linked to higher instances of symptom severity, comorbidity and treatment resistance. Unfortunately, our understanding of the effectiveness of various treatments is restricted by an insufficient number of studies and, within these, insufficient sample sizes. A number of therapies have, however, shown some degree of success and have highlighted that the condition can be manageable for sufferers upon accessing treatment.

OCD Ireland is a national organisation that provides such support to sufferers supporting of trichotillomania, obsessive compulsive disorder (OCD) and body dysmorphic disorder (BDD). As some sufferers experience embarrassment, shame and isolation, support groups can provide an important and effective method of support where sufferers can share their journeys (Trichotillomania Learning Center, 2011). For further information, please refer to www.ocdireland.org.



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