

Understanding and Treating Trichotillomania: What We Know and What We Don't Know

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Trichotillomania (TTM) is currently classified as an impulse-control disorder, but there has been considerable debate as to whether it would be classified more appropriately as a disorder on the obsessive-compulsive spectrum [1]. In either case, TTM involves repetitive hair pulling that results in significant hair loss (criterion A in the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition [DSM-IV]). To receive a diagnosis of TTM, an individual must also meet the following criteria [2]:

1. There is an increasing level of tension immediately before hair pulling or during attempts to avoid pulling
2. There is a sensation of relief, pleasure, or gratification during hair pulling
3. The pulling is not explained better by a general medical condition or other mental disorder
4. Significant distress or impairment in occupational, social, or other areas of functioning is experienced as a result of the pulling

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This article summarizes current research on TTM while focusing on information that may be particularly relevant to practitioners. After discussing diagnostic considerations and epidemiologic data, it discusses comorbidities and etiologic findings and then considers potential subtypes. The article then describes the various assessment tools available to clinicians and reviews the current status of TTM treatment research. Significant gaps remain in the knowledge of TTM, and the final section of the article outlines a direction for future research and highlights some work being done to ameliorate the situation.

Diagnostic considerations and epidemiology

Substantial controversy remains as to whether the criteria described in DSM-IV, text revised (TR), are too restrictive. Specifically, there is concern that the inclusion of criteria B (tension before pulling) and C (reduction of tension after pulling) actually excludes a large percentage of individuals who repetitively pull their hair to the point of hair loss and functional impairment but who do not experience antecedent tension or its subsequent reduction. Preliminary epidemiologic research supports this concern. Estimates suggest that the prevalence of pulling in the absence of both criteria B and C is approximately 3.4% of college women, whereas the prevalence of TTM as defined by the full DSM-IV criteria is 0.6% [3]. Unfortunately, the extent to which criteria B and C produce any incremental validity in terms of predicting functional impairment, treatment response, or course of the disorder has not been addressed as yet. A large study, currently underway and funded by the Trichotillomania Learning Center (TLC), should begin to clarify this diagnostic issue.

Regardless of diagnostic label, the locations and methods of pulling show great individual variation. Hair may be pulled from any body region but is most commonly pulled, one hair at a time, from the scalp, lashes, and brows [4]. Pulling typically is done with the fingers, but tools such as tweezers, brushes, or combs may also be used. Often, those who have TTM engage in a variety of postpulling behaviors including manipulating the pulled hair using the mouth, hands, or face or chewing or ingesting the hair [5].

In adult samples, the average age of onset is approximately 13 years [5], but when children who engage in chronic hair pulling are sampled, the average age of onset seems to be around 18 months [6]. In younger children, feelings of tension and relief from tension may not be reported [6–8].

TTM seems to be more common among females, although it remains unclear whether this sex difference results from a true differences in the occurrence of the disorder, reflects a female treatment-seeking bias, or reflects a tacit societal acceptability of hair loss in men [9]. The gender distribution in children is less clear, but it seems that the younger the sample, the more equal the gender distribution [10].

Functional impact and comorbidity

Early research on small samples of persons who had TTM suggests that the disorder can have numerous negative effects on physical and psychosocial functioning [11–13]. Physically, the most notable consequence is hair loss, but recurrent hair pulling can also produce follicle damage, changes in the structure and appearance of regrown hair, scalp irritation, enamel erosion and gingivitis (from hair mouthing) [9], and repetitive strain injury [14]. Those who ingest the hair are susceptible to trichobezoars, which may lead to anorexia, vomiting, weight loss, and possible death [15].

Psychosocially, TTM also seems to have a great impact [11,16,17]. For example, Stemberger and colleagues [17] found that more than 60% of adults who had TTM avoided swimming and getting haircuts, more than 20% avoided well-lit public places, and more than 30% were uncomfortable with windy weather. Additionally, more than 50% reported low self-esteem, depression, irritability, and feelings of unattractiveness. Although existing studies indicate that TTM may contribute to significant impairment in daily functioning, it is clear that the small samples and the use of psychosocial impact measures that are nonspecific to the disorder significantly limit what is known about the functional impact of TTM.

TTM seems to have a broad psychosocial impact, and it frequently co-occurs with other psychiatric conditions. As many as 55% of individuals who have TTM have comorbid psychiatric diagnoses, most commonly mood and anxiety disorders [12]. In another study, 27% of a sample who had TTM had a mood disorder, 26% had an obsessive-compulsive disorder, 23% had another anxiety disorder, and 55% had a comorbid personality disorder [18]. Similar comorbidity rates were found by Christenson and colleagues [3], who found that 23% of the sample also had major depression, and 18% had panic disorder.

Although hair pulling at a young age may be simply a benign habit [19], psychiatric comorbidity seems to be evident in some younger children who have TTM, with recent research on toddlers showing that 50% of the toddlers in the sample met requirements for a comorbid anxiety disorder, 40% displayed developmental problems, 20% had chronic pediatric concerns, and 100% of the sample had family stressors such as parental separation, homelessness, unemployment, or parent mental illness [6].

Etiologic and maintaining factors

Like the limited research on the utility of diagnostic criteria, functional impact, and psychiatric comorbidity, the research on etiologic and maintaining factors is sparse. In research on both biologic and environmental factors, studies are beset by generally small samples and lack of experimental designs. Therefore the literature reviewed here should be viewed not as definitive but rather as a basis for additional work.

Biologic underpinnings

Although a specific TTM gene has not been identified in humans, a genetic basis for TTM has been suggested [17,20,21]. Similarly, no experimental studies have been conducted linking a specific neurochemical deficit to pulling severity, but outcome studies suggesting favorable responses to selective serotonin reuptake inhibitors and dopamine blockers have led some to suggest that dysregulations of the serotonin and dopamine systems are functionally related to the severity of hair pulling [22,23]. Likewise the apparent efficacy of naltrexone (an opiate blocker) in reducing hair pulling has led to the belief that endogenous opiate activity is involved in TTM, [24] but studies evaluating whether those who have TTM experience decrease in pain sensitivity (a possible prediction of the opioid hypothesis) have not been supportive [25,26]. Limited research in neurostructural and neurofunctional deficits has shown that patients who have TTM have significantly reduced left putamen and left ventriculate volumes compared with healthy controls [27–29] and have increased right and left cerebellar and right superior parietal functioning [30]. Persons who have more severe hair pulling exhibit a greater decrease of activity in the frontal and parietal regions and left caudate [31].

Environmental factors

A number of different events, including specific features of the hair, cognitions, emotional experiences, or particular settings, may trigger an episode of pulling. Physical features of the hair that may evoke pulling include a particular color (eg, gray), shape (eg, curly or split ends), or texture (eg, coarse) [5,9]. Specific cognitions may also trigger pulling for some individuals [5]. Typically, these thoughts are about the hair or its perceived appearance (eg, “My eyebrows should be symmetrical” or “Gray hairs are bad, and I need to remove them”), but pulling severity has also been correlated with negative beliefs about appearance, shame-related cognitions, and fear of being negatively evaluated (Norberg MM, Woods DW, Wetterneck CT. Examination of the mediating role of psychological acceptance in relationships between cognitions and the severity of chronic hairpulling; unpublished manuscript). Although a direct causal relation is often assumed between such cognitions and pulling, recent research suggests that these cognition–pulling relationships may be mediated by a third variable, experiential avoidance, which refers to a person’s general tendency to control or escape from unpleasant private experiences such as thoughts or emotions (Norberg MM, Woods DW, Wetterneck CT. Examination of the mediating role of psychological acceptance in relationships between cognitions and the severity of chronic hairpulling; unpublished manuscript) [32,33].

A third common trigger for pulling is the experience of negative affective states such as anxiety and tension [12,34], loneliness, fatigue, guilt, anger, indecision, frustration, and excitement [5,12]. A final class of events that has

been found to trigger pulling in persons who have TTM is specific settings, such as studying or reading, sitting at work or in class, watching television, talking on the telephone, driving, or being in the bathroom or bedroom [12,35].

In addition to a variety of pulling triggers, a number of pulling consequences may serve to maintain the behavior through positive or negative reinforcement. Positive reinforcers can include tactile sensations created by rubbing the pulled hair against a person's body, on the face or lips, or between the fingers, the visual stimuli produced by pulling certain types of hair (eg, thick hairs or those with plump roots) [36–38], or satisfying or pleasurable feelings derived from the act of pulling [5]. Negative reinforcers for pulling include the removal of an aversive stimulus or emotional experience contingent on pulling. For example, it has been suggested that hair pulling may be reinforced by distracting an individual from a stressful event, undesired emotions, or boredom [5], and when asked to rate their emotional experiences before, during, and after pulling, people who have TTM report a reduction in anxiety and tension across the pulling episode [12]. In the same study, feelings such as guilt, sadness, and anger were found to have increased across the course of a hair-pulling session, suggesting that pulling may also create a rise in unpleasant feelings which then sets the occasion for additional hair-pulling episodes.

Possible subtypes of pulling

Evidence from the studies on environmental factors involved in TTM maintenance suggests the disorder may have different subtypes. Preliminary findings suggest two types of pulling may exist, and both types may be present in many of those who have the disorder. Focused pulling is viewed as an intentional act used to control aversive private experiences, such as an urge, bodily sensation (eg, itching or burning), or cognition. In contrast, non-focused or automatic pulling seems to occur outside the person's awareness and often occurs during sedentary activities. Generally, this behavior is considered an "habitual" type of pulling, occurring independent of any well-defined specific emotional or cognitive experience. Estimates of how automatic and focused pulling are distributed in those who have TTM vary greatly. Primarily focused pulling has been estimated to occur in 15% to 34% of pullers, automatic pulling in 5% to 47%, and both types in 19% to 80% [39,40]. Clearly, there is discrepancy in this research, much of which can be attributed to the lack of a common measurement instrument and use of slightly different subtype definitions.

The existence of the focused and nonfocused subtypes is still debatable, but recent research conducted in the authors' laboratory lends support to the distinction. In this research, a 10-item survey designed to measure focused and nonfocused pulling was administered to 43 adults who had TTM. A factor analysis was conducted using a varimax rotation, and

separate focused and nonfocused factors emerged. Results showed that the two factors were unrelated ($r = -0.092$; $P > .05$), thus increasing the validity of the focused/nonfocused construct. In addition, the focused factor, but not the nonfocused factor, was significantly and positively correlated with measures of negative affect, including the Beck Depression Inventory ($r = 0.31$; $P < .05$), and the State Trait Anxiety Inventory ($r = .33$; $P < .05$). A recently completed study, the Milwaukee Dimensions of Trichotillomania Survey (M-DOTS) further refined a focused/nonfocused pulling scale, and results generally confirmed earlier findings, lending even more support to the validity of the focused/nonfocused distinction (Flessner CA, Woods DW, Franklin M, et al. The Milwaukee-Dimensions of Trichotillomania Scale (M-DOTS): development, exploratory factor analysis, and psychometric properties; unpublished manuscript).

Assessment of trichotillomania

The review of etiologic/maintaining factors indicates that much information is needed for a more complete understanding of TTM. Unfortunately, one of the larger limitations to such an advance is the paucity of assessment instruments available to researchers and clinicians. This section describes the components of an assessment for TTM and then briefly reviews the existing instruments specifically designed to assess TTM.

A comprehensive assessment of TTM should include multiple components. Care should be taken to diagnose the disorder, its severity, and potential subtypes accurately, and clinicians should assess the physical and functional impact of the disorder and possible comorbid diagnoses. Although a discussion of strategies to assess comorbidities and functional impact is beyond the scope of this article, the assessments developed to assess the severity and possible subtypes of TTM are reviewed briefly.

Assessing severity of trichotillomania

Several assessment strategies, both direct and indirect, have been developed to measure severity of TTM. Direct strategies include measures of pulling frequency, duration, or amount of hair loss using self-monitoring, live or videotaped observation, or product-based techniques. In self-monitoring, the client records either the number of pulling episodes or the actual number of hairs pulled each day [41]. Although there may be a treatment benefit with self-monitoring because of reactivity, the accuracy and reliability of data collected with this procedure are suspect [42]. Live or videotaped observation by a clinician is rarely used because of the time commitment on the part of the practitioner and because most individuals who have TTM (particularly adults) do not pull in front of others [43,44]. Finally, some have used product-based strategies such as collecting or counting hairs, weighing pulled hairs [45], or photographing pulled areas [42], but these methods also

have several limitations including (1) an inability to confirm that the product was produced by pulling, (2) failure of the client to collect pulled hair accurately, (3) possible embarrassment or reactivity experienced by client, and (4) difficulty in photographing certain body sites because of practical or personal reasons (eg, pubic region, chest, legs) [43].

Indirect methods involve self- or clinician-rated scales and typically assess TTM in a more global fashion. Three clinician-rated scales have been developed: the Yale-Brown Obsessive Compulsive Scale-Trichotillomania (Y-BOCS-TM) [46], the Psychiatric Institute Trichotillomania Scale (PITS) [47], and the National Institute of Mental Health (NIMH) Trichotillomania Severity and Impairment Scales (NIMH-TSS and -TIS) [22]. In addition, two self-report measures, the Massachusetts General Hospital-Hairpulling Scale (MGH-HS) [48] and the Trichotillomania Scale for Children (TSC) [49], have been developed for adults and children, respectively. In recent examinations of the clinician-rated measures, the PITS and NIMH-TIS demonstrated acceptable inter-rater reliability, but the internal consistency of the PITS, Y-BOCS-TM, and NIMH-TSS fell below minimally acceptable levels [50,51].

Research has also examined the psychometric properties of self-report measures for adults (eg, the MGH-HS) [48] and children (TSC) [49]. O'Sullivan and colleagues [52] showed that the MGH-HS demonstrated good test-retest reliability, convergent and divergent validity, and sensitivity to change in hair pulling. Recent research has confirmed the good test-retest reliability and internal consistency of the MGH-HS but has provided more limited support for convergent validity when using ratings of hair loss, the NIMH-TIS, self-reported number of hairs pulled, or a scale of global severity as concurrent measures (Flessner CA, Wetterneck CT, Woods DW. Assessment of trichotillomania (TTM): revisiting the Massachusetts General Hospital-Hairpulling Scale (MGH-HS); unpublished manuscript) [51]. Although there is a dearth of literature examining adequate measures for the assessment of the severity of TTM in adults, only one study has attempted to extend this line of research to children. Research on the TSC is less extensive, but the measure seems have promise, because it has shown strong internal consistency and test-retest reliability as well as strong convergent validity with existing measures of pulling severity such as the PITS [49].

Assessing subtypes

To date, most clinician-rated and self-report measures have concentrated on assessing the severity of TTM. Much less research has focused on developing assessments to differentiate between the possible subtypes of TTM (ie, focused and nonfocused pulling). To the authors' knowledge, their research group is the first to develop and examine the psychometric properties of a scale designed to identify symptoms thought to be characteristic of these two subtypes.

The M-DOTS originated as a 24-item scale with questions designed to assess both focused pulling (eg, “I pull my hair when I am anxious or upset”) and automatic pulling (eg, “I pull my hair when I am concentrating on another activity”) (Flessner CA, Woods DW, Franklin M, et al. The Milwaukee-Dimensions of Trichotillomania Scale (M-DOTS): development, exploratory factor analysis, and psychometric properties; unpublished manuscript). The M-DOTS was administered to 1697 individuals who had TTM in a Web-based survey, and an exploratory factor analysis revealed two distinct dimensions of TTM, including a 12-item focused pulling scale and a six-item automatic pulling scale. Subsequent analyses revealed good internal consistency and construct validity for both scales. These findings provide empirical evidence supporting the distinction between focused and automatic pulling and offer a potentially useful tool for measuring the two types.

Psychometrically strong assessment options are lacking. Only a handful of studies have been conducted with the expressed purpose of developing new and evaluating existing methods for the assessment of TTM, and only one study has extended this research to children who have TTM. Continued work is necessary in the development of additional measures of both TTM severity and subtypes [50]. Continued work in this area may prove increasingly beneficial for researchers and clinicians examining the efficacy of existing interventions for both adults and children who have TTM.

Does treatment work?

Research on the pharmacologic and nonpharmacologic treatment of TTM is scarce, and this scarcity is reflected in what care providers know about the disorder and its management. A survey of general practitioners, psychiatrists, and psychologists suggested that such providers were relatively uninformed about TTM [53]. In addition, 72% of providers thought medication was an effective treatment for TTM, whereas only 54% thought cognitive behavioral therapy (CBT) was an effective treatment option. Unfortunately, the available treatment evidence is not consistent with these beliefs.

A review of the literature reveals that although numerous single-subject experimental designs and case-study methods have been used to evaluate a wide array of treatments [54], only nine randomized trials have been conducted thus far with adults. This section reviews each of these trials and then describes the authors’ recently completed randomized, controlled trial, which to their knowledge is the only randomized, controlled trial of any treatment for pediatric TTM. In general, knowledge about TTM treatments for adults is limited by small sample sizes, lack of specificity regarding sample characteristics, nonrandom assignment to treatment, dearth of long-term follow-up data, exclusive reliance on patient self-report measures, and lack of information regarding rates of treatment refusal and dropout.

Only six randomized, controlled trials evaluating the efficacy of pharmacotherapy have been conducted to date. Swedo and colleagues [22] conducted a double-blind crossover study with 14 women and found clomipramine superior to desipramine at posttreatment evaluation. Long-term response to clomipramine varied widely, with an overall 40% reduction in symptoms maintained at 4-year follow-up [55]. Another double-blind crossover study by Christenson and colleagues [56] failed to demonstrate the superiority of fluoxetine over placebo. In fact, neither condition improved hair pulling significantly. Streichenwein and Thornby [57] also failed to show any difference between fluoxetine and placebo in reducing hair pulling despite lengthening the treatment phase and increasing the maximum fluoxetine dose to 80 mg. In the first controlled trial directly comparing pharmacologic interventions with psychotherapy, Ninan and colleagues [58] compared clomipramine, CBT, and placebo. CBT produced greater changes in severity of hair pulling and in associated impairment and a higher rate of response than either double-blinded clomipramine and placebo; differences between clomipramine and placebo approached but did not achieve statistical significance. Another randomized, controlled trial found behavior therapy superior to fluoxetine and wait-list but failed to find a significant treatment effect for fluoxetine [59]. Research on the opioid-blocking compound naltrexone showed that the drug was superior to placebo in reducing TTM symptoms [24]. Taken together, results from these controlled studies of pharmacotherapy are equivocal at best. Much more work is needed in the development of pharmacotherapy for TTM in adults, and the absence of a single randomized, controlled trial in pediatric TTM severely limits treatment recommendations that can be made to parents whose children suffer from this disorder.

With respect to nonpharmacologic/CBT interventions, a variety of specific techniques have been applied, including awareness training, self-monitoring, aversion, covert sensitization, negative practice, relaxation training, habit-reversal training, stimulus control, and overcorrection [54]. Although the state of the CBT literature justifies only cautious recommendations, experts generally think that habit reversal, awareness training, and stimulus control are core interventions required for TTM, with other intervention strategies such as cognitive techniques to be used on an as-needed basis [1].

Only four randomized trials have been investigated the efficacy of CBT for TTM, all of which involved adult samples. Woods and colleagues [60] found a combination of acceptance and commitment therapy (ACT) and habit reversal superior to wait-list, although the study design did not allow conclusions to be made about the separate contributions of ACT and habit reversal, respectively. As described previously, Ninan and colleagues [58] found CBT superior to both clomipramine and placebo at posttreatment evaluation. Similarly, in their report of a completed randomized, controlled trial involving behavioral therapy, fluoxetine, and wait-list, van Minnen and

colleagues [59] found behavioral therapy superior to fluoxetine or wait-list. Azrin and colleagues [41] found that habit reversal was more effective than negative practice, another behavioral approach. Patients using habit reversal reported a 99% reduction in number of hair-pulling episodes, compared with a 58% reduction in patients using negative practice. Moreover, the habit-reversal group maintained their gains at 22-month follow-up, with patients reporting 87% reduction compared with pretreatment. Although encouraging, this particular study is limited by a number of methodologic problems including exclusive reliance upon patient self-report, substantial attrition (7 of 19 subjects) during the follow-up phase, and the absence of a formal treatment manual that would allow replication.

As noted previously, none of the existing randomized trials has focused exclusively on pediatric TTM. There is some evidence from single-subject experimental designs and multiple uncontrolled case studies that children and adolescents may benefit from CBT [61]. Studies that include larger sample sizes and randomization are sorely needed to evaluate the efficacy of CBT for pediatric TTM.

To address this issue, the authors' research group recently completed a randomized, controlled trial examining a CBT package that included awareness training, stimulus control, and habit-reversal training. Initial findings from that study were encouraging and attest the efficacy and durability of CBT for TTM: CBT was clearly superior to minimal attention control at posttreatment evaluation, and patients assigned randomly to CBT tended to maintain their gains through an 8-week maintenance phase and through the 6-month naturalistic follow-up phase [62].

Generally speaking, the limited literature on treatment of TTM strongly suggests that there is neither a universal or complete response to any treatments for TTM. Likewise, the limited body of literature suggests that treatment gains may be difficult to sustain [63–67]. Given that monotherapy with CBT or pharmacotherapy is likely to produce only partial symptom reduction in the long run, these therapies might yield superior improvement when combined. Unfortunately, the absence of any controlled studies comparing the efficacy of CBT treatments involving habit reversal, pharmacotherapy, and their combination weakens this suggestion considerably.

Future directions

The research presented in this article shows that much empirical work is needed to develop a better understanding of TTM and its treatment. Recognizing this problem and the importance of stimulating new research on TTM, the National Institute of Mental Health co-sponsored a meeting with the TLC in November of 2004 (<http://www.nimh.nih.gov/scientific-meetings/trichotillomania.pdf>). The purpose of the meeting was to provide a critical evaluation of the state of TTM research and to create an agenda

for future work. The Scientific Advisory Board of the TLC discussed these recommendations and formed a plan for addressing critical gaps.

One clear outcome from the NIMH-sponsored meeting was the need for a broad-spectrum investigation of the impact of TTM on the lives of those it affects. To address this issue, the TLC commissioned the Trichotillomania Impact Project for Adults (TIP-A) and children (TIP-C). These studies use parallel methodologies involving anonymous Internet sampling of adults and children (along with parents of the children) who have TTM. In each study, the impact on various functional domains is assessed, as are various phenomenologic features of the disorder. To date, the TIP-A (with more than 1600 participants) has been completed, and the TIP-C is under way. After the on-line portion of the studies, the TIP will begin broad-scale field trials in which data from extensive face-to-face phenotyping and ascertainment of functional impact will be collected. Currently plans are being made to link this extensive phenotyping with the systematic collection and storage of genetic data as a means of elucidating possible genetic markers of TTM.

A second direction for future research involves determining the prevalence and developmental course of the disorder. A large-scale epidemiologic study should be conducted to determine the point and lifetime prevalence rates of TTM in pediatric and adult samples. If the small-scale prevalence studies conducted so far are accurate, a larger, more credible epidemiologic effort would highlight the need to direct resources toward the scientific study of this problem. Further longitudinal research is also needed to determine the percentage of youngsters who experience this problem. Examination of factors associated with maintenance of pulling behavior over time may help determine which pullers should be targeted for earlier intervention.

A third area for future research is the development of additional psychometrically sound assessment instruments, a process that has already begun in adult TTM and is now under way with younger samples [48,49,52]. Because TTM is often episodic, such instruments must be sensitive to this feature of the condition. Further, the preferred pulling site must be taken into account when rating frequency of pulling and severity of alopecia. Also, as described earlier in the discussion of the M-DOTS, the development of assessments must focus not only on pulling severity but must consider the possible need to assess subtypes of the disorder that may emerge in subsequent research. Once available, the measures will enable the needed epidemiologic and longitudinal studies already described and the experimental psychopathology and treatment development studies discussed later.

It is also imperative to improve the understanding of factors contributing to and controlling TTM. As described previously and discussed more broadly in reference to treatments [68], improved theoretical understanding of the core psychopathology of TTM will beget the development of better treatments. A major problem in TTM involves the insufficient experimental study of its psychopathology, with the resulting gap in the understanding of its etiologic and maintaining factors. Studies linking psychological and

biological methods would help close the current gaps in knowledge and perhaps would stimulate a more interdisciplinary approach to the treatment of this condition.

The final area of future research involves treatment development and dissemination. The meager treatment-outcome literature and the equivocal findings from randomized, controlled trials in adults suggest that there is much work to do with adults. The relative absence of pediatric studies compounds the issue in children. Successful treatment development, demonstration of efficacy, dismantling of treatment packages found efficacious, and dissemination are still a long way off. Successful progression through each of these critical stages is hindered by the lack of conceptual clarity about the disorder as well as by the paucity of experimental psychopathology findings, epidemiologic evidence, and data on functional impairment clearly documenting that TTM is worthy of additional attention from researchers and, by extension, from funding agencies. Further, because research in TTM is in its infancy, pooling resources across the laboratories conducting the preliminary work in this area might allow larger sample sizes, more definitive conclusions, and better publications and thereby might begin to answer the many questions that must be addressed to enable significant progress in the conceptualization and ultimately in the treatment of those who suffer from this disorder.

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