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Review

TRICHOTILLOMANIA (HAIR PULLING DISORDER), SKIN PICKING DISORDER, AND STEREOTYPIC MOVEMENT DISORDER: TOWARD DSM-V

Dan J. Stein, M.D. Ph.D.,[1]* Jon E. Grant, M.D. J.D.,[2] Martin E. Franklin, Ph.D.,[3] Nancy Keuthen, Ph.D.,[4] Christine Lochner, Ph.D.,[5] Harvey S. Singer, M.D.,[6] and Douglas W. Woods, Ph.D.[7]

In DSM-IV-TR, trichotillomania (TTM) is classified as an impulse control disorder (not classified elsewhere), skin picking lacks its own diagnostic category (but might be diagnosed as an impulse control disorder not otherwise specified), and stereotypic movement disorder is classified as a disorder usually first diagnosed in infancy, childhood, or adolescence. ICD-10 classifies TTM as a habit and impulse disorder, and includes stereotyped movement disorders in a section on other behavioral and emotional disorders with onset usually occurring in childhood and adolescence. This article provides a focused review of nosological issues relevant to DSM-V, given recent empirical findings. This review presents a number of options and preliminary recommendations to be considered for DSM-V: (1) Although TTM fits optimally into a category of body-focused repetitive behavioral disorders, in a nosology comprised of relatively few major categories it fits best within a category of motoric obsessive–compulsive spectrum disorders, (2) available evidence does not support continuing to include (current) diagnostic criteria B and C for TTM in DSM-V, (3) the text for TTM should be updated to describe subtypes and forms of hair pulling, (4) there are persuasive reasons for referring to TTM as "hair pulling disorder (trichotillomania)," (5) diagnostic criteria for skin picking disorder should be included in DSM-V or in DSM-Vs Appendix of Criteria Sets Provided for Further Study, and (6) the diagnostic criteria for stereotypic movement disorder should be clarified and simplified, bringing them in line with those for hair pulling and skin picking disorder. Depression and Anxiety 27:611–626, 2010.

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[1]Department of Psychiatry, University of Cape Town, Rondebosch, Cape Town, South Africa
[2]Department of Psychiatry, University of Minnesota, Minneapolis, Minnesota
[3]Department of Psychiatry, University of Pennsylvania, Philadelphia, Pennsylvania
[4]Department of Psychiatry, Harvard Medical School, Boston, Massachusetts
[5]Department of Psychiatry, Stellenbosch University, Matieland, South Africa
[6]Department of Neurology, John Hopkins University, Baltimore, Maryland
[7]Department of Psychiatry, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin

Both DSM-IV and ICD-10 provide diagnostic criteria for trichotillomania (TTM) and for stereotypic or stereotyped movement disorder (SMD). Neither

*Correspondence to: Dan J. Stein, Department of Psychiatry, Groote Schuur Hospital, J2, Anzio Road, Observatory, Cape Town, South Africa 7925. E-mail: dan.stein@uct.ac.za

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classification system provides diagnostic criteria for pathological skin picking. Since the development of DSM-IV and ICD-10, there has been ongoing research on these conditions and this article, therefore, reviews nosological issues relevant to a revision of the classification systems. This article draws on an earlier review of this topic which was written for and discussed at a DSM-V Research Planning Conference on Obsessive-Compulsive Spectrum Disorders,[1] as well as on an editorial by the Scientific Advisory Board of the Trichotillomania Learning Center.[2]

This article was commissioned by the DSM-V Anxiety, Obsessive-Compulsive Spectrum, Post-Traumatic, and Dissociative Disorders Work Group. It represents the work of the authors for consideration by the work group. *Recommendations provided in this article should be considered preliminary at this time; they do not necessarily reflect the final recommendations or decisions that will be made for DSM-V, as the DSM-V development process is still ongoing.* It is possible that this article's recommendations will be revised as additional data and input from experts and the field are obtained.

DSM-IV AND ICD-10 DIAGNOSTIC CRITERIA FOR TTM AND SMD

TTM was included in DSM-III-R in 1987 as an impulse control disorder, not classified elsewhere. Modifications in DSM-IV included expansion of criterion B to include tension experienced when attempting to resist hair pulling and the addition of a clinical significance criterion E which required distress and/or impairment (Table 1). In ICD-10, TTM is classified in the section on disorders of adult personality and behavior, as one of the habit and impulse disorders. It is described as "A disorder characterized by noticeable hair-loss due to a recurrent failure to resist impulses to pull out hairs. The hair pulling is usually preceded by mounting tension and is followed by a sense of relief or gratification. This diagnosis should not be made if there is a pre-existing inflammation of the skin, or if the hair pulling is in response to a delusion or a hallucination. Excludes: stereotyped movement disorder with hair-plucking."

Stereotypic movement disorder was earlier called Stereotypy/Habit Disorder. In DSM-IV, stereotypic movement disorder falls under the category of Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence. DSM-IV criteria for SMD are tabulated below (Table 2). In ICD-10, SMDs are similarly classified in the section on behavioral and emotional disorders with onset usually occurring in childhood and adolescence. They are characterized by "voluntary, repetitive, stereotyped, nonfunctional (and often rhythmic) movements that do not form part of any recognized psychiatric or neurological condition. When such movements occur as symptoms of some other disorder, only the overall disorder should be recorded. The movements that are of a non self-injurious variety include: body-rocking, head-rocking, hair-plucking, hair-twisting, finger-flicking mannerisms, and hand-flapping. Stereotyped self-injurious behavior includes repetitive head-banging, face-slapping, eye-poking, and biting of hands, lips or other body parts. All the stereotyped movement disorders occur most frequently in association with mental retardation (when this is the case, both should be recorded). If eye-poking occurs in a child with visual impairment, both should be coded: eye-poking under this category and the visual condition under the appropriate somatic disorder code." They are noted to exclude "abnormal involuntary movements, movement disorders of organic origin, nail-biting, nose-picking, stereotypies that are part of a broader psychiatric condition, thumb-sucking, tic disorders, trichotillomania."

TABLE 1. DSM-IV diagnostic criteria for trichotillomania

A. Recurrent pulling out one's hair resulting in noticeable hair loss
B. An increasing sense of tension immediately before pulling out the hair or when attempting to resist the behavior
C. Pleasure, gratification, or relief when pulling out the hair
D. The disturbance is not better accounted for by another mental disorder and is not due to a general medical condition (e.g. a dermatological condition)
E. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning

STATEMENT OF THE ISSUES

This review will address the following issues:

1. Which diagnostic criteria for TTM require improvement? For example, does hair loss need to be noticeable? Does there necessarily need to be an increase in tension before hair pulling or a sense of

TABLE 2. DSM-IV diagnostic criteria for SMD

A. Repetitive, seemingly driven, and nonfunctional motor behavior (e.g. handshaking or waving, body rocking, head banging, mouthing of objects, self-biting, picking at skin or bodily orifices, hitting own body)
B. The behavior markedly interferes with normal activities or results in self-inflicted bodily injury that requires medical treatment (or would result in an injury if preventive measures were not used)
C. If mental retardation is present, the stereotypic or self-injurious behavior is of sufficient severity to become a focus of treatment
D. The behavior is not better accounted for by a compulsion (as in obsessive–compulsive disorder), a tic (as in tic disorder), a stereotypy that is part of a pervasive developmental disorder, or hair pulling (as in trichotillomania)
E. The behavior is not due to the direct physiological effects of a substance or a general medical condition
F. The behavior persists for 4 weeks or longer
Specifier: With self-injurious behavior: If the behavior results in bodily damage that requires specific treatment (or that would result in bodily damage if protective measures were not used).

relief at the time of hair pulling? How useful is the clinical significance criterion? Do the diagnostic criteria for TTM seem suitable cross-culturally, from a developmental perspective, and for both genders?
2. Should subtypes or specifiers of TTM be recognized? Some authors have, for example, differentiated between focused and automatic hair pulling, and between early-onset and late-onset TTM.
3. Should the name "trichotillomania" be changed?
4. Where should TTM be classified in DSM-V? Should it be classified as an impulse control disorder, or moved to another category (such as body focused-repetitive behavioral disorder, or obsessive-compulsive spectrum disorder)?
5. Should skin picking be classified as a separate disorder in DSM-V, given its prevalence and associated morbidity? If so, what should its diagnostic criteria consist of, and where should it be classified (as an impulse control disorder, as a body-focused repetitive behavioral disorder (BFRBD), or as an obsessive–compulsive spectrum disorder)?
6. Which diagnostic criteria for stereotypic movement disorder require improvement, and where should it be classified?

SIGNIFICANCE OF THE ISSUES

It has become recognized that TTM is a significant public health problem; it is highly prevalent, associated with a good deal of morbidity, and on occasion with mortality.[3–7] Research on TTM, as well as on other body-focused repetitive behavioral disorders (BFRBDs, e.g. skin picking),[8] has grown significantly since its introduction into DSM-III-R. It is timely, therefore, to assess whether the reliability, validity, and clinical utility of current diagnostic criteria for TTM can be improved, and whether the categorization of TTM as an impulse control disorder is optimal. In view of the emerging research on skin picking which suggests a high prevalence, significant associated morbidity, and response to treatment,[9–12] we also address the question of whether a specific diagnostic entity to cover such symptoms deserves inclusion in DSM-V. There is also accumulating research on stereotypies, including self-injurious behaviors, showing that these are also highly prevalent and clinically important symptoms, not only in populations of normal intelligence, but also in patients with intellectual disability and pervasive developmental disorders.[13–16]

SEARCH METHOD

A literature search was conduced using the Pubmed and PsychLit databases, with no time limits. Reference sections of published articles were also examined. Search terms included "hair pulling," "skin picking," "trichotillomania," "stereotypic movement disorder," "stereotyped movement disorder," "stereotypy," and "habit disorder." The Annotated Listings of Changes in each DSM, the DSM-IV Sourcebooks, and the DSM-IV Options Book were consulted for details of earlier TTM criteria revisions. The proceedings and/or monographs of the preparatory conference series for DSM-V, particularly the *Obsessive-Compulsive Spectrum Disorder* conference, were also used.

RESULTS

WHICH DIAGNOSTIC CRITERIA FOR TTM REQUIRE IMPROVEMENT?

Criterion A. DSM-IV criterion A for TTM refers to "recurrent pulling out of one's hair resulting in noticeable hair loss." Several words in this criterion deserve examination. The term "recurrent" is used in the DSM-IV definition of obsessions, whereas the term "repetitive" is used in the definition of compulsions. Both terms seem applicable to TTM, and there is no clear reason to change the current wording. The term "pulling" excludes patients with pathological hair cutting or hair biting, but these patients seem to form a minority. The term "noticeable" is sometimes inaccurate, insofar as hair pulling may be quite localized (and so not clearly noticeable), may occur in a distributed fashion to preclude obvious hair loss, or may be hidden. Deleting the term may lead to some increase in caseness, but we suspect that most decisions about caseness involve the clinical significance criterion (see below). We, therefore, recommend deleting the term and clarifying in the text that although hair pulling can lead to noticeable hair loss, such hair loss may be disguised.

Criteria B and C. Criterion B and C of DSM-IV, and the ICD-10 definition of TTM, emphasize that hair pulling is characterized by impulses to pull hair, with rising tension before the behavior or when attempting to resist, and relief or gratification when pulling. However, early systematic clinical work showed that approximately 20% of patients with clinically meaningful hair pulling do not report either an increasing sense of tension or a sense of pleasure/gratification/relief related to hair pulling.[17] Subsequent work in clinical settings has indicated that there are few significant clinical differences between TTM patients who do and do not meet criteria B and D,[18,19] indicating that these criteria may, therefore, have poor diagnostic validity and clinical utility. An analysis of clinical data across sites provides further support for the generalizability of these conclusions (Lochner and Keuthen, unpublished data).

Similarly, in the Trichotillomania Impact Project-Adults (TIP-A) survey of 2,268 persons with self-reported pulling,[4] 1,711 reported pulling to the point of noticeable hair loss and resultant impairment, and of these individuals, 4% ($n = 67$) did not endorse both

criteria B and C. Furthermore, when asked how often tension or urges were experienced before pulling hair or when attempting to resist pulling, only 38% of the sample reported that the urges were present "all the time" (defined as 90–100% of the time). Many (43%) reported the urges were present "most of the time" (71–89% of the time) before pulling, 14.5% reported that the urges were there "some of the time" (30–70% of the time), 3% said the urges were there "a little of the time" (11–29% of the time), and 1.1% reported the urges were "never or almost never" present (0–10% of the time) before pulling. Likewise, when asked how frequently they experienced a sense of pleasure or gratification/relief after pulling hair, 40% reported "all of the time," 37.6% "most of the time," 14.6% reported "some of the time," 4.4% "a little of the time," and 3.4% "none of the time." In summary, though the symptoms associated with impulse control disorders (tension and subsequent reduction) are quite common in people with hair pulling that leads to hair loss, they do not seem to occur in all individuals with the disorder and when they are present, they do not tend to occur before all pulling episodes. In future research, moment-by-moment monitoring of hair pulling and associated symptoms might be useful to confirm these data.

To explore the validity of criteria B and C in adults, TIP-A subjects who self-reported meeting criteria A, D, and E were broken down into those meeting criteria B and C (reporting endorsing both symptoms at least "a little of the time"; $n = 1.616$) and those not meeting both B and C ($n = 92$). These two groups were then compared on demographic variables and psychological symptom inventories. The two groups did not differ on the variables of current age, $F(1, 1.687) = 0.311$, $P = .577$; the number of other repetitive behaviors (i.e. nailbiting, skin picking) endorsed, $F(1, 1.559) = 2.29$, $P = .13$; Depression, Anxiety, and Stress Scale (DASS) Stress scores, $F(1, 1.614) = 1.06$, $P = .30$; DASS-Anxiety scores, $F(1, 1.588) = 0.395$, $P = .530$; DASS-Depression scores, $F(1, 1.615) = 0.298$, $P = .59$; Sheehan Disability Scale (SDS)-work impairment scores, $F(1, 1.626) = 0.94$, $P = .33$; SDS-social impairment scores, $F(1, 1.639) = 0.20$, $P = .89$; SDS-home impairment scores, $F(1, 1.637) = 0.09$, $P = .76$; and the Massachusetts General Hospital Hairpulling Severity Scale scores, $F(1, 1.582) = 0.29$, $P = .59$ (Woods et al., unpublished data). Taken together, these data confirm that while present at some level in most people with hair pulling, criteria B and C are not predictive of increased psychological symptoms, pulling severity, or functional impairment.

An additional consideration is that developmental factors make it unlikely that the youngest individuals who engage in chronic hair pulling have sufficient awareness of the antecedents of their own behavior, or ability to articulate that awareness, to provide reliable data regarding criterion B and C. There is a precedent for this difficulty in tic disorders, which have also been hypothesized to lie on the obsessive–compulsive spectrum, where children aged 9 and younger were unable to report reliably on the presence of a similar phenomenon, the premonitory urge, before completing tics.[20]

This issue has not been well explored in the clinical literature. However, an analysis of the Trichotillomania Impact Project-Child/Adolescent (TIP-CA) database of 208 children and adolescents reporting chronic hair pulling resulting in hair loss, found that 22 did not endorse symptoms consistent with both criteria B and C (B and C ABSENT). In addition, 50 endorsed symptoms that were consistent with Criteria B or C, but not both. Only 136 (65%) participants/parents reported symptoms consistent with both B and C (FULL TTM). A comparison of the B and C ABSENT group to the FULL TTM group on a number of different variables showed no significant differences in standard severity measures (Trichotillomania Scale for Children-Parent version), reported hair missing, age of onset, Multidimensional Anxiety Scale for Children (MASC)-Total Score, Child Depression Inventory (CDI) total score, or psychosocial impairment (Woods et al., unpublished data). These results suggest that for children with TTM, criteria B and C do not add any predictive validity in terms of impairment or comorbid symptom severity.

A counter-argument to dropping criteria B and C is that these help convey the compulsive and driven nature of hair pulling, and so contribute to accurate diagnosis. Clearly, patients with TTM are not pulling out hair for mere cosmetic reasons, and indeed, they often have great difficulty controlling their urges to pull out hair. Without describing these features, the diagnostic criteria may give the impression that hair pulling is simply a symptom rather than a syndrome with typical features. Nevertheless, although criteria B and C may help capture such features of TTM, as noted above, they have important limitations. Although the clinical phenomenology provided in the criteria will be very succinct in the absence of criteria B and C, our recommendation would be to provide a more comprehensive description of clinical features in the text. Further research to determine whether words such as "urges" or alternative phrases, such as "seemingly driven," are reliable and useful additions to the criteria set may well be useful.

Criteria D and E. Criterion D is a standard psychiatric and medical disorders exclusion criterion, and criterion E is the standard clinical significance criterion in DSM-IV. The phrasing of the exclusion of medical disorders may be criticized for not reflecting growing information about the neurobiology of TTM, but it is not immediately clear how best to improve this criterion to incorporate such knowledge (see Leckman et al., this issue, for a more comprehensive discussion). To be consistent with other disorders, we suggest a separate medical exclusion criterion. The phrasing of the exclusion of psychiatric

disorders may be criticized for being overly broad and insufficiently specific, and the term "not better accounted for" may also require rethinking (Phillips et al., this issue, for a more comprehensive discussion). Patients with TTM may, for example, be misdiagnosed with OC-spectrum conditions. We, therefore, suggest rephrasing D as: "The hair-pulling is not restricted to hair-pulling due to the symptoms of another mental disorder (e.g. hair pulling due to preoccupations with appearance in Body Dysmorphic Disorder)." We considered adding a phrase that hair-pulling should not be due to symmetry compulsions in OCD, but as symmetrical hair-pulling is rarely a symptom of OCD, decided not to.

The clinical significance criterion has also received considerable criticism,[21] and it is important to consider whether it can be better operationalized or even omitted (see Leckman et al., Phillips et al., this issue, for a more comprehensive discussion). It might be possible, for example, to replace this categorical threshold with dimensional assessments of distress and impairment. However, this solution would need to be tested across a range of conditions to determine its validity and utility. Alternatively, it might be possible to omit the clinical significance criterion and to use measures of hair pulling itself (e.g. duration) to determine the diagnostic threshold. However, there are few data that indicate that any particular cut-offs on measures of hair pulling would adequately differentiate TTM from non-pathological hair pulling or otherwise increase validity and utility. There are, for example, patients who not only pull quantitatively few hairs (e.g. only eyelash pulling), but who also have clear distress and impairment, and who benefit from treatment. Similarly, relying on a concept, such as "excessive hair pulling," would not seem to provide a more reliable operationalization than the current clinical criterion. We, therefore, do not suggest any changes in criterion E.

We also reviewed the literature to determine whether cross-cultural, gender, or developmental considerations should lead to changes in the criteria for TTM. We could find no data to support such changes.

In summary, there seems to be no empirical rationale for the continued inclusion of the (current) criterion B and C in DSM-V as diagnostic criteria. It may be useful, however, to retain recurrent prior tension and subsequent gratification as dimensions of hair pulling; additional research on subtypes, specifiers, and dimensions of TTM may be useful to elucidate fully its psychobiological mechanisms and treatment predictors (see also the following section). Similarly, the text would need to convey the typical clinical features of TTM. In addition, dropping the term "noticeable" in criterion A seems a reasonable option, given that many patients with TTM go to great lengths to disguise their alopecia. Thus, we propose the following criteria for DSM-V:

A. Recurrent pulling out of one's hair resulting in hair loss.

B. Disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

C. Hair pulling is not due to the direct physiological effects of a substance or a general medical condition (e.g. a dermatological condition).

D. Hair pulling is not restricted to the symptoms of another mental disorder (e.g. hair pulling due to preoccupations with appearance in Body Dysmorphic Disorder).

SUBTYPES/SPECIFIERS OF TRICHOTILLOMANIA

Clinicians have for some time differentiated between "focused" hair pulling (compulsive, reminiscent of the compulsions of OCD) and "automatic" hair pulling (automatic, with decreased awareness).[22] The Milwaukee Inventory for Subtypes of Trichotillomania was developed in order to rate these different types of hair pulling.[23] Focused pulling involves conscious pulling, often in reaction to an unpleasant sensory, emotional or cognitive state. Automatic pulling, in contrast, involves habitual pulling that often occurs out of the patient's awareness. The existence of these two dimensions has been confirmed in clinical samples of both adults[23] and children[24] with TTM.

From the TIP-A data, the correlation between the focused and automatic scale scores was $r(742) = .01$, ns, suggesting that the constructs are separable and unrelated.[23] Results also showed that scores on the automatic scale correlated negatively with self-reported awareness of pulling ($r = -.46$, $P < .001$), and were weakly correlated with the DASS-21 stress ($r = .15$) and anxiety ($r = .12$) subscales, but were uncorrelated with the depression subscale ($r = .05$). In contrast, the focused scale scores were moderately and significantly correlated with the depression ($r = .32$, $P < .001$), anxiety ($r = .32$, $P < .001$), and stress ($r = .36$, $P < .001$) subscales of the DASS-21.

Results from the TIP-CA study showed similar findings.[24] A factor analysis of the MIST-C (a measure designed to assess for focused and automatic pulling in children) yielded both a focused and automatic factor, which were unrelated $r(135) - .15$, $P = .08$. The automatic pulling scale was negatively correlated with awareness of pulling ($r = -.61$), but not with the CDI ($r = .12$) or the MASC ($r = .16$) total scores. On the contrary, the focused scale was correlated with the CDI ($r = .41$) and MASC total score ($r = .36$).

To further explore the implications of focused and automatic pulling in the adult TIP-A sample, median splits were conducted on both the focused and automatic factors. Groups were created to represent high focused/high automatic, low focused/low automatic, high focused/low automatic, and low focused/high automatic. Results showed that regardless of focused or automatic status, those who were classified as "high" had more severe TTM as measured by the

MGH. Those in the high focused/low automatic group were less likely to report scalp pulling as the most frequent pulling site, but were more likely to report pulling from the eyebrows, eyelashes, and pubic pulling as the primary site in comparison with the low focused/low automatic group. Those who were low in focused, but high in automatic, reported more difficulties in school than those who were low in both.

Although these results on the MIST-A and MIST-C suggest that automatic and focused styles of pulling are separable constructs that have differential correlates, additional work is needed to delineate fully the psychobiological underpinnings and treatment implications of focused versus automatic hair pulling. As an interim step, we suggest describing these subtypes or specifiers of hair pulling in the DSM-V text, so that readers have a better appreciation of the symptomatology of hair pulling.

The vast majority of TTM starts around the time of puberty, but some patients present with very early onset of hair pulling (infancy, toddlers). The relatively few data on this younger group of patients were reviewed for the DSM-IV Sourcebook, and it was noted that although it is likely that they represent a somewhat different form of hair pulling that does not persist over time; in the absence of more systematic data, it is not possible to assert with certainty a valid distinction between infancy onset and later onset TTM.[25] The same conclusion would seem to hold true currently.

In addition, in typical clinical samples of TTM, where onset is after puberty, there seems to be little clinical utility in further differentiating earlier versus later onset TTM.[22] Using the TIP-A and TIP-CA databases to conduct a cross-sectional exploration of pulling across the developmental spectrum from ages 10 to 69, seven groups defined by particular ages (i.e. 10–12, 13–15, 16–18, 19–28, 29–38, 39–48, 49+) were compared on various outcomes. Pulling severity, as measured by self (for adults with TTM) or parent (for children) of percentage of hair missing, did not differ across the developmental groups. However, psychosocial impairment, the number of pulling sites, and reports of physical anxiety before pulling seem to increase with age as the disorder progresses, plateauing in early adulthood (19–28). In contrast, the number of other repetitive behaviors people with TTM exhibit decreases markedly with increasing age. Finally, both automatic and focused pulling occur at relatively low levels during ages 10–12. However, both types of pulling spiked in early and late adolescence (aged 13–18), and began a steady descent to "below average" levels in the latter age cohorts (Woods et al., unpublished data).

Given that the psychobiological correlates and treatment implications of early onset TTM remain to be fully delineated, we do not feel that formally subtyping TTM according to age is indicated at the present time. Nevertheless, the text should emphasize the typical age of onset of TTM, so that clinicians are aware when particular cases differ from this pattern.

Similarly, although a range of other subtypes or specifiers of TTM have been proposed (e.g. TTM varies by site, some patients have oral habits, such as hair mouthing, hair biting, etc.), to date there is insufficient data to indicate that formal subtyping or specification is indicated.[19] Once again, however, the text should clarify some of these distinctions; for example, patients who ingest hairs are at risk for developing trichobezoars.[26]

HAIR PULLING DISORDER (TRICHOTILLOMANIA)

Although "trichotillomania" has become a widely used diagnostic term, leading consumer advocates have emphasized that it can be pejorative (Pearson, oral communication). Although the term "manic" is used in DSM-IV, the suffix "mania" is no longer used, and it has connotations that may increase stigmatization of hair pulling. Several alternative terms have been put forward, including "trichotillia" (Pearson, oral communication). However, this term may not be readily understood by clinicians or patients, and is not used in the existing literature. The term "hair pulling disorder" seems to offer a neutral description of the core behavior and to avoid any theoretical assumptions about its etiology; we, therefore, favor it. In order to provide continuity in clinical and research settings, we suggest that the term "trichotillomania" be retained in parentheses.

WHERE SHOULD TRICHOTILLOMANIA BE CLASSIFIED IN DSM-V?

Possibilities include (a) retaining the classification of TTM as an impulse control disorder not classified elsewhere, (b) moving TTM to a section of obsessive–compulsive spectrum disorders, or (c) including TTM as one of several BFRBDs. In addressing this issue, it is relevant to examine the literature on classical diagnostic validators, such as symptoms and course, and on emerging external validators, such as neurocircuitry, and genetic and environmental risk factors[27] as well as on clinical utility.[28] A comparison and contrast of OCD and TTM on validators developed during the DSM-V process is also presented in more detail elsewhere (Phillips et al., this issue).

Trichotillomania as an impulse control disorder. First, there are phenomenological similarities between the symptoms of TTM and other impulse control disorders. Thus, many hair pullers endorse the characteristic phenomenology of impulse control disorders consisting of an increasing sense of tension before impulsive behaviors or when attempting to resist the impulsive behaviors, and by pleasure, gratification, or relief when performing the behavior.[29] Impulsive

traits and symptoms may be more common in TTM than in other psychiatric disorders, such as OCD.[30,31]

Second, there is some evidence of impulse dysregulation in TTM. Comorbidity studies suggest that lifetime rates of TTM may be elevated in some impulse control disorders, such as compulsive sexual behavior (6%)[32] and kleptomania (10%).[33] Neuropsychology research indicates that in both OCD and TTM there is impaired inhibition of motor responses (e.g. on the stop-signal task).[34] For TTM, the deficit was worse than for OCD and the degree of the deficit correlated significantly with symptom severity. In contrast, OCD patients showed deficits in cognitive flexibility and executive planning.[35] Similarly, Bohne and co-workers found deficits in motor inhibition in a subset of people with hair pulling, but deficits in cognitive inhibition in OCD.[36,37] Family history studies of impulse control disorders have consistently found elevated rates of substance use disorders in first-degree family members.[29] One of the few studies of TTM that included a control group found that the first-degree relatives of TTM subjects were significantly more likely to have substance use disorders (21.6% alcohol and 14.7% drug use disorders) than relatives of non-ill comparison subjects (7.7% alcohol use disorders and 2.2% drug use disorders).[38]

Third, there may be some clinical utility to conceptualizing TTM as an impulse control disorder. For example, limited data suggest that TTM may respond to some interventions used for the treatment of other impulse control disorders (e.g. naltrexone).[39] Unlike OCD, impulse control disorders have demonstrated a mixed response to SSRIs. Similarly, although early evidence indicated selective efficacy for a serotonin reuptake inhibitor in TTM,[40] a meta-analysis of SSRI trials indicates that these agents are not more effective than placebo.[41]

At the same time, there is evidence against this classification. First, as discussed above in more detail, not all patients with TTM describe impulsive hair pulling (i.e. criteria B and C), and these criteria are not associated with increased psychological symptoms, pulling severity, or functional impairment.

Second, not all studies are consistent with phenomenological and psychobiological overlap across TTM and the impulse control disorders. Thus, research on other impulse control disorders (e.g. pathological gambling, intermittent explosive disorder) has found little if any co-occurrence with TTM.[42,43] Conversely, TTM patients show relatively little comorbidity with most impulse control disorders. It is notable that although the age of onset for TTM begins in early puberty (11–13 years of age), the age of onset for most impulse control disorders is generally late adolescence or early adulthood (aged 18–25). It should be emphasized, however, that few studies have compared neuropsychology, familiality, or other psychobiological factors across TTM and impulse control disorders.

Third, the clinical utility of this classification can be questioned. A first line psychotherapy intervention for TTM is habit reversal,[41] a set of techniques which are not used in the treatment of other impulse control disorders. Similarly, there may be specific pharmacotherapy interventions for TTM, such as *N*-acetylcysteine, which have not been widely studied in the impulse control disorders.[44]

Trichotillomania as an OCD spectrum disorder. There are some similarities between the phenomenology of hair pulling and those of OCD compulsions, insofar as the behavior is in response to urges and can be anxiety relieving, is driven and repetitive, and is sometimes symmetrical in nature.[45,46] On the other hand, there are no preceding obsessions (as currently defined) in TTM, and in contrast to OCD, there is often a sense of pleasure at the time of the repetitive behavior. Differences between TTM and OCD also occur in gender distribution (TTM is predominantly seen in females, whereas OCD is equally distributed in gender) and age of onset (TTM begins usually in early adolescence, whereas OCD starts in childhood up until early adulthood with a gender disparity in onset). In some work, occurrence rates of TTM are not higher in OCD than in other anxiety disorders.[47] Conversely, although there is comorbidity of OCD in TTM probands, this is not as high as expected were the two disorders closely related.[48] Furthermore, comorbidity patterns in OCD and TTM differ somewhat.[49,50]

There are some similarities in the underlying psychobiology of TTM and OCD. Swedo and colleague's initial work suggested that clomipramine was more effective than desipramine for both OCD and TTM.[40] There is, arguably, some evidence from brain imaging studies for involvement of frontostriatal circuitry in both disorders.[51–53] Family data indicate that "grooming disorders" (including TTM and skin picking) occur more frequently than expected in OCD probands and relatives.[54] There are rare reports of striatal damage leading to hair pulling, redolent of the literature on OCD. Patients with rare gene variants may present with TTM, OCD, or Tourette's disorder.[55–57]

On the other hand, in contrast to OCD, TTM may often not respond to SSRIs, or response may fail to be maintained.[41,58] There are only a few brain imaging studies of TTM and findings have not always consistently implicated fronto-striatal circuits,[59,60] or have pointed to other regions, such as the cerebellum.[61] Although neuropsychological studies have suggested similar impairments in OCD and TTM, findings have predominantly emphasized significant differences in the pattern of deficits.[35,62–65] Neurobiological studies suggest that individuals with TTM, unlike those with OCD, do not demonstrate either a blunted prolactin response to meta-chlorophenylpiperazine (a serotonergic agonist) or cerebral spinal fluid abnormalities in serotonin metabolites.[66,67] Family

studies indicate some relationship between OCD and TTM, but not a particularly strong one.[68,69] Genetic studies of TTM are scarce, but to date there is little evidence that common gene variants show significant overlap in OCD and TTM.[70]

There may be some clinical utility in conceptualizing TTM as part of the OCD spectrum, insofar as it reminds clinicians to inquire about comorbidity of these disorders, and insofar as treatment approaches to TTM have been influenced by work on OCD.[71] On the other hand, perhaps the most common comorbidity in TTM is with other body-focused repetitive behaviors.[48,72] Furthermore, the best evidence for TTM management currently lies in habit reversal,[41] a series of techniques which overlap only partially with those used in the treatment of OCD.

Trichotillomania as a body-focused repetitive behavioral disorder. Several authors have emphasized that hair pulling, skin picking, and similar body-focused repetitive behaviors have similar phenomenology,[73,74] and should be conceptualized as BFRBDs. Such symptoms may be ritualistic, but there are no preceding obsessions. Similar cues may trigger these symptoms and it has been suggested that they play a role in arousal modulation.[75] Age of onset is similar for chronic hair pulling and skin picking, although childhood onset skin picking seems to be female predominant, whereas childhood onset TTM is more gender equal and childhood onset OCD slightly more male predominant.

There is a high degree of comorbidity between hair pulling, skin picking, and other body-focused repetitive behaviors, with an increased number of "habits" (e.g. nail biting, acne, scab and nose picking, thumb sucking, knuckle cracking) in patients with hair pulling.[17] Severity scores on the Massachusetts General Hospital Hairpulling Scale and Skin Picking Scale (measures of hair pulling and skin picking, respectively) are highly correlated in clinical samples. Similarly, in patients with skin picking, there is high comorbidity of TTM and OCD, whereas other impulse control disorders occur infrequently.[74]

There is relatively little work on the underlying neurobiology of BFRBDs in humans, although there is a rich animal literature on the neurobiology of stereotypic and grooming behavior,[76–78] and there is some evidence for similarities between animal and human data (e.g. selective responsiveness to serotonin reuptake inhibitors).[79–81] Elevated rates of skin picking have been reported in OCD patients and their first-degree relatives.[82]

From the perspective of clinical utility, it seems useful to ask patients with one body-focused repetitive behavior about a whole range of these symptoms. In addition, habit reversal seems useful not only for hair pulling, but also for a number of other stereotypic behaviors.[83] At the same time, there may be differences in the response of hair pulling and skin picking to opioid antagonists.[9] Further work is clearly needed to assess various body-focused repetitive behaviors on a range of validators as well as treatment outcomes.

Overall, our recommendation is that TTM be classified as one of the body-focused repetitive behavioral disorders. These conditions have early onset and should the category of Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence be retained, they arguably belong there.[25] Nevertheless, many patients often only present in adulthood, and it is also possible to argue that these conditions fall into the motoric subtype of obsessive–compulsive spectrum disorders (Phillips et al., this issue). In a separate review, we also discuss the question of whether OCD is related to the anxiety disorders (Stein et al., this issue). Although OCD and the obsessive–compulsive spectrum disorders are not necessarily closely related to the anxiety disorders, if there are to be a limited number of diagnostic categories, then that review indicates that it is best to retain OCD and obsessive–compulsive spectrum disorders, including BFRBDs, within a category of anxiety, OCD, and obsessive–compulsive spectrum disorders.

SKIN PICKING DISORDER

A growing literature has documented the prevalence of skin picking in clinical and community samples,[9–12,84–86] with prevalence estimates ranging from 2 to 5.4%.[9] This work has also documented a high degree of psychiatric comorbidity (particularly with mood and anxiety disorders) and morbidity (with substantial associated distress and impairment, including occupational and marital difficulties). People with skin picking often spend significant amounts of time on their behavior, sometimes several hours each day.[87] Skin picking often results in significant tissue damage and scarring, requiring frequent antibiotic treatment for infection, and on occasion requiring surgery.[87]

Patients with skin picking often present with a typical set of clinical features and, indeed, these often overlap with those seen in hair pulling. Although skin picking may be present at any age, it most often has its onset during adolescence, and frequently begins with a dermatological condition, such as acne.[9] The most commonly picked sites are the head and face, and although most patients pick with their fingernails, a substantial minority use tweezers or other objects,[9] triggers to picking including feeling irregularities in the skin, or negative affects.[87] People with skin picking often feel embarrassed by and ashamed of their behavior, and this frequently contributes to delay in treatment seeking.[10] Skin picking may also be seen in subjects with other psychiatric disorders (e.g. body dysmorphic disorder)[88,89] and in patients with medical conditions (e.g. dermatological disorders).[9]

Various proposals have been put forward for a name for this phenomenon (neurotic excoriation, compulsive picking, pathological skin picking, dermatillomania),[90] and diagnostic criteria have also been proposed

(e.g. following the format of an impulse control disorder)[11,87] (Tables 3 and 4). In addition to a growing literature on prevalence, morbidity, and comorbidity, there is a small literature on underlying psychobiology and an increasing number of controlled intervention trials.[9,91]

An immediate criticism of the proposal to include clinical skin picking in DSM-V is that it is a symptom (or a habit) rather than a syndrome. This same criticism has been leveled at TTM,[92] and a central part of the discussion of TTM in the DSM-IV Sourcebook focused on arguing that this condition was not merely a component of other disorders.[25] As in TTM, skin picking frequently occurs as the primary disorder and has well-described clinical features (including course), with accumulating data on diagnostic validators.[9] Furthermore, the identification of TTM as a discrete disorder (excluding pulling secondary to other conditions) allowed valuable studies of its phenomenology, psychobiology and treatment, and improved clinical diagnosis and intervention.

Another criticism would be that if both hair pulling and skin picking are identified as disorders, this "opens the door" of the classification system to a whole range of other "habits," including nail biting, lip chewing, and nose picking. Currently, these might be diagnosed in DSM-IV as stereotypic movement disorder or in ICD-10 as other specified behavioral and emotional disorders (which already list nail biting and nose picking). However, there is significantly more data on clinical skin picking, and there is no a priori reason for excluding "habits"—which may in fact be associated with distress and impairment, with underlying psychobiological disturbances, and which may usefully be assessed and treated—from our nosology.

To examine whether skin picking should be included as a diagnosis in DSM-V, separate from other disorders, we address several considerations. First, we draw, in part, on the DSM-IV definition of a mental disorder while also considering ongoing discussion in the literature about what constitutes a mental disorder.[93,94] We then address several additional considerations for adding a disorder to the nomenclature, including diagnostic validity and clinical utility[95]:

The condition is a behavioral or psychological syndrome or pattern that occurs in an individual: As above, skin picking has long been described in the literature that it is a prevalent syndrome, and diagnostic criteria have been proposed.

The consequences of which are clinically significant distress or disability: As above, skin picking leads to clinically significant distress or disability, and in some cases can have important medical sequelae.

The proposed syndrome is not merely an expectable response to common stressors or losses or a culturally sanctioned response to a particular event: Although skin picking may be exacerbated by particular negative effects,[87] there is no evidence that it is an expectable response or that it is culturally sanctioned.

The proposed syndrome reflects an underlying psychobiological dysfunction: Much work is needed on the psychobiology of skin picking. Nevertheless, some data is available on the neurobiology of skin picking,[9,82,96] and there is also a growing literature on the neurobiology of itching and scratching.[97–99] Evidence that pharmacotherapy can be effective is consistent with underlying disturbance.

The syndrome is not primarily a result of social deviance or conflicts with society: There is no evidence that skin picking simply reflects social deviance or conflicts with society.

TABLE 3. Diagnostic criteria for psychogenic excoriation[11]

A.	Maladaptive skin excoriation (e.g. scratching, picking, gouging, lancing, digging, rubbing or squeezing skin) or maladaptive preoccupation with skin excoriation as indicated by at least one of the following
	Preoccupation with skin excoriation and/or recurrent impulses to excoriate the skin that is/are experienced as irresistible, intrusive, and/or senseless
	Recurrent excoriation of the skin resulting in noticeable skin damage
B.	The preoccupation, impulses, or behaviors associated with skin excoriation cause marked distress, are time-consuming, significantly interfere with social or occupational activities, or result in medical problems (e.g. infections)
C.	The disturbance is not better accounted for by another mental disorder and is not due to a general mental condition
Subtypes	
Compulsive type	
Skin excoriation is performed to avoid increased anxiety or to prevent a dreaded event or situation and/or is elicited by an obsession (e.g. obsession about contamination of the skin)	
It is performed in full awareness	
It is associated with some resistance to performing the behavior	
There is some insight into its senselessness or harmfulness	
Impulsive type	
Skin excoriation is associated with arousal, pleasure, or reduction of tension	
It is performed at times with minimal awareness (e.g. automatically)	
It is associated with little resistance to performing the behavior	
There is little insight into its senselessness or harmfulness	
Mixed type	
Skin excoriation has both compulsive and impulsive features	

TABLE 4. Diagnostic criteria for pathological skin picking[87]

A.	Recurrent skin picking resulting in noticeable skin damage
B.	Preoccupation with impulses or urges to pick skin, which is experienced as intrusive
C.	Feelings of tension, anxiety, or agitation immediately before picking
D.	Feelings of pleasure, relief, or satisfaction while picking
E.	The picking is not accounted for by another medical or mental disorder (e.g. cocaine or amphetamine use disorders, scabies)
F.	The individual suffers significant distress or social or occupational impairment

The syndrome has diagnostic validity on the basis of various diagnostic validators (e.g. prognostic significance, psychobiological disruption, response to treatment): Additional work is needed on many aspects of skin picking. Nevertheless, there is some data to support the diagnostic validity of skin picking, including data on course and comorbidity and on response to treatment.

The syndrome has clinical utility (e.g. contributes to better conceptualization of diagnoses, or to better assessment and treatment): Currently, skin picking likely falls within the category of impulse control disorders not otherwise specified. Including skin picking as a separate diagnosis would create greater awareness of this condition, encourage appropriate assessment and treatment, and give impetus to research.

The advantages of including skin picking as a disorder (improved recognition and treatment of a large group of patients with a clinically significant condition) seem to outweigh any disadvantages (inclusion of an entity for which data on diagnostic validity are relatively few). Several additional considerations may arise when proposing a new disorder for the nomenclature. These include: (1) Is there a need for the disorder; for example, is the syndrome sufficiently common in clinical or population samples that it merits an independent category as opposed to being one example in an NOS category? (2) What is the relationship of the proposed disorder with other DSM-V diagnoses; for example, is the disorder sufficiently distinct from other diagnoses? (3) Are there proposed diagnostic criteria with clinical face validity, reliability, and adequate sensitivity and specificity for the proposed construct? and (4) Can the criteria be easily implemented in a typical clinical interview and reliably operationalized/assessed for research purposes. In each of these cases, there is some data to support the entry of skin picking into the nomenclature, although further work on the reliability of the proposed criteria is needed. Taken together, we recommend that skin picking be added to DSM-V or to the DSM-V Appendix of Criteria Sets Provided for Further Study.

Recommendations for the optimal diagnostic criteria for pathological skin picking should take into account the literature, noted earlier, indicating similarity in phenomenology of clinically significant hair pulling and skin picking. This includes similarity in symptom form, antecedent cues, and comorbidity. Furthermore, there is evidence from factor analytic studies that both TTM and skin picking have similar forms (i.e. similar behavioral dimensions).[100] Indeed, we recommend that the diagnostic criteria parallel those used for TTM. As in the case of TTM, further research to determine whether alternative phrases, such as "seemingly driven," are reliable and useful additions to the criteria set may be useful.

As in TTM, we recommend that clinical threshold is decided primarily using the clinical significance criterion, rather than on the basis of the extent of skin picking or dermatological sequelae. Alternative approaches, such as specifying the time spent on skin picking or the extent of observable skin damage, seem problematic insofar as they entail arbitrary or difficult to operationalize cut-offs, and insofar as some patients may have clinically significant skin picking, but may perform most of their skin picking in a short amount of time each day or may pick their skin in a way that damage is limited to a small or hidden part of the body. Thus, we propose the following criteria for DSM-V:

A. Recurrent skin picking resulting in skin lesions.

B. Disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

C. Skin picking is not due to the direct physiological effects of a substance (e.g. during Amphetamine Intoxication) or a general medical condition (e.g. a dermatological condition).

D. Skin picking is not restricted to the symptoms of another mental disorder (e.g. skin picking due to fixed beliefs about skin infestation in Delusional Disorder, preoccupations with appearance in Body Dysmorphic Disorder).

The accompanying text could provide additional information about typical features, about the specific substances and general medical conditions that have been associated with skin picking, and the nature of skin picking in conditions such as delusional and body dysmorphic disorder.[88,101]

Recommendations for the optimal categorization and naming of clinically significant skin picking should take data on its comorbidity and psychobiology into account.[102] It is notable that occurrence rates for both TTM and OCD in clinical skin picking samples are higher than that reported for the normal population.[10,87] A significantly higher rate of OCD was reported in a skin picking cohort than in a control comparison sample,[103] suggesting that these disorders may be related. In addition, elevated rates of skin picking were reported in OCD patients and their first-degree relatives.[82] On the other hand, rates of occurrence of clinical skin picking may not significantly differ between OCD and other anxiety disorders.[47] TTM has, however, been reported to be the most common current and lifetime comorbid disorder in clinically significant skin picking (although other impulse control disorders occur infrequently). Indeed, there is only limited data to suggest that skin picking should be understood as an impulse control disorder.[96]

We recommend that clinically significant skin picking be termed "skin picking disorder," as this is a readily understandable term, is theoretically neutral about etiology (unlike "neurotic excoriation" or "compulsive picking"), and parallels the recommended name of "hair pulling disorder." Although the term "dermatillia" is thought preferable to "pathological skin picking" by some patient advocates (Pearson, oral communication), the former name has the same disadvantages as "trichotillia" (see above). Should skin

picking disorder be accepted into the main body of the nosology, we would recommend classifying it adjacent to hair pulling disorder (TTM).

STEREOTYPIC MOVEMENT DISORDER

Normally, developing infants exhibit a broad range of repetitive stereotyped behavioral movements, including toe sucking and body rocking, following a predictable developmental sequence.[104] A small database of studies indicates that onset of stereotyped behaviors seems to be delayed in individuals with developmental disabilities, such as intellectual disability, or pervasive developmental disorders, such as autism, but that the sequencing may be similar to that seen in normal populations.[105] In these latter populations, stereotyped behaviors, including self-injurious behaviors, are prevalent and impairing.[14,15,106,107] Such behaviors are also found in populations with normal intelligence.[8,13,86,108]

The term "stereotypies" has been applied to a broad range of symptoms, including specific movements (e.g. hand flapping) as well as to a heterogenous range of self-directed repetitive behaviors, activities, and interests (e.g. pacing, picking skin, playing in a fixed pattern).[13] Several studies, in a range of countries, have contributed to the classification of stereotyped behaviors using methods, such as factor analysis.[109–112] In developmental disabilities, for example, sensorimotor (or lower-order) stereotyped behaviors may be associated with more global developmental problems, whereas cognitive rigidity (higher-order) symptoms may be associated with ruminations in subjects with pervasive developmental disorders.[109] Indeed, a range of work suggests that stereotypies, including self-injurious behaviors, have a distinctive pattern in autism.[113,114]

Another approach is to classify stereotypies into those that are primary and those that are secondary to other disorders.[13] Primary stereotypies include common stereotypies (e.g. thumb sucking, nail biting, hair twirling, body rocking, self-biting, and head banging), head nodding stereotypies, and complex hand and arm movement stereotypies. Common stereotypies are relatively common in childhood, and most resolve during development. Secondary stereotypies are those seen in developmental disabilities, including pervasive developmental and psychiatric disorders. Although hair twirling is conceptualized as a common stereotypy, hair pulling often has a later onset and is due to a psychiatric syndrome (TTM), so would be classified as a secondary stereotypy.

There is an accumulating literature on the neurobiology of primary stereotypies, including both animal and clinical studies.[13,78,115–117] There is also a growing literature on the treatment of both primary stereotypies[108,118,119] and stereotypies in patients with developmental disorders.[120–122] A parallel, sometimes overlapping, literature on repetitive self-injurious behavior has also developed.[123–126]

Relatively little research has specifically focused on attempting to integrate the nosology of stereotypies with its neurobiology. Thus, the extent to which different kinds of stereotypic behavior (e.g. lower order versus higher order), or to which primary and secondary stereotypies, have convergent or divergent neurobiology remains to be fully clarified. In patients with primary motor stereotypies, however, psychiatric comorbidity includes attention deficit hyperactivity disorder (30%), tics (18%), and obsessive–compulsive behaviors/disorder (10%).[127] Similarly, a small literature indicates that primary motor stereotypies may involve neurocircuitry and neurotransmitters that overlap with those of putative obsessive–compulsive spectrum disorders,[128,129] and that these symptoms may respond to habit reversal.[118]

Similarly, patients with developmental disorders and stereotypic behaviors have been documented to commonly have comorbidity of obsessive–compulsive symptoms,[130–132] although such symptoms may not be typical of OCD.[133] The literature on the neurobiology of stereotypic behaviors in developmental disabilities suggests some overlap with OCD[134,135] or some value in using comorbid obsessive–compulsive symptoms, as a specifier when studying these disorders.[136–138] Nevertheless, not all data confirm such overlap,[139–141] and the literature also points to a number of unique features of stereotypic symptoms in developmental disorders, including pathology in the peripheral neuronal system.[142,143] As reviewed above, the neurobiology of TTM and skin picking is similarly inconsistent as regards its relationship to OCD.

Regarding the diagnostic criteria for SMD, DSM-IV's criterion A refers to "repetitive, seemingly driven, and nonfunctional motor behavior." The term "seemingly driven" conveys an important feature of the repetitive body-focused behavioral disorders. Although arguably difficult to operationalize, there is no evidence that any other phrase is superior. The term "nonfunctional" is arguably problematic insofar as these behaviors may have a self-regulatory function. We, therefore, recommend replacing it with the phrase "apparently purposeless" and clarifying relevant issues in the text (e.g. patients may state that they perform a particular stereotypy in order to reduce tension). The criterion could arguably be improved by specifying the nature of primary stereotypies in more detail; these tend to be rhythmic, coordinated movements that are patterned and predictable (in form, amplitude, and location). Such descriptors may be particularly useful in describing head nodding stereotypies and complex hand and arm movement stereotypies.[127] However, such terms are not often used in describing primary common stereotypies (such as self-biting). We recommend additional research, using a heterogeneous range of patients, to clarify the optimal definition of stereotypies. To reduce diagnostic confusion, however,

we suggest altering the examples of stereotypies to include those that are commonly described in the literature (hand shaking or waving, body rocking, head banging, self-biting).

Criterion B of SMD is somewhat inconsistent with other clinical significance criteria in DSM-IV, insofar as it refers to interference with normal activity or to "self-inflicted bodily injury that requires medical treatment," rather than to impairment in social, occupational, or other important areas of functioning. The reference to normal activity criterion may be particular relevant to patients with intellectual disability but, as noted above, SMD is also seen in adults with normal intelligence. A threshold of requiring medical treatment seems unnecessarily high for clinically significant self-injury. We, therefore, suggest replacing this criterion with the standard clinical significance criterion.

Criterion C of SMD also addresses a clinical threshold issue, indicating that when mental retardation is present, the stereotypic or self-injurious symptoms need to be sufficiently severe to become a focus of treatment. However, this is an unusual approach to determining clinical threshold and is arguably tautological. Another problem with this criterion is that many individuals lack access to health care. We, therefore, suggest removing this criterion. Similarly, we recommend dropping this phrase from the specifier, "with self-injurious behavior."

Criteria D and E are based on the standard hierarchical exclusion criteria in DSM-IV. If skin picking disorder is included in DSM-V, reference would need to be made to it. One option may be to omit reference to pervasive development disorder (PDD), on the assumption that SMD in PDD deserves to be diagnosed and treated. On the other hand, there is a long-standing distinction between primary motor stereotypies and those that are secondary to other neuropsychiatric disorders, reflecting possible differences in phenomenology, psychobiology, and treatment approaches.[13] In addition, it seems problematic to diagnose SMD that is a symptom of PPD as a separate disorder. We, therefore, recommend a conservative approach that retains this diagnostic distinction. It may also be relevant to refer to the distinction between the stereotyped self-injurious behaviors of SMD and more impulsive self-injurious behaviors seen in disorders, such as borderline personality disorder.[144]

Criterion F again addresses the clinical threshold question, stating that the behavior must have been present for 4 weeks. To our knowledge, there are no data that support this particular cut-off. SMD symptoms are chronic in nature, criterion A indicates that they are "repetitive," and the standard clinical significance criterion would also provide appropriate thresholding.

In summary, we suggest simplifying the diagnostic criteria for SMD as follows:

A. Repetitive, seemingly driven, and apparently purposeless motor behavior (e.g. hand shaking or waving, body rocking, head banging, self-biting).

B. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

C. The motor behavior is not due to the direct physiological effects of a substance or a general medical condition.

D. The motor behavior is not restricted to the symptoms of another mental disorder (e.g. compulsions in Obsessive–Compulsive Disorder, tics in Tic Disorder, stereotypies in Pervasive Developmental Disorder, hair pulling in Hair Pulling Disorder (TTM), skin picking in Skin Picking Disorder).

Specifier: Self-Injurious Behavior: If the behavior results in bodily damage (or that would result in bodily damage if protective measures were not used).

Relatively little research has specifically addressed the optimal categorization of SMD. If the section on disorders of infancy, childhood, and adolescent is retained, or reconfigured as a neurodevelopmental grouping, there may be no reason to move this condition elsewhere. However, if this section is not included in DSM-V, and if a section on obsessive–compulsive spectrum disorders is included, there is an argument for including SMD in this section. On the one hand, there are important differences in the phenomenology and, likely, psychobiology of OCD and SMD. On the other hand, there is also evidence of elevated comorbidity,[127] and partial overlap between SMD and OCSDs in phenomenology and psychobiology as well as in treatment approach.[118] In view of considerations of clinical utility, such as encouraging optimal diagnosis of stereotypical and other repetitive symptoms, and optimizing their treatment, if the section on disorders of infancy, childhood, and adolescence is not retained, or reconfigured as a neurodevelopmental grouping, we, therefore, recommend including SMD together with the OCSDs.

CONCLUSIONS

1. TTM fits optimally into a category of BFRBDs. A finely divided nosology would emphasize important differences between OCD, various OCD-related disorders (e.g. BDD) and BFRBDs. However, in a system comprised of relatively few major categories of disorders, then BFRBDs would fit best within a category of anxiety, OCD, and obsessive–compulsive spectrum disorders.
2. Available evidence does not support continuing to include (current) criterion B and C in DSM-V as diagnostic criteria for TTM. It may be useful, however, to retain recurrent prior tension and subsequent gratification as dimensions of hair pulling.
3. We recommend that forms of hair pulling be described in the text of DSM-V. Hair pulling has been described in infants, but there is currently insufficient data to specify an early-onset form of TTM.

4. The term "trichotillomania" deserves renewed thought, given that the phrase "mania" is potentially misleading in the context of this disorder. We suggest using the designation "hair pulling disorder (trichotillomania)."
5. We recommend that "skin picking disorder" be included in DSM-V or in the DSM-V Appendix of Criteria Sets Provided for Further Study. We have suggested a criteria set that is in line with that used for "hair pulling disorder (trichotillomania)."
6. We recommend clarifying and simplifying the criteria of stereotypic movement disorder, to bring them in line with those for hair pulling disorder and skin picking disorder.

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