Future NEUROLOGY

EDITORIAL

Improved criteria for the diagnosis of tic disorders in DSM-5

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Tourette syndrome (TS) and other tic disorders are clinical diagnoses largely based on patients' history and clinical presentation [1]. Internationally recognized classification systems, such as DSM published by the American Psychiatric Association, are of central importance for the standardization of clinical practice in tic disorders. While the International Classification of Diseases of WHO poses as a classification system for all areas of medicine [2], the DSM defines diagnostic criteria and codes that are specific to psychiatric conditions and are commonly used by mental health researchers worldwide. The diagnostic standards for TS and other tic disorders provided by the DSM have gone through a few important changes in the previous editions of this classification system. The fourth edition of the DSM (DSM-IV), published in 1994 [3], underwent a revision in 2000 (DSM-IV-TR), which involved important changes to the diagnostic criteria for tic disorders [4]. Specifically, the impairment criterion was removed, thus allowing clinicians to diagnose TS in patients who have the cardinal features of this condition (i.e., chronic motor and vocal tics), but do not experience impairment as a result of them [5].

Further changes to the classification have recently been implemented in the new edition of the DSM (DSM-5), published in 2013 [6]. Within the DSM-5, tic disorders are classified as movement disorders within the section 'Neurodevelopmental disorders', which replaces a previous section called 'Disorders usually first diagnosed in infancy, childhood, or adolescence'. The new edition of the DSM defines tics as sudden, rapid, recurrent, nonrhythmic movements or vocalizations. This definition has been maintained from the previous edition of the DSM, with the exception of the adjective 'stereotyped', which has been removed in order to avoid confusion between a tic and a stereotypy. Stereotypies are a different type of movement disorder: for instance, they lack some of the core features of tics, such as the 'premonitory urge' [7], are commonly observed in the context of autistic spectrum disorders and characterize stereotypic movement disorder. Moreover,

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"Future research will play a central role in the identification and definition of the multiple phenotypes of the 'Tourette syndrome spectrum'..."

the definition of tics has been made uniform across all tic disorders: persistent/chronic motor or vocal tic disorder, provisional tic disorder, other specified tic disorder and unspecified tic disorder, in addition to TS.

TS or 'Tourette's disorder' (DSM-5 code 307.23) is currently defined by four criteria: the presence of both motor and vocal tics at some time during the illness (not necessarily concurrently); the persistence of tics for more than 1 year since first tic onset; the onset age before 18 years; and the absence of underlying causes for the tics (substances or other medical conditions). Interestingly, stimulant use is no longer listed among the possible underlying causes of tics, reflecting the absence of conclusive evidence that the use of stimulants causes tics. These criteria show a strong overlap with the DSM-IV-TR criteria, however in the prior edition of this classification manual, tics had to be present consistently for at least 9 months in any given year in order to qualify for this diagnosis. This previous criterion about symptom duration has been revised, and the concept of a tic-free interval not longer than 3 months in 1 year has been removed. The criterion of persistency of tic symptoms for at least 1 year is now irrespective of the duration of tic-free periods, thus more closely matching clinical practice (where waxing and waning courses over a few months is not a rare presentation) and reducing the chances of 'false negatives' in the diagnostic process.

When single or multiple motor or vocal tics (but not both motor and vocal tics) have been present during the illness, and criteria have never been met for TS, patients are now given a diagnosis of 'persistent (chronic) motor or vocal tic disorder' (DSM-5 code 307.22). Compared to the DSM-IV-TR, a specifier was added in order to differentiate between vocal and motor tics, also in consideration of the finding that there are higher rates of comorbid diagnoses with chronic vocal tics than with chronic motor tics [8]. The DSM-IV-TR diagnostic category of 'Transient tic disorder' has been replaced by the new category of 'Provisional tic disorder' (DSM-5 code 307.21), which captures patients with single or multiple motor and/or vocal tics that have been present for less than 1 year since onset. Since initially presenting tics may eventually be diagnosed as TS or motor or vocal tic disorder, the previous diagnosis of transient tic disorder could only be applied in retrospect – that is, when it was ascertained that the tic(s) persisted for less than 9 months and then disappeared. The term 'provisional' can now be used for patients (usually children) who seek medical opinion a few months after tic onset, with the possibility of revising this diagnosis to TS or another chronic tic disorder if the tics persist for over 12 months.

The category 'Other specified tic disorder' (DSM-5 code 307.20) should be used when there is strong evidence from the history, physical examination, and/or laboratory results to suggest a plausible, proximal and probable cause of tics (e.g., Huntington's disease, postviral encephalitis and cocaine use, among others), when the onset of tics is in adulthood, and in general all presentations in which tic symptoms are present but the full criteria for a tic/neurodevelopmental disorder are not met. When the clinician chooses not to specify the reason why the criteria for a tic/neurodevelopmental disorder are not met despite the presence of tics, the 'Unspecified tic disorder' category should be used (DSM-5 code 307.20). This includes situations in which there is insufficient information to make a more specific diagnosis.

The revised criteria for the diagnosis of TS and other tic disorders in the new edition of the DSM classification system represent an overall improvement from previous criteria in terms of both clarity and clinical usefulness. Back in 1874, John Hughlings-Jackson, one of the fathers of modern neurology, compared the classification systems of diseases and plants by outlining the botanist's and the gardener's approach:

> "*There are two ways of investigating diseases, and two kinds of classification corresponding thereto, the empirical and the scientific. The former is to be illustrated by the way in which a gardener classifies plants, the latter by the way in which a botanist classifies them. The former is, strictly speaking, only an arrangement. The gardener arranges his plants as they are fit for food, for ornament, etc. One of his classifications of ornamental plants is into trees, shrubs, and flowers. His object is the direct application of knowledge to utilitarian purposes. It is, so to speak, practical. The other kind of classification (the classification properly so-called) is rather for the better organization of existing knowledge, and for discovering the relations of new facts; its principles are methodical guides to further investigation. It is of great utilitarian value, but not directly*" [9].

In the absence of ultimate evidence-based answers to the open questions about the pathophysiology of tic disorders and their clinical boundaries, the revised criteria contained in the DSM-5 provide a classification system that is practical to use in daily work (in the spirit of the gardener), without betraying the taxonomy principles favored by the botanist. Future research will play a central role in the identification and definition of the multiple phenotypes of the 'TS spectrum', in order to develop a nosological system that 'carves nature at its joints'. In the meantime, the new DSM-5 criteria are welcomed as a step forward from both a clinical (gardener) and scientific (botanist) perspective.

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