



Review

Catatonia in DSM-5

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ABSTRACT

Although catatonia has historically been associated with schizophrenia and is listed as a subtype of the disorder, it can occur in patients with a primary mood disorder and in association with neurological diseases and other general medical conditions. Consequently, catatonia secondary to a general medical condition was included as a new condition and catatonia was added as an episode specifier of major mood disorders in DSM-IV. Different sets of criteria are utilized to diagnose catatonia in schizophrenia and primary mood disorders versus neurological/medical conditions in DSM-IV, however, and catatonia is a codable subtype of schizophrenia but a specifier for major mood disorders without coding. In part because of this discrepant treatment across the DSM-IV manual, catatonia is frequently not recognized by clinicians. Additionally, catatonia is known to occur in several conditions other than schizophrenia, major mood disorders, or secondary to a general medical condition. Four changes are therefore made in the treatment of catatonia in DSM-5. A single set of criteria will be utilized to diagnose catatonia across the diagnostic manual and catatonia will be a specifier for both schizophrenia and major mood disorders. Additionally, catatonia will also be a specifier for other psychotic disorders, including schizoaffective disorder, schizophreniform disorder, brief psychotic disorder, and substance-induced psychotic disorder. A new residual category of catatonia not otherwise specified will be added to allow for the rapid diagnosis and specific treatment of catatonia in severely ill patients for whom the underlying diagnosis is not immediately available. These changes should improve the consistent recognition of catatonia across the range of psychiatric disorders and facilitate its specific treatment.

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1. Introduction

The current status of catatonia in the fourth edition of the Diagnostic and Statistical Manual for mental disorders (DSM-IV, *American Psychiatric Association, 1994*) is best understood from a historical perspective. It was first introduced as a distinct psychiatric syndrome by *Karl Kahlbaum (1973)* in the 1870s. Subsequently in the early 1900s,

it was combined with hebephrenia and dementia paranoides into a single entity (dementia praecox) by Emil Kraepelin (1971) and the presence of catatonia became synonymous with dementia praecox or schizophrenia (Bleuler, 1950). The Kraepelin–Bleuler view of catatonia as a subtype of schizophrenia became prevalent and was reflected in the first three editions of DSM (American Psychiatric Association, 1952, 1968, 1980) where the only mention of catatonia was as a subtype of schizophrenia. Findings in the 1970s and 1980s, however, revealed the presence of catatonia in a number of neurological and other medical disorders (Gelenberg, 1976), and “organic catatonia” or “catatonia secondary to a general medical condition” was added as a new category in DSM-IV. Additional findings in the 1970s and 1980s revealed that a significant proportion of catatonia occurred in the context of major mood disorders (Abrams and Taylor, 1976; Taylor and Abrams, 1977) and catatonia was also added as an episode specifier of major mood disorders in DSM-IV (American Psychiatric Association, 1994).

1.1. Catatonia in DSM-IV

Currently, the presence of catatonia is recognized in three contexts in DSM-IV:

1. Catatonic Disorder due to a General Medical Condition (ICD-9 code 293.89)
2. Schizophrenia – Catatonic Subtype (295.20)
3. Episode specifier for Major Mood Disorders (296.xx) without specific numerical code:
 - a. Bipolar 1 Disorder – Single manic episode (296.00)
 - b. Bipolar 1 Disorder – Most recent episode manic (296.40)
 - c. Bipolar 1 Disorder – Most recent episode depressed (296.50)
 - d. Bipolar 1 Disorder – Most recent episode mixed (296.60)
 - e. Major Depressive Disorder, Single episode (296.20)
 - f. Major Depressive Disorder, Recurrent (296.30).

Some experts consider neuroleptic malignant syndrome (333.92), an adverse effect of antipsychotic medications, as a form of malignant catatonia (Fink, 1997; Lee, 2007).

A diagnosis of catatonia in DSM-IV requires that the clinical picture be dominated by:

- a. Motoric immobility, as evidenced by catalepsy or stupor
- b. Excessive motor activity
- c. Extreme negativism or mutism
- d. Peculiarities of voluntary movement as evidenced by posturing, stereotyped movements, prominent mannerisms, or prominent grimacing
- e. Echolalia or echopraxia.

Whereas the DSM-IV definition of catatonia as a subtype of schizophrenia or episode specifier for major mood disorders explicitly requires the presence of at least two of these five sets of symptoms, there is no such requirement for its definition in “Catatonic disorder due to a general medical condition”. Of interest, the current edition of the International Classification of Disease (ICD-10, World Health Organization, 1992) recognizes catatonia only in two contexts, i.e., Organic Catatonic Disorder (ICD-10 code F06.1) and catatonic schizophrenia (F20.2).

2. Summary of new data and limitations in DSM-IV treatment of catatonia

Studies over the past two decades confirm the occurrence of catatonia in the context of schizophrenia, major mood disorders, and due to a range of general medical conditions (Peralta et al., 1997; Brauning et al., 1998; Ungvari et al., 2005; Weder et al., 2008). The continued importance of identifying the presence of catatonia in these different contexts is supported by its familial aggregation and co-aggregation with schizophrenia and major mood disorders (Peralta and Cuesta, 2007), clear

etiological attribution to a range of specific general medical conditions (Weder et al., 2008), and most importantly its relatively specific response to treatment with benzodiazepines and electroconvulsive therapy (Rohland et al., 1993; Hawkins et al., 1995; Bush et al., 1996; Caroff et al., 2007). Relative proportions of mood, primary psychotic, and neurological/medical disorders in samples of patients with catatonia vary across studies (Rosebush and Mazurek, 2010; Kleinhaus et al., 2012).

Whereas recent data provide clear support for the changes in the approach to catatonia made in DSM-IV, they also point to several limitations in its current definition and treatment. These include:

1. *Under-recognition.* The presence of catatonia is frequently missed by clinicians and this under-recognition has been noted in the context of schizophrenia, major mood disorders, and general medical conditions (Starkstein et al., 1996; Brauning et al., 1998; Ungvari et al., 2005; van der Heijden et al., 2005). Additionally, catatonia has been found to be significantly under-recognized in a range of other clinical populations and settings (Caroff et al., 2004; Dhossche and Wachtel, 2010; Rizos et al., 2011). One significant factor contributing to the under-recognition of catatonia is its inconsistent definition in DSM-IV.
2. *Prevalence in several psychotic disorders other than schizophrenia and psychotic mood disorders.* Currently, catatonia can be diagnosed only in the context of schizophrenia (subtype) and major mood disorders (episode specifier). It is, however, frequently observed in other psychotic disorders such as schizoaffective disorder, brief psychotic disorder, schizophreniform disorder, and substance-induced psychotic disorder (Rohland et al., 1993; Peralta et al., 1997, 2010; Tuerlings et al., 2010).
3. *Low frequency of use as schizophrenia subtype.* Although catatonic symptoms are prominent in a significant proportion of schizophrenia patients (Peralta et al., 1997; Ungvari et al., 2005), their presence is frequently not noted or diagnosed. This is significantly attributable to the fact that the only method to document the presence of catatonic symptoms in schizophrenia is as a diagnostic subtype. Despite the fact that catatonic schizophrenia is at the top of the diagnostic hierarchy of schizophrenia subtypes (in DSM-IV, prominent catatonic symptoms have to be absent before any other subtype can be diagnosed), catatonic schizophrenia is rarely diagnosed (0.2–3% of all schizophrenia; Stompe et al., 2002; Xu, 2011). In addition to rarity of use, catatonic schizophrenia as a subtype has low diagnostic stability and poor reliability (Carpenter et al., 1976; Helmes and Landmark, 2003; Tandon and Maj, 2008).
4. *Presence of catatonia in other psychiatric conditions and undiagnosed general medical conditions.* There have been several hundred reports of catatonia in a range of other psychiatric conditions such as autism and other disorders in the pediatric setting (Wing and Shah, 2000; Takaoka and Takata, 2003; Hare and Malone, 2004; Cornic et al., 2007; Dhossche and Wachtel, 2010). Additionally, the link between catatonia and a causal general medical condition may not be clear in the initial stages of clinical assessment/treatment and/or the general medical condition putatively causing catatonia may not be initially evident. There is a broad consensus among catatonia experts (Francis et al., 2011) that there needs to be an ability to diagnose catatonia in these circumstances because of its clinical importance (Fink, 2012; Shorter, 2012). Catatonia in such settings does respond to treatment with benzodiazepines and electroconvulsive therapy. Clinicians use a term of idiopathic catatonia (Benegal et al., 1993; Krishna et al., 2011), but this is unrecognized in ICD-10 and DSM-IV.

3. Changes for DSM-5

Following an extensive review of the literature and consultation with several experts, a series of changes have been made in the DSM-5 formulation of catatonia to address the identified gaps in the

DSM-IV treatment of catatonia. The revision process placed particular emphasis on clinical utility and applicability and utilized all available research evidence to build on the strengths of the DSM-IV approach to improve diagnostic practice. While DSM-5 will retain the DSM-IV entities of catatonia secondary to a general condition and catatonia as an episode specifier for major mood disorders, four changes to the DSM-IV approach to catatonia were made:

- (i) Identical criteria will be utilized for the diagnosis of catatonia across the DSM-5 diagnostic manual;
- (ii) The catatonic subtype of schizophrenia will be deleted along with other schizophrenia subtypes (Tandon and Carpenter, 2012) and catatonia will be a specifier for schizophrenia (analogous to its treatment in conjunction with the major mood disorders);
- (iii) DSM-5 will add four additional psychotic disorders (brief psychotic disorder, schizophreniform disorder, schizoaffective disorder, and substance-induced psychotic disorder), for which catatonia could be a specifier; and
- (iv) A residual diagnostic category of catatonia not otherwise specified (Catatonia NOS) will be added in order to allow a diagnosis of catatonia in patients with other conditions and in whom the underlying cause of catatonia may not be immediately recognized.

The rationale for each of these changes is discussed below.

3.1. Change in criteria for diagnosing catatonia

To improve simplicity and clinical utility, catatonia will be treated in a similar manner across DSM-5 and identical criteria will be utilized for its definition across the diagnostic manual. In one of two definitions in DSM-IV, catatonia was defined on the basis of 12 symptoms across five clusters, with the presence of symptoms in two of the five sets of symptoms required to make a diagnosis of catatonia. In DSM-5, catatonia will be defined on the basis of 3 or more of these 12 symptoms (Table 1) utilizing a scale validated by Peralta and co-workers (2001; 2010). An initial study (Peralta and Cuesta, 2001) found nine of these 12 items to possess very high discriminating value for catatonia, but noted that three items (agitation, stereotypy, and mannerisms) were weakly correlated with other constructs of catatonia. A subsequent study (Peralta et al., 2010) found stereotypy and mannerisms also to have exceptionally high discriminating value for catatonia. A clarification is added to the DSM-5 definition of the agitation item in catatonia.

This change is primarily designed to address the under-recognition of catatonia and its discrepant definition in DSM-IV. Its major clinical impact will be enhanced simplicity and consistency.

3.2. Catatonia will be a specifier and not a subtype of schizophrenia in DSM-5

In DSM-5, catatonia will be an episode specifier for schizophrenia, as it for the major mood disorders. This change is primarily designed

to address the discrepant treatment of catatonia in DSM-IV, the very low frequency of use of the catatonic subtype of schizophrenia, and its low diagnostic stability. This change is in keeping with the deletion of all schizophrenia subtypes in DSM-5 (Tandon and Carpenter, 2012). This change was also necessary in order to allow the use of catatonia as a specifier for other psychotic disorders as below. Its major clinical impact will be improved concurrent and predictive validity and easier clinical applicability.

3.3. Catatonia will be added as a specifier for four other psychotic disorders (brief psychotic disorder, schizophreniform disorder, schizoaffective disorder, and substance-induced psychotic disorder)

Catatonia will be added as a specifier to four additional psychotic disorders (Table 2):

- (i) Brief psychotic disorder
- (ii) Schizophreniform disorder
- (iii) Schizoaffective disorder
- (iv) Substance-induced psychotic disorder

This change specifically addresses the inability in DSM-IV to document the presence of catatonia in psychotic disorders other than schizophrenia and psychotic mood disorders. This change will permit the necessary identification of catatonia in these psychotic disorders, thereby enabling appropriate specific treatment of catatonia in these conditions.

3.4. A residual category of catatonia not otherwise specified will be added

DSM-5 will add a new residual diagnostic category of Catatonia NOS (not otherwise specified) to document the presence of catatonia outside the diagnoses in which it can be utilized as a specifier in DSM-5. There are two kinds of clinical situations in which this would be of value:

- a. The general medical condition that is likely contributing to catatonia may not be identified initially. The available clinical information to do so may be insufficient and the work-up may be ongoing. If a catatonia NOS is identified, however, specific treatment for catatonia can ensue and general medical conditions more likely associated with catatonia can be more readily considered.
- b. Presence of catatonia in psychiatric conditions other than schizophrenia and major mood disorders, specifically in the context of autism and other neurodevelopmental disorders. Catatonia not infrequently occurs in these disorders in the absence of major mood or other diagnosable psychotic disorders (Thakur et al., 2003; Dhossche et al., 2007; Ghaziuddin et al., 2012). The occurrence of catatonia in autism and other developmental disorders has important prognostic and treatment implications.

Table 1
Catatonia in DSM-5.

Catatonia is defined as the presence of three or more of the following
1. Catalepsy (i.e., passive induction of a posture held against gravity)
2. Waxy flexibility (i.e., slight and even resistance to positioning by examiner)
3. Stupor (no psychomotor activity; not actively relating to environment)
4. Agitation, not influenced by external stimuli
5. Mutism (i.e., no, or very little, verbal response [Note: not applicable if there is an established aphasia])
6. Negativism (i.e., opposing or not responding to instructions or external stimuli)
7. Posturing (i.e., spontaneous and active maintenance of a posture against gravity)
8. Mannerisms (i.e., odd caricature of normal actions)
9. Stereotypies (i.e., repetitive, abnormally frequent, non-goal directed movements)
10. Grimacing
11. Echolalia (i.e., mimicking another's speech)
12. Echopraxia (i.e., mimicking another's movements)

Table 2
The catatonia diagnosis in DSM 5.

1. Catatonic disorder due to a GMC (293.89)
2. Specifier "with Catatonia" for
a. Schizophrenia
b. Schizoaffective disorder
c. Schizophreniform disorder
d. Brief psychotic disorder
e. Substance-induced psychotic disorder
3. Specifier "with Catatonia" for current or most recent major depressive episode or manic episode in
a. Major depressive disorder,
b. Bipolar I disorder, or
c. Bipolar II disorder
4. Catatonic disorder NOS

Use of the same set of criteria to diagnose catatonia across DSM-5.

Catatonia often manifests in acute illness episodes and on initial diagnostic contact, the underlying disease may be unknown. Catatonia is a distinctive syndrome that is specifically treatable and potentially lethal if not properly treated in a timely manner. Catatonia NEC is therefore a useful diagnosis allowing initiation of necessary treatment. It will generally be a holding place until a full evaluation is completed and the basic disorder is identified. This change was strongly supported by a broad consensus of catatonia experts (Francis et al., 2011).

3.5. Change considered but not made: should catatonia be an independent syndrome?

One of the changes recommended by several catatonia scholars (Taylor and Fink, 2003; Fink et al., 2010; Francis et al., 2011) was the establishment of catatonia as an independent diagnostic class, akin to delirium. Arguments advanced in support of this recommendation included a need to heighten clinical awareness of this treatable syndrome and partly delink it from schizophrenia. After careful consideration and several exchanges with the group of experts, it was decided not to create such an independent diagnosis of catatonia, completely uncoupled from mood, psychotic, and neurological/general medical disorders (Heckers et al., 2010). There were four reasons why this change was not made:

- (i) the diagnostic condition in which catatonia occurs is more stable than catatonia in patients over the longitudinal course of the illness in a given patient. For example, patients with a major depressive disorder who exhibit catatonia in a particular depressive episode do not consistently do so in subsequent depressive episodes. Similarly, patients with schizophrenia may exhibit catatonia at one time-point in the illness, but not others. Thus, designation of catatonia as a specifier of the primary disorder in which it occurs seems appropriate;
- (ii) making such a change would result in spurious comorbidity, with the requirement that patients concurrently receive two diagnoses of a catatonic syndrome plus a diagnosis of the primary psychiatric disorder (mania, major depressive disorder, schizophrenia, etc.); and
- (iii) although catatonia does share some important similarities across the different diagnostic conditions in which it occurs, there are some important distinctions as well. For example, benzodiazepines and ECT are less effective in the treatment of catatonia when it occurs in the context of chronic schizophrenia in contrast to other disorders (Pataki et al., 1992; Ungvari et al., 1999, 2010). Antipsychotics can be effective in the treatment of catatonia when it occurs in the context of psychotic disorders (Peralta et al., 2010; Ungvari et al., 2010); and
- (iv) the other changes made in the DSM-5 treatment of catatonia adequately address the limitations in the DSM-IV.

The changes made in the formulation of catatonia in DSM-5 were endorsed by the group of catatonia scholars, who noted “the changes recommended in the DSM-5 are impressive and are sufficient to significantly improve clinical diagnosis” (Fink, 2013).

4. Summary

Changes made in the treatment of catatonia in DSM-5 include a consistent treatment of catatonia across the diagnostic manual, with a common set of criteria and its designation as a specifier for both schizophrenia and major mood disorders. Additionally, catatonia can also now be a specifier for other psychotic disorders, including schizoaffective disorder, schizophreniform disorder, brief psychotic disorder, and substance-induced psychotic disorder. The new residual category of catatonia not otherwise specified will allow rapid diagnosis and specific treatment of catatonia in severely ill patients with catatonia for whom

the underlying diagnosis is not immediately known. These changes are consistent with current knowledge about the nature of catatonia and should facilitate its appropriate recognition and specific treatment. The treatment of catatonia in DSM-5 is similar to what is currently proposed for ICD-11 (Gaebel et al., 2013; Tandon and Carpenter, 2013). While these changes were primarily motivated by clinical utility, they should facilitate research into the epidemiology, etiology, underlying neurobiology, and development of improved treatments for catatonia.

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The DSM-5 Psychosis Workgroup developed the proposal. Rajiv Tandon drafted the manuscript and all the other authors provided comments on the basis of which the manuscript was revised. All authors have approved the final manuscript.

Conflict of interest

The authors have declared all relevant conflicts of interest regarding their work on the DSM-5 website to the APA on an annual basis. Complete details are posted on the public website: <http://www.dsm5/Meetus/Pages/PsychoticDisorders.aspx>.

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