Schizophrenia Research xxx (2013) xxx–xxx

Contents lists available at SciVerse ScienceDirect

Schizophrenia Research

journal homepage: www.elsevier.com/locate/schres

Review

Definition and description of schizophrenia in the DSM-5

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ARTICLE INFO

Article history:
Received 29 March 2013
Received in revised form 24 May 2013
Accepted 24 May 2013
Available online xxxx

Keywords:
Schizophrenia
Classification
Definition, DSM-5
Nosology
DSM, criteria
Subtypes
RDoC, heterogeneity

ABSTRACT

Although dementia praecox or schizophrenia has been considered a unique disease for over a century, its definitions and boundaries have changed over this period and its etiology and pathophysiology remain elusive. Despite changing definitions, DSM-IV schizophrenia is reliably diagnosed, has fair validity and conveys useful clinical information. Therefore, the essence of the broad DSM-IV definition of schizophrenia is retained in DSM-5. The clinical manifestations are extremely diverse, however, with this heterogeneity being poorly explained by the DSM-IV clinical subtypes and course specifiers. Additionally, the boundaries of schizophrenia are imprecisely demarcated from schizoaffective disorder and other diagnostic categories and its special emphasis on Schneiderian "first-rank" symptoms appears misplaced. Changes in the definition of schizophrenia in DSM-5 seek to address these shortcomings and incorporate the new information about the nature of the disorder accumulated over the past two decades. Specific changes in its definition include elimination of the classic subtypes, addition of unique psychopathological dimensions, clarification of cross-sectional and longitudinal course specifiers, elimination of special treatment of Schneiderian 'first-rank symptoms', better delineation of schizophrenia from schizoaffective disorder, and clarification of the relationship of schizophrenia to catatonia. These changes should improve diagnosis and characterization of individuals with schizophrenia and facilitate measurement-based treatment and concurrently provide a more useful platform for research that will elucidate its nature and permit a more precise future delineation of the 'schizophrenias'.

1. Introduction

The definition of schizophrenia has evolved through the six editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM-I, DSM-II, DSM-III, DSM-III-R, DSM-IV, and DSM-IV-TR; American Psychiatric Association, 1952, 1968, 1980, 1987, 1994,

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http://dx.doi.org/10.1016/j.schres.2013.05.028

2000). Three major roots are reflected in all definitions: a) the Kraepelinian emphasis on avolition, chronicity and poor outcome (Kraepelin, 1971); b) incorporation of the Bleulerian view that dissociative pathology is primary and fundamental and accent on negative symptoms (Bleuler, 1950); and c) the Schneiderian stress on reality distortion or positive symptoms (Schneider, 1959). The relative emphasis paid to these three perspectives has, however, varied over time (Andreasen, 1989; Bruijnzeel and Tandon, 2011; Keller et al., 2011), with the Bleulerian accent on negative symptoms and interpersonal pathology leading to a broad definition reflected most strongly in DSM-I and DSM-II. This led to a marked discrepancy between the diagnosis of schizophrenia in the USA versus the UK and perhaps much of Europe (Kendell et al., 1971; Wing and Nixon, 1975). In reaction to these inconsistencies, the operationalized criteria of DSM-III narrowed the definition by requiring chronicity and poor function and highlighting Schneiderian first-rank symptoms in an effort to define a more homogeneous disorder. From DSM-III through DSM-III-R to DSM-IV, there has been a modest expansion of the criteria of schizophrenia with the elimination of the requirement that onset occur before age 45 and inclusion of negative symptoms.

The DSM-IV construct of schizophrenia has been found to be clinically useful, has high reliability, and fair validity (Tandon et al., 2009). Its validity (Robins and Guze, 1970; Kendell and Jablensky, 2003) is supported by a range of antecedent (familial aggregation, environmental risk factors), and predictive (diagnostic stability, course of illness, treatment response) validators (Bromet et al., 2011; Korver-Nieberg et al., 2011), although concurrent validation (e.g., biological markers) is less robust (Kapur et al., 2012). DSM-IV schizophrenia has very high diagnostic stability, with 80–90% of individuals receiving an initial diagnosis of schizophrenia retaining that diagnosis at 1–10 years (Haahr et al., 2008; Bromet et al., 2011). Therefore, the core of the DSM-IV diagnostic criteria for schizophrenia will be retained in DSM-5, with modest changes proposed principally for the purpose of simplicity and incorporation of new information about the nature of the disorder accumulated over the past two decades (Tandon and Carpenter, 2012). Most persons who did (or did not) meet the DSM-IV criteria for schizophrenia should continue to meet (or not meet) the DSM-5 criteria. The heterogeneity of schizophrenia is, however, poorly explained by the DSM-IV subtypes, necessitating a change in approach (Tandon, 2012).

In this paper, we describe the DSM-5 approach to the diagnosis and description of schizophrenia and discuss the rationale for changes made from DSM-IV. As with other disorders in DSM-5 (Regier et al., 2009), a conservative approach towards revisions was utilized. Changes were made only if they substantially improved clinical utility or enhanced validity and increased concordance with the International Classification of Diseases (ICD, World Health Organization, 1992; Gaebel et al., 2013) definition of schizophrenia.

2. Diagnostic criteria of schizophrenia in DSM-5

The six criteria (A–F) for the diagnosis of schizophrenia in DSM-IV will be retained with modest changes proposed in criteria A and F (Table 1). No changes are made in criteria B–E, although modifications in the definitions of schizoaffective disorder (see Malaspina et al., this issue) and major mood disorders (Fawcett, 2013; Maj, 2013) will affect their boundaries with schizophrenia (criterion D). Significant mood symptoms will now have to be present for the majority of the duration of the psychotic illness in order for schizoaffective disorder to be diagnosed instead of schizophrenia (Carpenter and Tandon, 2013). The rationale for changes made in criteria A (characteristic symptoms) and F (clarification of boundary with developmental disorders) is summarized below.

2.1. Characteristic symptoms (Criterion A)

The five characteristic symptoms for the diagnosis of schizophrenia with the requirement that at least two of these symptoms be present for a month will be retained in DSM-5 (Table 1). Three changes are made and include the elimination of the special treatment of bizarre delusions and Schneiderian "first-rank" hallucinations, clarification of the definition of negative symptoms, and the addition of a requirement that at least one of the minimum two requisite characteristic symptoms must be delusions, hallucinations, or disorganized speech.

2.2. Elimination of special treatment of bizarre delusions and special hallucinations

In DSM-IV, only one characteristic symptom is required if it is a bizarre delusion or a special (Schneiderian first-rank) hallucination. The note asserting this special treatment is deleted in DSM-5 since these symptoms have not been found to have diagnostic specificity and these 'positive symptoms' will be treated like any other with regard to their diagnostic implication. Thus, as with other characteristic symptoms of psychosis, two criterion A symptoms would need to be present for a diagnosis of schizophrenia even if one of them is a bizarre delusion or a specific type of hallucination.

This revision represents a continuation of the change begun in DSM-IV (Flaum et al., 1998). In DSM-III, Schneiderian first-rank symptoms received particular prominence in the diagnosis of schizophrenia; instead of two characteristic symptoms required to meet criterion A for schizophrenia, just one characteristic symptom was required if that symptom happened to be a Schneiderian first-rank symptom. This special treatment of Schneiderian first-rank symptoms (which overlap with the construct of bizarre delusions and "special" hallucinations) led to criterion A becoming excessively complex and redundant in DSM-III-R. In DSM-III-R, there were three separate criteria A (A1 [two or more characteristic symptoms], A2 [bizarre delusions], and A3 [special types of hallucinations — Schneiderian first-rank hallucinations]) — the DSM-IV review found this to be unnecessarily complicated (Flaum et al., 1998). In DSM-IV, it was decided to retain criterion A2 while folding the A3 criterion into A2. In DSM-IV, criterion A2 is stated as a criterion A note that reads: "Only one Criterion A symptom is required if delusions are bizarre or hallucinations consist of a voice keeping up a running commentary on the person's thoughts, or two or more voices conversing with each other." This is the note being deleted in DSM-5.

The diagnostic specificity of Schneiderian first-rank symptoms for schizophrenia has long been questioned (Carpenter et al., 1973) and a number of studies since the publication of DSM-IV in 1994 have called into question the continued emphasis on bizarre delusions and special hallucinations (Tannenberg-Karant et al., 1995; Crichton, 1996; Peralta and Cuesta, 1999; Jansson and Parnas, 2007; Nordgaard et al., 2008; Ihara et al., 2009). First, the presence of first-rank symptoms in a mixed group of psychotic disorders is found to have no prognostic relevance or association with a family history of schizophrenia. Second, the reliability of distinguishing bizarre from non-bizarre delusions has been found to be poor (Flaum et al., 1991; Mullen, 2003; Bell et al., 2006; Cermolacce, Sass and Parnas, 2010).

The change will have a very limited impact on caseness, since less than 2% of persons diagnosed with DSM-IV schizophrenia receive a diagnosis of schizophrenia based on a single bizarre delusion or hallucination (Table 2). In addition to improved criterion validity, this change will simplify criterion A for schizophrenia and thereby enhance clinical utility.

2.3. Clarification of negative symptoms in criterion A

Avolition and diminished emotional expression have been found to describe two distinguishable aspects of negative symptoms in

Please cite this article as: Tandon, R., et al., Definition and description of schizophrenia in the DSM-5, Schizophr. Res. (2013), http://dx.doi.org/10.1016/j.schres.2013.05.028

Table 1
Schizophrenia in DSM-5. Changes in diagnostic criteria from DSM-IV.

DSM-IV criteria for schizophrenia	Proposed criteria for schizophrenia in DSM-5
Criterion A. Characteristic symptoms Two (or more) of the following, each present for a significant portion of time during a 1-month period (or less if successfully treated) (1) Delusions (2) Hallucinations (3) Disorganized speech (4) Grossly disorganized or catatonic behavior (5) Negative symptoms, i.e., affective flattening, alogia, or avolition	Criterion A. Characteristic symptoms: (Minor change) Two (or more) of the following, each present for a significant portion of time during a 1-month period (or less if successfully treated). At least one of these should include 1–3 1. Delusions 2. Hallucinations 3. Disorganized speech 4. Grossly disorganized or catatonic behavior 5. Negative symptoms (i.e., diminished emotional expression or avolition)
Note: Only one Criterion A symptom is required if delusions are bizarre or hallucinations consist of a voice keeping up a running commentary on the person's behavior or thoughts, or two or more voices conversing with each other	Note: Deleted
Criterion B. Social/occupational dysfunction: For a significant portion of the time since the onset of the disturbance, one or more major areas of functioning, such as work, interpersonal relations, or self-care, are markedly below the level achieved prior to the onset (or when the onset is in childhood or adolescence, failure to achieve expected level of interpersonal, academic, or occupational achievement).	Criterion B. Social/occupational dysfunction (No change)
Criterion C. Duration: Continuous signs of the disturbance persist for at least 6 months. This 6-month period must include at least 1 month of symptoms (or less if successfully treated) that meet Criterion A (i.e., active-phase symptoms) and may include periods of prodromal or residual symptoms. During these prodromal or residual periods, the signs of the disturbance may be manifested by only negative symptoms or by two or more symptoms listed in Criterion A present in an attenuated form (e.g., odd beliefs, unusual perceptual experiences).	Criterion C. Duration of 6 months (No change)
Criterion D. Schizoaffective and major mood disorder exclusion Schizoaffective disorder and depressive or bipolar disorder with psychotic features have been ruled out because either (1) no major depressive or manic episodes have occurred concurrently with the active phase symptoms; or (2) if mood episodes have occurred during active-phase symptoms, their total duration has been brief relative to the duration of the active and residual periods.	Criterion D. Schizoaffective and mood disorder exclusion No change
Criterion E. Substance/general mood condition exclusion Substance/general medical condition exclusion: The disturbance is not attributed to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition.	Criterion E. Substance/general mood condition exclusion No change
Criterion F. Relationship to Global Developmental Delay or Autism Spectrum Disorder: If there is a history of autism spectrum disorder, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations are also present for at least 1 month (or less if successfully treated).	Criterion F. Relationship to Global Developmental Delay or Autism Spectrum Disorder — Minor Change If there is a history of autism spectrum disorder or other communication disorder of childhood onset, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations are also present for at least 1 month (or less if successfully treated).

schizophrenia (Blanchard and Cohen, 2006; Kirkpatrick et al., 2006; Messinger et al., 2011; Liemburg et al., in press; Strauss et al., in press) and diminished emotional expression better describes the nature of affective abnormality in schizophrenia than affective flattening. Therefore, the fifth characteristic symptom in criterion A will now be restated as *negative symptoms*, i.e., *diminished emotional expression* or *avolition* (Table 1). This change is more in the nature of clarification and more accurate clinical description and should have no impact on caseness.

2.4. Requirement that at least one of two required symptoms to meet criterion A be delusions, hallucinations, or disorganized speech.

Schizophrenia is conceptualized as a psychotic disorder and this change simply requires psychotic pathology in the diagnosis. Delusions, hallucinations, and disorganized speech are core "positive symptoms" diagnosed with high reliability and might reasonably be considered necessary for a reliable diagnosis of schizophrenia (Black and Boffeli, 1990; David and Appleby, 1992). This should have little

Table 2
DSM-IV Schizophrenia: Proportion of patients with single bizarre delusion or "first-rank Schneiderian" hallucination and proportion of patients without delusions, hallucinations, or disorganized speech.

Database	DSM-IV schizophrenia Sample size	Patients meeting Criterion A by virtue of single bizarre delusion or "Schneiderian first-rank" hallucination Number and (%)	Patients without delusion, hallucination, or disorganized speech Number and (%)
Peralta and Cuesta (1999) and personal communication from Peralta, 2011	358	5 (1.4%)	7 (1.9%)
Allardyce et al. (2007) and personal communication from van Os, 2011	113	0 (0.0%)	4 (3.5%)
Shinn et al. (2013) McLean data	325*	7 (2.1%)	–**
Shinn et al. (2013) Vanderbilt data	201*	1 (0.5%)	–**
Tandon et al. (2013)	221	1 (0.4%)	3 (1.4%)

* Sample included schizophrenia spectrum.
** Not studied.

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influence on caseness as the vast majority of individuals diagnosed with DSM-IV schizophrenia have at least one of these "positive" symptoms (Table 2).

2.5. Should cognitive deficits be added as a characteristic symptom in Criterion A — Change considered but not made

Cognitive deficits are a prominent aspect of the psychopathology of schizophrenia and research over the past two decades has substantially elucidated the nature and significant relevance of cognitive impairments in schizophrenia. The addition of cognitive impairment as a diagnostic criterion for schizophrenia (Keefe, 2008; Tandon and Maj, 2008) was carefully considered. No change was made, however, because cognitive deficits have not been found to sufficiently distinguish between schizophrenia and several other 'boundary' disorders (Depp et al., 2007; Reichenberg et al., 2009) and the impact of such a change on caseness is unknown. While the nature of cognitive impairment at the time of diagnosis may not be discriminating of schizophrenia, the developmental pattern of declining cognition over the years prior to onset of psychosis may be relevant for differential diagnosis. However, insufficient comparative data across the relevant disorders is available at this time to support a change. Please see Barch et al. (this issue) for a detailed discussion of why this change was not made in DSM-5.

2.6. Clarification of criterion F (Relationship to a developmental disorder)

In DSM-IV, if there is a history of autistic disorder or pervasive developmental disorder, the additional diagnosis of schizophrenia can only be made if prominent delusions or hallucinations are also present. There are other communication disorders of childhood onset, however, where disorganized speech and negative symptoms can be part of the presentation (Dyck et al., 2011), necessitating the same specification. Consequently, criterion F in DSM-5 is restated as "If there is a history of autistic disorder, other pervasive developmental disorder, *or other communication disorder of childhood onset*, the additional diagnosis of schizophrenia is made only if prominent hallucinations or delusions are also present for at least a month (or less if successfully treated)" (Table 1).

3. Characterizing the heterogeneity of schizophrenia: Elimination of schizophrenia subtypes and addition of psychopathological dimensions

Since the inception of the concept of schizophrenia over a century ago, the heterogeneity of schizophrenia has been nosologically explained in terms of distinct clinical subtypes — disorganized (hebephrenic), catatonic, paranoid, and undifferentiated. Although these subtypes were recognized as having poor reliability, low stability over time, and negligible prognostic value during the DSM-IV process (McGlashan and Fenton, 1994), it was decided to retain these subtypes "because of the substantial clinical tradition" (Flaum et al., 1998). More studies since 1994 have called into question the continued utilization of the classic subtypes of schizophrenia. Similar to findings of prior studies (Carpenter et al., 1973; Strauss et al., 1973; Carpenter and Stephens, 1979), cluster analytic and other approaches to identify taxonic schizophrenia subtypes consistently fail to identify the DSM-IV subtypes (Lykouras et al., 2001; Helmes and Landmark, 2003; Peralta and Cuesta, 2003; Picardi et al., 2012). A review of 24 publications describing 38 analyses of 28 participant cohorts found no support for classic schizophrenia subtypes (Linscott et al., 2010).

The absence of utility of the DSM-IV subtypes in explaining the heterogeneity of schizophrenia is reflected in the fact that less than 5% of research publications on schizophrenia compare different subtypes with regard to the variables evaluated in that study (Braff et al., in press). The few studies that have compared DSM-IV subtypes on a range of validators suggest the absence of meaningful differences (Table 3). Subtypes continue to be found to exhibit poor diagnostic stability over time, do not cluster in families, and have limited prognostic value (Cardno et al., 1998; Jablensky, 2006; Peralta and Cuesta, 2007; Korver-Nieberg et al., 2011).

Recognizing that patients often present with more than one subtype and noting the very infrequent use of the disorganized and catatonic subtypes, DSM-IV introduced a hierarchical structure to indicate which subtype should take precedence. According to DSM-IV, the catatonic subtype was to be diagnosed even when the person had symptoms of the paranoid and disorganized subtypes; the disorganized subtype was to be diagnosed even when the person had symptoms of the paranoid subtype; and the undifferentiated subtype

Table 3
Comparison of DSM-IV schizophrenia subtypes on antecedent, concurrent, and predictive validators.

Validator	Study	Description	Results and conclusion
Antecedent			
Familial aggregation	Cardno et al. (1998)	109 sibling pairs with DSM-IV schizophrenia	No significant within-pair association for any of the DSM-IV subtypes
	Peralta and Cuesta (2007)	358 DSM-IV Schizophrenia probands. 69 of 1472 first-degree relatives with DSM-IV schizophrenia	No relationship of DSM-IV subtype with familial liability.
Socio-demographic	Korver-Nieberg et al. (2011)	731 DSM-IV Schizophrenia patients from GROUP project 82% paranoid, 9% undifferentiated, 6% disorganized, 3% residual. Life chart schedule	No significant differences between subtypes with regard to age, gender, and years of education.
Environmental risk factors	Korver-Nieberg et al. (2011)	As above	No differences between subtypes with regard to cannabis abuse
Prior psychiatric history	Korver-Nieberg et al. (2011)	As above	No differences between subtypes with regard to premorbid function
Concurrent			
Cognitive	Korver-Nieberg et al. (2011)	As above. WAIS-III short version	No differences between subtypes on IQ, processing speed, working memory, and problem-solving.
Biological markers	Sallet et al. (2003)	40 DSM-IV Schizophrenia	No differences between subtypes with regard to ventricular enlargement or cerebral asymmetry
Clinical	No studies identified	–	–
Predictive			
Diagnostic stability	Helmes and Landmark (2003)	102 DSM-IV Schizophrenia	All subtypes are unstable over 10-year duration
Course of illness	Korver-Nieberg et al. (2011)	As above	No differences between subtypes with regard to course of illness
Response to treatment	No studies identified	–	–

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was to be diagnosed only when the person failed to have symptoms of the catatonic, disorganized, or paranoid subtypes. Despite the introduction of a subtyping hierarchy in DSM-IV with the catatonic and disorganized subtypes at the apex of the hierarchy, these subtypes are still very rarely diagnosed. Administrative psychiatric practice data in the USA reveal that the catatonic subtype is applied to just 1% of all Medicaid recipients and 2% of general outpatients with a diagnosis of schizophrenia. Similarly, the disorganized subtype is applied to 2% of Medicaid recipients and 3% of general outpatients with a diagnosis of schizophrenia. In a large sample of 19,000 hospitalized psychiatric patients in China over a 10-year period with a diagnosis of schizophrenia, the catatonic subtype was diagnosed in 0.2% of patients and the disorganized subtype was applied in 1.0% of patients; in that sample, 91% of the schizophrenia patients received a diagnosis of the *undifferentiated* subtype (Xu, 2011).

In summary, the classic DSM-IV subtypes of schizophrenia provide a poor description of the heterogeneity of schizophrenia, have low diagnostic stability, do not exhibit distinctive patterns of treatment response or longitudinal course, and are not heritable. Except for the paranoid and undifferentiated subtypes, other subtypes are rarely diagnosed. As a result, these subtypes of schizophrenia were eliminated from DSM-5. In contrast to subtyping, the use of psychopathological dimensions in DSM-5 should substantially improve the ability to describe the heterogeneity of schizophrenia in a manner that is more valid and clinically useful (see Barch et al. in this issue for details) and facilitate measurement-based treatment (Tandon et al., 2006; Jager et al., 2012).

4. Specifiers of course of illness in DSM-5

There is significant variability in the course of schizophrenia (Huber et al., 1979) and a wide range of factors need to be considered in order to characterize it. Gaebel (2004) reviewed general principles of course characteristics in mental disorders with an emphasis on affective disorders and schizophrenia, distinguishing temporal macro-aspects (over months to years in course-type, inter-episode duration, episode frequency, course regularities, and long-term outcome) from micro-aspects (days to weeks in illness onset, episode duration, and short-term outcome). In order to define clinically relevant course variants of schizophrenia spectrum and other psychotic disorders, one needs to be able to characterize and code both the current state (cross-sectional specifier) as well as the longitudinal pattern of the illness (longitudinal specifier) in the individual patient. 'Cross-sectional' course specifiers address the issue of whether the patient fully or partially meets active-phase criteria for schizophrenia and is presently in episode, in partial or complete remission (Andreasen et al., 2004; Leucht and Lasser, 2006; van Os et al., 2006), or in a continuous state of the disorder (Table 4). Additionally, one can note whether the patient with an episodic course type is experiencing the first or later episode of the illness (Table 4). Although described as cross-sectional, these specifiers require a minimum period of observation in order to be coded. In contrast, longitudinal course specifiers describe the longitudinal pattern of the illness in an individual patient, characterizing it as episodic or continuous.

The distinction of course specifiers according to their cross-sectional (state) and longitudinal character allows the clinician to document both the current status and the previous course up to the present observation period. The following set of generic course specifiers for Schizophrenia Spectrum and Other Psychotic Disorders will be included in DSM-5 (Tandon and Carpenter, 2013). The minimum observation period is one year for describing the longitudinal course:

1. First episode, currently in acute episode.
   This applies to the first manifestation of illness that meets all of the diagnostic criteria of schizophrenia. An acute episode is a time period in which characteristic symptoms (criterion A) are present.
2. First episode, currently in partial remission.
   Partial remission is a time period during which an improvement after a previous episode is maintained and in which the defining criteria of the disorder are only partially fulfilled.
3. First episode, currently in full remission.
   Full remission is a period of time after a previous episode during which no disorder-specific symptoms are present.
4. Multiple episodes, currently in acute episode.
   Multiple episodes may be determined after a minimum of two episodes, i.e., after a first episode, a remission and minimum one relapse. An acute episode is defined as above.
5. Multiple episodes, currently in partial remission.
   Multiple episodes may be determined after a minimum of two episodes, i.e., after a first episode, a remission and minimum one relapse. Partial remission is defined as above.
6. Multiple episodes, currently in full remission.
   Multiple episodes may be determined after a minimum of two episodes, i.e., after a first episode, a remission and minimum one relapse. Complete remission is defined as above.
7. Continuous.
   In order to categorize an individual as having a continuous course, symptoms fulfilling the diagnostic symptom criteria of the disorder must be present for the majority of the illness course with subthreshold symptom periods being brief relative to the overall course.
8. Unspecified.
   Available information is inadequate to characterize course.

The applicability of these specifiers across other disorders in the Section on Schizophrenia Spectrum and Other Psychotic Disorders is described in Table 5.

Table 4
Common definitions for generic terms of course characteristics in DSM-5.

Term	Definition
Episode	An episode is a specified duration of time in which the patient has developed symptoms that meet the symptomatic criteria of a given mental disorder. Note that these – depending on the type of mental disorder – may imply a certain number of symptoms, or a specified severity or frequency of symptoms. Episodes may be further differentiated into a Single (First) Episode or recurrence or relapse of Multiple Episodes if appropriate.
First episode	First manifestation of a disorder meeting diagnostic symptom and time criteria. (Single episode: Episode that occurs once in a lifetime, has not been preceded by another episode, and ends with full or partial remission. Can only be diagnosed retrospectively.)
Multiple episodes	May be determined after minimum 2 episodes, i.e., after a first episode and minimum one remission/relapse, or after multiple episodes. May be further specified as with partial or full inter-episode remission.
Remission	Remission occurs when disorder-specific symptoms have not been present for a period of time. May be further specified as partial or full.
Partial remission	Partial remission is a specified time period during which an improvement of a defined magnitude after a previous episode is maintained and in which the defining criteria of a given mental disorder are only partially fulfilled.
Full remission	Full remission is a specified period of time after a previous episode during which no disorder-specific symptoms are present.
Continuous	Symptoms fulfilling the diagnostic symptom criteria of a disorder are remaining for the majority of the illness course with subthreshold symptom periods being very brief relative to the overall course.

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Table 5
Possible coding of course specifiers across schizophrenia spectrum and other psychotic disorders in DSM-5.

ICD-11 Code terms	B 00* Schizotypal personality disorder	B 01* Delusional disorder	B 02* Brief psychotic disorder	B 03* Substance-induced psychotic disorder	B 04* Psychotic disorder associated with another medical condition	B 05* Catatonic disorder associated with another medical condition	B 06 * Schizophreniform disorder	B 07* Schizoaffective disorder	B 08* Schizophrenia	B 09* Psychotic disorder Not elsewhere classified	B 10* Catatonic disorder not otherwise specified
0 First episode, currently in acute episode	N/A	X	X	X	X	X	X	X	X	X	X
1 First episode, currently in partial remission	N/A	X	X	X	X	X	X	X	X	X	X
2 First episode, currently in full remission	N/A	X	X	X	X	X	X	X	X	X	X
3 Multiple episodes, currently in acute episode	N/A	X	X	X	X	X	X	X	X	X	X
4 Multiple episodes, currently in partial remission	N/A	X	X	X	X	X	X	X	X	X	X
5 Multiple episodes, currently in full remission	N/A	X	X	X	X	X	X	X	X	X	X
6 Continuous	X	X	N/A	X	X	X	N/A	X	X	X	X
7 Unspecified	X	X	X	X	X	X	X	X	X	x	x

X = applicable; N/A = not applicable.
* Will likely be coded in ICD-11.

5. Greater harmonization with ICD-11 in the definition of schizophrenia

Although the gap between the DSM and ICD definitions of schizophrenia narrowed from ICD-8/DSM II to the current ICD-10/DSM-IV, some significant differences remained. Whereas DSM-IV mandated a total duration of a minimum of 6 months, ICD-10 required a minimum duration of 1 month. In contrast to the DSM-IV requirement for social/occupational dysfunction, ICD-10 had no such requisite. Although both DSM-IV and ICD-10 provided special treatment to Schneiderian first-rank symptoms, ICD-10 placed a greater emphasis on them than DSM-IV. There were differences between the subtypes and course specifiers utilized in DSM-IV and those employed in ICD-10. A significant effort was made to improve concordance between the DSM and ICD definitions of schizophrenia and it appears that there will be much greater harmonization (Gaebel et al., 2013; Tandon and Carpenter, 2013). Although ICD-11 has not yet been finalized, current proposals incorporate all the changes made from DSM-IV to DSM-5, including the deletion of subtypes, addition of dimensions, elimination of the special treatment of Schneiderian first-rank symptoms, treatment of catatonia as a specifier (Heckers et al., 2010), and use of the same set of course specifiers (Gaebel, 2012). The differences between the two systems with regard to minimum duration of illness (6 months in DSM versus 1 month in ICD) and inclusion of impairment as a criterion of illness (present in DSM but absent in ICD) are likely to remain.

6. Conclusions

While the shortcomings of our current diagnostic approach to schizophrenia are presently easy to enumerate, it is rather more difficult to come up with an approach that is more valid, more clinically useful, and more reliable all at the same time. Starting with DSM-III, both DSM and ICD systems have promoted better diagnostic agreement (reliability) and thereby improved diagnostic communication and consistency of health statistics reporting across the world. The validity of our construct of schizophrenia has, however, been increasingly drawn into question (Hyman, 2010; Insel, 2010). There was an extensive review of schizophrenia against a range of validating criteria, including shared genetic risk factors and familiality, environmental risk factors, gene–environment interactions, neural substrates, biomarkers, temperamental antecedents, cognitive and emotional processing abnormalities, comorbidity, illness course, and treatment response (Andrews et al., 2009; Carpenter et al., 2009; Kupfer and Regier, 2011); there was insufficient evidence of etiology and pathophysiology to utilize neurobiological measures in the diagnosis of schizophrenia at this time. Based on the absence of clear boundaries around the condition, and the multiplicity of implicated etiological factors and pathophysiological mechanisms, schizophrenia is likely to be a conglomerate of multiple disorders. Dissection of its heterogeneity is proving to be very difficult, however, and the new dimensions approach appears to be the most promising method towards resolving this disease admixture. While an etiopathophysiological nosology of schizophrenia and related psychotic disorders is currently elusive, DSM-5 should provide a more useful platform than the current DSM-IV in integrating emerging genetic and other neurobiological information about these conditions.

While maintaining high reliability and improving validity are important considerations, the principal objective of the DSM system is clinical utility. Any proposed changes must primarily facilitate clinical assessment and treatment, must be implementable in routine clinical settings, and must provide meaningful distinctions between different kinds of mental illness. The provision of dimensional assessments and refinement of course specifiers should enable measurement-based treatment and more precise clinical description. Additionally, the DSM system is designed to assist research aimed at better understanding etiology and pathogenesis. The addition of psychopathological dimensions across

Please cite this article as: Tandon, R., et al., Definition and description of schizophrenia in the DSM-5, Schizophr. Res. (2013), http://dx.doi.org/10.1016/j.schres.2013.05.028

various psychotic disorders in DSM-5 should allow inter-digitation with the Research Domain Criteria initiative (Insel et al., 2010). The changes will also improve concordance with ICD-11 (based on the most recent draft version of ICD-11). The revisions in DSM-5 criteria for schizophrenia should make them more useful to patients, clinicians, researchers, and society at large.

Role of funding source

The authors do not have to declare any funding support for this manuscript.

Contributors

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.

Acknowledgment

The authors do not have to declare any funding or administrative support for this manuscript.

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Please cite this article as: Tandon, R., et al., Definition and description of schizophrenia in the DSM-5, Schizophr. Res. (2013), http://dx.doi.org/10.1016/j.schres.2013.05.028

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Please cite this article as: Tandon, R., et al., Definition and description of schizophrenia in the DSM-5, Schizophr. Res. (2013), http://dx.doi.org/10.1016/j.schres.2013.05.028