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Review

Structure of the psychotic disorders classification in DSM 5

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ABSTRACT

Schizophrenia spectrum disorders attract great interest among clinicians, researchers, and the lay public. While the diagnostic features of schizophrenia have remained unchanged for more than 100 years, the mechanism of illness has remained elusive. There is increasing evidence that the categorical diagnosis of schizophrenia and other psychotic disorders contributes to this lack of progress. The 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) continues the categorical classification of psychiatric disorders since the research needed to establish a new nosology of equal or greater validity is lacking. However, even within a categorical system, the DSM-5 aims to capture the underlying dimensional structure of psychosis. The domains of psychopathology that define psychotic disorders are presented not simply as features of schizophrenia. The level, the number, and the duration of psychotic signs and symptoms are used to demarcate psychotic disorders from each other. Finally, the categorical assessment is complemented with a dimensional assessment of psychosis that allows for more specific and individualized assessment of patients. The structure of psychosis as outlined in the DSM-5 may serve as a stepping-stone towards a more valid classification system, as we await new data to redefine psychotic disorders.

1. Introduction

Schizophrenia is a classic psychiatric diagnosis. The defining features have remained unchanged for more than 100 years (Heckers, 2011). However, emphasis has shifted from avolition and dissociation towards reality distortion (Fischer and Carpenter, 2009). The diagnosis attracts great interest among clinicians, researchers, and the lay public. Schizophrenia is associated with significant bias and stigma, leading some to ask for the removal of the word from diagnostic manuals (Umehara et al., 2011). But even those who prefer a different name do not doubt that schizophrenia is real (Lieberman and First, 2007).

Despite sustained effort, the mechanism of schizophrenia has remained elusive. There is increasing evidence that the categorical diagnosis of schizophrenia and other psychotic disorders contributes to this lack of progress (Heckers, 2008). The current diagnoses do not accurately capture the considerable variability of symptom profile, response to treatment, and most importantly, social function and outcome. As a result, there is increasing pressure to change the structure of psychiatric nosology, in order to accelerate better treatment, prevention, and ultimately cure (Cuthbert and Insel, 2010; Insel, 2010).

The 5th edition of the DSM does not represent such a paradigm shift. While there was considerable hope to replace the categorical diagnosis of psychiatric disorders, the research needed to establish a new nosology of equal or greater validity is lacking (Hyman, 2007; Kupfer and Regier, 2011). So far, the mechanistic models of brain and behavior provided by systems and basic neuroscience research have not been adequately tested in clinical settings. Nonetheless, despite the inherent

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conservative bias, the DSM-5 chapter "Schizophrenia Spectrum and Other Psychotic Disorders" (referred to as *Schizophrenia Spectrum* for short in the rest of this article) departs from the previous edition in several respects. Even within the established categorical system, we want to capture the underlying dimensional structure of psychosis. To that effect, we employ the terms domains, gradients, and dimensions. There are five domains of psychopathology that define psychotic disorders. The level of psychosis, the number of symptoms, and the duration of psychosis are the gradients that have been used to demarcate psychotic disorders from each other and continue to be used for the same purpose in DSM-5. The dimensions refer to a structure of psychosis that is not simply categorical but allows for much greater flexibility in the assessment of psychopathology, including aspects that are not considered as defining domains of psychosis.

Here, we describe the structure of the chapter on "Schizophrenia Spectrum and Other Psychotic Disorders" in the DSM-5. We review the domains of psychopathology that define psychosis, clarify the status of catatonic features, and describe the greater emphasis on dimensions incorporated into the DSM-5.

2. Domains of psychopathology

The most visible change in the schizophrenia spectrum chapter is the less prominent position of schizophrenia. DSM-IV puts schizophrenia front and center. All the classic features of psychotic disorders are introduced in the section on schizophrenia and are not presented again in the subsequent description of other psychotic disorders. This reaffirms schizophrenia as the paradigmatic disorder associated with hallucinations, delusions, disorganization of speech, disorganized behavior, and negative symptoms. The structure of the DSM-IV chapter creates the impression that the domains of psychosis are defined by schizophrenia and that all patients presenting with the signs and symptoms of psychosis should be evaluated first for schizophrenia. However, the proper diagnosis of a psychotic person includes a detailed exploration of all domains of psychopathology as part of a comprehensive mental status examination and with a review of the lifetime presentation of psychotic features.

The DSM-5 chapter begins with a review of the domains of psychopathology that have historically been used for the categorical assessment of schizophrenia spectrum disorders. There are five such domains: hallucinations, delusions, disorganized thought (speech), disorganized or abnormal motor behavior (including catatonia), and negative symptoms. We have made subtle changes to nomenclature and concepts. One such change is the definition of delusions as "fixed beliefs that are not amenable to change in light of conflicting evidence," not as "erroneous beliefs" (DSM-IV-TR) since it is often difficult, if not impossible, to establish the non-veridical nature of a belief (Spitzer, 1990; Coltheart et al., 2011). We hold on to the concept of a bizarre delusion, but not to a special status of such delusions in the differential diagnosis of delusional disorder and schizophrenia (Cermolacce et al., 2010) (for further details, see Tandon et al., under review). Another change is a greater focus on abnormal motor behavior and catatonia within the domain of disorganized behavior (for further details, see Bustillo et al., under review). The different psychiatric and medical conditions associated with catatonia can now be diagnosed when at least three of 12 signs and symptoms of catatonia are present (Peralta et al., 2010).

Two negative symptoms have been highlighted as particularly prominent: diminished emotional expression and avolition (Blanchard and Cohen, 2006; Messinger et al., 2011; Kring et al., 2013). This reflects emerging evidence that the symptoms previously grouped together as negative symptoms are separable at the level of clinical description, laboratory assessment of behavior, and studies of neural circuitry (Foussias and Remington, 2008; Strauss et al., 2011; Der-Avakian and Markou, 2012).

3. Gradients of psychosis

The signs and symptoms of psychosis are on a continuum with normal mental states (Allardyce et al., 2007). While some presentations are unequivocally beyond the most liberal spectrum of mental health, many presentations are subtle and the demarcation of the psychotic from the normal mental state is difficult. Assessment for the presence of psychosis should consider whether beliefs are flexible; whether perceptions are linked to an external stimulus; whether thoughts are logical, coherent, and goal directed; whether the individual engages readily in normal verbal communication and motor acts; and whether affect is modulated and of full range. If any of these assessments raise concern, further evaluation for a psychotic disorder is warranted.

The severity of a psychotic disorder can be defined by the level, number, and duration of psychotic signs and symptoms. The diagnosis of more severe psychotic disorders should only be made after time limited or less severe conditions have been excluded. This process demands patience, since final clarification often takes months, sometimes years. It also requires a thoughtful search for etiological factors that can explain the condition and, at times, may provide the opportunity for treatment and prevention (e.g., drug use and medical illnesses).

The schizophrenia spectrum chapter guides the diagnostician along the severity gradients of level, number, and duration of symptoms. The best estimate diagnosis is the one that includes all of the clinical features at the time of the interview, taking into consideration any medical condition that may explain the psychosis and a review of the lifetime prevalence of psychotic and mood symptoms. This remains a considerable challenge, but the reliability of the revised criteria for schizophrenia and schizoaffective disorder included in the DSM-5 proved to be acceptable (Regier et al., 2012).

Schizotypal personality disorder is recognized in the chapter as below the threshold required for the diagnosis of a psychotic disorder, whereas the attenuated psychosis syndrome is presented in section III of the DSM-5, requiring further studies before being considered for a new diagnostic category in the main text. Schizotypal personality disorder is part of the schizophrenia spectrum (Siever and Davis, 2004), but the abnormalities of perceptual experience, belief, and affect are below the threshold for the diagnosis of any psychotic disorder. The attenuated psychosis syndrome refers to the presence of psychotic symptoms in attenuated forms (e.g., delusional ideas, perceptual abnormalities, disorganized speech) that occur with relatively intact reality testing, but with sufficient severity and/or frequency to warrant clinical attention (Tandon and Carpenter, 2012) (for further details, see Tsuang et al., under review).

Two conditions are defined by abnormalities limited to just one domain of psychosis: delusional disorder and catatonia. In tandem with the removal of bizarre delusion as a pathognomonic sign of schizophrenia, bizarre delusions are no longer considered an exclusion criterion for the diagnosis of delusional disorder. While some have argued that catatonia should be considered an independent diagnostic class (Fink and Taylor, 2008), we retained catatonia as one of the five domains that define psychosis (Heckers et al., 2010). However, we removed catatonia as a subtype of schizophrenia, significantly broadened the use of the catatonia specifier across the manual, and recognized catatonia as a diagnosis for cases where the medical and psychiatric etiology is unknown (for further details, see Bustillo et al., under review).

The chapter then defines two time-limited psychotic disorders: brief psychotic disorder and schizophreniform disorder. Brief psychotic disorder lasts more than 1 day and remits by 1 month. The clinical features of schizophreniform disorder are equivalent to schizophrenia, but the duration is less than 6 months.

Two conditions are considered the most severe psychotic disorders since they last for at least 1 month, involve multiple domains of psychopathology, and are not secondary to another condition: schizophrenia

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and schizoaffective disorder (for further details, see Tandon et al., under review; Malaspina et al., in press). They require the presence of two or more of the five symptoms that define schizophrenia for at least one month (criterion A). A crucial difference between schizophrenia and all other psychotic disorders, including the closely related schizophreniform and schizoaffective disorders, is a decrease in the level of functioning below the level achieved prior to the onset of psychosis (criterion B for schizophrenia).

The manual also defines disorders that are the direct consequence of a primary condition that gives rise to psychotic symptoms: substance/medication-induced psychotic disorder, psychotic disorder due to another medical condition, and catatonic disorder due to another medical condition.

The chapter finishes with the diagnosis "Other specified schizophrenia spectrum and other psychotic disorder", for presentations of psychosis that do not meet the criteria for any of the specific psychotic disorders defined in this section.

4. Dimensions of psychosis

Dimensional assessments capture meaningful variation in the severity of symptoms, which may help with treatment planning and the prediction of course and outcome (Allardyce et al., 2007). It is also the hope that dimensional approaches will accelerate the study of disease mechanisms and ultimately the development of interventions to prevent and cure psychotic disorders (Heckers, 2008). In the DSM-5, we propose that a patient who presents with the signs and symptoms of psychosis should be assessed along eight dimensions: the five domains that define schizophrenia spectrum disorder as well as cognition, depression, and mania (for further details, see Barch et al., in press). Each dimension should be assessed on a five-point scale ranging from 0 (not present) to 4 (present and severe). As an example, a score of 2 or higher on the scales that serve as diagnostic criteria for schizophrenia will be considered sufficient severity to fulfill Criterion A. Fig. 1 depicts three different patients who have been assessed with a rating of the eight dimensions. The graph easily identifies the distinct features in the domain of psychosis and the related phenomena in the domains of cognition and affect.

This dimensional assessment is still very much grounded in the clinical description of schizophrenia spectrum disorders. We do not know how these dimensions will map onto models of human behavior (e.g., decision making, reward behavior) or neural circuitry (e.g., thalamocortical loops) (Gigerenzer and Gaissmaier, 2011; Bruno, 2011; Der-Avakian and Markou, 2012). But this initial proposal to integrate dimensions into clinical practice can set the stage for a future alignment of psychiatric nosology and clinical neuroscience.

5. Conclusion

The discovery process in psychiatry is slow. Despite significant investments over the last 100 years, the mechanism of psychosis has eluded us. While the emerging technologies of neuroscience and genetics have provided us with greater access to patients at the level of genes, protein, cells, and circuits, these new data have been connected only loosely to the well-known domains of psychopathology. It is likely that the current nosology of psychotic disorders is not an adequate template for the discovery of disease mechanisms (Heckers, 2008). We have created a silent spring by disconnecting neuroscientific and

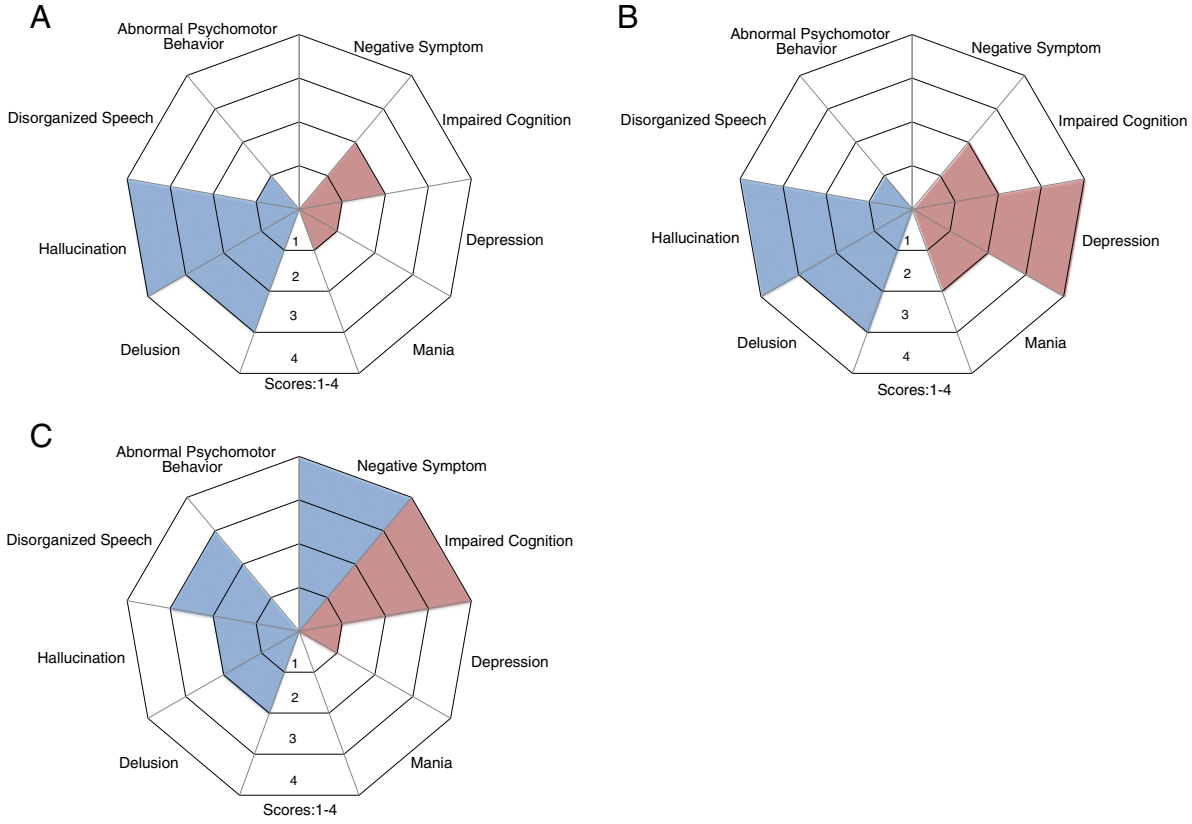

Fig. 1. Dimensional assessment of psychosis. The graphs depict three different patients who have been assessed for dimensions of psychosis (blue) and related phenomena in the domains of cognition and affect (red). (A) A patient with schizophrenia displays moderate hallucinations, prominent delusions, equivocal disorganization of speech, but no abnormalities of psychomotor behavior or negative symptoms. In addition, the patient has mild cognitive impairment and equivocal mania and depression. (B) A patient with schizoaffective disorder displays moderate hallucinations, prominent delusions, equivocal disorganization of speech, but no abnormalities of psychomotor behavior or negative symptoms. In addition, the patient has mild cognitive impairment, severe depression, and mild mania. (C) A patient with deficit syndrome schizophrenia displays mild hallucinations, mild delusions, moderate disorganization of speech, no abnormalities of psychomotor behavior, and severe negative symptoms. In addition, the patient has severe cognitive impairment, equivocal depression, but no mania.

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genetic data from a rich literature in clinical psychiatry and psychopathology (Andreasen, 1998). The schizophrenia spectrum chapter emphasizes the dimensions of psychosis but still defines psychotic disorder categories. It is our hope that future editions of the DSM can replace the current severity gradients (level, number, and duration) with criteria that more accurately capture the mechanism of psychosis. This requires translational research and the validation of new criteria sets in clinical practice. It will be worth the effort since it will we get us closer to the prevention and cure of psychotic disorders.

Conflict of interest

The authors have declared all relevant conflicts of interest regarding their work on the DSM-5 Psychotic Disorders work group to the APA on an annual basis. The complete details are posted on the public Web site http://www.dsm5.org/MeetUs/Pages/PsychoticDisorders.aspx.

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