The multidimensional assessment of psychopathology in mood and psychotic disorders. A proposal for Axis II in DSM-V/ICD-11

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Abstract
The inclusion of dimensional elements in the psychiatric diagnostic systems have been advocated for many years, however it has been resisted due to concerns about clinical utility. Recent suggestions have been for a combination of categorical and dimensional data in future diagnostic classification systems. In this paper we discuss the overlap in symptom complexes between mood disorders and schizophrenia and a multi-dimensional model of the mood-psychosis interface. We propose that the personality diagnoses should be included in Axis I and suggest the inclusion of a five factor dimensional diagnosis of mood and psychotic disorders on Axis II of DSM-V/ICD-11.

Keywords: diagnostic classification; bipolar disorder; schizophrenia; DSM-V; ICD-11

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Introduction

The classic understanding of bipolar disorder is of a cyclical phenomenon where opposing mood states present in an alternating pattern.[1] Mania and depression are therefore seen as contrasting mood states. It has however long been observed that patients with mania may present some depressive symptoms during the manic episode, just as some patients may present with some of the symptoms of mania during a depressive episode[2], the so-called mixed mood states.[3-6] The relationship between the different mood states, mood disorders and between the mood disorders and other psychotic disorders such as schizophrenia continues to be debated. Some, like Akiskal[5;7] have suggested a ''bipolar spectrum'' that includes many more categories than the ones specified in the DSM-IV-TR[8], and which encompasses many clinical presentations currently diagnosed as Major Depressive Disorder or even as personality disorders. These include manic states with mood incongruent features, mixed episodes and a variety of other so-called ''softer'' expressions of bipolar disorder. In addition to the conditions described to be part of the bipolar spectrum, Akiskal furthermore states that there are other conditions that may also be related to this bipolar spectrum, such as some of the cluster B personality disorders and impulse control disorders.[7] The major implication of this would of course be that an inaccurate classification system may lead to incorrect diagnosis and therefore inappropriate treatment.

In addition to the prominent disturbance in mood, psychotic features are common in bipolar disorder. In fact, some authors state that up to two-thirds of patients with manic symptoms have symptoms of psychosis.[9] It has also been noted that some patients with bipolar disorder have a deteriorating course of illness, much like schizophrenia and may even have negative symptoms as part of their clinical picture.[10] Conversely, the concept of schizophrenia as a unitary disorder completely unrelated to the mood disorders has also become increasingly untenable. Whereas it was originally thought that schizophrenia was an illness of delusions and hallucinations, Crow was the first to suggest the existence of

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more than one ''syndrome'' of schizophrenia, that may involve more than one disease process.[11] It is now well established that mood symptoms are common in patients with schizophrenia.[12;13] Depressive symptoms have furthermore been shown to have significant prognostic implications for patients with schizophrenia, with depressive symptoms in the acute psychotic phase of the illness an indicator of better prognosis, but post-psychotic depression an indicator of poorer prognosis.[14;15]

More recent analyses of clinical data with sophisticated statistical methods such as cluster analysis and latent class analysis suggests that schizophrenia does, in fact consist of a number of symptom complexes that deserve attention in their own right. These clusters were somewhat different in different analyses, but generally included positive symptoms, negative symptoms, mania, depression and disorganization.[16-21] Ratakonda found that these symptom clusters were not unique to schizophrenia only, but existed in other psychiatric disorders, including the mood disorders.[19] These symptom clusters were found to respond differently to treatment and to have differential effects on prognosis. Recently Boks et al[22] again provided evidence for different clusters of symptoms in patients with schizophrenia, including depressive and manic symptoms. Like others before them, they also concluded that the distinction between schizophrenia and bipolar disorder may not be as clear as the current classification system implies.

Schizophrenia and the major mood disorders seem to be interwoven not only on a phenotypical, but also genotypical and neurochemical level. There is ample evidence that the genetic factors for schizophrenia and the mood disorders overlap.[23-26] Becker presents the theory that common complex disorders such as bipolar disorder and schizophrenia arise from multiple alleles that are not disease specific. The genetic component of these disorders is therefore thought to comprise multiple genetic loci of small effect. These loci interact with each other and with epigenetic factors to cause disease susceptibility. These alleles are considered necessary, but not sufficient to cause the disease process and are prevalent in more people who do not have the disorder than in people who do and can therefore not be seen as causative. The result is that diseases may be expressed as complex combinations of overlapping symptoms, rather than as discreet disease entities.[27] On a neurochemical level dopamine dysregulation may present as schizophrenia[28;29], but may also be the basis for depression[30;31] and for mania.[32;33]

Multiple dimensions versus spectrum of disease

With the varying presentation of phenotypes that we see in the mood-psychosis interface, it is clear that these more often than not exist as mixed, rather than pure forms. One potential problem with the concept of a spectrum of disease is that it implies a two-dimensional model where two extremes of disease exist with varying presentations in between. A further elaboration would be to consider it as a multi-dimensional model, such as has previously been suggested.[18] It seems more likely that the dimensions of the disorders may lie on multiple axes and that symptom domains may therefore occur in any admixture, where no one implies or excludes any of the other. Therefore, patients may present with a combination of depression and mania, or depression and psychosis, or mania, psychosis and disorganization. These combinations of symptom domains form the phenotypes that we see and diagnose. Seen this way, depression and mania are no longer ''opposite'' mood states, but rather lie on two different axes of this model. Although they may obviously share some features, the risk factors – and treatments - are not identical.[34] The reason why some patients with depression who are treated with antidepressants may switch into mania and others not, could then be explained by this admixture: if the patient presents with depression only, antidepressants would be effective. However, if the patient presents with depression as the dominant cluster, but with some manic features (irritability, psychomotor restlessness), treatment of the depression with antidepressants will leave the manic symptoms untreated. As the depression is so dominant at the initial presentation, the mania may seem to result from the treatment of the depression. Conversely, it is known that mixed states or dysphoric manias are often followed by depressive episodes.[35] A multi-axial model would suggest that treatment of this condition with an anti-manic agent would resolve the mania, but may leave the depression to ''emerge'' as the dominant clinical picture once the mania is no longer in ascendancy. Although all of these symptoms may co-occur in any combination in such a model, some of the combinations would be more likely to co-occur, for example depression and mania; mania and psychosis, psychosis and disorganization. Depression and negative symptoms may be less likely to co-occur.[36]

Dimensional versus categorical classification

Since Kraepelin's (1899) description of manic-depressive psychosis the true nature of psychotic illness has been widely debated in the psychiatric literature. According to the Kraepelinian model, the psychoses are divided into two categories, with Schizophrenia (Dementia Praecox) considered a separate entity from Bipolar Disorder (manic-depressive insanity). This categorization has been continued in the DSM diagnostic system, where the major mood disorders are separated from schizophrenia and the other psychotic disorders. However, in the DSM system many more categories of disease are recognized. Diagnoses in the DSM system include schizophrenia, Schizophreniform disorder, schizo-affective disorder and the delusional disorders. The major mood disorders have also been further dichotomized into Bipolar Disorder and Major Depressive Disorder.

Over the last three decades many authors have questioned this categorization. Some have argued that psychosis exists along a continuum[37;38], with the current psychiatric diagnosis according to the DSM system only reflecting the ''position along the spectrum of disease'' where the patient is seen at the time of evaluation. Others have argued for a new classification system based on more clinical categories, derived from latent class analyses and other sophisticated statistical methods.[39] However, despite these challenges the categorical classification of psychiatric disorders has survived into the current classification system, the DSM-IV-TR.[8]

Kendler suggested that neither a unitary model such as the one proposed by Crow nor the Kraepelinian dichotomy gave an acceptable description of the complexity of these disorders. Analysis of data from the Roscommon cohort broadly supported the DSM-classification system, but Kendler

also suggested new diagnostic classes such as Bipolar-schizomania and schizodepression.[39] A potential compromise between the two models of disease classification was proposed recently by Helzer et al, who suggested that future classification systems should have elements of both categorical and dimensional diagnoses.[40] They suggest that categorical diagnoses should be elaborated with dimensional information, in order to retain the advantages of the categorical classification system, but to also add the more subtle nuances contained within the dimensional information. One option suggested is the dimensional scoring of criteria, with different diagnostic criteria scored along a spectrum of severity. Vieta and Phillips have proposed a new classification system based on a modular approach that combines a refined Axis I with 13 diagnostic dimensions in an additional module to reflect both categorical and dimensional data.[41]

Despite the evidence for dimensional characteristics of psychiatric disorders, it has been resisted due to concerns about clinical utility. The dimensional approach holds the advantage of providing more subtle information about disorders but is much less effective in providing succinct information about patients in a common medical language. The ''diagnosis'' in a purely dimensional system may therefore become little more than a description of symptoms and signs, which may not only be confusing, but will be contrary to the common medical practice of making definitive diagnoses. A purely dimensional approach may reverse many of the gains made in psychiatry since the introduction of current diagnostic systems, both in terms of treatment and in research. Whereas the categorical approach on the other hand provides for greater diagnostic specificity, it does not convey information about symptom severity and the different subsyndromes that have been demonstrated to exist. Helzer's suggestion of combining categorical and dimensional information provides a potential way of combining the advantages of both models. They have proposed the retention of the current diagnostic categories, but with a subscore that will indicate symptom severity and/or subsyndromes. This model may be particularly relevant in the mood-psychosis interface.

A solution that would combine the advantages of the categorical and dimensional information in future diagnostic systems would be to utilize Axis II of the current DSM classification system for this purpose. Although the multi-axial system has served mental health well, the value of diagnosing personality disorders on Axis II has been a questionable practice, particularly as new research provides evidence that many of these disorders are closely related to Axis I disorders, both in phenomenology and in genetics.[42;43] Furthermore, the separation of the personality diagnoses from other psychiatric diagnoses in the multi-axial system has inadvertently promoted prejudice in the funding of treatment of personality disorders.[44] There is considerable argument to include the current Axis II diagnoses in Axis I, as they are now known to cause as much impairment as any Axis I disorder[45], and can often be treated with the same treatment modalities as Axis I disorders.[46] Including personality diagnoses in the main Axis I diagnoses would not only put and end to this unjustified dichotomy and validate the importance of these disorders as treatable conditions, but would also serendipitously ''free up'' Axis II to be utilized in a different manner. We propose that Axis I should continue to represent the primary diagnosis as it is in the current diagnostic system, but that Axis II should be used to represent a five-dimensional diagnosis of patients with mood or psychotic disorders. Although the subsyndromes may change as more information become available over the years, it seems for the present that the symptom clusters of depression, mania, psychosis, disorganization and negative symptoms are valid in this group of disorders. Using too many subsyndromes in the dimensional diagnosis on Axis II would again pose the risk of becoming a mere description of symptoms and would progressively reduce the clinical utility of this Axis. The second Axis should be clinically informative, but also simple to use, otherwise it would quickly become obsolete in clinical practice.

In the model we propose, a patient would therefore still be diagnosed according to standard, widely used DSM categories (although revised for DSM-V/ICD-11) on Axis I, but in addition receive a rating of the subsyndromes/clusters on Axis II. Although there would be many ways of providing the dimensional information on Axis II, one potentially useful option would be to present the subsyndromes in order of primacy. For example, a patient presenting with an episode of mixed mania would then be diagnosed with Bipolar I Disorder on Axis I, with the dimensional classification MDN on Axis II to represent mania (M) as the most prominent cluster, depression (D) as the second and negative symptoms (N) the least prominent, with absence of disorganization (X) and positive symptoms (P). This rating could be done on a clinical basis, but it would also be advantageous to develop specific rating scales to assess and validate the symptom clusters for clinical and/or research purposes.

Conclusion

Neither a purely categorical nor exclusively dimensional diagnostic approach provides satisfactory breadth of information in psychiatric diagnoses. The multi-axial diagnostic system lends itself to the inclusion of both categorical diagnoses as well as dimensional information. With the blurring of the borders between current Axis I and Axis II disorders, we propose that the current Axis II diagnoses be included in Axis I, and that dimensional information in the form of a simple, easy-to-use primacy rating of five symptom clusters be used to expand diagnostic information on Axis II of future diagnostic classification systems of mood and psychotic disorders.

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