



Reliability of DSM and empirically derived prototype diagnosis for mood, anxiety and personality disorders

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ABSTRACT

Background: Prominent psychiatric diagnostic systems such as the DSM-IV and ICD-10 have shown low reliability in clinical practice. An alternative approach to classification of psychiatric disorders is prototype matching. In the current study, we examined reliability of assessing mood, anxiety and personality disorders using a multi-method multi informant approach. More specifically, we examined diagnosis made by treating clinician and independent expert clinical interviewer, using three different diagnostic systems (DSM symptom count, DSM-IV prototype diagnosis and empirically derived prototype diagnosis).

Methods: A convenience sample of clinicians (N = 80) and patients (N = 170) from eight community mental health clinics in Israel participated in the study.

Results: Our findings show fair to excellent interrater reliability for prototype dimensional diagnostic systems (ranged from 0.40 to 0.79) for most mood and anxiety disorders examined. Overall, dimensional diagnostic systems, yielded better interrater reliability for mood, anxiety and personality disorders, as compared with categorical diagnosis. There were no significant differences between dimensional systems.

Conclusions: Our findings provide further support to the advantages of dimensional over categorical models in increasing reliability.

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1. Introduction

The need to classify psychiatric disorders led to the development of numerous classification systems, of which most prominent for clinical and research purposes are DSM-5 and ICD-10. In both frameworks, the method of conducting a psychiatric assessment requires evaluating each of several dozen symptoms for their presence or absence and then applying idiosyncratic rules for combining them to determine a categorical diagnosis. Although these systems have shown sufficient reliability in research protocols, they have not done so in clinical practice, where cumbersome lists of symptoms with complex coding algorithms that vary by disorder have proven largely untenable, resulting in low inter-rater reliability [1, 2].

Related to these problems, is the evidence that psychiatric disorders, mainly personality disorders (PDs), are distributed continuously rather than categorically in nature, suggesting the importance of considering dimensional approaches for diagnosis [3–5]. An urging question,

however, is how to implement dimensional scoring. One possibility, which has become the norm in PD research, is to sum the number of diagnostic criteria met for each disorder. The advantage of dimensionalizing current criteria is continuity with the current diagnostic approach. The disadvantage is that clinicians find DSM diagnosis cumbersome already [6, 7]. Clinicians rarely use the DSM diagnostic system in the way it was intended and often fall short of collecting sufficient diagnostic information resulting in diagnostic bias [6–8].

An alternative approach to classification of psychiatric disorders is prototype matching. This method takes into account cognitive processing parameters of clinicians and naturally fits the way humans categorize [9, 10]. Furthermore, the system presents the advantages of dimensional scoring (patients are rated on a continuum assessing the extent to which they match the disorder rather than on a yes/no binary symptom checklist), while maintaining the advantages of standard categorical diagnosis (e.g. a patient is categorized as either having a disorder or not). To date few studies examined the reliability of prototype matching diagnostic systems. Studies so far have largely focused on assessment of PDs and did not include a comparison to a gold standard diagnosis (e.g., Structured Diagnostic Interview). For example, a study by Westen et al. [11] reported high interrater reliability (median $r = 0.72$) for personality prototype diagnosis made by clinicians and clinically trained independent observers, in a sample of adult patients.

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Yet, prototype matching approach may carry significant shortcomings. The absence of clear guidelines or rules as to what features need to be considered and how they should be integrated may result in clinicians focusing on different components of the narrative. This could open the door to clinicians' subjective judgments and cognitive heuristics that are likely biased in matching what they know about a patient in an unstructured, idiosyncratic manner [12–15]. Importantly, more rigorous empirical research is needed to examine the reliability of prototype matching approach to diagnosing mood, anxiety and personality disorders.

In the current study, we examined reliability of assessing mood, anxiety and personality disorders using a multi-method multi informant approach. Specifically, treating clinicians completed three measures of diagnostic assessment (DSM-IV symptoms, prototypes based on DSM and empirically derived prototypes) based on their practice as usual, while trained independent clinicians completed the same assessment measures following administration of the Clinical Interview for DSM-IV Axis I and Axis II Disorders (SCID). We hypothesized that dimensional ratings, either based on the DSM or empirically derived will result in better interrater reliability compared with DSM categorical diagnosis or symptoms count. Since this is the first study to assess interrater reliability of mood, anxiety and personality disorders using both categorical diagnosis and dimensional scoring methods across multiple independent raters, we cannot make specific predictions regarding the comparison of the of two prototype dimensional ratings.

2. Materials and method

2.1. Setting and sample

The study was conducted in eight community mental health clinics in Israel. All participating clinics offer mental health services to an ethnically and socio-economically diverse adult patient population. A convenience sample of clinicians ($N = 80$) and patients ($N = 170$) participated in the study. We imposed minimal exclusion criteria for patient participation to maximize generalizability (i.e., actively suicidal and psychotic patients). The patients were adult males ($n = 69$, 40.6%) and females ($n = 101$, 59.4%) over 18 years of age ($M = 37.5$, range from 18 to 70). Patient participants were known reasonably well by the clinician (using a guideline of having a minimum five clinical contact hours, but less than one year to minimize confounds due to treatment; M months in treatment = 6.0, $SD = 4.6$). Participating clinicians ($N = 80$) were psychologists ($n = 48$), social workers ($n = 25$) and psychiatrists ($n = 7$) who were licensed clinicians or interns in advanced training. For full description of the sample see Table 1.

2.2. Procedure

We recruited the clinician participants at the clinics through introductory informational meetings. Treating clinicians were encouraged to participate with up to four patients each, maximizing the rate of data collection while maintaining diversity of the sample ($M = 2.13$, $SD = 1.27$). Clinicians referred suitable patients. A research coordinator contacted each patient who agreed to hear about the study and provided detailed explanation regarding the study's aims and procedures. All aspects of the study were approved by the appropriate Institutional Ethics Committees at each participating clinic and data collection was in compliance with all human subject protocols. All participating patients and clinicians completed informed consent prior to participation.

Independent licensed clinicians who were trained interviewers ($n = 4$) administered the Structured Clinical Interview for DSM-IV Axis I and Axis II Disorders (SCID-I/P and SCID-II) which served as gold standard for diagnosis [16, 17]. Each patient was interviewed using the SCID-I/P and SCID II by an independent interviewer. The independent interviewer and treating clinicians completed diagnostic assessment measures of the patients according to DSM-IV categorical diagnostic

Table 1

Socio-demographic and clinical information for patients and clinicians participants in the study.

	Patients ($n = 170$) % (N)	Clinicians ($n = 80$) % (N)
Gender		
Male	40.6% (69)	25.0% (20)
Female	59.4% (101)	75.0% (60)
Age; M (SD)	37.5 (13.7)	41.6 (9.7)
Country of birth		
Israel	75.3% (128)	90.0% (72)
Other	24.1% (41)	8.8% (7)
Relationship status		
Single	43.5% (74)	
With longtime partner, not married	5.3% (9)	
Married	32.9% (56)	
Separated/divorced	15.9% (27)	
Widowed	1.8% (3)	
Education		
Less than 12 years	12.4% (21)	
High school graduate	20.6% (35)	
Certification studies	11.8% (20)	
Some college or technical school	21.8% (37)	
Technical school graduate	4.1% (7)	
College graduate	17.1% (29)	
Some graduate school	4.1% (7)	
Completed graduate school	6.5% (11)	
Currently employed		
No	37.6% (64)	
Yes	60.0% (102)	
Household income ^a		
Primarily student	10.6% (18)	
0–1300\$	31.2% (53)	
1301–2600\$	24.1% (41)	
2601–3900\$	15.3% (26)	
3901–5200\$	2.9% (5)	
More than 5200\$	7.7% (13)	
Months in treatment with current clinician; M (SD)	6.0 (4.6)	
Number of sessions; M (SD)	16.2 (8.4)	
Discipline		
Psychiatry		8.8% (7)
Psychology		60.0% (48)
Social work		31.3% (25)
Level or expertise		
Licensed		71.3% (57)
Trainee		27.5% (22)
Years of experience post-training; M (SD)		8.7 (10.9)

Note. Numbers do not add up to 100% due to missing data.

^a Mean household income in Israel approximately 4000\$ per month.

system, as well as additional two-dimensional prototype diagnostic systems - based on DSM IV and empirically derived. Administration of assessment measures was counterbalanced to avoid order effect. Both patients and clinicians were awarded an honorarium of \$50 for their participation. For full description of study procedure and measures see Nakash et al. [18].

2.3. Measures

Empirically Derived Prototype Diagnosis- Clinicians completed a diagnostic assessment of their patients according to empirically developed prototype diagnoses of six mood and anxiety disorders selected for their higher prevalence in outpatient samples: major depressive disorder (MDD), dysthymic disorder, panic disorder (PD), generalized anxiety disorder (GAD), social phobia, specific phobia and obsessive-compulsive disorder (OCD). Prototypes were constructed in previous studies using factor analysis of Mood and Anxiety Questionnaires [19]. For personality disorders, clinicians assessed the following personality syndromes: Anxious-Avoidant, Dependent-Victimimized, Schizoid-Schizotypal, Antisocial-Psychopathic, Paranoid, Narcissistic, Borderline (BPD), Obsessional (OCPD) and Hysterical-Histrionic. Prototypes were constructed in previous studies by applying statistical

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