Testing New Diagnostic Criteria for Hypomania

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Background. A recent series of studies has questioned DSM-IV diagnostic criteria for hypomania, suggesting that overactivity (increased goal-directed activity) should have priority over mood change as stem criterion. Angst has suggested new criteria for hypomania, giving priority to overactivity. Study aim was to test the validity of Angst's diagnostic criteria for hypomania.

Methods. A consecutive sample of remitted 213 DSM-IV bipolar-II disorder (BP-II) and major depressive disorder (MDD) outpatients were re-diagnosed, during a follow-up visit, by the Structured Clinical Interview for DSM-IV (yes/no structured questions on hypomanic symptoms, skip-out instruction of stem question on mood change not followed, in order to assess all past hypomanic symptoms), by a mood disorder specialist psychiatrist in a private practice. Angst's stem diagnostic criteria for hypomania were tested versus DSM-IV hypomania: 1) overactivity plus at least 3 of the 7 DSM-IV hypomanic symptoms 2) overactivity plus at least 2 of the 7 DSM-IV hypomanic symptoms.

Results. DSM-IV criteria for hypomania were met by 137 patients, overactivity plus 2/7 was met by 146 patients, and overactivity plus 3/7 was met by 135 patients. Of the patients with overactivity plus 2/7, 83.5% also met DSM-IV criteria for hypomania, and of the patients with overactivity plus 3/7 86.6% also met DSM-IV criteria for hypomania. Logistic regression of DSM-IV hypomania versus overactivity plus 2/7 found odds ratio (OR) = 17.6, and versus overactivity plus 3/7 found OR = 18.8. Comparisons between DSM-IV hypomania and Angst's criteria for hypomania showed that there were no significant differences on age, gender, symptom structure of hypomania, number of episodes, episodes duration, and episodes level of functioning. Associations (ORs) between the stem criterion of each definition of hypomania and hypomanic symptoms were often strong. DSM-IV hypomania stem criterion was closely associated with overactivity (OR = 15.4), and Angst's hypomania stem criteria were closely associated with mood change (OR = 7.6 for overactivity plus 2/7, OR = 14.3 for overactivity plus 3/7).

Conclusions. Results support Angst's criteria for hypomania based on overactivity (overactivity plus 3/7 seems more supported). These criteria do not seem to lead to overdiagnosing hypomania. Previous studies supported the upgrading of overactivity among DSM-IV hypomanic symptoms. Angst's diagnostic criteria may positively impact the treatment of depression. It has been shown that focusing the probing for history of hypomania more on overactivity than on mood change reduces the false-negative BP-II. By using Angst' criteria for hypomania, clinicians may reduce the current high misdiagnosis of BP-II as MDD and the related mistreatment.

Keywords Bipolar II disorder, Diagnostic criteria, Hypomania

INTRODUCTION

There is a recent rebirth of studies on the diagnostic criteria for hypomania. According to DSM-IV-TR (1), mood change (i.e., elevated/irritable mood) must always be present during the episode (stem criterion A), plus at least 3–4 of 7 symptoms (increased self-esteem, decreased need for sleep, more talk-

Address correspondence to Dr. Franco Benazzi, Via Pozzetto 17, 48015 Castiglione di Cervia, RA, Italy. E-mail: FrancoBenazzi@FBenazzi.it ativeness, racing thoughts, distractibility, increased goaldirected activity, and excessive risky activities). It is also required an observable and unusual change in mood and functioning, not so severe to cause marked impairment and to require hospital admission, or to have psychotic symptoms. The episode must last at least 4 days, and must not be related to substances/antidepressants or medical disorders. According to DSM-IV-TR, elevated mood is the "prototypical" symptom of hypomania (p. 366), leading clinicians to believe that when there is no elevated mood the episode is not a hypomanic one.

DSM-IV-TR criteria run against Kraepelin's definition of hypomania (2). According to Kraepelin, the basic features of hypomania were elevated mood and increased thinking and behavior, setting no priority among these symptoms. Kraepelin noted that "increased busyness" (i.e., increased goal-directed activity) was "the most striking feature" of hypomania. The same observation had been made by Hecker in 1898 (3) and by Falret in 1854 (4). Recent studies have questioned several DSM-IV-TR criteria for hypomania. It has been shown that the minimum duration of the episode can be lower than the DSM-IV-TR 4 days (i.e., 1 to 3 days) (5-8). DSM-IV-TR stem criterion A (i.e., the priority of mood change) has been challenged on several grounds, stressing the utility and validity of overactivity (increased goal-directed activity) for the diagnosis of hypomania (5,8). Overactivity was more remembered than mood change by patients and key informants (thus reducing the underdiagnosis of hypomania) (9,10), and it was closely linked to bipolar validators such as bipolar family history (5,11). The upgrading of overactivity was also supported by psychometric (factor analysis) studies (12-18). Recently, Angst suggested new diagnostic criteria for hypomania (5,19,20), requiring overactivity as stem criterion, plus 2-3 of the 7 DSM-IV-TR hypomanic symptoms. Angst's new diagnostic criteria may have an important impact on clinicians' diagnosis of hypomania (and bipolar-II disorder-BP-II), and may thus reduce the current high misdiagnosis of bipolar-II disorder as major depressive disorder (5,21), and the related mistreatment (22–27). It has been shown that focusing the probing for history of hypomania more on overactivity than on mood change reduces the falsenegative BP-II (5,9,10,28). Angst's preliminary findings, based on small samples, showed a marked increase in the diagnosis of hypomania (from 12 individuals meeting DSM-IV criteria to 33 and 44 meeting Angst's criteria) (20), suggesting that his criteria could lead to overdiagnosing BP-II.

Study Aim

The study aim was to test the validity of Angst's diagnostic criteria for hypomania. An overdiagnosing of hypomania was expected, on the basis of Angst's preliminary findings.

METHODS

Study Setting

An outpatient psychiatry private practice in Emilia-Romagna region, northern Italy. This setting is more representative of the mood disorders usually seen in psychiatric clinical practice in this area (apart from the psychotic ones) because 1) it is the first or second (after general practitioners) line of treatment of mood disorders, 2) the most severe and socially disadvantaged individuals are usually seen in tertiary-care centers (i.e., national health services and academic centers), 3) mood disorder patients do not like to be treated in the national health services for fear of stigma, and 4) most individuals can afford a private psychiatrist (fee-for-service) in this area, reducing a possible income bias.

Interviewer

A senior clinical (21 years in practice) and research mood disorder specialist psychiatrist.

Patient Population

A consecutive sample of 213 DSM-IV bipolar-II disorder (BP-II) and major depressive disorder (MDD) remitted (i.e., GAF > 80 for at least one month) outpatients. BP-II far outnumbered MDD because BP-II has more recurrences and requires more follow-ups for its more complex treatment. Patients had previously presented voluntarily (i.e., selfreferred, apart from a small number referred by general practitioners) for major depressive episode (MDE) treatment in 2002. DSM-IV substance-related disorders (i.e., substance dependence, substance abuse, substance-induced disorders, including alcohol), and borderline personality disorders, were excluded because these disorders may confound the diagnosis of BP-II due to their high background mood instability (29). Anyway, these disorders are rare in the study setting (30). Clinically significant general medical illnesses and cognitive disorders were also excluded. Informed consent was obtained from the subjects. The study was approved by the local institutional review board.

Assessment Instruments and Interview Methods

During a follow-up visit, patients were re-diagnosed by the Structured Clinical Interview for DSM-IV Axis I Disorders-Clinician Version (31) (SCID-CV, reported inter-rater reliability k = 0.70-1.0). The interviewer's inter-rater reliability k for the diagnosis of BP-II had been previously tested, resulting 0.73 (32). Often, family members or close friends supplemented clinical information during the interview, increasing the validity of the diagnosis of BP-II (1). The Global Assessment of Functioning scale (GAF, in the SCID-CV) was used for assessing remission. All the SCID-CV yes/no structured questions on hypomanic symptoms were assessed. The skipout instruction of the stem question on history of mood change was not followed, in order to assess all past hypomanic symptoms, following Dunner and Tay method (33). Patients were asked 1) which were the most common symptoms present during the DSM-IV hypomanic episodes, and during the episodes with hypomanic symptoms (at least three) 2) the number of episodes had 3) which was the most common duration of the episodes, and 4) which was the usual level of functioning during the episodes. The sample was part of a larger sample of a study comparing structured versus semi-structured interview for the diagnosis of hypomania, following Simpson et al. (34). Therefore, the present study goal had not been planned, and an interviewer's bias is unlikely, also because of the systematic, structured interviewing by the validated SCID-CV.

Hypomania had to last at least 2 days (instead, DSM-IV-TR requires a minimum duration of 4 days), on the basis of data supporting this cutoff, i.e., no differences on diagnostic validators between BP-II with history of hypomania lasting less than 4 days, and DSM-IV BP-II (5–7), while DSM-IV cutoff is not data-based (21). Among the present study BP-II, around 30% met the 2-day cutoff for hypomania, all the others met DSM-IV cutoff.

Angst's diagnostic criteria for hypomania were tested versus DSM-IV hypomania. Angst suggested two sets of criteria: 1) overactivity plus at least 3 of the 7 DSM-IV hypomanic symptoms, duration > = 1 day, impaired functioning 2) overactivity plus at least 2 of the 7 DSM-IV hypomanic symptoms, duration > = 1 day, impaired functioning not required. It was decided to test only the basic stem question (i.e., overactivity plus 2–3 of the 7 hypomanic symptoms), because this is a strong difference compared to DSM-IV, because the study sample had a minimum duration of hypomania of 2 days, and because the sample often had improved functioning (as reported by Hecker in private practice outpatients) (3). A comparison of DSM-IV criteria for hypomania and Angst's criteria is presented in Table 1.

Data Analysis

Means were compared by one-way analysis of variance (ANOVA), frequencies by the chi-squared test. Logistic regression was used to study associations. STATA Statistical Software, Release 8.2, was used (Stata Corporation, College Station, TX, USA, 2003). P values were two-tailed, and alpha level was set at 0.05.

RESULTS

DSM-IV criteria for hypomania were met by 137 patients, overactivity plus 2/7 was met by 146 patients, and overactivity

Table 1	DSM-IV	and Angst	's Diagnostic	Criteria for	Hypomania

plus 3/7 was met by 135 patients. Of the patients with overactivity plus 2/7, 83.5% also met DSM-IV criteria for hypomania, and of the patients with overactivity plus 3/7 86.6% also met DSM-IV criteria for hypomania. For diagnosing DSM-IV hypomania, overactivity plus 2/7 had sensitivity 89.0%, specificity 68.4%, positive predictive value 83.5%, and negative predictive value 77.6%. For diagnosing DSM-IV hypomania, overactivity plus 3/7 had sensitivity 85.4%, specificity 76.3%, positive predictive value 86.6%, and negative predictive value 74.3%. Logistic regression of DSM-IV hypomania versus overactivity plus 2/7 found odds ratio (OR) = 17.6 (95% CI = 8.5 to 36.2, p < 0.01), and versus overactivity plus 3/7 found OR = 18.8 (95% CI = 9.2 to 38.3, p < 0.01). Comparisons between DSM-IV hypomania and Angst's new criteria for hypomania are presented in Tables 2 and 3. There were no significant age and gender differences, the symptom structure of hypomania was not significantly different, as well as the number of episodes, the episodes' most common duration, and the usual level of functioning during the episodes. The associations (ORs) between the stem criterion of each definition of hypomania (i.e., mood change, overactivity plus 2-3/7) and hypomanic symptoms were often strong (i.e., OR > 3). DSM-IV hypomania stem criterion was closely associated with overactivity (OR = 15.4), and Angst's hypomania stem criteria were closely associated with mood change (OR = 7.6 for overactivity plus 2/7, OR = 14.3 for overactivity plus 3/7).

DISCUSSION

It was expected an overdiagnosis of hypomania (and hence of BP-II) by using Angst's criteria for hypomania, on the basis of his preliminary findings (20). The present study results showed instead that DSM-IV criteria and Angst's criteria diagnosed a similar number of patients. Furthermore, Angst's hypomania diagnostic criteria included many DSM-IV hypomania. Angst's criteria for hypomania had a positive predictive value for DSM-IV hypomania of 84%–87%, and were strongly associated with DSM-IV hypomania (OR = 18–19), suggesting a close overlap. The overlap between DSM-IV hypomania and Angst's hypomania criteria was clearly shown by similar age and gender differences, symptom structure of hypomania, number of episodes, episodes most common duration, and

DSM-IV Criteria	Overactivity+> = 2 / 7 DSM-IV Symptoms	Overactivity+> = 3 / 7 DSM-IV Symptoms
Mood change	Overactivity	Overactivity
At least 3	At least 2	At least 3
Always	No impairment	Always impairment
Always	Always	Always
Always	Not specified	Not specified
	DSM-IV Criteria Mood change At least 3 Always Always Always	Overactivity+> = 2 / 7 DSM-IV CriteriaOveractivity+> = 2 / 7 DSM-IV SymptomsMood change At least 3 AlwaysOveractivity At least 2 No impairmentAlwaysNo impairmentAlwaysAlways Not specified

	DSM-IV Hypomania	Overactivity $+> = 2 / 7$	Overactivity $+> = 3 / 7$	
Variables: mean (SD), %	n = 137	Symptoms $n = 146$	Symptoms $n = 135$	
Age, years	41.8 (11.8)	43.4 (11.7)	43.0 (11.7)	
Female	67.1	68.4	67.4	
Elevated mood	72.2	65.7	70.3	
Irritable mood	64.2	60.9	65.1	
Mood change	100.0 by definition	93.2	95.7	
Increased self-esteem	64.9	66.4	66.6	
Reduced need for sleep	56.2	54.1	58.5	
Talkativeness	65.6	60.9	62.2	
Racing thoughts	66.4	65.0	68.1	
Distractibility	61.3	60.9	62.9	
Overactivity (increased goal-directed activity)	90.5	100.0 by definition	100.0 by definition	
Risky activities	53.2	52.0	55.5	
> 1 episode	83.9	86.3	85.1	
Episode duration > 3 days	71.8	72.9	73.4	
Episode duration > 1 week	60.9	61.3	62.5	
Episode duration > 1 month	26.5	31.3	32.0	
Episode with improved functioning	65.2	67.5	67.6	

Table 2 Comparisons among Definitions of Hypomania (DSM-IV Hypomania, and Overactivity Plus > = 2/7, Overactivity Plus > = 3/7Hypomanic Symptoms According to Angst)

Statistics: no significant differences found by one-way analysis of variance and chi-squared test.

Table 3 Associations between Stem Criteria for Hypomania and DSM-IV Hypomanic Symptoms

DSM-IV Hypomanic	DSM-IV Mood change	Overactivity $+> = 2/7$	Overactivity $+> = 3/7$
Symptoms	n = 137	Symptoms $n = 146$	Symptoms $n = 135$
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Elevated mood	12.6 (6.2–25.5)**	6.1 (3.1–11.8)**	8.5 (4.4–16.3)**
Irritable mood	2.2 (1.2–3.9)**	1.6 (0.9–2.8)	2.4 (1.3-4.2)**
Mood change	NC	7.6 (2.3–25.2)**	14.3 (3.6–55.9)**
Increased self-esteem	5.1 (2.7–9.6)**	9.0 (4.4–18.5)**	6.2 (3.3–11.6)**
Reduced need for sleep	10.9 (4.8–24.4)**	11.9 (4.8–29.4)**	16.9 (6.8-41.6)**
Talkativeness	11.3 (5.4–23.4)**	7.1 (3.5–14.5)**	5.9 (3.1–11.2)**
Racing thoughts	1.6 (0.9–2.8)	1.4 (0.8–2.5)	1.9 (1.0–3.4)*
Distractibility	1.5 (0.9–2.7)	1.6 (0.9–2.8)	1.8 (1.0–3.3)*
Overactivity (increased goal-directed activity)	15.4 (7.4–32.2)*	NC	NC
Risky activities	3.4 (1.8–6.3)**	3.4 (1.8–6.6)**	4.4 (2.3-8.4)**

(Odds Ratio = OR; 95% Confidence Intervals = 95% CI; * = p < 0.05, ** = p < 0.01; NC = not calculable as always required).

usual level of functioning during the episodes. The associations (ORs) between DSM-IV hypomania stem criterion and each hypomanic symptom, and between Angst's hypomania stem criteria and each hypomanic symptom, were often strong (i.e., OR > 3). There was a close link between mood change and overactivity. DSM-IV hypomania stem criterion (i.e., mood change) was closely associated with overactivity (OR = 15.4), and Angst's hypomania stem criteria were closely associated with mood change (OR = 7.6 for overactivity plus 2/7, OR = 14.3 for overactivity plus 3/7). Looking at the ORs of Angst's two hypomania criteria, the definition of hypomania requiring overactivity plus 3/7 was often more closely associated with hypomanic symptoms. Coupled with the much closer association with mood change, it seems that the definition requiring overactivity plus 3/7 could be better than the definition requiring overactivity plus 2/7. The close similarities between Angst's hypomania criteria and DSM-IV hypomania was related to many patients meeting Angst's hypomania criteria meeting also DSM-IV hypomania criteria. The finding was not expected, on the basis of Angst's preliminary findings.

Study results support Angst's criteria for hypomania based on overactivity. These criteria do not seem to lead to overdiagnosing hypomania (and hence BP-II). Previous studies supported the upgrading of overactivity among DSM-IV hypomanic symptoms (5,8–17,28). The suggested change in the diagnostic criteria for hypomania (i.e., overactivity as stem criterion) closely follows the classic descriptions of hypomania by Kraepelin, Hecker, and Falret (2,3), which stressed the mental and behavioral activation of hypomania.

Angst's diagnostic criteria for hypomania may positively impact the treatment of depression. It has been shown that focusing the probing for history of hypomania more on overactivity than on mood change reduces the false-negative BP-II (5,8,10,28). By using Angst's criteria for hypomania, clinicians may reduce the current high misdiagnosis of BP-II as MDD (5,21), and the related mistreatment (3,15,16,23,24,25,35).

Limitations

A single interviewer limited the validity of the findings. However, the interviewer was a specialist mood disorder researcher and clinician, who systematically used a validated structured interview, supplemented by key informants. The interviewer inter-rater reliability for the diagnosis of BP-II was acceptable (32). An interviewer's bias is unlikely, as the present study aim had not been planned when the variables were collected for different study goals. It would have been very useful to test the different definitions of hypomania versus bipolar validators such as family history, but these variables were not present in the database. This testing would definitely show the validity of Angst's diagnostic criteria for hypomania. Study findings need replication in larger samples, in different settings, and by independent groups.

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104

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