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Special research report

Validity of the assessment of bipolar spectrum disorders in the WHO CIDI 3.0

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Abstract

Objective: Although growing interest exists in the bipolar spectrum, fully structured diagnostic interviews might not accurately assess bipolar spectrum disorders. A validity study was carried out for diagnoses of threshold and sub-threshold bipolar disorders (BPD) based on the WHO Composite International Diagnostic Interview (CIDI) in the National Comorbidity Survey Replication (NCS-R). CIDI BPD screening scales were also evaluated.
Method: The NCS-R is a nationally representative US household population survey (n=9282 using CIDI to assess DSM-IV disorders. CIDI diagnoses were evaluated in blinded clinical reappraisal interviews using the non-patient version of the Structured Clinical Interview for DSM-IV (SCID).
Results: Excellent CIDI-SCID concordance was found for lifetime BP-I (AUC=.99 κ=.88, PPV=.79, NPV=1.0), either BP-II or sub-threshold BPD (AUC=.96, κ=.88, PPV=.85, NPV=.99), and overall bipolar spectrum disorders (i.e., BP-I/II or sub-threshold BPD; AUC=.99, κ=.94, PPV=.88, NPV=1.0). Concordance was lower for BP-II (AUC=.83, κ=.50, PPV=.41, NPV=.99) and sub-threshold BPD (AUC=.73, κ=.51, PPV=.58, NPV=.99). The CIDI was unbiased compared to the SCID, yielding a lifetime bipolar spectrum disorders prevalence estimate of 4.4%. Brief CIDI-based screening scales detected 67–96% of true cases with positive predictive value of 31–52%.
Limitation: CIDI prevalence estimates are still probably conservative, though, but might be improved with future CIDI revisions based on new methodological studies with a clinical assessment more sensitive than the SCID to sub-threshold BPD.
Conclusions: Bipolar spectrum disorders are much more prevalent than previously realized. The CIDI is capable of generating conservative diagnoses of both threshold and sub-threshold BPD. Short CIDI-based scales are useful screens for BPD.

Keywords: Bipolar disorders; Bipolar spectrum; Mania; Hypomania; Composite International Diagnostic Interview (CIDI); Validity; National Comorbidity Survey Replication (NCS-R)

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Although the estimated lifetime prevalence of bipolar disorders (BPD) in international adult population surveys using structured diagnostic interviews and standardized diagnostic criteria is only approximately 0.8% for BP-I and 1.1% for BP-II, (Bauer and Pfennig, 2005; Pini et al., 2005; Waraich et al., 2004; Angst, 2004; Tohen and Angst, 2002; Wittchen et al., 2003; Weissman et al., 1996) recent clinical and epidemiological studies suggest that bipolar spectrum disorders might affect up to 6% of the general population (Angst, 1998; Angst et al., 2003; Akiskal et al., 2000; Akiskal and Benazzi, 2005; Judd and Akiskal, 2003; Benazzi and Akiskal, 2001). This estimate is uncertain, though, as bipolar spectrum disorders, which includes not only BP-I and BP-II but also cases with episodes of hypomania of lesser severity or briefer duration than specified in the DSM and ICD criteria, have not been the focus of sustained attention in large-scale community epidemiological studies.

An impediment to resolving this uncertainty is lack of information on the accuracy of fully structured diagnostic interviews to assess sub-threshold BPD. The current report presents results of a clinical reappraisal study to address this issue by evaluating the validity of Version 3.0 of the WHO Composite International Diagnostic Interview, (Kessler and Ustun, 2004) the most widely used fully structured diagnostic interview in psychiatric epidemiology, in assessing both threshold and sub-threshold BPD. Validity is assessed in comparison to blindly administered clinical re-interviews using the non-patient version of the Structured Clinical Interview for DSM-IV (SCID) (First et al., 2002) as the validity standard. Data are also presented on the accuracy of CIDI-based screening scales for BPD.

The clinical reappraisal study was carried out in conjunction with the National Comorbidity Survey Replication (NCS-R) (Kessler and Merikangas, 2004), a nationally representative survey of mental disorders among English-speaking household residents ages 18 and older in the continental US. A previous report of the main NCS-R clinical reappraisal study documented good CIDI-SCID concordance for lifetime diagnoses of most anxiety disorders, substance use disorders, and major depressive disorder, with κ for classes of disorder in the range .48–.54, positive predictive value (PPV; the percent of CIDI cases confirmed by the SCID) in the range .74–.99, and negative predictive value (NPV; the percent of CIDI non-cases confirmed by the SCID) in the range .80–.89 (Kessler et al., 2005b). BPD was not included in the main clinical reappraisal study because of its low prevalence. However, a separate clinical reappraisal study was subsequently carried out explicitly to evaluate BPD. The results of that study are reported here.

1. Methods

1.1. The NCS-R survey design

The NCS-R was administered face-to-face to a sample of 9282 adult respondents between February 2001 and April 2003. The sample was based on a multistage clustered area probability design described in more detail elsewhere (Kessler et al., 2004b). Informed consent was obtained verbally prior to data collection. Consent was verbal rather than written to maintain consistency with the baseline NCS (Kessler et al., 1994). The response rate was 70.9%. Respondents were given a $50 incentive for participation. A probability subsample of hard-to-recruit pre-designated respondents was selected for a brief telephone non-respondent survey. Non-respondent survey participants were given a $100 incentive. The Human Subjects Committees of Harvard Medical School and the University of Michigan both approved these recruitment and consent procedures. The results of the non-respondent survey were used to create a non-response adjustment weight that was added to more conventional within-household probability of selection and post-stratification weights to create a composite NCS-R weight. A more detailed discussion of NCS-R sampling and weighting is presented elsewhere (Kessler et al., 2004b).

1.2. CIDI assessment of bipolar disorders

The World Health Organization's Composite International Diagnostic Interview (CIDI) Version 3.0 (Kessler and Ustun, 2004) is a fully structured lay-administered diagnostic interview. DSM-IV criteria were used to define mania, hypomania, and major depressive episode (MDE). The requirement that symptoms do not meet criteria for a Mixed Episode (Criterion C for mania and Criterion B for MDE) was not operationalized in making these diagnoses. Respondents were classified as having lifetime BP-I if they ever had a manic episode and as having lifetime BP-II if they never had a manic episode, ever had a hypomanic episode, and ever had an episode of MDE. Respondents were classified as having sub-threshold BPD if they met any of the following three sets of criteria: (i) they had a history of recurrent sub-threshold hypomania (at least two Criterion B symptoms, such as grandiosity or decreased need for sleep, along with all other criteria for hypomania) in the presence of MDE; (ii) they had a