Prevalence and Correlates of Bipolar Spectrum Disorder in the World Mental Health Survey Initiative

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Context: There is limited information on the prevalence and correlates of bipolar spectrum disorder in international population-based studies using common methods.

Objectives: To describe the prevalence, impact, patterns of comorbidity, and patterns of service utilization for bipolar spectrum disorder (BPS) in the World Health Organization World Mental Health Survey Initiative.

Design, Setting, and Participants: Cross-sectional, face-to-face, household surveys of 61,392 community adults in 11 countries in the Americas, Europe, and Asia assessed with the World Mental Health version of the World Health Organization Composite International Diagnostic Interview, version 3.0, a fully structured, lay-administered psychiatric diagnostic interview.

Main Outcome Measures: Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition) disorders, severity, and treatment.

Results: The aggregate lifetime prevalences were 0.6% for bipolar type I disorder (BP-I), 0.4% for BP-II, 1.4% for subthreshold BP, and 2.4% for BPS. Twelve-month prevalences were 0.4% for BP-I, 0.3% for BP-II, 0.8% for subthreshold BP, and 1.5% for BPS. Severity of both manic and depressive symptoms as well as suicidal behavior increased monotonically from subthreshold BP to BP-I. By contrast, role impairment was similar across BP subtypes. Symptom severity was greater for depressive episodes than manic episodes, with approximately 74.0% of respondents with depression and 50.9% of respondents with mania reporting severe role impairment. Three-quarters of those with BPS met criteria for at least 1 other disorder, with anxiety disorders (particularly panic attacks) being the most common comorbid condition. Less than half of those with lifetime BPS received mental health treatment, particularly in low-income countries, where only 25.2% reported contact with the mental health system.

Conclusions: Despite cross-site variation in the prevalence rates of BPS, the severity, impact, and patterns of comorbidity were remarkably similar internationally. The uniform increases in clinical correlates, suicidal behavior, and comorbidity across each diagnostic category provide evidence for the validity of the concept of BPS. Treatment needs for BPS are often unmet, particularly in low-income countries.

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Bipolar disorder (BP) is responsible for the loss of more disability-adjusted life-years than all forms of cancer or major neurologic conditions such as epilepsy and Alzheimer disease, primarily because of its early onset and chronicity across the life span. Aggregate estimates of the prevalence of BP indicate that approximately 1.0% of the general population meet lifetime criteria for BP type I (BP-I). Estimates of the lifetime prevalence of BP-II have been provided by only 1 investigation, which reported a median lifetime prevalence of 1.2%. A recent international review of both DSM-IV BP-I and BP-II in population studies yielded an aggregate cross-study lifetime prevalence estimate of 1.2%, ranging from 0.1% in Nigeria to 3.3% in the United States.

Divergence in cross-country prevalence rates may reflect methodologic differences in diagnostic procedures or assessment methods as well as true differences in disease prevalence. As highlighted by the classic US-UK study that demonstrated that differential diagnostic practices primarily explained the wide divergence in rates of schizophrenia and manic depressive psychosis in the United States and United Kingdom, the application of standardized diagnostic criteria for mental disorders has facilitated international comparisons. Likewise, the development of common diagnostic assessment methods such as the Composite International Diagnostic Interview (CIDI) has also reduced methodo-
logic sources of variation in international prevalence estimates. In addition to the need for common methods, converging evidence from clinical and epidemiologic studies suggests that current diagnostic criteria for BP fail to include milder but clinically significant syndromes. The application of the subthreshold bipolarity concept in a growing number of population surveys reveals that between 4% and 6% of adults may in fact manifest these conditions. However, a significant percentage of subthreshold BP cases are diagnosed by default as unipolar major depression using current criteria. Expanding the definition of bipolarity is supported by prospective findings for a high probability of conversion to BP in youths with subthreshold mania as well as by findings from the National Comorbidity Survey Replication that indicate uniform increases in spectrum of severity and impairment across subthreshold BP, BP-II, and BP-I categories. Investigations of depression and mania symptom severity associated with subthreshold BP conditions further suggest that this category encompasses clinically significant manifestations that are comparable to people seeking treatment for BP in outpatient settings.

Few prior international studies of BP have included information on severity or disability associated with this condition. Such information is necessary to facilitate cross-country analyses of comparable disorders and to help inform allocation of health services to populations with poor access to treatment, particularly in low-income countries. This article presents the lifetime and 12-month prevalence rates, patterns of comorbidity, impact, and use of mental health services for the BP spectrum (BPS) (BP-I, BP-II, and subthreshold BP) in the World Mental Health (WMH) Survey Initiative, a project of the World Health Organization Surveys, carried out exclusively in the official languages of each country. Persons who could not speak these languages were excluded. Quality control protocols were standardized across countries to check interviewers’ reliability and to specify data cleaning and coding procedures. The institutional review board of the organization that coordinated the survey in each country approved and monitored compliance with procedures for obtaining informed consent and protecting participants’ identification.

MEASURES

All surveys used the WMH Survey Initiation version of the World Health Organization CIDI, version 3.0, a fully structured diagnostic interview composed of 2 parts to reduce respondent burden and survey costs. Part 1 constituted the core diagnostic assessment of various mental disorders including major depressive disorder and BPs. Part 2 included additional information relevant to a wide range of survey objectives. All respondents completed part 1, and those meeting criteria for any core mental disorder plus a probability sample of other respondents were administered part 2. The part 1 sample was weighted to adjust for the probability of selection and nonresponse and was post-stratified to approximate the general population distribution regarding sex and age among other characteristics. Part 2 respondents were also weighted by the inverse of their probability of selection for part 2 of the interview to adjust for differential sampling. Methodological evidence collected in the WMH CIDI field trials and later clinical calibration studies showed that all of the disorders considered here were assessed with acceptable reliability and validity. Manic episodes, hypomanic episodes, and major depressive episodes (MDEs) were assessed according to DSM-IV criteria.

BP DISORDERS

Respondents were classified as having lifetime BP-I if they ever had a manic episode, defined by a period of 7 days or longer with elevated mood plus 3 other mania-related symptoms or with irritable mood plus 4 other mania-related symptoms, with the mood disturbance resulting in marked impairment, need for hospitalization, or psychotic features. Respondents were classified as having lifetime BP-II if they had both MDEs and a hypomanic episode, defined by a period of 4 days or longer with symptom criteria similar to mania and with an unequivocal change in functioning but without a manic episode. Criteria for subthreshold hypomania included the presence of at least 1 symptom on the screening questions for mania and failure to meet the full diagnostic criteria for hypomania. In the remainder of this article, BPD refers to people with either BP-I or BP-II, and BPS refers to those with BP spectrum comprised of BP-I, BP-II, or subthreshold BP. The DSM-IV requirement that symptoms do not meet criteria for a mixed episode was not operationalized in making these diagnoses.

Among respondents with lifetime BP-I or BP-II, those reporting an MDE or a manic or hypomanic episode at any time in the 12 months before the interview were classified as having 12-
The number of manic or hypomanic episodes and MDEs in this 12-month period was assessed. For those having episodes in the past 12 months, symptom severity and role impairment were also assessed. Symptom severity for the most severe month in the past 12 months was assessed with the self-report versions of the Young Mania Rating Scale (YMRS) and the Quick Inventory of Depressive Symptomatology (QIDS) for manic or hypomanic episodes and MDEs as severe (YMRS score > 10, QIDS score > 15), moderate (YMRS score > 14 to 24, QIDS score > 10 to 15), mild (YMRS score > 8 to 14, QIDS score > 5 to 10), or clinically nonsignificant (YMRS score 0-8, QIDS score 0-5). Role impairment was assessed with the Sheehan Disability Scale. Respondents were asked to focus on the months in the past year when their manic or hypomanic episode or MDE was most severe and to rate how much the condition interfered with their home management, work, social life, and close relationships using a visual analogue scale scored from 1 to 10. Impairment was scored as none (0), mild (1-3), moderate (4-6), severe (7-9), or very severe (10). Clinical features such as age at onset, course, longest lifetime episode, and number of months in the episode during the previous year were assessed separately for manic or hypomanic episodes and MDEs.

OTHER DISORDERS

Assessment of other DSM-IV disorders or symptoms included anxiety disorders (generalized anxiety disorder, panic attacks, panic disorder and/or agoraphobia, posttraumatic stress disorder, obsessive-compulsive disorder, specific phobia, social phobia, separation anxiety disorder), impulse control disorders (at-
tension-deficit/hyperactivity disorder, oppositional defiant disorder, conduct disorder, intermittent explosive disorder), and substance-related disorders (alcohol abuse and dependence, drug abuse and dependence). Organic exclusion rules and diagnostic hierarchy rules were used in making all diagnoses (ie, the diagnosis was not made if the respondent indicated that the episode of depression or mania was due to physical illness or injury or use of medication, drugs, or alcohol).

CLINICAL REAPPRAISAL OF CIDI DISORDER

Blinded clinical reappraisal interviews using the nonpatient version of the Structured Clinical Interview for DSM-IV with a probability subsample of respondents in the US National Comorbidity Survey Replication found generally good concordance of CIDI and DSM-IV diagnoses of anxiety, mood, and substance-related disorders with independent clinical assessments. Systematic evaluation of the validity of the assessment of BPS in the WMH CIDI yielded excellent concordance between the Structured Clinical Interview for DSM-IV and CIDI diagnoses of BP-I and either BP-II or subthreshold BP but poor ability to distinguish between the latter 2 categories. This demonstrates the importance of including subthreshold BP in characterizing the full spectrum of expression of BP in community settings.

OTHER MEASURES

We also considered the association of BPD with sociodemographic variables at the time of interview, such as sex, age (ages 18-34, 35-49, 50-64, ≥65 years), marital status (married, previously married, never married), education level compared with the local country standard (low, low-average, high-average, high), employment status (working, student, homemaker, retired, other [including unemployed]), and household income compared with the local country standard (low, low-average, high-average, high). Results are not presented by income level for all of the analyses, but differences are described in the text when relevant. Cross-country treatment rates are presented by income levels because of international variation in the availability of mental health services. All part 2 respondents were asked about 12-month and lifetime treatment of any problem concerning emotions, nerves, or substance use by a psychiatrist, other mental health professional (psychologist, psychotherapist, psychiatric nurse), general medical provider, human services professional, and complementary and alternative medicine provider (eg, acupuncturist, chiropractor, spiritual healer). They were also asked about treatment specific to MDE and/or mania or hypomania, whether the treatment was helpful or effective, hospitalization for MDE and/or mania or hypomania, and use of indicated medications such as mood stabilizers, antidepressants, or antipsychotics.

STATISTICAL ANALYSIS

Age at onset and projected lifetime risk as of age 75 years were estimated using the actuarial method implemented in SAS version 8.2 statistical software (SAS Institute, Inc, Cary, North Carolina). Standard errors were estimated using the Taylor series linearization method implemented in the SUDAAN software system (Research Triangle Institute, Research Triangle Park, North Carolina). Multivariate significance tests were made with Wald χ² tests using Taylor series design-based coefficient variance-covariance matrices. Standard errors of lifetime risk were estimated using the jackknife repeated replication method implemented in an SAS macro. Significance tests were all evaluated at the P = .05 level with 2-sided tests.

RESULTS

LIFETIME AND 12-MONTH PREVALENCE AND AGE AT ONSET

The lifetime prevalence rates of BP-I, BP-II, and subthreshold BP from the pooled sample of 11 countries were 0.6%, 0.4%, and 1.4%, respectively (Table 2). The 12-month prevalences of BP-I, BP-II, and subthreshold BP were 0.4%, 0.3%, and 0.8%, respectively. The United States had the highest lifetime and 12-month prevalence of BPS (4.4% and 2.8%, respectively), while India had the lowest (both 0.1%). Exceptions were found for Japan, a high-income country with very low lifetime and 12-month prevalences of BPS (0.7% and 0.2%, respectively), and Colombia, a low-income country with high lifetime prevalence of BPS (2.6%). Lifetime rates of BP-I and subthreshold BP were greater in males than in females, whereas females had higher rates of BP-II than their male counterparts. Marital status and employment status but not family income were significantly associated with BPS.

The cumulative lifetime risk of BPS subtypes is shown in the Figure. Approximately half of those with BP-I and subthreshold BP report onset before age 25 years, and those with BP-II report a slightly later age at onset. However, there was a direct increase in the mean age at onset with less severe subtypes of BPS; the mean (SE) ages at onset were 18.4 (0.7) years for BP-I, 20.0 (0.6) years for BP-II, and 21.9 (0.4) years for subthreshold BP.

LIFETIME COMORBIDITY WITH OTHER DSM-IV DISORDERS

Three-quarters of those with BPS also met criteria for another lifetime disorder, more than half of whom had 3 or more other disorders (Table 3). Anxiety disorders, particularly panic attacks, were the most common comorbid conditions (62.9%), followed by behavior disorders (44.8%) and substance use disorders (36.6%). There were significantly greater rates of comorbid disorders among those with BP-I (88.2%) and BP-II (83.1%) than among those with subthreshold BP (69.1%), although the odds of comorbid disorders were still significantly elevated for those with subthreshold BP relative to those without BP. Patterns of comorbidity with anxiety disorders and substance use disorders were remarkably similar across countries, whereas rates of comorbid behavior disorders were substantially higher in the United States and New Zealand compared with most other countries.

CLINICAL SEVERITY

The vast majority of persons with BPS during the past 12 months reported severe or moderate manic or hypomanic episodes or MDEs in the past year (Table 4). Combined manic or hypomanic episodes and MDEs in the past 12 months were more severe among persons with BP-I (74.3%) and BP-II (68.8%) than among those with subthreshold BP (42.5%). The severity of MDEs...
was greater among those from low-income countries (95.5%) and medium-income countries (77.4%) than those in high-income countries (68.5%), whereas the severity of mania was comparable across low- and middle-income countries and slightly higher in high-income countries.

**ROLE IMPAIRMENT**

The aggregate proportions of severity levels of role impairment as assessed by the Sheehan Disability Scale by BP subtypes are presented in Table 4. The proportion of respondents with severe and very severe role impairment was greater for depression (74.0%) than for mania (50.9%). Severe and very severe role impairment was greater in high-income countries for both mania (57.3%) and depression (84.9%) than in medium-income countries (49.0% for mania; 58.7% for depression) and low-income countries (30.4% for mania; 55.1% for depression).

**SUICIDE ATTEMPTS**

Suicidal behaviors among those with BPS during the past 12 months are shown in Table 4. Similar to the other clinical indicators of severity, there was an increasing proportion of persons with suicidal behaviors with increasing levels of BPS. One in every 4 persons with BP-I, 1 in 5 of those with BP-II, and 1 in 10 of those with subthreshold BP reported a history of suicide attempts.

A substantially greater proportion of respondents with any BPS from high-income countries reported mental health service use (50.2% lifetime; 28.4% in the past 12 months) than those in middle-income countries (33.9% lifetime; 15.9% in the past 12 months) or low-income countries (25.2% lifetime; 13.0% in the past 12 months) (Table 5 and Table 6). Most respondents used men-
controlling for age at interview, age at interview squared, and country. The last model had the predictors exactly 1, exactly 2, and 3 or more disorders in 1 model.

...Comparable 12-month prevalence rates were 0.4% for BP-I, 0.4% for BP-II, and 1.4% for subthreshold BP, yielding symptom severity, role impairment, comorbidity, suicidality, and treatment. For example, the proportion of mood episodes rated as clinically severe increased from 42.5% for subthreshold BP to 68.8% for BP-II to 74.5% for BP and the diagnostic interviews and definitions that were used to characterize BP. The use of common diagnostic definitions in the WMH reduces the methodologic diversity that has hindered international prevalence estimates and prevented accurate descriptions of the personal and economic impacts of this disorder.

These data also provide the first aggregate international evidence, to our knowledge, that supports the validity of the spectrum concept of bipolarity. There was a direct association between increasingly restrictive definitions of BP and indicators of clinical severity including symptom severity, role impairment, comorbidity, suicidality, and treatment. For example, the proportion of mood episodes rated as clinically severe increased from 42.5% for subthreshold BP to 68.8% for BP-II to 74.5% for BP-I, and the proportion of cases reporting severe role impairment ranged from 46.3% for subthreshold BP to 57.1% for BP-I. These findings also confirm those of previous epidemiologic surveys that have highlighted pervasive comorbidity between BP and other mental disorders.

To our knowledge, this article presents the first international data on the prevalence of DSM-IV BP and the broader BPS using common diagnostic procedures and methods. In a combined sample of 61 392 adults from 11 countries, the total lifetime prevalences were 0.6% for BP-I, 0.4% for BP-II, and 1.4% for subthreshold BP, yielding a total BPS prevalence estimate of 2.4% worldwide. Comparable 12-month prevalence rates were 0.4% for BP-I, 0.3% for BP-II, and 0.8% for subthreshold BP, with a total 12-month BPS prevalence of 1.5%. These rates are somewhat lower than those from earlier reviews of European studies and international studies, which yielded aggregate estimates of 1.5% and 0.8% for BP-I and BP-II, respectively, but with a far wider range of estimates than those reported here. In fact, variation in prevalence rates in these studies was attributed primarily to differences in the diagnostic interviews and definitions that were used to characterize BP. The use of common diagnostic definitions in the WMH reduces the methodologic diversity that has hindered international prevalence estimates and prevented accurate descriptions of the personal and economic impacts of this disorder.

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quarters of those with BP-I or BP-II and more than half of those with BPS have a history of 3 or more disorders. With respect to specific types of conditions, the association of BP with anxiety disorders, particularly panic attacks, was notable; 62.9% of those with BPS have an anxiety disorder, with nearly half reporting panic attacks and about one-third meeting criteria for a phobic disorder. Confirmation of a strong link between BP and anxiety is particularly interesting in light of results from prospective studies of adolescents and follow-up studies of children of parents with BP suggesting that anxiety disorders may constitute an early form of expression of the developmental pathway of BPs.

There was striking similarity in patterns of comorbidity of BPS with substance use disorders despite large differences in cross-national prevalence rates of substance use and abuse. The strong association of BP with substance use disorders has also been widely described in both clinical characteristics of respondents with 12-month DSM-IV bipolar spectrum disorders.

| Clinical Characteristic | BPS | BP-I | BP-II | Subthreshold BP | \( \chi^2 \) | \( P \) Value
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<tr>
<td>Manic or hypomanic episode(^b)</td>
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<tr>
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<td>66.6 (6.3)</td>
<td>44.3 (6.2)</td>
<td>26.6 (3.3)</td>
<td>31.2</td>
<td>&lt;.001</td>
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<td>24.8 (5.6)</td>
<td>36.1 (6.3)</td>
<td>52.6 (3.9)</td>
<td>4.3</td>
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<td>14.5 (5.2)</td>
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<td>2.8 (0.9)</td>
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<tr>
<td>No. (^c)</td>
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<tr>
<td>Major depressive episode(^d)</td>
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<tr>
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<td>76.5 (5.1)</td>
<td>76.1 (4.7)</td>
<td>66.1 (5.1)</td>
<td>5.5</td>
<td>.06</td>
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<td>20.4 (5.2)</td>
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<td>33.3 (5.1)</td>
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<td>.25</td>
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<td>3.1 (1.5)</td>
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<td>0.3 (0.3)</td>
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<td>0.0 (0.0)</td>
<td>0.0 (0.0)</td>
<td>0.3 (0.3)</td>
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<tr>
<td>No. (^e)</td>
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<td>140</td>
<td>146</td>
<td>130</td>
<td></td>
<td></td>
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<tr>
<td>Combined YMRS and QIDS scores(^f)</td>
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<tr>
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<td>74.5 (4.5)</td>
<td>66.8 (4.7)</td>
<td>42.5 (3.3)</td>
<td>31.0</td>
<td>&lt;.001</td>
</tr>
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<td>21.2 (4.4)</td>
<td>26.8 (4.5)</td>
<td>44.3 (4.3)</td>
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<td>169</td>
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<tr>
<td>Role impairment</td>
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<td></td>
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<tr>
<td>Manic or hypomanic episode(^h)</td>
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<td></td>
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</tr>
<tr>
<td>Severe and very severe</td>
<td>50.9 (2.2)</td>
<td>57.1 (4.7)</td>
<td>57.0 (4.9)</td>
<td>46.3 (3.2)</td>
<td>3.9</td>
<td>.14</td>
</tr>
<tr>
<td>Moderate</td>
<td>30.2 (2.1)</td>
<td>29.2 (4.3)</td>
<td>22.4 (4.1)</td>
<td>33.0 (2.8)</td>
<td>4.7</td>
<td>.10</td>
</tr>
<tr>
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<td>7.5 (2.3)</td>
<td>4.1 (1.5)</td>
<td>9.8 (1.9)</td>
<td>10.8</td>
<td>.005</td>
</tr>
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<td>6.2 (2.4)</td>
<td>16.5 (4.2)</td>
<td>10.9 (1.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. (^i)</td>
<td>744</td>
<td>211</td>
<td>132</td>
<td>401</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major depressive episode(^h)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe and very severe</td>
<td>74.0 (2.9)</td>
<td>77.6 (5.1)</td>
<td>72.8 (4.7)</td>
<td>71.9 (4.5)</td>
<td>3.7</td>
<td>.15</td>
</tr>
<tr>
<td>Moderate</td>
<td>20.4 (2.7)</td>
<td>19.2 (5.0)</td>
<td>21.9 (4.4)</td>
<td>19.9 (4.4)</td>
<td>1.3</td>
<td>.51</td>
</tr>
<tr>
<td>Mild</td>
<td>2.0 (0.9)</td>
<td>0.4 (0.3)</td>
<td>1.4 (0.8)</td>
<td>4.4 (2.4)</td>
<td>0.1</td>
<td>.93</td>
</tr>
<tr>
<td>None</td>
<td>3.5 (1.2)</td>
<td>2.7 (1.7)</td>
<td>3.9 (2.2)</td>
<td>3.8 (2.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. (^j)</td>
<td>452</td>
<td>150</td>
<td>156</td>
<td>146</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suicide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ideation</td>
<td>43.4 (1.9)</td>
<td>52.2 (3.9)</td>
<td>50.6 (4.0)</td>
<td>36.3 (2.7)</td>
<td>10.8</td>
<td>.005</td>
</tr>
<tr>
<td>No. of 12-mo BPS cases</td>
<td>444</td>
<td>158</td>
<td>109</td>
<td>179</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan</td>
<td>21.0 (1.6)</td>
<td>31.4 (3.4)</td>
<td>23.9 (3.6)</td>
<td>14.9 (1.9)</td>
<td>13.6</td>
<td>.001</td>
</tr>
<tr>
<td>No. of 12-mo BPS cases</td>
<td>225</td>
<td>90</td>
<td>55</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attempt</td>
<td>16.0 (1.5)</td>
<td>25.6 (3.5)</td>
<td>20.8 (3.4)</td>
<td>9.5 (1.6)</td>
<td>20.7</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No. of 12-mo BPS cases</td>
<td>161</td>
<td>69</td>
<td>42</td>
<td>50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: BP, bipolar disorder; BP-I, DSM-IV bipolar disorder type I; BP-II, DSM-IV bipolar disorder type II; BPS, bipolar spectrum disorder; QIDS, Quick Inventory of Depressive Symptoms; YMRS, Young Mania Rating Scale.

\(^a\) Significance tests were performed for cumulative categories. In the case of moderate severity, the BPS subgroups were compared for the prevalence of severe or moderate vs mild or none. In the case of mild severity, the BPS subgroups were compared for the prevalence of any severity (ie, severe, moderate, or mild) vs none. No significance test values are given for the final category (none) because of this cumulative coding.

\(^b\) Based on the YMRS score.\(^26\)

\(^c\) Number of 12-month cases of mania or hypomania with valid YMRS scores (New Zealand did not use the YMRS).

\(^d\) Based on the QIDS self-report score.\(^28\)

\(^e\) Number of major depressive episodes among people with 12-month BPS with valid QIDS scores.

\(^f\) Respondents who reported both manic/hypomanic and major depressive episodes in the past year were assigned the more severe of their 2 severity scores.

\(^g\) Number of 12-month BPS cases in the sample with either valid YMRS or valid QIDS scores.

\(^h\) Based on the Sheehan Disability Scale.\(^29\) Respondents were assigned their highest rating of impairment across the 4 Sheehan Disability Scale domains.

\(^i\) Number of 12-month BPS cases in the sample with valid Sheehan Disability Scale scores associated with 12-month mania or hypomania.

\(^j\) Number of 12-month BPS cases in the sample with valid Sheehan Disability Scale scores associated with 12-month major depressive episode.
disorder. The finding that more than half of those with BP made suicide attempts. When taken together with the early age at onset and strong association with other mental disorders, these results provide further documentation of the serious nature of BP that has been well established in prior clinical and population-based surveys. Three-quarters of those with BP reported severe levels of depressive symptoms and a comparable magnitude of severe role impairment. This suggests that BP can be considered a risk factor for the development of substance use disorders, which has important implications for prevention efforts. These findings also support the need for careful probing of a history of bipolarity among those with substance use disorders.

Finally, the large proportion of those with severe symptoms and role impairment demonstrates the serious nature of BP that has been well established in prior clinical and population-based surveys. Three-quarters of those with BPS reported severe levels of depressive symptoms and a comparable magnitude of severe role impairment. Most striking, 1 in every 4 or 5 persons with BPD had made suicide attempts. When taken together with the early age at onset and strong association with other mental disorders, these results provide further documentation of the individual and societal disability associated with this disorder.

The finding that more than half of those with BP in adulthood date their onset to adolescence highlights the importance of early detection and intervention and possibly the importance of prevention of subsequent comorbid disorders. Because BP has an average age at onset at one of the most critical periods of educational, occupational, and social development, its consequences often lead to lifelong disability. In light of the disability associated with BP, the lack of mental health treatment among those with BP, particularly in low-income countries, is alarming. Only one-quarter of those with BP in low-income countries and only half of those in high-income countries had contacted mental health services. Previous findings of service use in the WMH surveys described the large gap between the burden of mental disorders and mental health care in the studies participating in the WMH Survey Initiative. However, it is notable that most of those with BP received treatment in the mental health sector, even in low-income countries.

Interpretations of our findings must take account of the following conceptual and methodological issues. First, the surveys are cross-sectional, so the findings are based on retrospective recall of symptoms, age at onset, and clinical correlates. Such recall bias may differ by variation in the age composition across countries. Second, despite the use of common interview and diagnostic methods, there was still substantial cross-national variation in the rates of BPS. Although it is possible that these differences reflect real variation in prevalence perhaps owing to higher false-negatives in countries with greater stigma associated with mental illness, further inspection of these differences suggested that there was also variation in the translation, imple-

### Table 5. Lifetime Treatment of Bipolar Spectrum Disorders

<table>
<thead>
<tr>
<th>Category by Income</th>
<th>Respondents, No.</th>
<th>Psychiatrist</th>
<th>Other</th>
<th>Any</th>
<th>General Medical</th>
<th>Human Services</th>
<th>CAM</th>
<th>Any</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low and lower-middle</td>
<td>BPS 210</td>
<td>13.9 (3.6)</td>
<td>16.5 (3.2)</td>
<td>25.2 (3.9)</td>
<td>6.8 (2.1)</td>
<td>3.3 (1.2)</td>
<td>3.9 (1.5)</td>
<td>35.1 (3.9)</td>
</tr>
<tr>
<td>BP-I 48</td>
<td>18.4 (7.1)</td>
<td>11.8 (5.1)</td>
<td>22.3 (7.4)</td>
<td>9.6 (4.8)</td>
<td>9.2 (4.6)</td>
<td>7.7 (4.5)</td>
<td>37.9 (8.3)</td>
<td></td>
</tr>
<tr>
<td>BP-II 28</td>
<td>19.3 (6.2)</td>
<td>25.7 (8.4)</td>
<td>34.7 (9.2)</td>
<td>0.0 (0.0)</td>
<td>0.0 (0.0)</td>
<td>4.0 (3.0)</td>
<td>35.9 (9.3)</td>
<td></td>
</tr>
<tr>
<td>Subthreshold BP</td>
<td>134</td>
<td>11.2 (4.2)</td>
<td>16.1 (4.1)</td>
<td>24.2 (5.0)</td>
<td>7.2 (2.5)</td>
<td>1.8 (1.1)</td>
<td>2.5 (1.3)</td>
<td>33.9 (6.1)</td>
</tr>
<tr>
<td>Upper-middle</td>
<td>BPS 310</td>
<td>20.5 (3.0)</td>
<td>20.7 (2.8)</td>
<td>33.9 (3.6)</td>
<td>17.0 (2.5)</td>
<td>6.1 (1.8)</td>
<td>7.2 (1.7)</td>
<td>45.3 (3.9)</td>
</tr>
<tr>
<td>BP-I 90</td>
<td>34.5 (5.9)</td>
<td>21.6 (4.9)</td>
<td>44.8 (6.5)</td>
<td>15.6 (3.8)</td>
<td>6.1 (2.4)</td>
<td>9.2 (2.8)</td>
<td>54.7 (6.7)</td>
<td></td>
</tr>
<tr>
<td>BP-II 35</td>
<td>21.0 (7.9)</td>
<td>16.3 (7.4)</td>
<td>26.7 (8.2)</td>
<td>22.3 (7.9)</td>
<td>1.4 (1.4)</td>
<td>16.9 (7.7)</td>
<td>43.0 (9.7)</td>
<td></td>
</tr>
<tr>
<td>Subthreshold BP</td>
<td>185</td>
<td>13.4 (2.8)</td>
<td>21.2 (3.4)</td>
<td>29.9 (3.9)</td>
<td>16.6 (3.6)</td>
<td>7.0 (2.6)</td>
<td>4.0 (2.1)</td>
<td>41.1 (4.4)</td>
</tr>
<tr>
<td>High-income</td>
<td>BPS 1053</td>
<td>37.1 (2.0)</td>
<td>35.3 (1.9)</td>
<td>50.2 (2.0)</td>
<td>46.3 (2.1)</td>
<td>18.3 (1.4)</td>
<td>21.6 (1.7)</td>
<td>74.9 (1.6)</td>
</tr>
<tr>
<td>BP-I 291</td>
<td>49.3 (3.9)</td>
<td>48.3 (3.7)</td>
<td>61.3 (3.3)</td>
<td>52.5 (3.6)</td>
<td>22.5 (2.9)</td>
<td>33.2 (3.8)</td>
<td>82.0 (2.7)</td>
<td></td>
</tr>
<tr>
<td>BP-II 229</td>
<td>56.8 (4.1)</td>
<td>48.0 (3.4)</td>
<td>70.7 (3.5)</td>
<td>63.3 (3.8)</td>
<td>24.2 (3.2)</td>
<td>25.1 (3.4)</td>
<td>94.7 (1.7)</td>
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</tr>
<tr>
<td>Subthreshold BP</td>
<td>533</td>
<td>23.9 (2.3)</td>
<td>24.4 (2.5)</td>
<td>37.2 (2.9)</td>
<td>36.8 (2.6)</td>
<td>14.1 (1.9)</td>
<td>15.0 (1.8)</td>
<td>63.8 (2.8)</td>
</tr>
<tr>
<td>All</td>
<td>BPS 1573</td>
<td>29.8 (1.5)</td>
<td>29.1 (1.4)</td>
<td>42.7 (1.6)</td>
<td>33.6 (1.6)</td>
<td>13.3 (1.0)</td>
<td>15.7 (1.1)</td>
<td>62.1 (1.6)</td>
</tr>
<tr>
<td>BP-I</td>
<td>429</td>
<td>41.3 (3.1)</td>
<td>36.2 (2.9)</td>
<td>51.6 (3.1)</td>
<td>36.8 (2.9)</td>
<td>16.3 (2.1)</td>
<td>23.5 (2.7)</td>
<td>68.7 (3.0)</td>
</tr>
<tr>
<td>BP-II</td>
<td>292</td>
<td>47.1 (3.7)</td>
<td>40.6 (3.1)</td>
<td>59.9 (3.5)</td>
<td>49.9 (3.5)</td>
<td>18.0 (2.5)</td>
<td>21.5 (2.8)</td>
<td>80.2 (3.0)</td>
</tr>
<tr>
<td>Subthreshold BP</td>
<td>852</td>
<td>19.3 (1.7)</td>
<td>22.3 (1.8)</td>
<td>33.3 (2.1)</td>
<td>27.0 (1.9)</td>
<td>10.4 (1.3)</td>
<td>10.3 (1.2)</td>
<td>53.4 (2.2)</td>
</tr>
</tbody>
</table>

Abbreviations: BP, bipolar disorder; BP-I, DSM-IV/bipolar disorder type I; BP-II, DSM-IV/bipolar disorder type II; BPS, bipolar spectrum disorder; CAM, complementary and alternative medicine; MH, mental health.

* Treatment either for mania or hypomania or for a major depressive episode.
international collaborations that permit investigation of
information that can provide a context for the public health
assessing severity and role impairment facilitates esti-
s. Third, the inclusion of standardized methods for
enhanced the validity of the cross-national compari-
son, the high degree of coordination across studies
regions of the world, including low-income countries. Sec-
tiative includes a far larger representation of several re-
studies in psychiatric epidemiology. First, the WMH ini-
tiative that represent advances over prior cross-national
BP or major depression.

There are also several features of the WMH Survey Ini-
itiative that represent advances over prior cross-national
BP in a series of nationally representative surveys using
on the prevalence and correlates of the full spectrum of
morbidity between BP and other disorders. In sum-
t he urgent need for increased recognition and treat-
ment facilitation.

These findings demonstrate the important growth of
international collaborations that permit investigation of
cultural and regional differences in prevalence and risk
factors for mental disorders. Recent efforts such as the
proposal of a common global nomenclature to define the
course and outcome in BP as proposed by a task force
under the auspices of the International Society for Bipolar
Disorders should facilitate outcome studies across
geographic areas. Contemporary issues concerning BP that
warrant further study include the following: further eval-
uation of the thresholds and boundaries of BP; better in-
tegration of adult and child epidemiology of BP and its
evolution in light of its onset in adolescence; and fur-
ther investigation of explanations for the patterns of co-
 morbidity between BP and other disorders. In summary,
this article reports the first data, to our knowledge,
on the prevalence and correlates of the full spectrum of
BP in a series of nationally representative surveys using
common methods. As such, it documents the magni-
tude and major impact of BP worldwide and underscores
the urgent need for increased recognition and treatment
facilitation.

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Author Affiliations: National Institute of Mental Health,
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### Table 6. Twelve-Month Treatment of Bipolar Spectrum Disorders

<table>
<thead>
<tr>
<th>Country by Income Category</th>
<th>Respondents, No.</th>
<th>MH Specialty</th>
<th>% (SE)²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Psychiatrist</td>
<td>Other</td>
<td>Any</td>
</tr>
<tr>
<td>Low and lower-middle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPS</td>
<td>129</td>
<td>10.6 (4.3)</td>
<td>3.1 (1.3)</td>
</tr>
<tr>
<td>BP-I</td>
<td>28</td>
<td>6.1 (4.3)</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>BP-II</td>
<td>20</td>
<td>9.1 (5.3)</td>
<td>7.4 (5.6)</td>
</tr>
<tr>
<td>Subthreshold BP</td>
<td>81</td>
<td>12.6 (6.3)</td>
<td>2.9 (1.7)</td>
</tr>
<tr>
<td>x²</td>
<td>0.8</td>
<td>4.1</td>
<td>1.6</td>
</tr>
<tr>
<td>P value</td>
<td>.68</td>
<td>.13</td>
<td>.44</td>
</tr>
<tr>
<td>Upper-middle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPS</td>
<td>205</td>
<td>10.2 (2.3)</td>
<td>8.0 (2.3)</td>
</tr>
<tr>
<td>BP-I</td>
<td>63</td>
<td>17.9 (5.9)</td>
<td>7.6 (2.7)</td>
</tr>
<tr>
<td>BP-II</td>
<td>30</td>
<td>7.9 (5.1)</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>Subthreshold BP</td>
<td>112</td>
<td>6.5 (2.3)</td>
<td>10.5 (3.8)</td>
</tr>
<tr>
<td>x²</td>
<td>3.5</td>
<td>10.9</td>
<td>2.7</td>
</tr>
<tr>
<td>P value</td>
<td>.18</td>
<td>.005</td>
<td>.26</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>BPS</td>
<td>620</td>
<td>16.4 (1.7)</td>
<td>22.8 (1.9)</td>
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<tr>
<td>BP-I</td>
<td>178</td>
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<td>32.6 (4.6)</td>
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<tr>
<td>BP-II</td>
<td>150</td>
<td>25.3 (3.9)</td>
<td>30.5 (4.0)</td>
</tr>
<tr>
<td>Subthreshold BP</td>
<td>292</td>
<td>7.7 (1.8)</td>
<td>14.3 (2.3)</td>
</tr>
<tr>
<td>x²</td>
<td>23.8</td>
<td>20.4</td>
<td>32.8</td>
</tr>
<tr>
<td>P value</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>All</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPS</td>
<td>954</td>
<td>14.0 (1.3)</td>
<td>16.0 (1.3)</td>
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<tr>
<td>BP-I</td>
<td>269</td>
<td>20.7 (3.0)</td>
<td>21.1 (3.0)</td>
</tr>
<tr>
<td>BP-II</td>
<td>200</td>
<td>20.0 (3.1)</td>
<td>21.9 (3.0)</td>
</tr>
<tr>
<td>Subthreshold BP</td>
<td>485</td>
<td>8.3 (1.7)</td>
<td>11.2 (1.7)</td>
</tr>
<tr>
<td>x²</td>
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<td>14.1</td>
<td>21.7</td>
</tr>
<tr>
<td>P value</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Abbreviations: BP, bipolar disorder; BP-I, DSM-IV/bipolar disorder type I; BP-II, DSM-IV/bipolar disorder type II; BPS, bipolar spectrum disorder; CAM, complementary and alternative medicine; MH, mental health.

²Treatment either for mania or hypomania or for a major depressive episode.

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try, Mexico City, Mexico (Dr Medina-Mora); Health 
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ces, Christchurch, New Zealand (Dr Wells); and Na-
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