Mild Disorders Should Not Be Eliminated From the DSM-V

Ronald C. Kessler, PhD; Kathleen R. Merikangas, PhD; Patricia Berglund, MBA; William W. Eaton, PhD; Doreen S. Koretz, PhD; Ellen E. Walters, MS

Background: High prevalence estimates in epidemiological surveys have led to concerns that the DSM system is overly inclusive and that mild cases should be excluded from future DSM editions.

Objective: To demonstrate that the DSM-III-R disorders in the baseline National Comorbidity Survey (NCS) can be placed on a severity gradient that has a dose-response relationship with outcomes assessed a decade later in the NCS follow-up survey (NCS-2) and that no inflection point exists at the mild severity level.

Methods: The NCS was a nationally representative household survey of DSM-III-R disorders in the 3-year time span 1990-1992. The NCS-2 is a follow-up survey of 4375 NCS respondents (76.6% conditional response rate) reinterviewed in 2000 through 2002. The NCS-2 outcomes include hospitalization for mental health or substance disorders, work disability due to these disorders, suicide attempts, and serious mental illness.

Results: Twelve-month NCS/DSM-III-R disorders were disaggregated into 3.2% severe, 3.2% serious, 8.7% moderate, and 16.0% mild case categories. All 4 case categories were associated with statistically significantly (P<.05, 2-sided tests) elevated risk of the NCS-2 outcomes compared with baseline noncases, with odds ratios of any outcome ranging monotonically from 2.4 (95% confidence interval, 1.6-3.4) to 15.1 (95% confidence interval, 10.0-22.9) for mild to severe cases. Odds ratios comparing mild to moderate cases were generally nonsignificant.

Conclusions: There is a graded relationship between mental illness severity and later clinical outcomes. Retention of mild cases in the DSM is important to represent the fact that mental disorders (like physical disorders) vary in severity. Decisions about treating mild cases should be based on cost-effectiveness not current severity. Cost-effectiveness analysis should include recognition that treatment of mild cases might prevent a substantial proportion of future serious cases.

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Original Article

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sons with severe and persistent mental illness (SPMI) from other persons with mental illness, while the Alcohol, Drug Abuse, and Mental Health Administration Reorganization Act stipulated that state mental health block grant funds can be used only to treat persons with serious mental illness (SMI). 13,15 Many health care plans have followed suit by restricting mental health coverage to a subset of DSM disorders that they consider to be biologically based. Darryl Regier, MD, director of the Division of Research at the American Psychiatric Association, who is expected to play a prominent role in the development of DSM-V, has supported similar restrictions using more elaborate requirements for clinically significant distress or impairment than those in DSM-IV. 13,16,17

The SPMI and SMI proposals are different from the Regier proposal for DSM-V. The definitions of SPMI and SMI are practical attempts to focus treatment resources on the subset of cases with the greatest need. In comparison, the Regier proposed restriction of cases in DSM-V is an attempt to declare that mild cases do not exist. This radical approach has implications not only for the definition of current unmet need for treatment but also for current research and consideration of future treatment needs. Research shows that many syndromes currently defined as mental disorders are extremes on continua that appear not to have meaningful thresholds. 18,19 These results are important in at least 2 ways. First, exploration of the full continua rather than the currently established diagnostic thresholds might yield greater power in studies of genetic and environmental risk factors. 20 Second, development of early interventions to prevent progression along a given severity continuum might reduce the prevalence of serious cases. 21 Removal of current mild cases from the DSM system would undercut both of these advantages as well as distort the reality that mental disorders (like physical disorders) vary widely in seriousness. 22,23

The current article presents data designed to argue against using the deletion of mild cases from future editions of the DSM as an approach to restrict the number of persons who are defined as being in need of treatment. The argument is based on the expansion of an analysis of the NCS that was recently reported in the ARCHIVES by Narrow, Regier, and colleagues. 13 These authors divided 12-month NCS/DSM-III-R cases into those considered either clinically significant mental illness (CSMI) or clinically nonsignificant mental illness (CNMI) based on respondent reports about interference and treatment. Comparison of these 2 subgroups showed, not surprisingly, that various indicators of illness severity (eg, days out of role [ie, the number of days when a person is unable to carry out their normal activities], history of suicide attempts) were higher in CSMI than CNMI. Narrow, Regier, and colleagues asserted, based on these results, that mild cases should be excluded from DSM-V. 13

We build on this analysis in 2 ways. First, we use data from the recently completed NCS-2, 24 a survey that reinterviewed NCS respondents a decade after their baseline interviews, to examine the associations of baseline NCS 12-month illness severity with clinically significant outcomes assessed in NCS-2. Second, we expand the number of illness severity categories from 2 to 4 by dividing the cases that Narrow, Regier, and colleagues defined as having CSMI into severe, serious, and moderate cases. We show that differences in the risk of clinically significant outcomes in NCS-2 across these severity categories are as large as, and in some cases larger than, those between moderate and mild (ie, CNMI) cases. We also show that the elevated risk of the NCS-2 outcomes among mild cases vs noncases is consistently larger than the elevated risk among moderate cases vs mild cases. These results call into question the suggestion that the DSM-V case threshold should be set above CNMI rather than at any other arbitrary point on the severity gradient.

SAMPLE

The baseline NCS was a nationally representative household survey of 8098 respondents in the age range of 15 to 54 years carried out in the 3-year time span of 1990-1992. 4 Respondents were selected from a stratified, multistage area probability sample of the noninstitutionalized civilian population in the 48 coterminous states, with a supplemental sample of students living in campus housing. The survey response rate was 82.4%. All NCS respondents were administered a part I diagnostic interview (described in the “Baseline Diagnostic Assessment” section), while a part II risk factor interview was administered to a probability subsample of 3877 respondents who included all those in the age range of 15 to 24 years, all those who screened positive for any of the DSM-III disorders assessed in part I, and a 1 in 6 random subsample of all remaining part I respondents. The part II sample was weighted to adjust for differential probabilities of selection as well as for nonresponse bias. 25

The NCS-2 attempted to trace and reinterview all 3877 part II NCS respondents a decade after the baseline NCS using an expanded version of the baseline interview that reconstructed information on illness onset, course, and severity during the years between the 2 surveys. A total of 5463 target respondents were successfully traced, of whom 166 were deceased, and 4375 were interviewed for a conditional response rate of 76.6%. The unconditional response rate, which considers the baseline NCS response rate of 82.4%, is 63.1% (0.766 X 0.824). The NCS-2 respondents differ significantly from other baseline NCS respondents in higher probabilities of being female, well educated, and residents of rural areas (Table 1, part I). A propensity score adjustment weight 26 was used to correct the NCS-2 sample for these compositional biases. There was remarkably little difference, in comparison, between NCS-2 respondents and nonrespondents either in the prevalence of baseline NCS/DSM-III-R disorders or in the severity of these disorders (Table 1, part II).

BASELINE DIAGNOSTIC ASSESSMENT

The baseline NCS diagnostic interview was a modified version of the World Health Organization Composite International Diagnostic Interview (CIDI). 27,28 Diagnoses were based on DSM-III-R criteria. The 12-month diagnoses available in the part II sample, which are the focus of this article, are mood disorders (major depression, mania, dysthymia), anxiety disorders (panic disorder, agoraphobia without panic, social phobia, simple phobia, generalized anxiety disorder, posttraumatic stress disorder), substance use disorders (alcohol or other drug abuse or dependence), and nonaffective psychosis (NAP) (schizophrenia, schizoaffective disorder, delusional disorder, or psychosis not otherwise specified). Criteria for at least one of these disorders in the 12 months before
the baseline interview was met by 31.2% of the weighted part II NCS sample.

A clinical calibration of all NCS/DSM-III-R diagnoses other than NAP was carried out with blind follow-up interviews of 356 NCS respondents using the lifetime version of the Structured Clinical Interview for DSM-III-R (SCID). The vast majority of CIDI prevalence estimates were lower than the SCID prevalence estimates. However, only 2 differences were statistically significant—an overestimated prevalence of major depression in the CIDI compared with the SCID and an underestimated prevalence of simple phobia in the CIDI compared with the SCID. A separate calibration study for NAP showed that, although the CIDI could be used as a useful first-stage screen for NAP, no calibration rule could generate valid diagnoses of NAP from the CIDI data. Based on this result, an attempt was made to administer a clinical reappraisal interview for NAP to all NCS respondents who screened positive for NAP in the baseline NCS. Clinician-diagnosed NAP was subsequently used instead of CIDI-diagnosed NAP in all NCS reports, including the current report.

THE BASELINE ILLNESS SEVERITY SCALE

The baseline illness severity scale was created by using 3 previously published definitions: (1) The National Mental Health Advisory Council definition of SPMI; (2) the Substance Abuse and Mental Health Services Administration definition of SMI; and (3) the definition of CSMI recently made by Narrow, Reiger, and colleagues. The operational definitions of SPMI and SMI have been described in detail elsewhere. Briefly, SPMI was defined as either (1) meeting criteria for 12-month NAP or mania or (2) having a 12-month anxiety or mood disorder that required hospitalization or treatment with antipsychotic medications. Serious mental illness was defined as either (1) meeting criteria for SPMI or (2) having a 12-month anxiety or mood disorder that was associated with at least 1 indicator of serious role impairment (suicidality, mental health-related work disability, marital violence, or extreme social isolation). Following Narrow, Reiger, and colleagues, CSMI was defined as having a 12-month NCS/DSM-III-R diagnosis that either (1) was described by the respondent as interfering “a lot” with his or her life and activities or (2) was treated at some time in the 12 months before the baseline NCS interview. Clinically nonsignificant mental illness, finally, was defined as any 12-month NCS/DSM-III-R disorder that did not meet the requirements for CSMI. Using these definitions and defining categories hierarchically, 3.2% (SE, 0.3%) of part II NCS respondents met 12-month criteria at baseline for SPMI, an additional 3.2% (SE, 0.2%) met criteria for SMI but not SPMI, an additional 8.7% (SE, 0.4%) met criteria for CSMI but neither SPMI nor SMI, and an additional 16.0% (SE, 0.3%) met criteria for CNMI but not SPMI, SMI, or CSMI.

NCS-2 OUTCOME ASSESSMENT

The 4 NCS-2 outcomes considered herein were defined as follows: (1) Hospitalization was defined as being hospitalized for mental health or substance problems at any time in the decade between the NCS and NCS-2 interviews. This outcome was reported by 2.5% (SE, 0.3%) of the NCS-2 respondents. (2) Work disability was defined as being out of work on disability for a mental health or substance problem for a minimum of 4 consecutive weeks at any time between the 2 interviews. This outcome was reported by 1.4% (SE, 0.2%) of the NCS-2 respondents. (3) Suicide attempt was defined as reporting an attempted suicide at any time between the 2 interviews. This outcome was reported by 1.4% (SE, 0.2%) of the NCS-2 respondents. (4) Serious mental illness was defined as meeting the criteria described earlier for SMI in the 12 months before the NCS-2 interview. This outcome was reported by 5.6% (SE, 0.5) of the NCS-2 respondents. At least 1 of the 4 outcomes was reported by 8.3% (SE, 0.6%) of the NCS-2 respondents.

STATISTICAL ANALYSIS

Controlling for respondent age and sex, logistic regression analysis was used to predict the NCS-2 outcomes from dummy variables that distinguished NCS respondents with baseline 12-month severe, serious, moderate, and mild DSM-III-R/NCS disorders compared with respondents who did not meet criteria for any of these disorders at the time of the original NCS. Parallel logistic regression equations were estimated to com-

<table>
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<tr>
<th>Severity of Mental Illness</th>
<th>Hospitalization</th>
<th>Work Disability</th>
<th>Suicide Attempt</th>
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<tr>
<td></td>
<td>% OR (95% CI)</td>
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<td>Severe</td>
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<td>5.6 (2.2-14.4)</td>
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<td>Moderate</td>
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<td>1.3 (0.4-3.6)</td>
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<td>Mild</td>
<td>2.9</td>
<td>2.7 (1.5-4.9)</td>
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<td>1.3 (0.4-3.2)</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0 (0.7)</td>
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χ² Test: 152.1†, 17.0†, 40.4†, 194.0†, 202.8†

Abbreviations: CI, confidence interval; NCS, National Comorbidity Survey; ORs, odds ratios; SMI, serious mental illness.
*Entries in the percentage columns are differences in unadjusted prevalences of the NCS-2 outcomes between the subsamples defined by baseline 12-month NCS/DSM-III-R disorder severity. Entries in the OR and (95% CI) columns are odds ratios and design-corrected 95% CIs obtained by exponentiating multiple logistic regression coefficients in equations that simultaneously included dummy variables for the baseline disorder severity categories and controls for age and sex to predict the NCS-2 outcomes. For an explanation of the degrees of severity of mental illness see “The Baseline Illness Severity Scale” subsection of the “Methods” section.
†The value is significant to the .05 level, 2-sided test.


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<tr>
<th>Comparison of the Severity of Mental Illness</th>
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<td>% OR (95% CI)</td>
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<td>Severe vs serious</td>
<td>14.0†</td>
<td>2.9† (1.5-5.9)</td>
<td>4.4†</td>
<td>3.8† (1.3-11.7)</td>
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<td>Serious vs moderate</td>
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<td>1.0 (0.4-2.3)</td>
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<tr>
<td>Mild vs noncases</td>
<td>1.9†</td>
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<td>0.5</td>
<td>1.3 (0.5-3.2)</td>
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Abbreviations: CI, confidence interval; NCS, National Comorbidity Survey; OR, odds ratio; SMI, serious mental illness.
*Entries in the percentage columns are differences in unadjusted prevalences of the NCS-2 outcomes between the subsamples being contrasted. Entries in the OR columns are ratios of contiguous ORs in Table 2. Entries in the 95% CI columns are design-corrected 95% CIs of these ORs. For an explanation of the degrees of severity of mental illness see “The Baseline Illness Severity Scale” subsection of the “Methods” section.
†The value is significant to the .05 level, 2-sided test.

RESULTS

EFFECTS OF BASELINE SEVERITY IN PREDICTING NCS-2 OUTCOMES

A consistent monotonic relationship exists between the baseline illness severity categories and the 4 NCS-2 outcomes (Table 2), with only 1 inversion in monotonicity (the OR for mild cases was larger than the OR for moderate cases in predicting work disability). The largest ORs associated with severe cases are in the range of 5.60 to 29.7, while the smallest ORs associated with mild cases are in the range of 1.3 to 2.7. Three of the 3 ORs associated with mild cases are statistically significant at the .05 level.

A comparison of pairwise differences in outcomes across contiguous categories of the baseline illness severity gradient (Table 3) finds 10 statistically significant differences (P<.05, 2-sided tests) of 20 comparisons. Importantly, the differences between moderate cases vs mild cases are consistently smaller than either the differences between severe cases vs serious cases or serious cases vs moderate cases. The moderate vs mild distinction is statistically significant in only 1 comparison (SMI in the year before the NCS-2 interview). The mild vs none distinction, in comparison, is significant in 3 comparisons and consistently larger than the moderate vs mild distinction.

The population attributable risk proportions associated with each category of baseline illness severity (Table 4) vary less than the ORs. This is true because the higher baseline prevalences of the less severe categories counterbalance their lower effects on the outcomes. As a result, although severe cases are consistently asso-
associated with the highest population attributable risk proportions, there is no consistent rank order of population attributable risk proportions among the other categories.

These results show that a continuous graded relationship exists between the baseline NCS illness severity categories and the NCS-2 outcomes. No consistent inflection point in the gradient of outcome risk can be found at the point on the distribution proposed by Narrow, Regier, and colleagues as distinguishing between CSMI and CNMI. The results also show that the elevated risk of NCS-2 outcomes among mild cases vs noncases is consistently larger than the elevated risk among moderate cases vs mild cases. These results call into question the suggestion that the case threshold should exclude mild cases.

This is not to say that more principled considerations, based either on future epidemiological, biological, or taxometric studies, might not lead to the conclusion that diagnostic thresholds for certain DSM disorders should be changed. Nor is it to say that the problem that motivated Narrow, Regier, and colleagues to propose narrowing the DSM criteria (the number of persons who meet current criteria is much larger than the number of persons who can be treated with available treatment sources) is unimportant. However, the solution to this problem proposed by Narrow, Regier, and colleagues to define the problem out of existence is ill conceived. The definition of a case should not be considered synonymous with need for treatment any more than with clinically significant distress or impairment.

The problem of unmet need for treatment should be addressed by developing comprehensive triage rules that allocate available resources based on evidence-based assessments of the cost-effectiveness of available treatments across the severity threshold of the disorder. Severity gradients are widely used in this way in other branches of medicine. In the absence of such rules, which do not exist, ad hoc decision making is inevitable. In developing these rules for mental disorders, consideration should be given not only to current distress and impairment but also to the risk of progression from a mild to a more severe disorder. It is unclear whether these rules, once they are developed, would define treatment of mild cases as cost-effective. Even if they did not, mild cases should be retained in the definition of disorders both to acknowledge that mental disorders (like physical disorders) vary in severity and to remind us that the development of cost-effective treatments for mild disorders might prevent a substantial proportion of future serious disorders.

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Dr Kessler and Merikangas are coprincipal investigators. Collaborators include Jim Anthony, PhD, Johns Hopkins University; Jane Costello, PhD, Duke University, Durham, NC; William Eaton, PhD, Johns Hopkins University; Doreen Koretz, PhD, NIMH; Dan Offord, MD, McMaster University, Hamilton, Ontario; and Elaine Wethington, PhD, Cornell University, Ithaca, NY.

A complete list of NCS publications along with information about NCS-2 can be obtained from the NCS Web site home page at: http://www.hcp.med.harvard.edu/ncs.

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REFERENCES


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Abbreviations: CSMI, clinically significant mental illness; NSMI, nonserious mental illness; SMI, serious mental illness; SPMI, severe and persistent mental illness.

*Each population attributable risk proportion was calculated by generating 2 estimated probabilities of a given NCS-2 outcome for each NCS-2 respondent based on the logistic regression equations in Table 2. The first estimate used all the original coefficients in the equation, while the second constrained the coefficient for the severity category under investigation to be 0 (ie, odds ratio, 1.0). The population attributable risk proportion was defined as the proportional reduction in the estimated prevalence of the outcome in the total sample in the restricted equation vs the unrestricted equation.

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23. Spitzer RL. Diagnosis and need for treatment are not the same. Arch Gen Psychiatry. 1998;55:120.