Prevalence of Mental Illness in the United States: Data Sources and Estimates

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Summary

Determining how many people have a mental illness can be difficult, and prevalence estimates vary. While numerous surveys include questions related to mental illness, few provide prevalence estimates of diagnosable mental illness (e.g., major depressive disorder as opposed to feeling depressed, or generalized anxiety disorder as opposed to feeling anxious), and fewer still provide national prevalence estimates of diagnosable mental illness. This report briefly describes the methodology and results of three large surveys (funded in whole or in part by the U.S. Department of Health and Human Services) that provide national prevalence estimates of diagnosable mental illness: the National Comorbidity Survey Replication (NCS-R), the National Comorbidity Survey Replication Adolescent Supplement (NCS-A), and the National Survey on Drug Use and Health (NSDUH). The NCS-R and the NCS-A have the advantage of identifying specific mental illnesses, but they are more than a decade old. The NSDUH does not identify specific mental illnesses, but it has the advantage of being conducted annually.

Between February 2001 and April 2003, NCS-R staff interviewed more than 9,000 adults aged 18 or older. Analyses of NCS-R data have yielded different prevalence estimates. One analysis of NCS-R data estimated that 26.2% of adults had a mental illness within a 12-month period (hereinafter called 12-month prevalence). Another analysis of NCS-R data estimated the 12-month prevalence of mental illness to be 32.4% among adults. A third analysis of NCS-R data estimated the 12-month prevalence of mental illness excluding substance use disorders to be 24.8% among adults. The 12-month prevalence of serious mental illness was estimated to be 5.8% among adults, based on NCS-R data.

Between February 2001 and January 2004, NCS-A staff interviewed more than 10,000 adolescents aged 13 to 17. Using NCS-A data, researchers estimated the 12-month prevalence of mental illness to be 40.3% among adolescents. Some have suggested that the current approach to diagnosing mental illness identifies people who should not be considered mentally ill. The 12-month prevalence of serious mental illness was estimated to be 8.0% among adolescents, based on NCS-A data.

The NSDUH is an annual survey of approximately 68,000 adults and adolescents aged 12 years or older in the United States. According to the 2016 NSDUH, the estimated 12-month prevalence of mental illness excluding substance use disorders was 18.3% among adults aged 18 or older. The estimated 12-month prevalence of serious mental illness (excluding substance use disorders) was 4.2% among adults. Although the NSDUH collects information related to mental illness (e.g., symptoms of depression) from adolescents aged 12 to 17, it does not produce estimates of mental illness for that population.

The prevalence estimates discussed in this report may raise questions for Congress. Should federal mental health policy focus on adults or adolescents with any mental illness (including some whose mental illnesses may be mild and even transient) or on those with serious mental illness? Should substance use disorders be addressed through the same policies as other mental illnesses? Members of Congress may approach mental health policy differently depending in part on how they answer such questions.
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Introduction

Congress has demonstrated an interest in mental health and mental illness,¹ and knowing how many people have a mental illness may be helpful in addressing related policy issues. Determining how many people have a mental illness can be difficult, and prevalence² estimates vary. While numerous surveys include questions related to mental illness, few provide prevalence estimates of diagnosable mental illness, and fewer still provide national prevalence estimates of diagnosable mental illness.³

This report briefly describes the methodology and selected findings of three large federally funded surveys that provide national prevalence estimates of diagnosable mental illness: the National Comorbidity Survey Replication (NCS-R), the National Comorbidity Survey Replication Adolescent Supplement (NCS-A), and the National Survey on Drug Use and Health (NSDUH). This report presents prevalence estimates of any mental illness and serious mental illness⁴ based on each survey and ends with a brief discussion of how these prevalence estimates might inform policy discussions.

One data source may be preferred over another in specific situations. For example, the NCS-R and the NCS-A are more than a decade old, so the NSDUH (which is conducted annually) may be preferred for more recent prevalence estimates. On the other hand, the NCS-R and the NCS-A provide prevalence estimates for specific disorders,⁵ which the NSDUH does not provide.⁶

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² Prevalence is the share of a population affected by a given condition during a specified period of time. The term “12-month prevalence” refers to the share of study participants with symptoms that could be identified as mental illness in the 12 months before the interview. Another way to express prevalence is “lifetime prevalence,” which is based on the share of study participants that had ever had a mental illness as of the time of the interview. This report focuses on 12-month prevalence because it more closely reflects the number of people with mental illness at a given time, which might translate into need for services at a given time.


⁴ Severity of mental illness is generally defined by the number of symptoms (i.e., whether the individual has just enough symptoms to meet diagnostic criteria or has excess symptoms) and/or the degree of functional impairment (e.g., whether an individual with mental illness is unable to work as a consequence of the illness). Each survey discussed in this report uses its own definition of serious mental illness.

⁵ Estimates of specific disorders are not presented in this report; they are available in the cited documents. The National Institute of Mental Health also compiles prevalence estimates for selected disorders; see the left navigation bar at “What is prevalence?” http://www.nimh.nih.gov/health/statistics/prevalence/index.shtml. However, these estimates may come from various studies with different methodologies, and are not necessarily comparable to one another.

⁶ The NSDUH provides more detailed information about substance use disorders, but not other mental illness.
Estimating Prevalence of Mental Illness

In clinical practice, mental health professionals diagnose mental illnesses based on criteria in the American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders* (DSM)\(^7\) and exercise clinical judgment in doing so.\(^8\) Large surveys, however, may not allow for lengthy interviews and use of clinical judgment. Considerations in generating national prevalence estimates of diagnosable mental illness\(^9\) through large surveys include (1) what survey instrument (i.e., set of questions) is used, (2) who administers it, and (3) how generalizable the findings are. Each of these considerations is discussed briefly below.

When designing surveys, researchers must weigh the value of detailed information against the time required to collect that information. Longer survey instruments may be better able to identify mental illness accurately by asking all or most of the questions necessary to assess DSM diagnostic criteria. Shorter survey instruments, while more practical to include in a survey, may not identify mental illness as accurately as longer instruments. Table 1 provides examples of survey instruments assessing mental illness.

Survey instruments may be administered in different ways, which may affect both the accuracy of their assessment of mental illness and the feasibility of their inclusion in large surveys. Some, such as the Structured Clinical Interview for DSM Disorders (described in Table 1), require trained mental health professionals. Others require trained interviewers who need not be mental health professionals. Still others may be self-administered or administered by interviewers without extensive training.

The prevalence estimates described in this report are weighted to reflect the general U.S. population as closely as possible.\(^10\) This is accomplished by assigning a weight to each survey respondent based on information that is available for both the survey respondents and the general U.S. population (e.g., age and gender, among others). Weighting can correct for known differences between the survey respondents and the general U.S. population (e.g., if people in a certain age range are overrepresented in the survey). Weighting cannot, however, correct for subpopulations that are excluded from the survey altogether (e.g., the homeless). Prevalence estimates are not generalizable to excluded subpopulations.\(^11\)

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\(^8\) A diagnosis of mental illness may be based on what an individual reports about himself or herself; what other people report about the individual (if, for example, a family member is available); and what the mental health professional observes about the individual. People may not be forthcoming with information about certain behaviors (e.g., drug use) or symptoms (e.g., hallucinations); this is a challenge in both clinical settings and research settings.

\(^9\) This report uses the term “diagnosable” as distinct from “diagnosed” in acknowledgement of the potential for surveys to identify people suffering from mental illnesses that have not been diagnosed by a mental health professional. Also important is the distinction between symptoms of mental illness (e.g., feelings of depression or anxiety) and a combination of symptoms meeting DSM criteria for a diagnosis of mental illness (e.g., major depressive disorder or generalized anxiety disorder). While all DSM disorders may be considered mental illnesses, surveys generally do not assess all of them. In this report, some of the prevalence estimates include substance use disorders and others do not.

\(^10\) The weighting was done by the researchers whose published results CRS cites in this report, not by CRS.

\(^11\) Excluded subpopulations may have higher or lower risk of mental illness than the general population. Thus if these subpopulations had been included in the surveys, the overall prevalence estimates would have been slightly higher or lower accordingly. Policy approaches that might be appropriate for excluded subpopulations such as the homeless or non-English speakers may be different than policy approaches for the general population.
Table 1. Examples of Survey Instruments Assessing Mental Illness

<table>
<thead>
<tr>
<th>Instrument</th>
<th>What It Assesses</th>
<th>Who Administers It</th>
<th>How Long It Takes</th>
<th>Examples of Surveys Using It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structured Clinical Interview for DSM Disorders (SCID)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Diagnoses</td>
<td>Trained mental health professionals</td>
<td>Approximately 30-60 minutes</td>
<td>NSDUH (for a subsample of respondents)</td>
</tr>
<tr>
<td>World Mental Health Survey Initiative version of the Composite International Diagnostic Interview (WMH-CIDI)&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Diagnoses, functioning, treatment, risk factors, socio-demographic characteristics, and more</td>
<td>Trained lay interviewers</td>
<td>Approximately 2 hours, but modular so that some sections can be excluded</td>
<td>NCS-R; NCS-A uses a modified Composite International Diagnostic Interview (CIDI)</td>
</tr>
<tr>
<td>World Health Organization Disability Assessment Schedule (WHODAS)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Difficulties (due to health conditions) in the areas of cognition, mobility, self-care, getting along, life activities, and participation</td>
<td>Either self-administered or administered by an interviewer (no training required)</td>
<td>Different versions are available; the longest (36 items) takes approximately 15–20 minutes</td>
<td>NSDUH uses a modified version</td>
</tr>
<tr>
<td>Kessler-6 Psychological Distress Scale (K6)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Frequency and severity of feeling nervous, hopeless, restless/fidgety, sad/depressed, and worthless</td>
<td>Either self-administered or administered by an interviewer (no training required)</td>
<td>No more than 2 minutes</td>
<td>NSDUH uses a modified version</td>
</tr>
</tbody>
</table>

**Note:** A survey instrument is a tool for systematically collecting information from survey respondents; each instrument listed in this table is a set of questions that may be asked as part of a larger questionnaire.


c. Information about the WHODAS in this table is drawn from World Health Organization, Classifications, *Classification of Functioning, Disability and Health (ICF)*, http://www.who.int/classifications/icf/whodasi/en/.

National Comorbidity Survey Replication

The National Comorbidity Survey Replication (NCS-R) replicated the original National Comorbidity Survey (conducted between 1990 and 1992), which was the first survey to use fully structured research diagnostic interviews to assess a wide range of DSM disorders among a national sample of adults in the United States. The NCS-R was funded primarily by the National Institute of Mental Health within the National Institutes of Health (NIH) of the Department of Health and Human Services (HHS), with supplemental support from the National Institute on Drug Abuse (also within NIH), the Substance Abuse and Mental Health Services Administration (of HHS), the Robert Wood Johnson Foundation, and the John W. Alden Trust. Between February 2001 and April 2003, NCS-R staff conducted in-person interviews with more than 9,000 adults aged 18 or older, drawing the sample from households in the contiguous United States. The sample did not include the homeless, individuals in institutions, or non-English speakers; these exclusions limit the generalizability of findings based on the NCS-R.

Prevalence of Any Mental Illness Among Adults

The NCS-R determined the presence of any mental illness based on the World Health Organization’s World Mental Health Survey Initiative version of the Composite International Diagnostic Interview (WMH-CIDI), which assessed 19 specific DSM diagnoses. Analyses of NCS-R data have yielded different prevalence estimates. One analysis of NCS-R data estimated that 26.2% of adults had a mental illness within a 12-month period (hereinafter called 12-month prevalence). Another analysis of NCS-R data estimated the 12-month prevalence of mental illness to be 32.4% among adults; the difference may be attributable to the use of more recent information about the U.S. population in weighting the NCS-R data. Both of these estimates include substance use disorders as mental illness; an analysis of NCS-R data estimated the 12-month prevalence of mental illness excluding substance use disorders to be 24.8% among adults.

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12 Harvard Medical School, Department of Health Care Policy, National Comorbidity Survey, http://www.hcp.med.harvard.edu/ncs/.
15 The DSM includes more than 19 diagnoses. While all of them may be considered mental illnesses, some are often excluded from definitions of mental illness (e.g., learning disorders).
17 Harvard Medical School, Department of Health Care Policy, National Comorbidity Survey, “NSC-R Twelve-Month Prevalence Estimates” link at http://www.hcp.med.harvard.edu/ncs/. This later analysis was based on updated data as of July 19, 2007, and “reflect[s] the latest diagnostic, demographic and raw variable information.”
18 Benjamin G. Druss et al. “Impairment in Role Functioning in Mental and Chronic Medical Disorders in the United States: Results from the National Comorbidity Survey Replication.” Molecular Psychiatry, vol. 14, no. 7 (July 2009), pp. 728-737.
Prevalence of Serious Mental Illness Among Adults

Additional analyses of NSC-R data were conducted to determine the 12-month prevalence of mental illness at three levels of severity: serious, moderate, or mild. Among the 26.2% of adults identified with a mental disorder in the analysis, serious disorders (22.3% among adults with a disorder) were less common than moderate disorders (37.3%) or mild disorders (40.4%). The estimated 12-month prevalence of serious mental illness among all adults was 5.8%.

National Comorbidity Survey Replication Adolescent Supplement

The National Comorbidity Survey Replication Adolescent Supplement (NCS-A) was the first survey to use fully structured research diagnostic interviews to assess a wide range of DSM disorders among a national sample of adolescents in the United States. Like the NCS-R, the NCS-A was funded primarily by the National Institute of Mental Health, with supplemental support from the National Institute on Drug Abuse, the Substance Abuse and Mental Health Services Administration, the Robert Wood Johnson Foundation, and the John W. Alden Trust. Between February 2001 and January 2004, NCS-A staff interviewed more than 10,000 adolescents aged 13 to 17, drawing the sample from both schools and households in the coterminous United States. Adolescent participants were interviewed in person, and one parent of each participating adolescent was asked to complete a self-administered questionnaire about the adolescent’s developmental history and mental health. The sample did not include the homeless, individuals in institutions, or non-English speakers; these exclusions limit the generalizability of findings based on the NCS-A.

Prevalence of Any Mental Illness Among Adolescents

The NCS-A determined the presence of any mental illness based on a modified Composite International Diagnostic Interview (CIDI), which assessed 15 specific DSM diagnoses. Using...

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19 Kessler et al., NCS-R Prevalence (2005). Any of the following qualified a case of mental illness as serious: “a 12-month suicide attempt with serious lethality intent; work disability or substantial limitation due to a mental or substance disorder; positive screen results for non-affective psychosis; bipolar I or II disorder; substance dependence with serious role impairment (as defined by disorder-specific impairment questions); an impulse control disorder with repeated serious violence; or any disorder that resulted in 30 or more days out of role in the year” (p. 618).

20 Kessler et al., NCS-R Prevalence (2005). Among cases of mental illness not defined as serious, any of the following qualified a case as moderate: “suicide gesture, plan, or ideation; substance dependence without serious role impairment; at least moderate work limitation due to a mental or substance disorder; or any disorder with at least moderate role impairment in 2 or more domains of the Sheehan Disability Scale [which] assessed disability in work role performance, household maintenance, social life, and intimate relationships” (p. 618).

21 Kessler et al., NCS-R Prevalence (2005). All cases of mental illness that were not defined as serious or moderate were considered mild (p. 618).

22 Kessler et al., NCS-R Prevalence (2005).


NCS-A data, researchers estimated the 12-month prevalence of mental illness to be 40.3% among adolescents.\(^\text{25}\) Some have suggested that the current version of the DSM identifies people who should not be considered mentally ill.\(^\text{26}\)

**Prevalence of Serious Mental Illness Among Adolescents**

Additional analyses of NCS-A data were conducted to determine the presence of serious mental illness (called serious emotional disturbance in NCS-A), which was defined as at least one diagnosis accompanied by an estimated score of 50 or less on the Children’s Global Assessment Scale (CGAS), indicating either severe functional impairment in one area of living or moderate functional impairment in most areas of living. The CGAS score was not measured directly as part of the NCS-A. Instead the NCS-A used a sophisticated approach that involved (1) selection of a subsample of 347 adolescent-parent pairs from the main study; (2) follow-up telephone interviews conducted by mental health professionals who assigned CGAS scores; (3) development of a statistical model linking CGAS scores to responses to questions in the main study; and (4) application of the statistical model to the full sample to impute CGAS scores based on responses to questions in the main study.\(^\text{27}\)

Using the imputed CGAS scores, researchers assessed serious mental illness among 6,483 adolescent NCS-A participants with complete data (including parent questionnaires). This analysis yielded a 12-month prevalence of any mental illness (42.6%) that was slightly higher than the previous estimate and found most cases to be mild (58.2% among adolescents with a disorder) or moderate (22.9%), rather than serious (18.8%). The estimated 12-month prevalence of serious mental illness among all adolescents was 8.0%. Some people have suggested that most adolescents with mental disorders do not need treatment because their disorders are mild and will resolve on their own; however, some research has shown that mild disorders during adolescence may predict serious disorders during adulthood.\(^\text{28}\)

**National Survey on Drug Use and Health**

The National Survey on Drug Use and Health (NSDUH) focuses primarily on the use of illegal drugs, alcohol, and tobacco and also includes several modules that focus on mental health issues.\(^\text{29}\) The NSDUH is funded by the Substance Abuse and Mental Health Services Administration (SAMHSA). Each year, the NSDUH surveys approximately 68,000 noninstitutionalized civilians aged 12 years or older in the United States, divided roughly between

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\(^{25}\) Kessler et al., NCS-A Prevalence (2012).

\(^{26}\) Kessler et al., NCS-A Severity (2012).


\(^{28}\) Kessler et al., NCS-A Severity (2012).

51,000 adults (aged 18 or older) and 17,000 adolescents (aged 12 to 17). The NSDUH is conducted in both English and Spanish. Participants are interviewed in their homes using a combination of personal interviewing and audio computer-assisted self-interviewing, which offers more privacy in order to encourage honest reporting of sensitive topics such as illicit drug use. The sample does not include homeless persons not living in a shelter, individuals in institutions, those who speak a language other than English or Spanish, or military personnel on active duty; these exclusions limit the generalizability of findings based on the NSDUH.

NSDUH-based prevalence estimates of any mental illness and serious mental illness among adults aged 18 or older are described below. Although the NSDUH collects information related to mental illness (e.g., symptoms of depression) from adolescents aged 12 to 17, it does not produce prevalence estimates of mental illness for that population.

Prevalence of Any Mental Illness Among Adults

The NSDUH determines the presence of any mental illness based on a combination of relatively short modules of questions (including modified versions of the K6 and WHODAS described in Table 1) in the main survey and information from an additional follow-up interview conducted with a subsample of adults from the main survey. Unlike the NCS-R and the NCS-A, the core component of NSDUH does not include questions designed to identify specific DSM diagnoses. Instead, the NSDUH uses an approach similar to the one used by NCS-A to impute the CGAS, involving (1) selection of a subsample of adults from the main study; (2) follow-up telephone interviews conducted by mental health professionals who conduct the Structured Clinical Interview for DSM Disorders (SCID); (3) development of a statistical model linking the SCID-based diagnosis of mental illness to responses to questions in the main study; and (4) application of the statistical model to the full sample to impute the presence of mental illness based on responses to questions in the main study. According to the 2016 NSDUH, the estimated 12-month prevalence of mental illness excluding substance use disorders is 18.3% of adults (aged 18 or older).

Prevalence of Serious Mental Illness Among Adults

The NSDUH identifies adults (aged 18 or older) as having a serious mental illness if (1) they have a mental illness (excluding substance use disorders and developmental disorders) and (2) the illness substantially interferes with or limits at least one major life activity. The same approach used to impute any mental illness is applied to impute serious mental illness. According to the

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31 2016 NSDUH: Methodological Summary. The NSDUH has been ongoing since 1971; prior to 2002, it was called the National Household Survey on Drug Abuse.

32 2016 NSDUH: Methodological Summary.

33 This approach, called the Mental Health Surveillance Study, began with the 2008 NSDUH. The statistical model was changed in 2012; the 2012 model continued to be used in subsequent years, including 2016.

2016 NSDUH, the estimated 12-month prevalence of serious mental illness excluding substance use disorders is 4.2% among adults (aged 18 or older).\(^{35}\)

## Concluding Comments

Knowing how many people are likely to be affected by policies related to mental illness may help policymakers identify specific problems as well as their scope; however, the national prevalence estimates discussed in this report may raise as many questions as they answer. For example, given the difference in prevalence estimates between any mental illness and serious mental illness among adolescents, might policymakers choose to focus on a large group of adolescents that includes many whose mental illnesses may be mild and even transient, or might they choose to focus more narrowly on adolescents with serious mental illness? As clinical practice is moving toward more integrated care,\(^{36}\) should substance use disorders be included in the definition of mental illness (as in the NCS-R and the NCS-A) and addressed through the same policies, or should they be identified separately (as in the NSDUH) and addressed through different policies? How might policymakers address mental illness among populations that are excluded from the prevalence estimates (e.g., the homeless)? With regard to the NCS-R and the NCS-A, there is an overarching question of whether prevalence estimates based on surveys conducted more than a decade ago remain relevant to current policy discussions. Policymakers may come to different conclusions about the best policy approach depending in part on how they answer such questions.

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The authors gratefully acknowledge the significant contributions made to this report by (name redacted) and Mariel C. Garcia.

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\(^{35}\) 2016 NSDUH: Mental Health Tables, Table 8.4B.

\(^{36}\) Like clinical practice, financing is moving toward including substance use disorders with the rest of mental illness. The Mental Health Parity Act of 1996 (MHPA, P.L. 104-204) did not apply to coverage of substance use disorders. The more recent Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008 (MHPAEA, P.L. 110-343) applies to both substance use disorders and the rest of mental illness.
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