The NSDUH Report
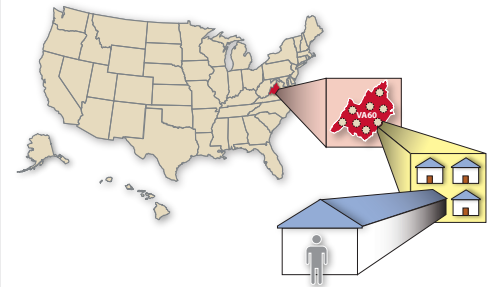
Revised Estimates of Mental Illness from the National Survey on Drug Use and Health

The Substance Abuse and Mental Health Services Administration (SAMHSA) has produced national and State estimates of mental illness among adults using its National Survey on Drug Use and Health (NSDUH) since 2008. These estimates are based on the Mental Health Surveillance Study (MHSS), initiated in 2008. The overarching goal of the MHSS was to provide accurate estimates of serious mental illness (SMI) among adults aged 18 or older at both the national and State levels, with a secondary goal of providing accurate estimates of any mental illness (AMI). This report discusses recent improvements to the methods used to produce these estimates and provides revised 2011 estimates. The improvements in the methodology were facilitated by a partnership between SAMHSA and the National Institute of Mental Health (NIMH). This partnership resulted in the collection of a large, nationally representative sample of clinical psychiatric interviews from a subsample of adult NSDUH respondents.[1] The data from this sample were used to refine the methods used to estimate SMI and AMI.[2,3]

Overview

In accordance with the 1992 Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) Reorganization Act, SAMHSA developed conceptual and operational definitions of SMI and developed a methodology for producing estimates of SMI.[4,5,6] SAMHSA defined SMI as having at least one mental disorder, other than a developmental or substance-use disorder, in the past 12 months that resulted in serious impairment.[7] SAMHSA also established a definition for AMI as having at least one mental disorder, other than a developmental or substance-use disorder, in the past 12 months, regardless of the level of impairment. Using these definitions, the MHSS was initiated in 2008 comprising the following:

- short scales measuring psychological distress and functional impairment included in the main NSDUH interview[8];

IN BRIEF

The Substance Abuse and Mental Health Administration (SAMHSA) is releasing revised estimates of serious mental illness and any mental illness among adults aged 18 or older from the National Survey on Drug Use and Health (NSDUH)

Revisions are due to improvements in methods for estimating mental illness; the improvements resulted in estimates of mental illness that are more accurate

Estimates of mental illness for those aged 18 to 25 are most impacted by the revisions

- clinical psychiatric diagnostic data collected from a nationally representative subset of NSDUH respondents each year from 2008 to 2012[9]; and

- development of an estimation methodology for SMI and AMI among adults based on a weighted, statistical model.

The clinical diagnostic interview to assess the presence of mental disorders and functional impairment was administered to a subsample of NSDUH adult respondents within 2 to 4 weeks of the NSDUH interview. Each participant was assessed by a trained clinical interviewer (master's or doctoral-level clinician, counselor, or social worker) over the telephone. A subsample was collected because it was not feasible to administer a structured diagnostic clinical interview to assess mental illness to all NSDUH adult respondents (about 45,000 respondents each year). Administration of this type of interview to such a large number of NSDUH respondents would require a large staff of trained mental health clinicians and would require each respondent to participate in both the NSDUH interview and a clinical diagnostic interview.

Development of Estimation Methods

A prediction model of SMI was developed from the clinical subsample of respondents. The model used the short scales of psychological distress and functional impairment in combination with the clinical diagnostic data. Specifically, the short scales were used as predictor variables of SMI diagnosis in a statistical model developed from the subsample. The model was then used to classify each of the NSDUH adult respondents as having SMI or AMI based on their responses to the distress and impairment scales. The prediction models were developed in two phases.

Phase One: Initial Estimation Method

The initial model was developed using the 2008 MHSS subsample of approximately 750 respondents. The psychological distress and functional impairment indicators were used as predictor variables of SMI diagnosis in a statistical model developed from the subsample. The model was then used to classify each of the NSDUH adult respondents as having SMI

or AMI based on their responses to the distress and impairment scales.

Although clinical interview data were collected annually between 2008 and 2012,[10] producing a new model each year based on the small annual clinical samples would have resulted in large changes in the estimates due to sampling error, making it impossible to detect trends in SMI and AMI over time. Furthermore, an evaluation of the 2008 model, using 2009 clinical interview data, found that the model could not be significantly improved with the addition of the 500 cases from the 2009 sample. Therefore, SAMHSA continued using the 2008 model to generate 2009 to 2011 estimates, to provide consistency for trend measurement. SAMHSA planned to reevaluate the model after more clinical data were accumulated from 2009 to 2012.[11,12]

Phase Two: Improved Estimation Method

By the end of 2012, SAMHSA had accumulated a nationally representative sample of about 5,000 completed clinical assessments. This larger clinical sample enabled SAMHSA to evaluate the current methods for estimating mental illness to see if they could be improved. The evaluation of the methods included an assessment of the 2008 statistical model and the weights applied to the clinical interview sample used to develop the model.

The 2008 model included two predictors (i.e., short scales of psychological distress and impairment). The exploration of the model with the combined 2008 to 2012 sample indicated that additional predictors would improve the model. For example, incorporating age into the model corrected for the fact that the 2008 model substantially overestimated SMI and AMI among young adults.[13] A new model was identified that improved the two-predictor 2008 model by adding three more predictors based on the respondent's age, past year thoughts of suicide, and past year depression.

The weights applied to the 2008 clinical sample also contributed to the overestimation of SMI and AMI. As part of the reevaluation, it was determined that respondents with mental health issues were more likely to respond to the clinical interview. This resulted in an overrepresentation of respondents with SMI and AMI in the sample and an overestimation of the

prevalence of mental illness in the Nation. Therefore, SAMHSA developed new weights that included better adjustments for sample nonresponse because of the higher response rate among those with mental health issues in the clinical subsample and that also accounted for coverage error.[14]

Using combined 2008 to 2012 data, SAMHSA produced estimates using the initial 2008 method and the improved method, and compared these estimates with those from the clinical interview sample. This comparison showed that estimates based on the improved methods are more similar to the clinical data than estimates based on the 2008 methods (Table 1). Furthermore, estimates of SMI and AMI by age groups produced using the improved methods were closer to the estimates produced using the clinical data. Thus, revising

the weights and adding new predictors to the model produced more accurate estimations of SMI and AMI.

Revised 2011 Estimates

To date, reports providing 2011 NSDUH data on SMI and AMI have used the 2008 estimation method. This section presents the first look at 2011 estimates produced using the improved method; hereafter, such estimates are referred to as the "revised 2011 estimates" or "revised estimates." Additionally, this section compares the revised estimates to the 2011 estimates produced using the 2008 methods (hereafter referred to as the "prior 2011 estimates" or "prior estimates"). Comparisons are made for the overall population and by age group and gender. Revised and prior estimates by other characteristics (e.g., race/ethnicity, region) are provided in tables at the end of this document (see Supporting/Additional Tables). For all mental illness estimates, overall and by characteristics, the 2012 improved methods reduce the number of individuals who have mental illness compared to the 2008 methods.[15]

Serious Mental Illness

Among adults aged 18 or older, the revised 2011 estimate of past year SMI is 3.9 percent (9.0 million adults) (Table A1). By age groups, the revised estimates were 3.8 percent for those aged 18 to 25, 5.0 percent for those aged 26 to 34, 5.1 percent for those aged 35 to 49, and 2.8 percent for those aged 50 or older (Figure 1). The revised estimates of SMI by gender are 4.8 percent among females and 2.9 percent among males (Figure 2).

The revised 2011 estimate of SMI is lower than the prior 2011 estimate (3.9 vs. 5.0 percent) (Table A1). The distribution of the prevalence across age groups differs depending on whether the revised or prior methods are applied (Figure 1). For example, in the revised estimates, the prevalence of SMI was highest among the 26 to 34 and 35 to 49 age groups; whereas in the prior estimates, the prevalence was highest among the 18 to 25 age group. Females were more likely than males to have SMI regardless of whether revised or prior methods are used; however, the revised estimates were lower than the prior estimates among both females and males (Figure 2).

Table 1. Serious Mental Illness (SMI) and Any Mental Illness (AMI) among Persons Aged 18 or Older, by Methodology and Age Group: Percentages (Standard Errors), 2008 to 2012

Diagnosis and Age Group	Direct Estimate From Clinical Interview Sample*	2008 Methods**	Improved Methods***
SMI: Aged 18 or Older	3.9 (0.3)	4.9+ (0.1)	3.9 (0.1)
SMI: Aged 18 to 25	3.7 (0.6)	7.7+ (0.1)	3.8 (0.1)
SMI: Aged 26 to 34	4.2 (0.6)	6.5+ (0.2)	5.0 (0.2)
SMI: Aged 35 to 49	5.7 (0.6)	5.5 (0.1)	5.0 (0.1)
SMI: Aged 50 or Older	2.8 (0.4)	3.0 (0.1)	2.8 (0.1)
AMI: Aged 18 or Older	18.0 (0.9)	20.0 (0.2)	18.1 (0.1)
AMI: Aged 18 to 25	20.9 (2.2)	30.5+ (0.2)	18.5 (0.2)
AMI: Aged 26 to 34	19.7 (1.9)	24.1 (0.4)	22.0 (0.3)
AMI: Aged 35 to 49	20.2 (1.5)	20.5 (0.3)	20.4 (0.2)
AMI: Aged 50 or Older	14.9 (2.0)	14.4 (0.3)	14.9 (0.2)

* Combined 2008 to 2012 direct estimates from NSDUH follow-up clinical interviews using revised weights.

** Combined 2008 to 2012 NSDUH estimates using 2008-based model (distress and impairment variables).

*** Combined 2008 to 2012 NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

+ Significantly different from the clinical interview estimate at the .05 level (when computed using the clinical sample).

Note: Standard errors in parentheses were computed assuming model parameters were estimated without errors for the NSDUH-based estimates and without poststratification reductions for the direct estimates.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2008 to 2012 (revised October 2013).

Any Mental Illness

The revised 2011 estimate of past year AMI among adults is 17.8 percent (41.4 million adults) (Table A2). By age groups, the revised estimates were 18.5 percent for those aged 18 to 25, 20.9 percent for those aged 26 to 34, 20.0 percent for those aged 35 to 49, and 15.0 percent for those aged 50 or older (Figure 3). The revised estimates of AMI by gender are 21.1 percent among females and 14.2 percent among males (Figure 4).

Similar to SMI, the revised 2011 estimates of AMI are lower than the prior 2011 estimates (17.8 vs. 19.6 percent) (Table A2). The distributions of AMI across age groups for the revised and prior estimates differ (Figure 3). For example, in the revised estimates, the prevalence of AMI was highest among the 26 to 34 and 35 to 49 age groups; whereas in the prior estimates, the highest prevalence was among the 18 to 25 age group. Females were more likely than males to have AMI

regardless of whether revised or prior methods are used (Figure 4). However, the revised estimates were lower than prior estimates for both females and males.

Substance Use Disorder among Persons with Mental Illness

When presented independently, estimates of substance use disorder are not affected by using the improved methods. However, estimates of substance use disorder among those with mental illness are affected by using the improved methods.[16,17] Therefore, revised and prior estimates of substance use disorder among adults with mental illness are described and compared in this section.

Among the 9.0 million adults aged 18 or older with SMI in the past year, the revised 2011 estimate of meeting criteria for substance use disorder is 23.6 percent (2.1 million adults). The revised estimates of having a substance use disorder among adults with SMI

Figure 1. Prior and Revised Estimates of Serious Mental Illness (SMI) in Past Year among Persons Aged 18 or Older, by Age Group: 2011
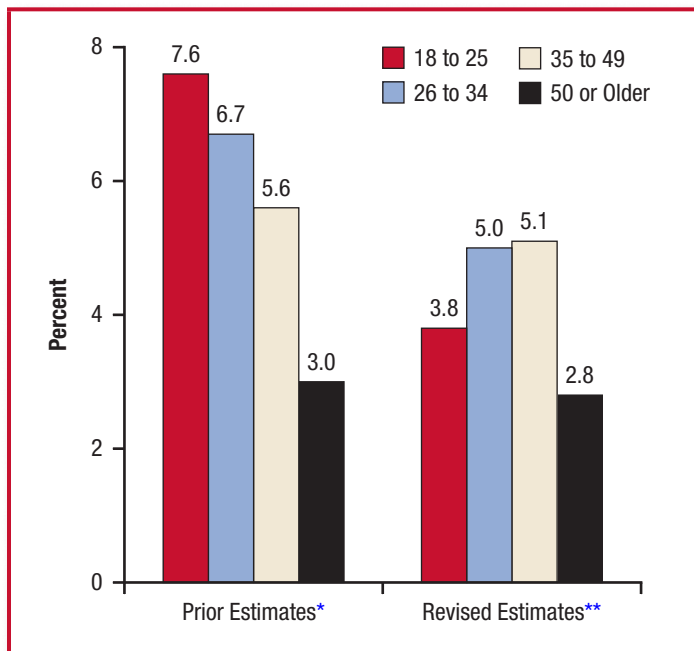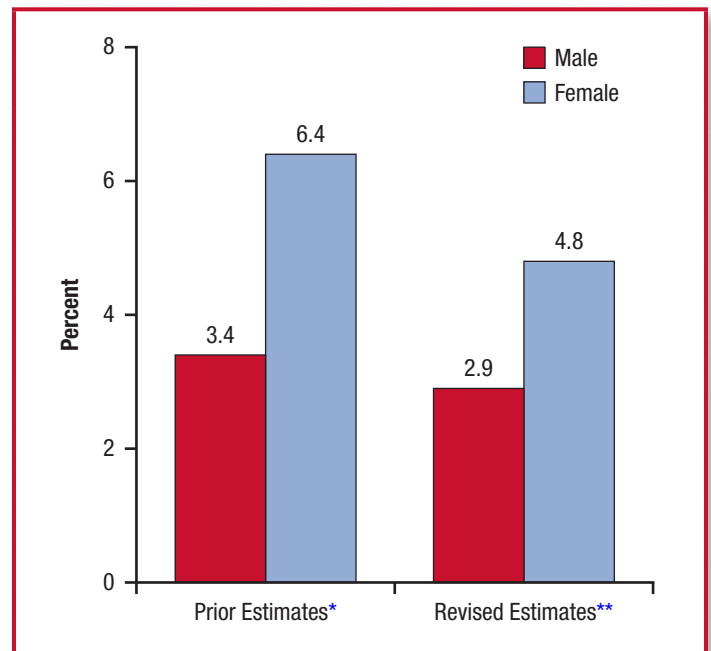
* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).

Figure 2. Prior and Revised Estimates of Serious Mental Illness (SMI) in Past Year among Persons Aged 18 or Older, by Gender: 2011

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).

Figure 3. Prior and Revised Estimates of Any Mental Illness (AMI) in Past Year among Persons Aged 18 or Older, by Age Group: 2011

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).
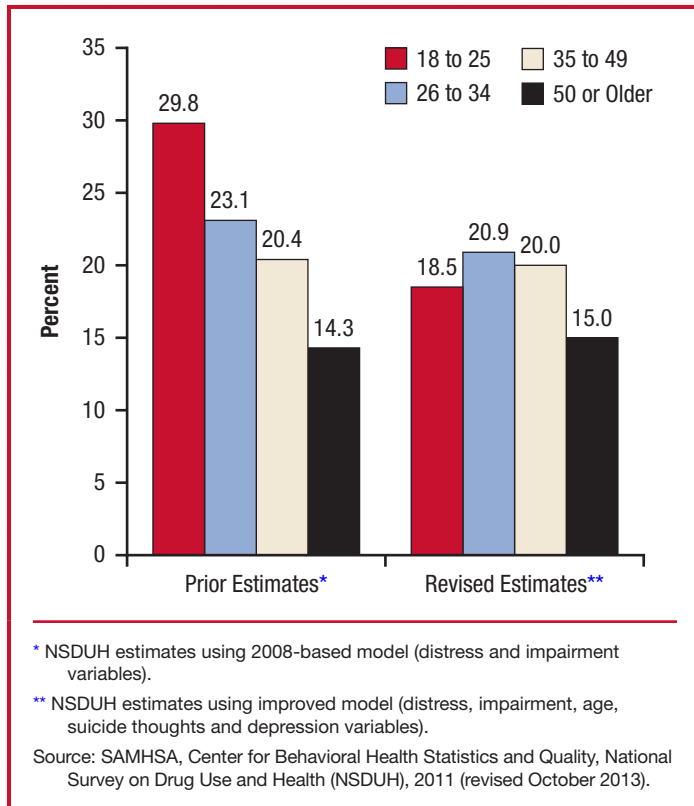
Figure 4. Prior and Revised Estimates of Any Mental Illness (AMI) in Past Year among Persons Aged 18 or Older, by Gender: 2011

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).
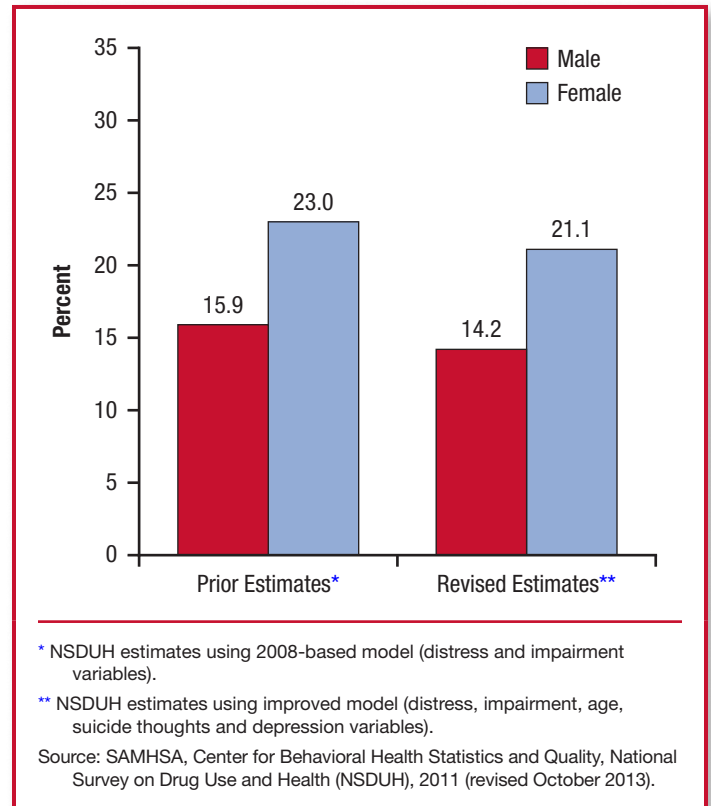
Figure 5. Prior and Revised Estimates of Substance Use Disorder in Past Year among Adults with Serious Mental Illness (SMI) or Any Mental Illness (AMI) in the Past Year, by Age Group: 2011

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).
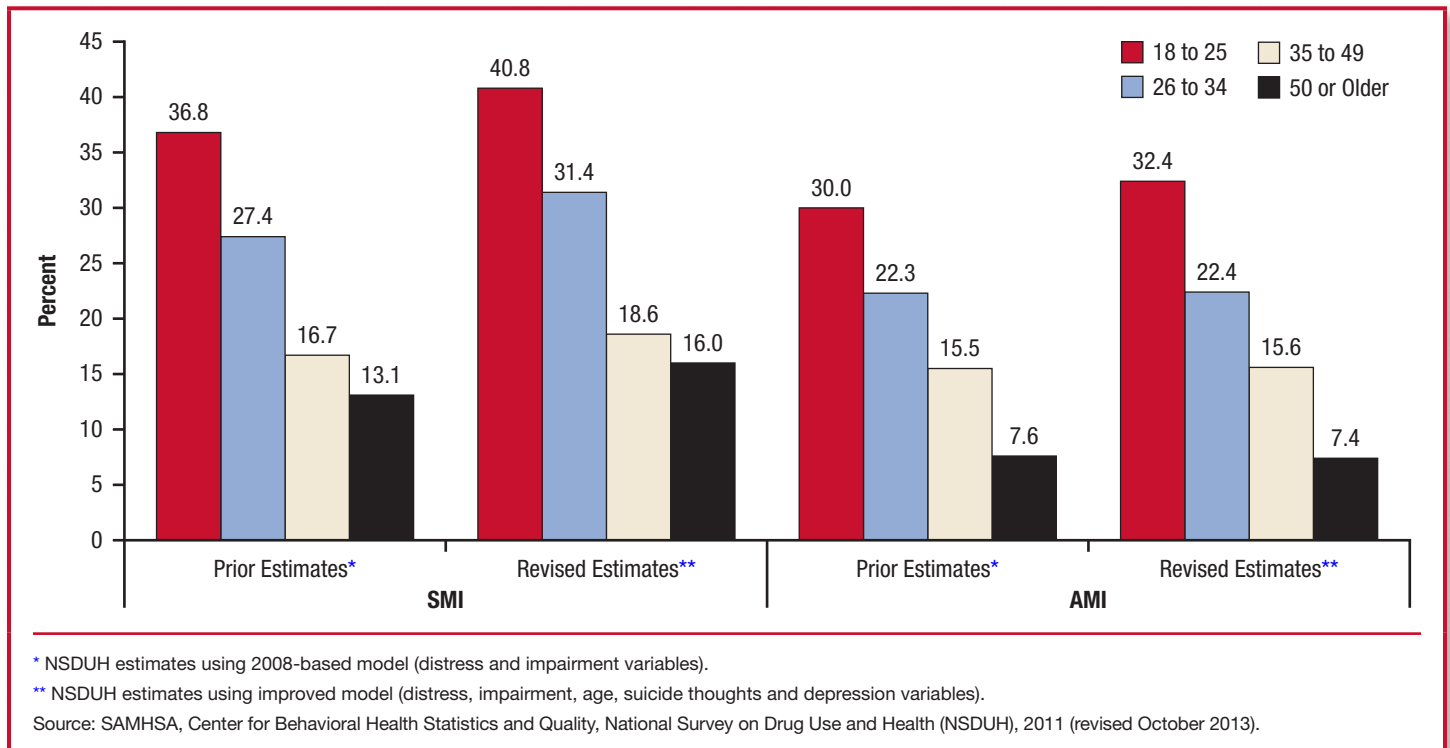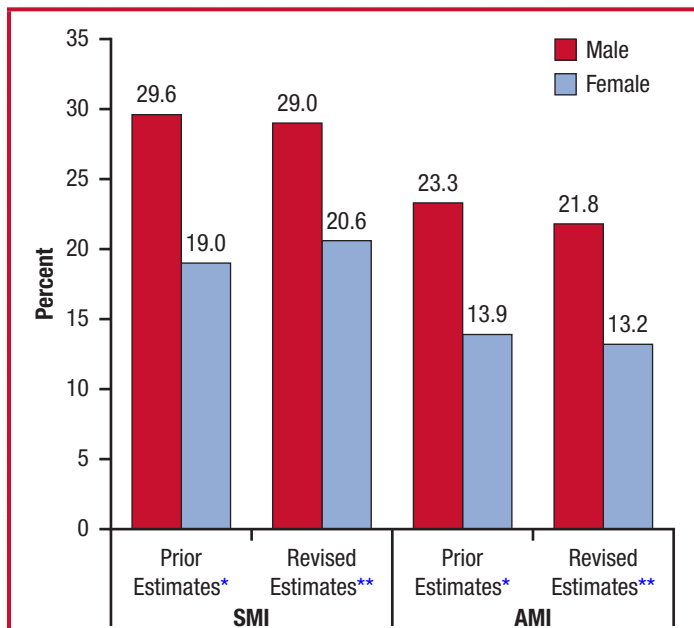
by age groups were 40.8 percent among adults aged 18 to 25, 31.4 percent among adults aged 26 to 34, 18.6 percent among adults aged 35 to 49, and 16.0 percent among adults aged 50 or older (Figure 5). The revised estimates of having a substance use disorder among adults with SMI by gender are 20.6 percent among females and 29.0 percent among males (Figure 6).

Among the 41.4 million adults (17.8 percent) with AMI in the past year, the revised 2011 estimate of meeting criteria for substance use disorder is 16.5 percent (6.8 million adults). The revised estimates of having a substance use disorder among adults with AMI by age groups were 32.4 percent among adults aged 18 to 25, 22.4 percent among adults aged 26 to 34, 15.6 percent among adults aged 35 to 49, and 7.4 percent among adults aged 50 or older (Figure 5). The revised estimates of having substance use disorder among adults with AMI by gender are 13.2 percent among females

and 21.8 percent among males (Figure 6).

The revised estimates of having a substance use disorder among adults with SMI were generally similar to the prior estimates (23.6 and 22.6 percent, respectively), as were the estimates for having a substance use disorder among adults with AMI (16.5 and 17.5 percent, respectively). The distributions of AMI and SMI across age groups and gender for the revised and prior estimates were fairly similar. For example, both the revised and prior estimates of having a substance use disorder among adults with SMI is highest for adults aged 18 to 25 followed by adults aged 26 to 34, adults aged 35 to 49, and adults aged 50 or older. Similarly, both the revised and prior estimates of having a substance use disorder among adults with AMI is highest for adults aged 18 to 25 followed by adults aged 26 to 34, adults aged 35 to 49, and adults aged 50 or older.

Mental Health Service Use

Revised and prior estimates of mental health service use among adults with mental illness are described and compared in this section (Table 2).[18]

Figure 6. Prior and Revised Estimates of Substance Use Disorder in Past Year among Adults with Serious Mental Illness (SMI) or Any Mental Illness (AMI) in the Past Year, by Gender: 2011

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).

Table 2. Prior and Revised Estimates of Past Year Mental Health Service Use among Persons Aged 18 or Older with Serious Mental Illness (SMI) and Any Mental Illness (AMI) in the Past Year, by Demographic Characteristics: Percentages (Standard Errors), 2011

Mental Health Service Use	SMI: Prior Estimates*	SMI: Revised Estimates**	AMI: Prior Estimates*	AMI: Revised Estimates**
Total	59.6 (1.5)	64.9 (1.7)	38.2 (0.8)	40.8 (0.8)
Aged 18 to 25	45.0 (1.6)	52.1 (2.3)	26.3 (0.7)	32.9 (1.0)
Aged 26 to 34	52.4 (3.2)	56.8 (3.4)	34.4 (1.7)	37.0 (1.8)
Aged 35 to 49	66.6 (2.7)	67.6 (2.9)	42.7 (1.4)	43.7 (1.5)
Aged 50 or Older	69.8 (3.6)	73.2 (3.6)	44.9 (1.8)	43.6 (1.7)
Male	55.5 (2.8)	59.3 (2.8)	31.7 (1.3)	34.2 (1.4)
Female	61.6 (1.7)	68.0 (2.0)	42.3 (1.0)	44.9 (1.1)

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).

Among adults with SMI, the revised 2011 estimate of receipt of mental health services was 64.9 percent. The revised estimates of mental health service use among adults with SMI by age groups were 52.1 percent among adults 18 to 25, 56.8 percent among adults aged 26 to 34, 67.6 percent among adults aged 35 to 49, and 73.2 percent among adults aged 50 or older. The revised estimates of receipt of mental health services among persons with SMI by gender are 68.0 percent among females and 59.3 percent among males.

Among adults with AMI, the revised 2011 estimate of mental health service use was 40.8 percent. The revised estimates of mental health service use among adults with AMI by age groups were 32.9 percent among adults aged 18 to 25, 37.0 percent among adults aged 26 to 34, 43.7 percent among adults aged 35 to 49, and 43.6 percent among adults aged 50 or older. The revised estimates of AMI by gender are 44.9 percent among females and 34.2 percent among males.

The revised estimates of mental health service use among persons with SMI or AMI were generally greater than prior estimates. The revised estimate for mental health service use among adults with SMI was 64.9 percent, and the prior estimate was 59.6 percent. The revised estimate for mental health service use among adults with AMI was 40.8 percent, and the prior estimate was 38.2 percent.

Both the revised and prior estimates indicate that the older age groups were more likely to use mental health services compared with the 18 to 25 age group among adults with SMI or AMI. However, the proportion of adults with SMI or AMI receiving mental health services was higher in the revised estimates than in the prior estimates for all age groups. Both the revised and prior estimates indicate that females with SMI or AMI were more likely than males to use mental health services; however, the percentage with SMI or AMI receiving mental health services was higher in the revised estimates than in the prior estimates for both genders.

Discussion

This report includes information on the improvement to the methods used to produce annual estimates of SMI and AMI among adults. The improvements in methodology were the result of a planned evaluation of these methods at the end of the clinical data collection in 2012 in which a total sample size of over 5,000 clinical interviews was obtained. This report demonstrates that the improved methods produce model based estimates that are more accurate because they are more consistent with the direct estimates from the clinical interview.[19] Therefore, the 2008 methods will no longer be used by SAMHSA to produce SMI and AMI estimates. The 2012 Mental Health National Findings Report scheduled for release in November 2013 will only include SMI and AMI estimates produced using the improved method. In addition, SAMHSA will release revised 2008 to 2011 detailed tables that include the revised estimates for those years. Beginning in May 2013, any CBHSQ report that includes AMI or SMI estimates will be based on the improved method. However, existing reports will not be revised and will continue to be available on the SAMHSA website with a notification about these changes.

The NSDUH public-use files available at http://www.datafiles.samhsa.gov will be updated to include the revised mental illness variables. The updated data files are expected to be made available in the fall of 2013. Additionally, the 2-year Restricted-Use Data Analysis System (R-DAS) data file that allows for analysis of SMI and AMI at the State level is also expected to be updated by the end of 2013.

End Notes

1. The MHSS began in 2008. The partnership with NIMH began in 2011. This partnership allowed for an expansion to the ongoing MHSS clinical data collection and improvements to the estimation methodology.

2. Estimates affected include AMI, SMI, moderate mental illness, and low/mild mental illness. Estimates of major depressive episode and severe psychological distress were not affected.

3. The development of the methodology for estimating SMI was initiated in 2007 based on recommendations from a December 2006 technical advisory group meeting convened by SAMHSA.

4. Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) Reorganization Act of 1992, Public Law 102-321 (1992).

5. Aldworth, J., Colpe, L. J., Gfroerer, J. C., Novak, S. P., Chromy, J. R., Barker, P. R., Barnett-Walker, K., Karg, R. S., Morton, K. B., & Spagnola, K. (2010). The National Survey on Drug Use and Health Mental Health Surveillance Study: Calibration analysis. *International Journal of Methods in Psychiatric Research, 19*(Suppl. 1), 61-87.

6. Colpe, L. J., Barker, P. R., Karg, R. S., Batts, K. R., Morton, K. B., Gfroerer, J. C., Stolzenberg, S. J., Cunningham, D. B., First, M. B., & Aldworth, J. (2010). The National Survey on Drug Use and Health Mental Health Surveillance Study: Calibration study design and field procedures. *International Journal of Methods in Psychiatric Research, 19*(Suppl.1), 36-48.

7. SAMHSA's definition for SMI is the following: persons aged 18 or older who currently or at any time during the past year have had a diagnosable mental, behavioral, or emotional disorder of sufficient duration to meet diagnostic criteria specified within the third revised edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R) that has resulted in serious functional impairment that substantially interferes with or limits one or more major life activities. Life activities include basic daily living skills; instrumental living skills; and functioning in social, family, and vocational/educational contexts.

8. Kessler-6 (K6) and an abbreviated World Health Organization Disability Assessment Schedule (WHODAS).

9. Models that used these short scales to predict SMI and AMI status were developed using a subsample of NSDUH respondents who had completed the NSDUH interview and were administered a diagnostic interview (the Structured Clinical Interview for the DSM-IV-TR Axis I Disorders, Research Version, Non-patient Edition [SCID-I/NP]) over the telephone and via a clinical follow-up study by trained clinicians. For the SCID-I/NP, see First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (2002). *Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Non-patient Edition* (SCID-I/NP). New York, NY: New York State Psychiatric Institute, Biometrics Research.

10. Clinical data collections continued with 500 clinical interviews completed in 2009 and 2010, and 1,500 interviews in 2011 and 2012. The clinical follow-up data collection ended in 2012.

11. Gfroerer, J., Hedden, S., Barker, P., Bose, J., & Aldworth, J. (2012). *Estimating mental illness in an ongoing national survey*. Retrieved from http://www.fcsm.gov/12papers/Gfroerer_2012FCSM_VII-A.pdf

12. Office of Applied Studies. (2009). *Results from the 2008 National Survey on Drug Use and Health: National findings* (NSDUH Series H-36, HHS Publication No. SMA 09-4434). Rockville, MD: Substance Abuse and Mental Health Services Administration.

13. Age was incorporated into the model as a linear variable for ages 18-30 and then was treated constant thereafter.

14. Coverage error refers to the fact that the clinical interview study did not include those respondents who had answered the NSDUH main interview in Spanish.

15. Kott, P., Hedden, S., Aldworth, J., Bose, J., Chromy, J., Gfroerer, J., & Liao, D. (2013). *A revised strategy for estimating the prevalence of serious mental illness*. Retrieved from http://www.samhsa.gov/data/

16. Substance use disorder is defined as dependence on or abuse of alcohol or illicit drugs, using criteria in the DSM-IV, which include such symptoms as withdrawal, tolerance, use in dangerous situations, trouble with the law, and interference with major obligations at work, school, or home during the past year.

17. Illicit drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used nonmedically, including data from original methamphetamine questions but not including new methamphetamine items added in 2005 and 2006.

18. Mental health services are defined as having received inpatient care or outpatient care or having used prescription medication for problems with emotions, nerves, or mental health. Respondents were not to include treatment for drug or alcohol use. Respondents with unknown treatment/counseling or combination of types of treatments information were excluded.

19. The 2012 mental illness revised estimates are closer to the direct estimates from the clinical interview because the 2012 estimation methodology corrects for coverage and nonresponse bias and reduces misclassification error.

Suggested Citation

Supporting Tables

Table S1. Prior and Revised Estimates of Serious Mental Illness (SMI) in Past Year among Persons Aged 18 or Older, by Demographic Characteristic: Percentages (Standard Errors), 2011 (Supports Figures 1 and 2)

Age Group and Gender	Prior Estimates*	Revised Estimates**
Aged 18 to 25	7.6 (0.24)	3.8 (0.17)
Aged 26 to 34	6.7 (0.42)	5.0 (0.36)
Aged 35 to 49	5.6 (0.30)	5.1 (0.26)
Aged 50 or Older	3.0 (0.23)	2.8 (0.22)
Male	3.4 (0.19)	2.9 (0.17)
Female	6.4 (0.23)	4.8 (0.22)

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).

Table S2. Prior and Revised Estimates of Any Mental Illness (AMI) in Past Year among Persons Aged 18 or Older, by Demographic Characteristic: Percentages (Standard Errors), 2011 (Supports Figures 3 and 4)

Age Group and Gender	Prior Estimates*	Revised Estimates**
Aged 18 to 25	29.8 (0.41)	18.5 (0.37)
Aged 26 to 34	23.1 (0.70)	20.9 (0.67)
Aged 35 to 49	20.4 (0.54)	20.0 (0.55)
Aged 50 or Older	14.3 (0.51)	15.0 (0.53)
Male	15.9 (0.40)	14.2 (0.40)
Female	23.0 (0.43)	21.1 (0.42)

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).

Table S3. Prior and Revised Estimates of Substance Use Disorder in Past Year among Adults with Serious Mental Illness (SMI) or Any Mental Illness (AMI) in the Past Year, by Diagnosis and Age Group: Percentages (Standard Errors), 2011 (Supports Figure 5)

Diagnosis and Age Group	Prior Estimates*	Revised Estimates**
SMI: Aged 18 or Older	22.6 (1.1)	23.6 (1.4)
SMI: Aged 18 to 25	36.8 (1.6)	40.8 (2.2)
SMI: Aged 26 to 34	27.4 (3.0)	31.4 (3.6)
SMI: Aged 35 to 49	16.7 (1.8)	18.6 (2.1)
SMI: Aged 50 or Older	13.1 (2.5)	16.0 (2.9)
AMI: Aged 18 or Older	17.5 (0.5)	16.5 (0.6)
AMI: Aged 18 to 25	30.0 (0.8)	32.4 (1.0)
AMI: Aged 26 to 34	22.3 (1.4)	22.4 (1.6)
AMI: Aged 35 to 49	15.5 (1.0)	15.6 (1.0)
AMI: Aged 50 or Older	7.6 (0.9)	7.4 (0.9)

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).

Table S4. Prior and Revised Estimates of Substance Use Disorder in Past Year among Adults with Serious Mental Illness (SMI) or Any Mental Illness (AMI) in the Past Year, by Diagnosis and Gender: Percentages (Standard Errors), 2011 (Supports Figure 6)

Diagnosis and Gender	Prior Estimates*	Revised Estimates**
SMI: Male	29.6 (2.2)	29.0 (2.5)
SMI: Female	19.0 (1.3)	20.6 (1.7)
AMI: Male	23.3 (1.0)	21.8 (1.0)
AMI: Female	13.9 (0.6)	13.2 (0.6)

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).

Additional Tables

Table A1. Serious Mental Illness (SMI) in Past Year among Persons Aged 18 or Older, by Methodology and Characteristics: Percentages (Standard Errors), 2011

Characteristic	Prior Estimate*	Revised Estimate**
Total	**5.0 (0.15)**	**3.9 (0.14)**
White	5.5 (0.19)	4.4 (0.18)
Black or African American	3.5 (0.35)	2.8 (0.31)
American Indian or Alaska Native	12.4 (3.45)	9.8 (3.34)
Native Hawaiian or Other Pacific Islander	5.3 (2.65)	-- (--)
Asian	3.4 (0.71)	1.9 (0.52)
Two or More Races	8.1 (1.89)	4.6 (1.08)
Hispanic or Latino	3.7 (0.36)	2.5 (0.29)
Employed Full-Time	3.7 (0.20)	2.7 (0.16)
Employed Part-Time	5.8 (0.41)	4.6 (0.40)
Unemployed	7.6 (0.64)	5.4 (0.55)
Other***	6.1 (0.32)	5.2 (0.32)
Less than High School Education	5.7 (0.40)	4.7 (0.39)
High School Graduate	4.8 (0.26)	3.4 (0.22)
Some College	6.2 (0.34)	4.7 (0.29)
College Graduate	3.6 (0.25)	3.2 (0.24)
<100% of Poverty Threshold+	9.6 (0.54)	7.6 (0.53)
100-199% of Poverty Threshold	6.0 (0.34)	4.6 (0.31)
>200% of Poverty Threshold	3.6 (0.17)	2.8 (0.15)
Northeast	4.1 (0.30)	3.4 (0.30)
Midwest	5.1 (0.25)	4.2 (0.25)
South	4.7 (0.25)	3.6 (0.22)
West	5.9 (0.42)	4.4 (0.34)
Large Metropolitan	4.7 (0.22)	3.4 (0.19)
Small Metropolitan	5.4 (0.28)	4.5 (0.25)
Non-metropolitan	5.1 (0.36)	4.4 (0.33)
Received Mental Health Treatment++	21.7 (0.79)	18.5 (0.76)
Did Not Receive Mental Health Treatment	2.3 (0.11)	1.6 (0.10)
Had Health Insurance Coverage	4.6 (0.17)	3.6 (0.15)
Did Not Have Health Insurance Coverage	6.6 (0.41)	5.2 (0.37)
Had Substance Use Disorder+++	13.8 (0.71)	11.2 (0.71)
Did Not Have Substance Use Disorder	4.2 (0.15)	3.2 (0.13)

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

*** The other employment category includes retired persons, disabled persons, homemakers, students, or other persons not in the labor force.

+ Estimates are based on a definition of the Federal Poverty Level that incorporates information on family income, size, and composition and is calculated as a percentage of the U.S. Census Bureau's poverty thresholds. Respondents aged 18 to 22 who were living in a college dormitory were excluded.

++ Mental Health Treatment/Counseling is defined as having received inpatient care or outpatient care or having used prescription medication for problems with emotions, nerves, or mental health. Respondents were not to include treatment for drug or alcohol use. Respondents with unknown treatment/counseling or combination of types of treatments information were excluded.

+++ Substance use disorder is defined as dependence on or abuse of alcohol or illicit drugs, using criteria in the DSM-IV, which include such symptoms as withdrawal, tolerance, use in dangerous situations, trouble with the law, and interference with major obligations at work, school, or home during the past year.

-- Low precision; no estimate reported.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).

Table A2. Any Mental Illness (AMI) in Past Year among Persons Aged 18 or Older, by Methodology and Characteristics: Percentages (Standard Errors), 2011

Characteristic	Prior Estimate*	Revised Estimate**
Total	**19.6 (0.30)**	**17.8 (0.30)**
White	20.5 (0.36)	19.0 (0.36)
Black or African American	18.8 (0.79)	16.3 (0.75)
American Indian or Alaska Native	28.9 (3.75)	27.7 (3.89)
Native Hawaiian or Other Pacific Islander	-- (--)	-- (--)
Asian	16.1 (1.39)	13.1 (1.38)
Two or More Races	28.3 (2.78)	25.8 (2.78)
Hispanic or Latino	15.9 (0.76)	13.5 (0.76)
Employed Full-Time	16.1 (0.40)	14.5 (0.39)
Employed Part-Time	23.2 (0.74)	20.1 (0.76)
Unemployed	28.0 (1.13)	23.4 (1.11)
Other***	22.0 (0.59)	20.9 (0.61)
Less than High School Education	22.5 (0.91)	19.9 (0.91)
High School Graduate	18.9 (0.49)	17.0 (0.50)
Some College	21.8 (0.59)	19.3 (0.57)
College Graduate	16.8 (0.53)	16.3 (0.54)
<100% of Poverty Threshold+	29.6 (0.86)	25.8 (0.85)
100-199% of Poverty Threshold	23.1 (0.65)	20.5 (0.64)
>200% of Poverty Threshold	16.2 (0.35)	15.2 (0.35)
Northeast	18.4 (0.66)	16.3 (0.64)
Midwest	20.1 (0.54)	18.0 (0.54)
South	19.4 (0.47)	17.9 (0.47)
West	20.4 (0.73)	18.6 (0.75)
Large Metropolitan	18.5 (0.41)	16.8 (0.42)
Small Metropolitan	20.8 (0.55)	18.8 (0.51)
Non-metropolitan	20.9 (0.67)	19.1 (0.69)
Received Mental Health Treatment++	54.9 (0.99)	53.2 (0.97)
Did Not Receive Mental Health Treatment	14.0 (0.28)	12.2 (0.28)
Had Health Insurance Coverage	18.7 (0.33)	17.1 (0.33)
Did Not Have Health Insurance Coverage	24.3 (0.74)	21.4 (0.74)
Had Substance Use Disorder+++	42.3 (1.12)	36.1 (1.09)
Did Not Have Substance Use Disorder	17.6 (0.31)	16.2 (0.31)

* NSDUH estimates using 2008-based model (distress and impairment variables).

** NSDUH estimates using improved model (distress, impairment, age, suicide thoughts and depression variables).

*** The other employment category includes retired persons, disabled persons, homemakers, students, or other persons not in the labor force.

+ Estimates are based on a definition of the Federal Poverty Level that incorporates information on family income, size, and composition and is calculated as a percentage of the U.S. Census Bureau's poverty thresholds. Respondents aged 18 to 22 who were living in a college dormitory were excluded.

++ Health Treatment/Counseling is defined as having received inpatient care or outpatient care or having used prescription medication for problems with emotions, nerves, or mental health. Respondents were not to include treatment for drug or alcohol use. Respondents with unknown treatment/counseling or combination of types of treatments information were excluded.

+++ Substance use disorder is defined as dependence on or abuse of alcohol or illicit drugs, using criteria in the DSM-IV, which include such symptoms as withdrawal, tolerance, use in dangerous situations, trouble with the law, and interference with major obligations at work, school, or home during the past year.

-- Low precision; no estimate reported.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2011 (revised October 2013).