Brief communication

Trends in mental health service use by age among adults with serious mental illness

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ABSTRACT

Purpose: This study examines trends in mental health service use among 18- to 64-year-old adults with serious mental illness (SMI).
Methods: Data are from approximately 22,200 adults with SMI who participated in the National Survey on Drug Use and Health, an annual nationally representative survey of the U.S. civilian, noninstitutionalized population. A regression restricted spline modeled the trend in mental health service use by age among adults with SMI.
Results: Approximately 20 to 50% of adults with SMI did not receive past-year mental health services. The odds of past-year service use increased by 3% per year until age 52 years.
Conclusions: From age 18 to 52 years, age incrementally increases the likelihood that an adult with SMI makes treatment contact.

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In 2014, an estimated 9.8 million U.S. adults aged 18 years or older had a mental, behavioral, or emotional disorder that substantially interfered with or limited one or more major life activities, referred to as a serious mental illness (SMI). This number represents 4.2% of all adults [1]. Nevertheless, only two-thirds of adults with SMI (68.5%) report using mental health services in the past year [2]. Little is known, however, about how service use among adults with SMI may vary by age. Rates of service use are often compared between two or three age groups, potentially masking heterogeneity within age groups [2]. The objective of this study, therefore, is to examine trends in mental health service use among adults with SMI across a broad age range (aged 18 to 64 years) using combined National Survey on Drug Use and Health (NSDUH) data for 2008 to 2017. By examining this trend's slope and direction at specific ages, we can provide a more complete picture of patterns in service use among adults with SMI.

Methods

The NSDUH is an annual survey, representative of the U.S. civilian, noninstitutionalized population, designed to estimate annual prevalence and correlates of substance use and mental health issues. The present study uses combined 2008–2017 NSDUH data from approximately 22,200 adults (unweighted) aged 18 to 64 years with SMI.

Respondents were defined as having SMI if in the past year they had any mental, behavioral, or emotional disorder that substantially interfered with or limited one or more major life activities. To generate estimates of SMI, a subsample of adults (part of the Mental Health Surveillance Study) selected from the main NSDUH study who were administered a clinical psychiatric diagnostic interview (Structured Clinical Interview for DSM-IV-TR Axis I Disorders [SCID]; SCID-I/Nonpatient edition) [3], and a measure of functional impairment/symptom severity (Global Assessment of Functioning) [4]. Adults who had at least one of the past year mental disorders measured in the Mental Health Surveillance Study and who had a Global Assessment of Functioning score indicative of serious functional impairment (50 or less) were classified as having past year SMI [5,6]. Based on these data, a predictive model was developed and cut points were established for the estimation of SMI using variables from the main NSDUH
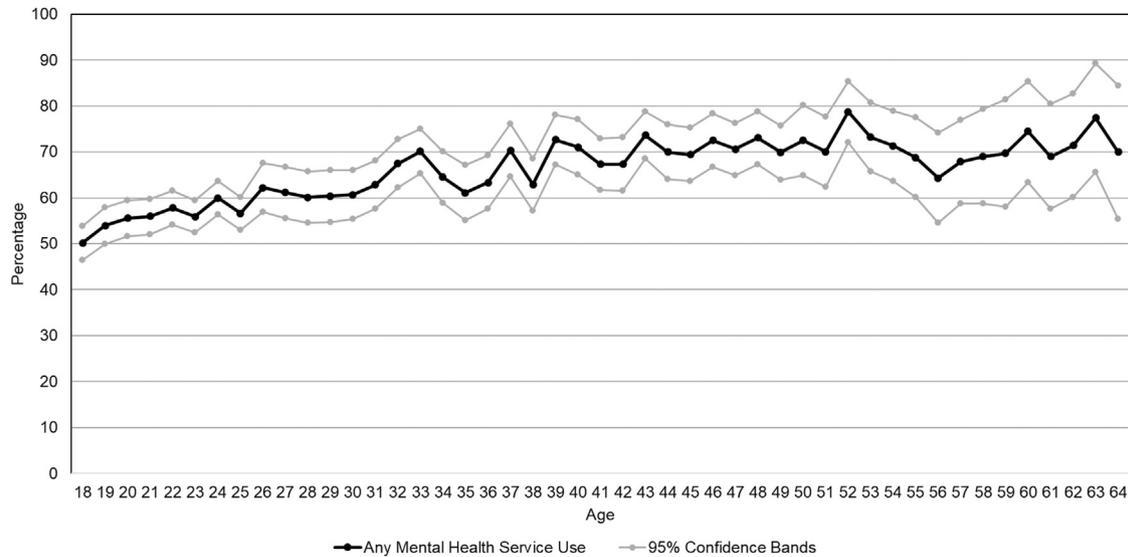
Fig. 1. Any mental health services used in the past year among adults aged 18 to 64 years with SMI, by age: weighted percentages adjusted for sex, race/ethnicity, family poverty level, veteran status, and county type: annual averages based on 2008 to 2017 NSDUHs. Past-year use of mental health services includes outpatient services (treatment from a therapist, psychologist, psychiatrist, social worker, and counselor, and partial-day treatment), inpatient services (overnight stay or longer), and psychotropic medication. County types include metropolitan or nonmetropolitan; insurance types include Medicaid/Medicare only, private only, CHAMPUS/CHAMPVA/military/other only, more than one type of insurance, uninsured; and family poverty level includes <100% federal poverty level [FPL], 100–199% FPL, 200%+ FPL. SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health, 2008−2017.

study. Detailed information on NSDUH methodology, including the development of model-based estimates of SMI, is documented elsewhere [5−7].

NSDUH respondents were also asked questions about past year use of outpatient services, inpatient services, and psychotropic medication to treat emotions, nerves, or mental health problems, excluding treatment for substance use disorders. In the present study, these modalities were combined to create a category representing any mental health service use.

To model the trend in mental health service use by age among adults with SMI, we used a regression restricted spline model, which considers piecewise polynomial functions of age as predictors. Within each selected range of ages, these linear functions are joined together over adjacent intervals by fixed "knots," constrained so that the functional values (and their derivatives) coincide at each knot to provide a continuous smooth function. The significance of the linear trend was determined by whether the coefficients of the spline variables were significantly different from zero ($P < .05$). Analyses were adjusted for sex, race/ethnicity, county type, insurance, veteran status, and family poverty level. Significant variables and piecewise polynomial functions were included in a preliminary logistic regression model that considered four knots at ages 20, 27, 34, and 52 years. No significant differences were found among adjusted odds ratio (OR) across the knots representing each age range through age 52 years. Thus, we report a smoother model that reports one linear trend through age 52 years and another linear trend among those aged 53−64 years. Analyses used the PROC logistic in SUDAAN, version 11.0.0, to account for NSDUH's complex sample design and applied survey weights.

Results

Results indicated that across each age of adulthood examined, approximately 50%−80% of those with SMI reported using any mental health service in the past year. Overall, there was a significant increasing linear trend in the use of mental health services for each year of age between 18 and 52 years ($P < .001$). As Figure 1 demonstrates, for those aged 18 to 52 years, the odds of using mental health services in the past year increased by 3.0% with each passing year (OR = 1.03, 95% confidence interval = 1.02−1.03). From age 53 to 64 years, however, there were no significant changes in the odds of using past year mental health services (OR = .98, 95% confidence interval = .94−1.01).

Discussion

The results highlight the considerable percentage of 18- to 64-year-old adults—particularly young adults—with SMI who did not receive mental health services in the last year. Results also depict an increasing linear trend in the use of mental health services from age 18 to 52 years. That is, every year through age 52 years, the likelihood of mental health service use increases. However, from age 53 to 64 years, the likelihood of mental health service use does not significantly change. A major factor contributing to the substantial unmet need among people with mental illness is the pervasive delays before first treatment contacts are made. The delay in initial treatment seeking can persist for years, with a 5-year average delay between onset and first treatment contact for even the most severe disorders [8]. SMI, in effect, initiates a "trajectory of accumulating disability" [9], which, over time, may push more adults to seek treatment.

Our findings must be considered in the context of several limitations. The data are self-report, cross-sectional, and include residents of households and those in noninstitutional group quarters (e.g., shelters). The survey does not cover several high-risk populations, including those without a fixed household address (e.g., homeless), noncivilian/active-duty service members, and residents of institutional group quarters (e.g., correctional facilities). In addition, it is possible that trends in service use by age may vary depending on the type of treatment (e.g., inpatient, outpatient), the age of SMI onset, and age of initial and continued treatment contact. For example, difficulties navigating complex systems and the transition from child to adult services may impede service use [10].

Despite these limitations, the large, population-based sample of adults with SMI in NSDUH offers a widely generalizable survey to study service use.

Acknowledgments

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