National Trends in the Prevalence of Suicidal Ideation and Behavior Among Young Adults and Receipt of Mental Health Care Among Suicidal Young Adults

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Objective: This study examined national trends in the prevalence of suicidal ideation and behavior among young adults and receipt of mental health care among suicidal young adults.

Method: We examined restricted data from 145,800 persons aged 18 to 25 years who participated in the 2009 to 2015 National Surveys on Drug Use and Health. Descriptive analyses and bivariable and multivariable logistic regressions were applied.

Results: Among US young adults during 2009 to 2015, the 12-month prevalence of suicidal ideation increased from 6.1% to 8.3%, the 12-month prevalence of suicide plan increased from 2.0% to 2.7%, and 12-month prevalence of suicide attempt increased from 1.1% to 1.6%. After adjusting for personal factors and changes in residing county’s population characteristics, we found upward trends in suicidal ideation among non-Hispanic whites and Hispanics, an upward trend in suicide plan among young adults overall, and an upward trend in suicide attempt among those without major depressive episodes (MDE). Among young adults with MDE, the prevalence of suicide attempt remained high and unchanged. During 2009 to 2015, trends in receipt of mental health care remained unchanged among most suicidal young adults and declined slightly among uninsured suicidal young adults. The annual average prevalence of receipt of mental health care was 36.2% among suicidal young adults.

Conclusion: During 2009 to 2015, suicidal ideation, suicide plan, and suicide attempt increased among young adults overall, but receipt of mental health care among suicidal young adults did not increase. Our results suggest that effective efforts are needed for suicide prevention and promotion of mental health care among young adults.

Key words: young adults, suicidality, mental health care, psychiatric epidemiology


Death by suicide and suicidal ideation and behavior (e.g., suicide plan or attempt) among young adults are major public health concerns. The crude death rate by suicide among this population increased by 23.2%, from 11.86 to 14.61 per 100,000 between 2009 and 2015. In 2015, about 14% of young adults with suicidal ideation attempted suicide. Young suicide attempters often have long-term mental, physical health, and social problems that last into their later adulthood. Furthermore, although many deaths by suicide occur in the absence of prior attempts, suicide attempt remains the strongest known predictor for death by suicide.

One recent study reported that the 12-month prevalence of major depressive episodes (MDE) increased from 8.8% in 2005 to 9.6% in 2014 among young adults, but there were few changes in mental health care during 2005 to 2014. These results indicate a growing number of young people with untreated depression. Depression is often associated with suicidality. However, it is unknown whether there have been recent changes in the national prevalence of suicidal ideation and behavior among US young adults.

Mental health care can reduce suicide risk among adults with suicidal ideation and behavior. Some studies have shown that receipt of mental health care increased among the US adult population during 2004 to 2005 and 2013 to 2014. However, recent national trends in mental health care among suicidal young adults have not been examined.

Using nationally representative data, this current study examined the following questions:

1. What are the recent trends in the 12-month prevalence of suicidal ideation, suicide plan, and suicide attempt among US young adults overall? Do they vary by sociodemographic factors and mental disorders?
2. What are the trends in the 12-month prevalence of receipt of mental health care among suicidal young adults in the US?

Understanding these questions may help inform and target suicide prevention efforts aimed at young adults. These results may be useful to clinicians, policy makers, college and workplace professionals, families/peers, and the general public.

METHOD

Data Sources

We examined restricted-use data from 145,800 persons aged 18 to 25 years who participated in the 2009 to 2015 National Surveys on Drug Use and Health (NSDUH). NSDUH provides nationally representative data on suicidal ideation and behavior and mental health treatment among the civilian, noninstitutionalized population aged 18 or older in the United States. NSDUH used a stratified,
multistage area probability sample that was designed to be representative of both 
the nation as a whole and for each of the 50 states and the District of Columbia.

Data were collected by interviewers during in-person visits to households and 
noninstitutional group quarters. Audio computer-assisted self-administered inter-
viewing was used, providing respondents with a private, confidential way to record 
answers. The annual mean weighted response rate of the 2009 to 2015 NSDUH 
was 62.0%. Details regarding NSDUH are provided elsewhere.2,26

To better understand factors associated with trends in suicidality, we linked 
the Area Health Resource Files’ (AHRF)7 relevant county-level variables (residing 
county’s unemployment rate, percentage of persons in poverty, the number of 
deaths by suicide, suicide rate, and status of mental health professional shortage 
area [whole, part, or no county]) to the 2009 to 2015 NSDUH respondents’ 
individual records for the corresponding year based on the Federal Information 
Processing Standards (FIPS) state and county codes. For example, a recent study 
reported contagion effects of suicidal behaviors28; thus, we examined the impact 
of deaths by suicide in the residing county on suicidality among young adults.

Measures

Suicidal Ideation With or Without Suicidal Behavior. The 2009 to 2015 
NSDUH questionnaires asked adult respondents if at any time during the past 12 
months they had thought seriously about trying to kill themselves. Those who 
reported that they had suicidal ideation were asked if they had made any plans to 
kill themselves and if they had tried to kill themselves in the past 12 months.3,16,17 
These suicidality measures are similar to those used in other national surveys.29

Indicators of Mental Disorders That May Be Related to Suicidal Ideation 
and Behavior. The 2009 to 2015 NSDUH assessed whether a respondent had 
an MDE, alcohol use disorder, or cannabis use disorder in the past year based on 
DSM-IV criteria.30 Nicotine dependence among cigarette smokers was assessed 
using the Nicotine Dependence Syndrome Scale.31 The 2009 to 2014 NSDUH 
also asked adult respondents if they were told by a doctor or other health 
professional that they had an anxiety disorder in the past year. These measures 
have demonstrated good validity and reliability.32,33

Mental Health Care and Substance Use Treatment. NSDUH asked adult 
respondents to report whether they received inpatient or outpatient mental health 
treatment and whether they received prescription medications for mental health 
problems in the previous year. Inpatient treatment included services received at 
a psychiatric hospital, psychiatric unit of general hospital, medical unit of general 
hospital, or other type of hospital for mental health treatment. Outpatient treat-
ment included services received at a community mental health center, private 
therapist’s office (psychologist, psychiatrist, social work, or counselor) for mental 
health treatment, physician’s office (nonpsychiatrist) or outpatient medical clinic 
for mental health treatment, or day treatment program or other type of facility for 
mental health treatment. Because adults with substance use treatment also tended 
to receive mental health treatment,34 we assessed whether young adults received 
past-year substance use treatment.

Sociodemographic Characteristics. Since sociodemographic characteristics 
are associated with prevalence of suicidal ideation and behavior and receipt of 
mental health care,3,16,17 this study examined age, gender, race/ethnicity, family 
income, marital status, health insurance, employment status, and school/college 
enrollment.

Statistical Analyses

All analyses were conducted for young adults aged 18 to 25 years. Between 2009 
and 2015, for each examined year, descriptive analyses were conducted to estimate 
the 12-month prevalence of suicidal ideation, suicide plan, and suicide attempt 
among young adults, overall and by sociodemographic factor and mental disorder.

Multivariable logistic regression models were applied to examine trends in 
suicidal ideation, suicide plans, and suicide attempts among young adults after 
controlling for covariates. Similar models were applied to assess trends in mental 
health care among suicidal young adults. For multivariable models, we examined 
potential interactions among examined factors, including interactions between 
survey year and all other covariates. Backward stepwise procedures were applied to 
remove nonsignificant interactions. This study used SUDAAN software to 
account for the complex sample design and sample weights of NSDUH data.

RESULTS

Trends in the Prevalence of Suicidal Ideation

The 12-month prevalence of suicidal ideation among young adults in the 
United States increased from 6.1% in 2009 to 8.3% in 2015 (Table 1) 
and increased significantly for nearly all demographic and clinical 
subgroups examined. During 2009 to 2015, it increased from 7.0% to 
10.0% among those aged 18 to 20 years, from 5.4% to 7.3% among 
those aged 21 to 25 years, from 5.0% to 7.2% among men, from 
7.1% to 9.4% among women, and from 6.1% to 9.0% among non-
Hispanic whites.

Suicidal ideation increased from 34.2% in 2009 to 38.1% in 2015 
among individuals with MDE and from 3.6% to 4.8% among those 
without MDE, from 11.4% to 16.8% among those with alcohol use dis-
order, from 5.0% to 7.3% among those without alcohol use disorder, from 
14.5% to 22.9% among those with cannabis use disorder, and from 5.6% 
to 7.5% among those without cannabis use disorder. It increased from 
19.0% to 25.5% among individuals with receipt of mental health care and 
from 4.4% to 6.0% among those without receipt of mental health care.

Trends in the Prevalence of Suicide Plans

The 12-month prevalence of suicide plan among young adults in the 
United States increased from 2.0% in 2009 to 2.7% in 2015 (Table 2) 
and increased in many, but not all, subgroups examined. It increased from 
2.5% to 3.6% among those aged 18 to 20 years, from 2.3% to 
3.2% among women, and from 1.7% to 2.7% among non-Hispanic 
whites. Suicide plan increased from 0.8% to 1.4% among those 
without MDE, from 4.0% to 5.8% among those with alcohol use dis-
order, from 1.6% to 2.3% among those without alcohol use disorder, from 
1.6% to 2.4% among those without nicotine dependence, and from 
1.7% to 2.4% among those without cannabis use disorder. It increased from 
7.8% to 10.6% among persons with receipt of mental health care 
and from 1.2% to 1.6% among those without receipt of mental health care.

Trends in the Prevalence of Suicide Attempts

The 12-month prevalence of suicide attempt among young adults in the 
United States increased from 1.1% in 2009 to 1.6% in 2015 (Table 3) 
and increased in a few of the subgroups examined. During 2009 to 2015, 
it increased from 1.0% to 1.6% among non-Hispanic whites, from 0.7% 
to 1.4% among those with full-time employment, and from 0.8% to 
1.5% among those with private health insurance. During 2009 to 2015, 
the 12-month prevalence of suicide attempt increased from 0.4% to 
1.0% among individuals without MDE, from 2.7% to 4.2% among 
those with alcohol use disorder, from 0.8% to 1.3% among those 
without alcohol use disorder, from 1.0% to 1.5% among those without 
cannabis use disorder, and from 0.6% to 0.9% among those without 
receipt of any mental health care. In addition, Tables S1 to S3 (available 
online) present trends in the prevalence of suicidal ideation, suicide plans, 
and suicide attempts by family income, employment status, health in-
insurance, and school/college enrollment status.

Trends in the Prevalence of Suicidal Ideation and 
Behavior After Controlling for Covariates

Multicollinearity was not found in final multivariable models. However, 
we identified significant interaction effects between year and race/
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