

Mental Health Care Utilization of a National Sample of U.S. Adults with Suicidality

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Abstract

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**Background:** Suicide remains a significant public health issue in the United States, with a 32% increase in suicide rates over the past two decades. Mental health disorders, such as depression and anxiety, along with substance use disorders, are major risk factors. Sociodemographic determinants further complicate the issue. This study examines the risk factors associated with the utilization of inpatient and outpatient mental health care among individuals experiencing suicidal ideation or attempts in the past year.

**Methods:** This analysis utilized data from the Mental Health and Substance Use Disorders Prevalence Study (MDPS), a cross-sectional project that collected qualitative and quantitative data from 5679 adults across the United States between October 2020 and October 2022. Participants were assessed for behavioral health diagnoses and other standardized questions. The study focused on adults reporting suicidal ideation (SI) and suicide attempts (SA) in the past year compared to those who had experienced neither SI or SA. Health care utilization, particularly inpatient or residential treatment and outpatient treatment, was examined. All analyses were weighted inversely to the selection probability, adjusted for nonresponse to the screener, adjusted for the clinical interview, and then poststratified to 2019 1-year ACS for the frame items and demographics.

**Results:** Of the 4751 participants analyzed, 3529 reported no suicidal ideation or attempt in the past year (74%), 1168 reported suicidal ideation alone (25%), and 54 reported a suicide attempt

(1%). The SI and SA groups were younger, received less education, were more likely to be unmarried, and had lower income compared to those without SI or SA. The SI and SA groups had significantly greater inpatient and outpatient mental health service utilization compared to the no SI/SA group. Participants with suicidal ideation or attempt in the past year were less likely to receive inpatient mental health care if they were Asian but more likely if they had a stimulant, opioid, or alcohol use disorder. For outpatient care, those with higher education levels, females, public health insurance, or diagnoses of PTSD, anxiety, depression, or schizophrenia were more likely to receive services, while racial minorities had lower odds compared to white participants.

**Discussion:** The study identified substantial disparities in mental health care utilization, influenced by sociodemographic factors, mental health diagnoses, and substance use disorders. Of the participants who had experienced SI or SA in the past year, racial and ethnic minorities, lower-income individuals, and those without adequate health insurance faced significant barriers in accessing care. Integrated treatment approaches and culturally sensitive outreach are essential to address these gaps. The increased utilization among individuals with concurrent substance use disorders and specific mental health diagnoses highlights the need for integrated treatment approaches.

**Conclusions:** Addressing disparities in mental health care access and improving the delivery of culturally competent care are critical steps in reducing the incidence of suicide and enhancing mental health outcomes for at-risk individuals. Future research should focus on prospective studies to understand the temporal relationships between suicidal behavior and mental health care engagement and explore the impact of stigma on care utilization.

**Keywords:** Suicide, mental health care, suicidal ideation, suicide attempt, health care utilization, mental health disparities, integrated treatment, stigma, sociodemographic factors.

## BACKGROUND

Deaths due to suicide in the United States have increased by 32% over the past two decades, bringing mortality related to suicide to 1.7% of all deaths.<sup>1,2</sup> Because current literature predicts that more than 87% of individuals who die by suicide have experienced depression or another mental illness, engagement in mental health care is a key component of suicide prevention.<sup>3-5</sup> Mental health care interventions such as medication, therapy, risk reduction counseling, and, when needed, inpatient psychiatric hospitalization reduce risk for individuals with suicidal thoughts or plans to harm themselves.<sup>6,7</sup> For patients who have experienced a recent suicide attempt (SA), both inpatient and outpatient mental health treatment have been shown to significantly reduce the risk of a subsequent attempt. Factors associated with increased risk of suicidality have been well established by previous research, but there is limited literature on factors associated with lack of engagement in mental health care among individuals experiencing suicidal ideation (SI) or a recent SA.<sup>8-13</sup> The current analysis addresses this gap by utilizing data from a large national household survey of US adults, which was the first epidemiological study to use semi-structured interviews delivered by trained clinicians diagnose mental disorders. The aims of the current study are:

- I. Describe demographic and clinical characteristics amongst the three groups of interest: SI in the past year (n = 1334), SA in the past year (n = 102), and neither SI or SA in the past year (n = 4228).
- II. Compare past-year mental health service utilization (inpatient psychiatry, outpatient mental health care, and psychiatric medication use) among participants reporting past year suicidal ideation compared to those who reported a suicide attempt in the past year

- III. In any participant who has experienced suicidal ideation or attempt in the past year ( SI and SA groups combined), compare factors related to any use of inpatient or outpatient mental health services, including mental illness diagnoses.

## **METHODS**

These analyses utilized data from the Mental Health and Substance Use Disorders Prevalence Study (MDPS), a cross-sectional psychiatric epidemiologic study that included a national sample of 5,679 US adults, 18-65 years-old .<sup>14</sup> The current study used data solely from the MDPS household sample (n=4,751). Data was collected between October 2020 to October 2022. A stratified, multistage sampling scheme was used, with the primary sampling unit being counties or groups of counties across the United States. Due to data collection occurring during the COVID-19 pandemic, clinical interviews were conducted by video and by phone. Trained clinicians leveraged the Structured Clinical Interview for the DSM-5 to diagnose 7 mental disorders, and the research interview included additional standardized questions about demographics and clinical characteristics, including experience of suicidal ideation or a suicide attempt in the past year. A comprehensive background on the methods of this study can be found in the publication by Guyer et al.<sup>14</sup>

The research interview included a question about suicidal ideation in the previous year, framed as “in the past year, have you had any thoughts about taking your own life or just going to sleep and not waking up, or thinking that you would be better off dead?” A second question asked participants about whether they had made a suicide attempt: “in the past year, have you done anything to try to end your life?” Additional questions asked about utilization of mental health care specifically “inpatient or residential treatment in the past 12 months for mental health, emotions,

or behavior;” “outpatient treatment in the past 12 months for mental health, emotions, or behavior;” and prescription medication use for “mental health, emotions, behavior, energy, concentration, or ability to cope with stress.”

The analysis for this project was conducted in three sections:

*Part 1: Descriptive Data*

Two tables stratified by SI/SA groups were created that include descriptive data on participant demographics, mental illness, substance use disorder and mental health care utilization (Table 1). This provided a weighted estimate of SI and SA prevalence, as well as weighted estimates of past-year healthcare utilization among these at-risk groups.

*Part 2: Mental Health Care Utilization in Participants with SI, SA, and No SI/SA*

Weighted logistic regression models with a categorical covariate for SI, SA, and no SI/SA were used to compare mental health care utilization via several variables, including inpatient, outpatient, and medication use. Using planned comparisons, we re-leveled the order of the SI/SA categorical variable to derive direct contrasts between each of the three groups (i.e., specified no SI/SA as the referent category, then respecified SA as the referent category). Each regression was controlled for age, race, ethnicity, sex, and education. The outcomes from respective models yielded estimated contrasts in mental healthcare utilization between adults with SI, adults with SA, and adults with neither SI nor SA.

### *Part 3: Factors Affecting Health Care Utilization*

A logistic regression model was also used to analyze factors that may contribute to the likelihood of any past-year health care utilization (inpatient or outpatient) in participants who have *either* SI or SA. For this model, we subset the SI and SA groups and removed participants without past-year SI or SA. The focus was on the following variables that may affect care: age, alcohol use, mental health diagnoses, education, gender, health insurance, income, and location.

All analyses were weighted inversely to the selection probability, adjusted for nonresponse to the screener, adjusted for the clinical interview, and then poststratified to 2019 1-year ACS for the frame items and demographics (see the MDPS background and methods publication for details).<sup>14</sup>

All analyses were completed in R using the ‘survey’ package (Lumley, 2020).<sup>15</sup>

## **RESULTS**

Of the 4,751 participants in the MDPS household sample, 3,529 reported no suicidal ideation or attempt in the past year (74%), 1,168 reported suicidal ideation only in the past year (25%), and 54 reported a suicide attempt in the past year (1%). The weighted proportions for demographics, weighted mean ages, and confidence intervals for each of the three sub-groups can be found in Table 1. Notably, the mean age was lower for individuals with either SI or SA compared to participants who reported no SI or SA in the past year. Additionally, the SI and SA groups had lower education, were unmarried, had public health insurance, were lower income, and had received mental health care in the past year compared to the no SI or SA group.

**Table 1: Weighted Demographics**

	No SI/SA (n= 3529)	SI (n=1168)	SA (n=54)
Mean Age (95% CI)	42.3 (41.0, 43.5)	35.9 (34.3, 37.4)	33.4 (27.8, 39.0)
	% Prevalence (95% CI)	% Prevalence (95% CI)	% Prevalence (95% CI)
Sex			
Male	49.6 (45.3, 53.9)	45.0 (38.7, 51.4)	45.9 (24.8, 68.1)
Female	50.4 (46.1, 54.7)	55.0 (48.6, 61.3)	54.1 (31.9, 75.2)
Race			
White	74.8 (70.5, 78.7)	70.0 (63.3, 76.2)	72.4 (53.0, 87.3)
Black/African American	13.7 (10.4, 17.4)	15.6 (10.7, 21.5)	17.1 (5.9, 34.8)
Asian	4.7 (3.3, 6.4)	5.0 (2.7, 8.4)	3.8 (0.5, 12.4)
American Indian/ Alaska Native	1.0 (0.5, 1.7)	1.6 (0.8, 2.8)	0.0 (0.0, 0.0)
Native Hawaiian Islander/Other Pacific Islander	0.9 (0.2, 2.6)	0.4 (0.1, 1.0)	0.0 (0.0, 0.0)
Multi-Racial	5.0 (3.7, 6.5)	7.4 (4.3, 11.5)	6.7 (1.9, 15.6)
Ethnicity			
Hispanic	19.1 (13.9, 25.1)	14.0 (9.4, 19.7)	20.5 (6.7, 42.0)
Not Hispanic	80.9 (74.9, 86.1)	86.0 (80.3, 90.6)	79.5 (58.0, 93.3)
Education			
Less than High School	11.0 (7.8, 14.8)	6.3 (3.7, 9.7)	12.3 (2.4, 32.1)
High School or GED	46.5 (41.4, 51.6)	56.5 (51.4, 61.5)	62.6 (41.0, 81.2)
College or Associate's Degree	30.7 (26.8, 34.8)	29.0 (25.1, 33.2)	23.7 (12.5, 38.1)
Graduate or Professional Degree	11.8 (9.8, 14.0)	8.2 (6.1, 10.6)	1.5 (0.1, 6.4)
Marital Status			
Married	52.8 (48.4, 57.1)	31.5 (26.7, 36.7)	11.8 (4.4, 23.6)
Previously Married	14.4 (11.8, 17.2)	14.5 (11.0, 18.5)	17.2 (7.7, 30.7)
Never Married	32.8 (29.0, 36.8)	54.0 (48.1, 59.8)	71.1 (54.1, 84.7)
Location			
Urban	81.9 (74.2, 88.2)	82.1 (74.1, 88.6)	95.2 (89.0, 98.6)
Rural	18.1 (11.8, 25.8)	17.9 (11.4, 25.9)	4.8 (1.4, 11.0)
Medical Insurance			
None	9.3 (7.4, 11.5)	7.5 (5.0, 10.5)	4.2 (0.5, 14.1)
Public	24.6 (21.3, 28.1)	36.2 (20.0, 42.7)	55.4 (31.2, 77.9)
Private/Other	66.1 (62.3, 69.9)	55.9 (50.0, 61.6)	40.4 (19.1, 64.4)
Income			
\$20,000 or more per year	78.8 (74.0, 83.1)	72.8 (67.5, 77.8)	39.9 (21.2, 60.8)
<\$20,000 per year	16.2 (13.3, 19.5)	22.9 (17.9, 28.5)	46.3 (22.7, 71.1)

**Table 2: Weighted Clinical Characteristics**

	No SI/SA (n= 3529)	SI (n=1168)	SA (n=54)
PTSD Diagnosis, Past Year	1.9 (1.3, 2.7)	15.4 (11.3, 20.2)	17.9 (7.2, 33.8)
Generalized Anxiety Disorder Diagnosis, Past Year	7.0 (5.4, 8.7)	26.9 (21.9, 32.3)	24.5 (10.6, 43.5)
Major Depression Disorder Diagnosis, Past Year	10.1 (8.2, 12.2)	44.8 (39.1, 50.6)	42.6 (23.6, 63.3)
Schizophrenia Spectrum Disorder Diagnosis, Past Year	0.7 (0.4, 1.1)	3.9 (2.1, 6.4)	10.8 (3.4, 23.5)
Cannabis Use Disorder, Past Year	2.7 (1.4, 4.4)	9.8 (6.3, 14.2)	12.6 (5.8, 22.3)
Stimulant Use Disorder, Past Year	1.2 (0.7, 1.9)	3.1 (2.0, 4.7)	14.2 (3.4, 33.9)
Opioid Use Disorder, Past Year	0.4 (0.2, 0.7)	0.9 (0.2, 2.1)	4.0 (0.9, 10.7)
Alcohol Use Disorder, Past Year	4.7 (3.5, 6.2)	17.0 (12.0, 23.0)	18.7 (8.3, 33.3)
MH Inpatient past year	0.6 (0.4, 0.9)	3.0 (2.0, 4.4)	34.2 (18.3, 52.9)
MH Outpatient past year	20.2 (17.2, 23.4)	51.3 (45.4, 57.3)	82.2 (61.1, 94.9)
MH Prescription Medication past year	17.9 (15.3, 20.8)	48.0 (42.6, 53.5)	66.8 (35.8, 89.9)

Compared to MDPS household participants who did not report either suicidal ideation or attempt in the past year, rates of utilization of mental health inpatient, outpatient, and prescription medication in the past year were all higher among participants reporting past-year suicidal ideation, and highest among participants who reported a suicide attempt (Table 3). The greatest difference was outpatient mental health care utilization, where those who reported a suicide attempt in the past year had received services with an odds ratio of 72.10 compared to those who had neither SI or SA. The SA group had significantly greater inpatient and outpatient mental health service utilization compared to the SI group as well. Outpatient services once again had the greatest difference between the groups, with participants who had experienced SA had received

outpatient mental health services with an odds ratio of 15.53 compared to participants who had experienced SI alone.

**Table 3: Mental Health Care Utilization Over the Past Year in Participants with SI, SA, and No SI/SA**

	Inpatient		Outpatient		Medication Use	
	Odds Ratio	P-Value	Odds Ratio	P-Value	Odds Ratio	P-Value
SI vs. No SI/SA	<b>4.08</b>	<b>&gt;0.001</b>	<b>4.64</b>	<b>&gt;0.001</b>	<b>4.23</b>	<b>&gt;0.001</b>
SA vs. No SI/SA	<b>20.5</b>	<b>&gt;0.001</b>	<b>72.10</b>	<b>&gt;0.001</b>	<b>10.20</b>	<b>0.001</b>
SA vs. SI	<b>5.03</b>	<b>0.006</b>	<b>15.53</b>	<b>&gt;0.001</b>	2.41	0.19

\* Bolded values are significant

As shown in Table 4, participants who reported either suicidal ideation or an attempt in the past year were significantly less likely to receive inpatient mental health care if they were Asian and significantly more likely if they had a stimulant, opioid, or alcohol use disorder. Demographic and clinical differences were also identified with respect to utilization of outpatient mental health services. Participants who reported suicidal ideation or an attempt were significantly more likely to receive outpatient mental health care if they had a college or associate's degree, were female, had public health insurance, or met past-year criteria for PTSD, generalized anxiety disorder, major depressive disorder, or schizophrenia spectrum disorder. Racial minorities, including black/African American and Asian participants, had lower odds of receiving care compared to their white counterparts. In general, participants who were better educated were more likely to have received outpatient care as were individuals with health insurance.

**Table 4: Association Between Variables and Engagement in Mental Health Care for Individuals with Any Reported Suicidality (SI or SA) in the Past Year**

	Inpatient Care OR	P-Value	Outpatient Care OR	P-Value
Age	0.99	0.46	0.99	0.54
Education				
Less than High School	-	-	-	-
High School or GED	0.97	0.96	2.52	0.09
College or Associate's Degree	1.05	0.95	<b>3.50</b>	<b>0.01</b>
Graduate or Professional Degree	0.24	0.17	3.39	0.06
Income				
\$20,000 or more per year	-	-	-	-
Less than \$20,000 per year	2.04	0.10	0.63	0.12
Sex				
Male	-	-	-	-
Female	1.50	0.39	<b>1.70</b>	<b>0.03</b>
Race				
White	-	-	-	-
Black/African American	0.61	0.45	<b>0.24</b>	<b>&lt; 0.001</b>
Asian	<b>0.08</b>	<b>0.03</b>	<b>0.12</b>	<b>&lt; 0.001</b>
American Indian/ Alaska Native	1.44	0.76	1.08	0.91
Multi-Racial	1.57	0.41	1.24	0.69
Ethnicity				
Not Hispanic	-	-	-	-
Hispanic	1.39	0.57	0.78	0.44
Health Insurance				
No Insurance	-	-	-	-
Public	<b>8.49E6</b>	<b>&lt;0 .001</b>	<b>3.23</b>	<b>0.01</b>
Private/Other	<b>8.00E6</b>	<b>&lt;0 .001</b>	2.17	0.06
Marital Status				
Married	-	-	-	-
Previously Married	1.21	0.76	1.66	0.21
Never Married	0.37	0.07	1.29	0.31
Location				
Urban	-	-	-	-
Rural	0.37	0.06	0.79	0.58
PTSD Diagnosis, Past Year	0.68	0.35	<b>4.44</b>	<b>&lt; 0.001</b>
Generalized Anxiety Disorder Diagnosis, Past Year	1.41	0.40	<b>1.83</b>	<b>0.01</b>

Major Depression Disorder Diagnosis, Past Year	1.74	0.18	<b>1.61</b>	<b>0.04</b>
Schizophrenia Spectrum Disorder Diagnosis, Past Year	1.12	0.92	<b>7.81</b>	<b>0.02</b>
Cannabis Use Disorder, Past Year	1.07	0.89	0.60	0.18
Stimulant Use Disorder, Past Year	<b>4.30</b>	<b>0.03</b>	3.16	0.08
Opioid Use Disorder, Past Year	<b>21.09</b>	<b>0.02</b>	0.35	0.20
Alcohol Use Disorder, Past Year	<b>3.30</b>	<b>0.02</b>	0.60	0.10

\*Bolded values are significant

## DISCUSSION

The study identified differences in mental health care utilization amongst US adults reporting either past-year suicidal ideation or a suicide attempt, compared to neither, adjusting for sociodemographic factors, mental health diagnoses, and substance use disorders in a large household sample. In this sample, participants with suicidal ideation were less likely to receive outpatient mental health care than those reporting an attempt, suggesting that more focus should be placed on identifying individuals with SI and connecting them to care to prevent this high-risk group with SI from a suicide attempt. This is further supported by finding that only 51.3% of participants who endorsed SI in the past year received mental health care during that time, despite there being a higher burden of mental health disorders in this group that would warrant care.

Given the cross-sectional nature of the study, the increased inpatient mental health utilization amongst participants with substance use disorders and outpatient mental health care in participants with mental illness may reflect that these individuals were already be engaged in the healthcare system, decreasing barriers to entry. Amongst substance use disorders, cannabis use disorder was not significantly related to mental health care utilization, suggesting less involvement

in mental health care amongst this group overall. It may be worthwhile for future studies to further examine the need for mental health care amongst individuals with cannabis use disorder alone.

The results of this study should be considered through the lens of inequity, racism, and stigma. Inequity can be seen where marginalized communities, such as those who are lower income, have no health insurance, and have less education are less likely to have received health care. Racism and cultural attitudes towards treatment may contribute to differences in care between Black/African American participants and Asian participants compared to white participants. There is a long-documented history of racism in medicine toward Black/African American individuals, including specifically in psychiatry, where African Americans were used as experimental subjects.<sup>16-19</sup> Additionally, diversity among psychiatrists still does not reflect the US population, limiting the number of providers from minority communities and providing another barrier to care.<sup>20-22</sup> Both of these factors reduce trust and awareness of mental health interventions among Black/African American communities. Likewise, Asian individuals in the US have also encountered medical racism, which have increased in the years of this study secondary to the pandemic, which may have affected their access to care.<sup>23</sup>

Stigma related to mental illness and care by extension should be considered amongst groups with differing mental health care utilization as well. Elevated stigma towards mental illness has been documented in literature in men and Asian cultures, including Asian-American individuals.<sup>24-27</sup> This may, at least in part, explain the decreased mental health care utilization in participants from these subgroups.

There are several limitations to this study. The cross-sectional study design precludes interpretation of causality when examining the relationship between mental health care utilization and suicidality. For example, since both the indicators (e.g., SI) and outcomes (e.g., healthcare

utilization) refer to past-year, it is not possible to disentangle the temporality as some participants may have only become treatment-engaged *following* SI/SA, while others may have already been treatment-engaged *prior to* SI/SA. Since the data examines suicidality in the past, it is missing participants who completed suicide who may have had different mental health care utilization compared to the participants included in this study. That is, as with all retrospective studies of suicide, the subsample of adults with SA only includes participants with non-fatal attempts. They represent an important perspective that may be better understood via a prospective study. The age range for participants is 18-65 years old. When considering the adult population, this excludes older individuals who are a unique cohort, albeit a group that is less at risk for suicide compared to 25-64 year-olds based on recent CDC data.<sup>13,28,29</sup> Additionally, certain cohorts were too small to accurately measure, including the inpatient Native Hawaiian Islander/Other Pacific Islander subgroup and the no-health insurance group for the regressions summarized in Table 4. Further study of mental healthcare utilization amongst racial minority groups and those without health insurance would be valuable. The analysis in Table 3 especially used many variables, which leaves concern for a false-positive due to multiplicity. The single model that controlled for each variable and large sample size may have helped prevent this issue, though the possibility for an error should still be considered.

## **CONCLUSION**

This study highlights critical disparities in mental health care utilization among individuals with suicidal ideation or attempts. Significant barriers, including sociodemographic factors, racial and ethnic disparities, and inadequate health insurance, hinder access to necessary care. Integrated treatment approaches and culturally sensitive outreach are essential to address these gaps.

Future research should focus on prospective studies to understand the temporal relationships between suicidal behavior and mental health care engagement and explore the impact of stigma and inequity on care utilization. Addressing these disparities and improving culturally competent care are crucial steps to reducing suicide rates and enhancing mental health outcomes for at-risk individuals.

## REFERENCES

1. Products - Data Briefs - Number 464 - April 2023. doi:10.15620/cdc:125705
2. Heron M. Deaths: Leading Causes for 2019.
3. Arsenault-Lapierre G, Kim C, Turecki G. Psychiatric diagnoses in 3275 suicides: a meta-analysis. *BMC Psychiatry*. 2004;4:37. doi:10.1186/1471-244X-4-37
4. BERTOLOTE JM, FLEISCHMANN A. Suicide and psychiatric diagnosis: a worldwide perspective. *World Psychiatry*. 2002;1(3):181-185.
5. Patel V. Building social capital and improving mental health care to prevent suicide. *Int J Epidemiol*. 2010;39(6):1411-1412. doi:10.1093/ije/dyq199
6. Ross EL, Bossarte RM, Dobscha SK, et al. Estimated Average Treatment Effect of Psychiatric Hospitalization in Patients With Suicidal Behaviors: A Precision Treatment Analysis. *JAMA Psychiatry*. Published online October 18, 2023. doi:10.1001/jamapsychiatry.2023.3994
7. McClellan C, Ali MM, Mutter R. Impact of Mental Health Treatment on Suicide Attempts. *J Behav Health Serv Res*. 2021;48(1):4-14. doi:10.1007/s11414-020-09714-4
8. Bachmann S. Epidemiology of Suicide and the Psychiatric Perspective. *Int J Environ Res Public Health*. 2018;15(7):1425. doi:10.3390/ijerph15071425
9. O'Reilly LM, Wiggs KK, Quinn PD. Suicide Risk Before Mental Health Treatment Initiation: Implications for Screening and Access to Care. *Psychiatr Serv*. 2023;74(1):70-72. doi:10.1176/appi.ps.202100657
10. Tang JJ, Yu Y, Wilcox HC, et al. Global risks of suicidal behaviours and being bullied and their association in adolescents: School-based health survey in 83 countries. *eClinicalMedicine*. 2020;19. doi:10.1016/j.eclinm.2019.100253
11. García de la Garza Á, Blanco C, Olfson M, Wall MM. Identification of Suicide Attempt Risk Factors in a National US Survey Using Machine Learning. *JAMA Psychiatry*. 2021;78(4):398-406. doi:10.1001/jamapsychiatry.2020.4165
12. Borges G, Nock MK, Haro Abad JM, et al. Twelve Month Prevalence of and Risk Factors for Suicide Attempts in the WHO World Mental Health Surveys. *J Clin Psychiatry*. 2010;71(12):1617-1628. doi:10.4088/JCP.08m04967blu

13. Raue PJ, Ghesquiere AR, Bruce ML. Suicide risk in primary care: identification and management in older adults. *Curr Psychiatry Rep*. 2014;16(9):466. doi:10.1007/s11920-014-0466-8
14. Guyer H, Ringeisen H, Dever J, et al. Mental and Substance Use Disorders Prevalence Study: Background and Methods. *Int J Methods Psychiatr Res*. 2024;33(1):e2000. doi:10.1002/mpr.2000
15. Assessment UENC for E. Survey: Analysis of complex survey samples. Published March 15, 2009. Accessed June 6, 2024. [https://hero.epa.gov/hero/index.cfm/reference/details/reference\\_id/11327199](https://hero.epa.gov/hero/index.cfm/reference/details/reference_id/11327199)
16. Gordon-Achebe K, Hairston DR, Miller S, Legha R, Starks S. Origins of Racism in American Medicine and Psychiatry. In: Medlock MM, Shtasel D, Trinh NHT, Williams DR, eds. *Racism and Psychiatry: Contemporary Issues and Interventions*. Springer International Publishing; 2019:3-19. doi:10.1007/978-3-319-90197-8\_1
17. Olivet J, Dones M, Richard M. The Intersection of Homelessness, Racism, and Mental Illness. In: Medlock MM, Shtasel D, Trinh NHT, Williams DR, eds. *Racism and Psychiatry: Contemporary Issues and Interventions*. Springer International Publishing; 2019:55-69. doi:10.1007/978-3-319-90197-8\_4
18. Price JL, Bruce MA, Adinoff B. Addressing Structural Racism in Psychiatry With Steps to Improve Psychophysiologic Research. *JAMA Psychiatry*. 2022;79(1):70-74. doi:10.1001/jamapsychiatry.2021.2663
19. Hairston DR, Gibbs TA, Wong SS, Jordan A. Clinician Bias in Diagnosis and Treatment. In: Medlock MM, Shtasel D, Trinh NHT, Williams DR, eds. *Racism and Psychiatry: Contemporary Issues and Interventions*. Springer International Publishing; 2019:105-137. doi:10.1007/978-3-319-90197-8\_7
20. Olfson M, Zuvekas SH, McClellan C, Wall MM, Hankerson SH, Blanco C. Racial-Ethnic Disparities in Outpatient Mental Health Care in the United States. *Psychiatr Serv Wash DC*. 2023;74(7):674-683. doi:10.1176/appi.ps.20220365
21. Wyse R, Hwang WT, Ahmed AA, Richards E, Deville C. Diversity by Race, Ethnicity, and Sex within the US Psychiatry Physician Workforce. *Acad Psychiatry J Am Assoc Dir Psychiatr Resid Train Assoc Acad Psychiatry*. 2020;44(5):523-530. doi:10.1007/s40596-020-01276-z
22. Pinder-Amaker S, Leary K. Changing Institutional Values and Diversifying the Behavioral Health Workforce. In: Medlock MM, Shtasel D, Trinh NHT, Williams DR, eds. *Racism and Psychiatry: Contemporary Issues and Interventions*. Springer International Publishing; 2019:181-203. doi:10.1007/978-3-319-90197-8\_10
23. Santos PMG, Dee EC, Deville C Jr. Confronting Anti-Asian Racism and Health Disparities in the Era of COVID-19. *JAMA Health Forum*. 2021;2(9):e212579. doi:10.1001/jamahealthforum.2021.2579
24. Chaudhry T, Chen SH. Mental illness stigmas in South Asian Americans: A cross-cultural investigation. *Asian Am J Psychol*. 2019;10(2):154-165. doi:10.1037/aap0000141
25. Kudva KG, El Hayek S, Gupta AK, et al. Stigma in mental illness: Perspective from eight Asian nations. *Asia-Pac Psychiatry*. 2020;12(2):e12380. doi:10.1111/appy.12380

26. Ng CH. The stigma of mental illness in Asian cultures. *Aust NZ J Psychiatry*. Published online January 1, 1997. Accessed June 1, 2024. <https://www.tandfonline.com/doi/abs/10.3109/00048679709073848>
27. Men's Experiences of Mental Illness Stigma Across the Lifespan: A Scoping Review - Sarah K. McKenzie, John L. Oliffe, Alice Black, Sunny Collings, 2022. Accessed June 1, 2024. <https://journals.sagepub.com/doi/full/10.1177/15579883221074789>
28. Valera Ortín J, Lucerón Lucas-Torres MI. [Suicide related factors in the elderly: A systematic review.]. *Rev Esp Salud Publica*. 2021;95:e202110166.
29. Suicide Data and Statistics | Suicide Prevention | CDC. Published December 4, 2023. Accessed March 14, 2024. <https://www.cdc.gov/suicide/suicide-data-statistics.html>