HHS Public Access

Author manuscript

J Affect Disord. Author manuscript; available in PMC 2023 June 01.

Published in final edited form as:

J Affect Disord. 2022 June 01; 306: 138–147. doi:10.1016/j.jad.2022.03.038.

Trends in College Student Mental Health and Help-Seeking by Race/Ethnicity: Findings from the national Healthy Minds Study, 2013–2021

Sarah Ketchen Lipson, PhD, EdM[a], **Sasha Zhou, PhD, MHSA, MPH**[b], **Sara Abelson, PhD, MPH**[c], **Justin Heinze, PhD**[d], **Matthew Jirsa, MHSA**[e], **Jasmine Morigney, MS**[f], **Akilah Patterson, MPH**[d], **Meghna Singh**[d], **Daniel Eisenberg, PhD**[g]

[a]Boston University School of Public Health, Department of Health Law Policy and Management, 715 Albany Street, Room 264W, Boston, MA, 02118 U.S.;

[b]Wayne State University, College of Liberal Arts and Sciences, Department of Public Health, 2155 Old Main 4841 Cass Avenue, Detroit, MI 48201, U.S.

[c]Hope Center for College, Community, and Justice, Lewis Katz School of Medicine, Temple University, 3500 N. Broad St., Philadelphia, PA 19140, U.S.

[d]University of Michigan School of Public Health, Department of Health Behavior and Health Education, 1415 Washington Heights, Ann Arbor, MI 48109, U.S.

[e]University of Michigan School of Public Health, Department of Health Management and Policy, 1415 Washington Heights, Ann Arbor, MI 48109, U.S.

[f]Eastern Michigan University Psychology Department, 341 Science Complex, Ypsilanti, Michigan 48197, U.S.

[g]University of California Los Angeles Fielding School of Public Health, Department of Health Policy of Management, 650 Charles E. Young Dr. South 16-035 Center for Health Sciences Los Angeles, CA, U.S.

Abstract

Background: A considerable gap in knowledge exists around mental health trends in diverse racial and ethnic adolescent and young adult populations. The purpose of this study is to examine annual trends for mental health and help-seeking by race/ethnicity in a national sample of college students.

corresponding author: sklipson@bu.edu, Phone: +1 781-354-9393.

Contributors:

Lipson, Eisenberg, and Heinze led the data collection used for this study (the Healthy Minds Study). Lipson led the statistical analyses and drafting of the methods, results, discussion and conclusion. Zhou, Morigney, Patterson, and Singh conducted a literature review and drafted the introduction of the manuscript. Zhou and Abelson provided feedback and significant edits on the analytic plan as well as the manuscript throughout its many iterations. Eisenberg, Heinze, Jirsa, Morigney, Patterson, and Singh provided multiple rounds of edits and feedback to further improve the manuscript. All authors contributed to and have approved the final manuscript.

Declarations of interest: none

Methods: Survey data come from >350,000 students at 373 campuses that participated in the Healthy Minds Study between 2013–2021. Analyses are descriptive in nature focusing on year-by-year prevalence and help-seeking rates for each racial/ethnic group.

Results: In 2020–2021, >60% of students met criteria for one or more mental health problems, a nearly 50% increase from 2013. Mental health worsened among all groups over the study period. American Indian/Alaskan Native students experienced the largest increases in depression, anxiety, suicidal ideation, and meeting criteria for one or more mental health problem. Students of color had the lowest rates of mental health service utilization. The highest annual rate of past-year treatment for Asian, Black, and Latinx students was at or below the lowest rate for White students. Although Arab American students experienced a 22% increase in prevalence, there was an 18% decrease in treatment.

Limitations: Response rates raise the potential of nonresponse bias. Sample weights adjust along known characteristics, but there may be differences on unobserved characteristics.

Conclusions: Findings have important implications for campus mental health programming and underscore the urgency of reducing mental health inequalities in college student populations through the identification and implementation of best practices both in clinical settings and through system-level change.

Keywords

mental health; mental health treatment; college students; inequalities; trends; survey

Introduction[1]

Understanding and addressing mental health during young adulthood is of vital public health importance, as roughly half of lifetime mental disorders have first onset by mid-adolescence and three-quarters by the mid-twenties (Kessler et al., 2005a). Approximately 20 million young adults are enrolled in U.S. postsecondary education (NCES, 2020a). In the past decade, mental health symptoms have nearly doubled in college student populations (Duffy et al., 2019). Mental health problems during college are predictive of lower academic success, and depression is associated with a two-fold increase in risk in dropping out or “stopping out” of college without graduating (Eisenberg et al., 2009). Colleges and universities have many unique opportunities for identifying risk and delivering prevention and intervention to students in need, such as through residential life, athletics, and academic advising. For these reasons, higher education represents an ideal setting to address mental health during a psychosocially significant life period.

In fall 2019, 45% of undergraduates at four-year, public institutions, and 53% of undergraduates at two-year, public institutions were racial/ethnic minority students (NCES, 2020b). Understanding the mental health needs of these students, and heterogeneity therein, is essential to supporting wellbeing and advancing equity. Previous studies indicate that

[1]**List of Abbreviations:** Healthy Minds Study (HMS); Patient Health Questionnaire-9 (PHQ-9); Generalized Anxiety Disorder-7 Scale (GAD-7); Non-suicidal self-injury (NSSI); Asian/Pacific Islander/Desi American (APIDA); American Indian/Alaskan Native (AI/AN).

while racial/ethnic minority students experience mental health symptoms at similarly high rates as White students (Eisenberg et al., 2013; Herman et al., 2011), minority students are less likely to access mental health treatment (Lipson et al., 2018). The extant literature has consistently found that Asian students have the lowest rates of treatment uptake (Goodwill & Zhou, 2020).

However, a considerable gap in knowledge still exists surrounding mental health outcomes in diverse racial and ethnic college populations. Much of the prior research comes from students seeking care at counseling centers, such as through the Center for Collegiate Mental Health (CCMH, 2021). Given differences in who presents for treatment, clinical data likely underestimate population-level inequities. Furthermore, large-scale data are necessary to understand mental health needs among racial and ethnic subgroups that are often omitted or combined due to small sample sizes (e.g., Native American students). Likewise, research is needed to discern patterns and trends over time within groups to document progress, or lack thereof, towards reducing inequalities.

To our knowledge, the present study is the first multi-campus, national study to assess trends in mental health and treatment utilization among racial/ethnic minority undergraduate and graduate students over time. Our study draws on data from the national Healthy Minds Study (HMS) from 2013–2021. We use validated screening tools to measure symptoms and examine seven groups based on self-identified race/ethnicity (as defined below): 1) American Indian/Alaskan Native, (2) Arab/Arab American, (3) Asian/Pacific Islander/Desi American, (4) Black/African American, (5) Latino/a/@, (6) White, and (7) multiracial.

It is also important to note that the data analyzed in this study span the start of the COVID-19 pandemic. At a time when there are countless calls for research to understand effects of the pandemic on population mental health—including the 2021 U.S. Surgeon General's Advisory on *Protecting Youth Mental* Health, which specifically calls for data collection to "understand mental health needs, trends, services" (p. 38)—HMS data provide a unique opportunity to examine evolving trends over time for these key outcomes. Our HMS data include multiple years before the pandemic (2013-fall 2019) as well as three full semesters during the pandemic (spring 2020, fall 2020, spring 2021), allowing us to more accurately describe trends. In this way, the present study extends beyond prior literature, which has relied on data collected over shorter periods of time to understand effects of the pandemic. For example, one recent study compared mental health outcomes in the months immediately preceding the pandemic (October-December 2019) relative to the initial onset of the pandemic (March-May 2020), finding that symptoms increased in student populations (Kim et al., 2021). Additionally, measuring and documenting the impact of the pandemic on mental health inequities requires large-scale data that can be disaggregated by race/ethnicity. Understanding trends in mental health inequities in HMS data since 2013 will help us contextualize and interpret emerging research on the pandemic's impact. Overall, findings from this study have important implications for addressing student mental health needs and reducing inequalities. Specifically, the large-scale nature of the data and the comprehensive set of measures administered consistently across years can reveal progress, or lack thereof, in addressing college student mental health as well as identify important focus areas for advancing mental health equity among young adults attending postsecondary institutions.

Methods

Data

Data come from the national Healthy Minds Study (HMS, 2021), an annual web survey examining mental health, service utilization, and related factors among undergraduate and graduate students. De-identified HMS data (as used in the present analyses) are made publicly available to researchers. In the present study, we analyze eight waves of data (2013–2021), which include students from 373 U.S. campuses. Institutions elect to participate in HMS; there are no exclusion criteria for institutional enrollment. The sample of student participants and institutions varies each year, as addressed below. Study sites are diverse across school characteristics, including institutional type, enrollment size, and geographic location, with both urban and rural campuses and representation from all nine census regions. A list of participating institutions by year is available online at the Healthy Minds website (HMS, 2021). Data were collected via Qualtrics. HMS was approved by a central Institutional Review Board. A National Institutes of Health Certificate of Confidentiality provided further protections. The study design of HMS has been reported on extensively in prior publications (e.g., Goodwill & Zhou, 2020; Lipson et al., 2018).

Recruitment and informed consent

At each institution with ≥4,000 students, our team recruited a random sample of 4,000 degree-seeking students from the full population; at smaller institutions, all students were invited to participate. Sample files, containing information for recruitment and nonresponse analyses, were obtained from the Registrar at each site. Students had to be at least 18 years old to participate; there were no other exclusion criteria. Students were recruited via email. To incentivize participation, students were informed of their eligibility for one of several prizes totaling $2,000 annually. Incentives were not contingent on participation. Upon clicking a personalized link in the email, students were presented with an informed consent page and had to agree to the terms before entering the survey. Response rates were as follows: 16% in 2013, 23% in 2014–15, 27% in 2015–16, 23% in 2016–17, 23% in 2017–18, 16% in 2018–19, 16% in fall 2019, 13% in winter/spring 2020, 14% in fall 2020, and 15% in winter/spring 2021. To adjust for potential differences between responders and nonresponders, the study team constructed sample weights. Administrative data, including sex, race/ethnicity, and grade point average, were obtained from institutions for the full initial samples invited to the survey. These variables were used to construct weights, equal to 1 divided by the predicted probability of response, based on logistic regressions. Weights are larger for respondents with underrepresented characteristics, making estimates representative of the full population in terms of known characteristics.

Measures

Race/ethnicity: In HMS, students were asked “What is your race/ethnicity?” and were instructed to “select all that apply.” The primary independent variable is students’ racial/ethnic identity, operationalized as the following mutually exclusive categories: (1) American Indian/Alaskan Native (AI/AN), (2) Arab/Arab American, (3) Asian/Pacific Islander/Desi American (APIDA), (4) Black/African American, (5) Latino/a/@, (6) White, and (7) multiracial (comprised of students who selected more than one racial/ethnic identity).

Mental health status: We examine seven outcomes related to mental health status; binary outcomes are used because most have been validated based on standard cutoffs and reported in prior studies (Lipson et al., 2018). (1) To estimate the proportion of students who are flourishing, we use the eight-item Flourishing Scale (Diener et al., 2010). Scores range from 8 to 56, with higher scores indicating higher wellbeing. This scale does not have a recommended cutoff; rather a score of ≥48 was selected because it best matches rates of flourishing in other scales (e.g., the Mental Health Continuum (Keyes, 2002)) in college populations. (2) Symptoms of depression are examined using the Patient Health Questionnaire-9 (PHQ-9) (Lowe et al., 2004). Across settings and populations, including among racially diverse respondents, the PHQ-9 has been validated as internally consistent (Huang et al., 2006). The standard cutoff of ≥10 is used. (3) Symptoms of anxiety are measured by the Generalized Anxiety Disorder 7-item scale (GAD-7) (Spitzer et al., 2006). The standard cutoff of ≥10 is used, which has been shown to have high sensitivity (89%) and specificity (82%) (Spitzer et al., 2016). (4) Symptoms of eating disorders are assessed using the SCOFF (Luck et al., 2002), with ≥2 constituting a positive screen. (5) The following item is used to assess non-suicidal self-injury (NSSI): “This question asks about ways you may have hurt yourself on purpose, without intending to kill yourself. In the past year, have you ever done any of the following intentionally?” Students were instructed to “select all that apply;” we created a binary variable of any NSSI. (6) A single question, originally developed for the National Comorbidity Survey (Kessler et al., 2005b), is used to assess suicidal ideation: “In the past year, did you ever seriously think about attempting suicide?” Responses are “yes” and “no.” (7) Finally, we created a variable of one or more mental health problems, defined as a positive PHQ-9, GAD-7, or SCOFF screen or NSSI or suicidal ideation.

Help-seeking and service utilization: We examine four outcomes related to help-seeking and service utilization: (1) past-year treatment (therapy and/or medication), (2) past-year therapy, (3) past-year psychotropic medication use, and (4) lifetime diagnosis of a mental illness. In order to understand disparities not attributed to differences in clinical need, we examine past-year help-seeking among students meeting criteria for any mental health problem (as defined above). We examine lifetime diagnoses among all students.

Statistical analysis

Analyses are intended to describe annual trends and variations therein by students’ racial/ethnic identities. We report year-by-year prevalence rates for the full sample and for each racial/ethnic group as well as the percentage point difference from 2013 to 2021 for each group and the percent change, calculated as (B-A)/A where B is the most recent year of data and A is the first year of data. This approach is consistent with a previously published trends paper using earlier years of HMS data (through 2018) (Duffy et al., 2019). We report annual rates of past-year treatment, therapy, and medication among students with one or more mental health problems, overall and by race/ethnicity. We discuss the mental health ‘treatment gap,’ (Kohn et al., 2004) defined as the proportion of students with apparent symptoms (those reporting one or more mental health problems) who are not receiving treatment. Our focus on the mental health treatment gap is not meant to imply that all students meeting criteria for one or more mental health problems necessarily

require treatment; rather the treatment gap is meant to help quantify levels of unmet need accounting for symptom prevalence. We also report the percentage of students with a lifetime diagnosis by year within each group (regardless of symptoms). We report the percentage point difference in help-seeking from 2013 to 2021 for each group as well as the percent change ((B-A)/A).

For both the prevalence and help-seeking outcomes, we estimate logistic regression models controlling for age, gender identity, degree program, and parental education and stratified by race/ethnicity; for treatment, therapy, and medication, these models are restricted to students with one or more mental health problems. From the logistic regression models, the key variable is a continuous predictor of survey year, which was transformed to range from 0 to 1, with 0 representing the first year of data (2013) and 1 representing the most recent year of data (2021). Consistent with the analytic approach of prior research using cross-sectional survey data over time (Duffy et al., 2019), we report adjusted odds ratios (ORs) with 95% confidence intervals (CI), representing the change in odds during the 2013–2021 survey period. The regression models with year as a linear variable can be interpreted as an average per-year change over the study period, adjusting for covariates. In addition to the results tables, the appendix includes figures showing trends over time for each group examined.

While it has been common in research to operationalize White as the reference group, we depart from this practice in order to avoid perpetuating the idea that any racial/ethnic group represents the “norm” (Ioannidis et al., 2021). Our analytic approach avoids reinforcing the privileged group as the “default” category (Choo & Ferree, 2010).

All analyses were conducted using Stata 17 and weighted using the sample weights described. Tables 2 and 3 present weighted percentages of students by race/ethnicity and year meeting criteria for each mental health symptom outcome (Table 2) and for each help-seeking outcome (Table 3). To further contextualize these findings, the Appendix includes tables with unweighted sample sizes for having each outcome by race/ethnicity and year—Appendix Tables A1 and A2, corresponding to the weighted percentages represented in Tables 2 and 3, respectively. The Appendix also includes additional information about the construction and application of the survey weights in HMS data.

Participants

The analytic sample is restricted to students on U.S. campuses. Given known differences in outcomes by citizenship (e.g., lower rates of help-seeking for international students (Lipson et al., 2018)) and the objective of the present study to understand variations in trends by race/ethnicity, the sample is restricted to U.S. citizens/permanent residents. Students with missing data on race/ethnicity were dropped from the analysis (1.3% missingness across all survey years). The analytic sample is comprised of 359,777 students from 373 campuses that participated in HMS between fall 2013 and winter/spring 2021. Over 60% of students are between ages 18–21 and more than 80% are undergraduates. The sample is 66.1% White, 8.9% Black, 7.3% Latino/a/@, 7.1% APIDA, 1.0% Arab American, 0.4% AI/AN, and 9.4% multiracial. Detailed demographic characteristics are presented in Table 1.

Results

Mental health status (Table 2)

For each of the seven prevalence outcomes, annual trends reveal worsening mental health among all students. (1) For flourishing, there was an 32.5% decrease among all students from 2013–2021. Flourishing decreased for each racial/ethnic group during the study period, ranging from a 17.3% decrease among Black students to a 59.6% decrease among AI/AN students. In adjusted logistic regression models stratified by race, change in odds during the 2013–2021 survey period were lowest among AI/AN students (OR=0.36, p=0.003) and Latinx students (OR=0.46, p<0.001) and highest (though still significantly below 1) for Black students (OR=0.82, p=0.01). For Arab American, APIDA, multiracial, and White students, ORs were in the range of 0.53–0.63 (all at p<0.001), comparable to the change in odds in the overall sample (OR=0.57, p<0.001). (2) For symptoms of depression, there was a 134.6% increase among all students from 2013–2021. Depression increased significantly for each group, with the largest increase among AI/AN students. In logistic regression models, changes in odds were highest among AI/AN students (OR=3.48, p<0.001) and lowest (though still significantly greater than 1) for Black students (OR=1.53, p<0.001). For Arab American, APIDA, Latinx, multiracial, and White students, ORs were in the range of 2.02–2.68 (all at p<0.001), comparable to the overall sample (OR=2.46, p<0.001). (3) For symptoms of anxiety, there was a 109.5% increase among all students from 2013–2021. Anxiety increased significantly for each group, with the largest increase among AI/AN students. Changes in odds were highest for AI/AN students (OR=3.70, p<0.001) and lowest (though still significantly greater than 1) for Arab American students (OR=1.54, p=0.02). For all other groups, ORs were in the range of 1.62–2.36 (all at p<0.001), similar to the change in odds for the overall sample (OR=2.16, p<0.001). (4) For symptoms of eating disorders, there was a 95.6% increase among all students from 2013–2021. Prevalence increased for each group, with the largest increases among multiracial and White students. Changes in odds for racial/ethnic groups were all in the range of 1.10–1.96, similar to the overall sample (OR=1.78, p<0.001). (5) For NSSI, there was a 45.5% increase among all students from 2013–2021. With the exception of AI/AN students, who experienced a slight decrease over time, NSSI prevalence increased for all racial/ethnic groups; the largest increases were among Latinx and White students. Changes in odds were in the range of 1.05–1.52 for all groups (though significant only for Latinx, multiracial, and White students), similar to overall trends (OR=1.37, p<0.001). (6) For suicidal ideation, there was a 64.0% increase from 2013–2021. Suicidal ideation increased for each racial/ethnic group during the study period, with the largest increases among AI/AN and Arab American students. Changes in odds were highest among AI/AN students (OR=2.94, p=0.02). Statistically significant ORs for all other groups were in the range of 1.26–1.46, comparable to the overall sample (OR=1.41, p<0.001). (7) Lastly, for one or more mental health problems, there was a 49.7% increase among all students. Prevalence increased for each group, with the largest increase among AI/AN students. Changes in odds were highest among AI/AN students (OR=2.58, p=0.006) and lowest (though still significantly above 1) among Black (OR=1.30, p=0.002), APIDA (OR=1.52, p<0.001), and Arab American students (OR=1.52, p=0.03). For all other groups, ORs were in the range of 1.79–2.12 (all at p<0.001), comparable to the overall sample (OR=1.93, p<0.001). As noted previously,

the data span the start of the COVID-19 pandemic. Looking at the outcome of one or more mental health problems, prevalence increased among all students from 58.0% in 2018–2019 (the last academic year pre-pandemic) to 60.2% in 2020–2021 (the first complete academic year in the pandemic). The most notable increases over this period were for AI/AN and APIDA students.

Help-seeking and service utilization (Table 3)

For each of the four help-seeking/service utilization variables, annual trends reveal key inequalities by race/ethnicity. (1) For past-year treatment, there was a 23.5% increase from 2013–2021 among all students meeting criteria for one or more mental health problems. Treatment rates increased for all groups with the exception of Arab American students, who experienced an 18.4% decrease from 2013–2021; the smallest increases were observed among multiracial students. In logistic regression models, changes in odds during the 2013–2021 survey period were highest among White students (OR=1.38, $p<0.001$); all other ORs were not statistically significant. While data reveal that past-year treatment decreased slightly in the overall sample before vs. during the COVID-19 pandemic (52.3% in 2018–2019 vs. 50.2% in 2020–2021), treatment rates declined more notably for certain groups, namely APIDA and Black students. Among APIDA students with one or more mental health problems, past-year treatment went from 37.2% in 2018–2019 to 33.8% in 2020–2021; for Black students, treatment went from 40.6% in 2018–2019 to 37.7% in 2020–2021. (2) For past-year therapy, there was a 25.6% increase from 2013–2021 among all students meeting criteria for one or more mental health problems. Rates of therapy increased for all groups, with the smallest increases among AI/AN, Arab American, Black, and multiracial students. In logistic regression models, changes in odds were significant only for White students (OR=1.37, $p<0.001$). (3) For past-year medication, there was a 33.0% increase from 2013–2021 among all students meeting criteria for one or more mental health problems. Medication rates increased for all groups with the exception of Arab American students, who experienced a 36.7% decrease over the study period; the smallest increases were observed among AI/AN students. The only statistically significant result from the regression models was for White students who had the highest change in odds of any group (OR=1.30, $p<0.001$). (4) Lastly, for lifetime diagnosis, there was a 49.9% increase from 2013–2021 among all students. Diagnosis rates increased for all groups with the exception of AI/AN and Arab American students, who experienced decreases over time. From the logistic regression models, statistically significant results revealed that White students had the highest change in odds (OR=1.62, $p<0.001$), followed by multiracial (OR=1.50, $p<0.001$), Latinx (OR=1.40, $p<0.001$), Black (OR=1.38, $p=0.001$), and APIDA students (OR=1.24, $p=0.003$).

Discussion

Findings from this study have important implications for campus mental health programming and future research to understand and address inequalities. Our work also builds off of prior analyses, including a 2013–2017 analysis of Healthy Minds Study data, examing symptom prevalence in the overall student population (Duffy et al., 2019). The present study benefits from additional years of data, a focus on both prevalence and help-

seeking outcomes, and fills an important gap in our understanding of racial/ethnic trends not examined in prior studies of college student mental health. In the present analysis, from 2013 to 2021, we observed a roughly 135% increase in positive screens for depression and 110% increase in positive screens for anxiety among all college and university students in our sample, including a continuation of this troubling trend throughout the COVID-19 pandemic. In the most recent year of Healthy Minds data (2020–2021), over 60% of students met criteria for one or more mental health problems, a nearly 50% increase from 2013.

We find that mental health worsened among all racial/ethnic groups over the study period. For each group, results reveal decreased levels of flourishing and increased prevalence of depression, anxiety, eating disorders, and suicidal ideation over time. For non-suicidal self-injury and symptoms of eating disorders, prevalence increased most significantly for White students. For all other prevalence outcomes—symptoms of depression, anxiety, suicidal ideation, and one or more mental health problems—prevalence increased most significantly among racial/ethnic minority students. Specifically, American Indian/Alaskan Native students experienced the largest decreases in flourishing of any group as well as the largest increases in depression, anxiety, suicidal ideation, and meeting criteria for one or more mental health problem from 2013 to 2021.

In addition to rising prevalence levels, the present study reveals large inequalities in terms of help-seeking and use of mental health services in college populations. Findings show that little progress has been made—and indeed a worsening of inequalities has occurred—when it comes to the mental health ‘treatment gap’ for racial/ethnic minority students. This suggests a lack of attention and resources devoted to serving these populations and their unique needs. Among students meeting criteria for one or more mental health problem, there was a 24% increase in past-year treatment from 2013 to 2021. Although Arab American students experienced a 22% increase in meeting criteria for one or more mental health problems, there was an 18% decrease in past-year treatment among Arab American students with symptoms of one or more problems. Prevalence of one or more mental health problems increased 45% among multiracial students, but past-year treatment among these students increased just 9% from 2013 to 2021.

Findings from this study point to important opportunities for future research. As noted, the increasing prevalence of mental health problems in college populations is well-documented (Duffy et al., 2019). One potential partial explanation for rising levels of distress is a change in students’ openness to report symptoms; future research should examine whether changes in such attitudes are occurring differently across groups. Additionally, research is needed to understand how brief screens align with more detailed clinical assessments, whether that is changing over time, and how that may vary by race/ethnicity. Very little is known about the mental health of students identifying as American Indian/Alaskan Native or Arab American. Findings from the present study emphasize the importance of understanding unique factors shaping the wellbeing of these groups. The present study’s documentation of worsening problems and the lack of progress on closing equity gaps suggests an urgent need for research on effective interventions, particularly research that enhances understanding of what works to reduce inequities (Abelson, Lipson, & Eisenberg, 2022). Relatedly, this study included mental health data collected during the COVID-19 pandemic, providing critical

information for future research unpacking how the pandemic is shaping mental health inequities in college populations. While the present analyses reveal that past-year treatment decreased slightly in the overall sample during the pandemic, treatment rates declined more notably for APIDA and Black students in recent years. This is a troubling finding given inequalities in access to treatment that existed pre-pandemic, which seem to have widened in recent years. Continued monitoring of these trends through national, population-level data collected on an on-going basis (as in Healthy Minds) will be important for documenting inequalities, changes therein, and underscoring the urgency for system-level efforts to reach students with untreated mental health symptoms. There is also a need for more intersectional research, examining trends over time by race/ethnicity, socioeconomic status, gender identity, sexual orientation, disability status, and other key dimensions of identity.

Limitations

Leveraging large-scale, national data, we examined trends in key mental health outcomes by students' racial/ethnic identities, including for groups that have often been omitted from prior studies. As noted, this is the first known study to examine trends in mental health prevalence and service utilization by race/ethnicity. The study incorporates validated screening tools to measure symptom prevalence, with consistent measures across years. Generalizability of findings is strengthened by the multisite nature of HMS (with over 300 campuses included) as well as random sampling at the student level. In addition to these strengths, there are several limitations to consider. First, annual response rates ranged from 13% to 27%; though this is typical for online surveys (Duffy et al., 2019; Eisenberg et al., 2007; Lipson et al., 2018), it clearly raises the potential of nonresponse bias. The researchers applied nonresponse weights along known characteristics, but there may be differences on unobserved characteristics. Second, sample sizes varied year to year. For groups with smaller sample sizes (e.g., American Indian/Alaskan Native students, N=1,058 from 2013–2021), the year-to-year samples are even smaller, underscoring the need for continued data collection. Third, campuses elected to participate in HMS; though the institutional sample is large and diverse, it is not random and the institutional sample differs each year (in other words, a different set of colleges and universities enrolled in the survey each year). Importantly, prior research with HMS data has consistently found—through estimations of random-effects regression models and calculations of intraclass correlation coefficients—that campus-level variation is small compared with the individual-level variation in student mental health and help-seeking (Lipson et al., 2015). Furthermore, the variation in school characteristics across years of HMS data is random (i.e., there is not a year of data that come from resource-poor institutions and another year that come from well-resourced institutions). In addition to the logistic regression models with survey year transformed from 0–1, we also ran sensitivity analyses with campus fixed effects (operationalized as dummy variables for each campus in a given year), the results of which were consistent in magnitude and direction with the primary findings. That said, while a small amount of variation year-to-year can be attributed to differences in campus characteristics and resource contexts at institutions, given the utter dearth of research on how institution-level factors impact student mental health (e.g., if/how the level of mental health services shapes the treatment gap per campus), this limitation of the HMS study design does not invalidate the importance of this work. There remains an urgent need for research on how campus systems and structures

shape student mental health. Finally, although mental health outcomes were measured with validated screens, it is important to remember that these measures do not represent clinical diagnoses.

Conclusions

Findings from this study provide information critical to reducing inequalities, advancing equity, and generating urgency around promoting the wellbeing of racial/ethnic minority students. Our study provides essential and novel information on historical trends, which will be helpful for contextualizing and interpreting emerging research seeking to quantify the pandemic's impact on mental health inequalities during the epidemiologically vulnerable college years. We find that the disparities in treatment access by race/ethnicity that existed in 2013 changed very little by 2021, showing a lack of progress towards equity, and for some outcomes and groups, a widening of inequalities over time. The COVID-19 pandemic has exacerbated college students' known mental health risk factors. For example, students of Asian and Pacific Islander decent have encountered discrimination and xenophobia in the face of COVID-19 (Hahm et al., 2021; Zhou et al., 2021). Disparities perpetuated by structural racism have led Black, Latinx, American Indian and Pacific Islander communities to be disproportionately affected by the pandemic (Hooper et al., 2020; Kakol et al., 2020). Our findings underscore the salience of identifying best practices to bridge the mental health equity gap. There have been various best practices identified to bridge this gap, including facilitating critical examinations of privilege and racial attitudes in the classroom and across administrative practices, building culturally responsive social support, and developing strategies that reduce harms on campus and in healthcare settings (Miller et al., 2018; Abelson et al., 2022). These interventions can be done in parallel with psychoeducation, outreach, and advocacy efforts. The Steve Fund, in collaboration with the JED Foundation, has developed the *Equity in Mental Health Framework* (2020), which outlines actionable recommendations for campuses to support racial/ethnic minority students. These include: building trust through racial trauma-informed leadership; taking a collaborative approach to promote mental health for racial/ethnic minority students; engaging faculty and staff to support the mental health of racial/ethnic minority students; treating student mental health as a priority for investment; and leveraging community and external stakeholders to promote mental health and emotional wellbeing of racial/ethnic minority students. The framework has been most effectively implemented with: cross-departmental/-unit collaborations (e.g., counseling centers, offices of diversity, equity, and inclusion, student affairs, academic units); dedicated financial resources to prioritize the mental health of racial/ethnic minority students; and buy-in and active participation from administrative leaders (e.g., presidents, deans, directors, department chairs). Overall, the Framework focuses on system-level change to promote mental health equity; this is in line with an anti-racist approach to mental health, seeing inequalities as stemming from systems (rather than individuals) and thus, the most promising opportunities to advance equity, lie within these systems.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements:

This study would not be possible without the student participants who lent their time and energy to completing the survey and their colleges and universities, which prioritized the need for collecting student mental health data.

Role of Funding Source:

Sarah Ketchen Lipson is supported by the National Institutes of Health, Bethesda, MD [K01MH121515, 2020-24] and the William T. Grant Foundation, New York, NY [Scholars Program, 2020-25]; both are career development awards that support Dr. Lipson's time and research training. Sara Abelson was supported by a Rackham Predoctoral Fellowship from the University of Michigan Rackham Graduate School, Ann Arbor, MI [April 2021-January 2022]. These funding sources did not play a role in the study design, data collection, analysis, or interpretation of data, nor in the writing of the report/submission of the article.

References

Abelson S, Lipson S, Eisenberg D (2022). Mental health in college populations: a multidisciplinary review of what works, evidence gaps, and paths forward in: Perna LW (Ed.) Higher Education: Handbook of Theory and Research. Springer Nature Switzerland. 10.1007/978-3-030-66959-1_6-1.

Center for Collegiate Mental Health, 2021. 2020 Annual Report (Publication No. STA 21–045). https://ccmh.psu.edu/assets/docs/2020%20CCMH%20Annual%20Report.pdf (accessed 4 January 2022).

Choo HY, Ferree MM (2010). Practicing intersectionality in sociological research: A critical analysis OF Inclusions, interactions, and institutions in the study of inequalities. Sociological Theory. 28(2):129–149. doi:10.1111/j.1467-9558.2010.01370.x.

Diener E, Wirtz D, Tov W, Kim-Prieto C, Choi D-W, Oishi S, et al. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. Social Indicators Research. 97, 143–156.

Duffy ME, Twenge JM, Joiner TE (2019). Trends in mood and anxiety symptoms and suicide-related outcomes Among U.S. Undergraduates, 2007–2018: Evidence from two national surveys. Journal of Adolescent Health. 65(5):590–598. doi:10.1016/j.jadohealth.2019.04.033.

Eisenberg D, Golberstein E, Gollust SE (2007). Help-seeking and access to mental health care in a university student population. Medical Care, 45(7), 594–601. doi:10.1097/mlr.0b013e31803bb4c1. [PubMed: 17571007]

Eisenberg D, Golberstein E, Hunt JB (2009). Mental health and academic success in college. The BE Journal of Economic Analysis & Policy, 9(1). doi:10.2202/1935-1682.2191.

Eisenberg D, Hunt J, Speer N (2013). Mental health in American colleges and universities. Journal of Nervous & Mental Disease. 201(1):60–67. doi:10.1097/nmd.0b013e31827ab077.

Goodwill JR, Zhou S (2020). Association between perceived public stigma and suicidal behaviors among college students of color in the U.S. Journal of Affective Disorders. 262:1–7. doi:10.1016/j.jad.2019.10.019. [PubMed: 31693973]

Hahm HC, Xavier Hall CD, Garcia KT et al. (2021). Experiences of COVID-19-related anti-Asian discrimination and affective reactions in a multiple race sample of U.S. young adults. BMC Public Health 21. 10.1186/s12889-021-11559-1.

[dataset] Healthy Minds Network (2021). Healthy Minds Study among Colleges and Universities, year (2013–2021). Healthy Minds Network, University of Michigan, University of California Los Angeles, Boston University, and Wayne State University. https://healthymindsnetwork.org/reserach/data-for-researchers.

Herman S, Archambeau OG, Deliramich AN, Kim BS, Chiu PH, Frueh BC (2011). Depressive symptoms and mental health treatment in an ethnoracially diverse college student sample. Journal of American College Health. 59(8):715–720. doi:10.1080/07448481.2010.529625. [PubMed: 21950252]

Hooper M, Nápoles AM, Pérez-Stable EJ (2020). COVID-19 and Racial/Ethnic Disparities. JAMA. 323(24):2466–2467. doi:10.1001/jama.2020.8598. [PubMed: 32391864]

Huang FY, Chung H, Kroenke K, Delucchi KL, Spitzer RL (2006). Using the patient health questionnaire-9 to measure depression among racially and ethnically diverse primary care patients.

Journal of General Internal Medicine. 21(6):547–552. doi:10.1111/j.1525-1497.2006.00409.x. [PubMed: 16808734]

Ioannidis JP, Powe NR, Yancy C (2021). Recalibrating the use of race in medical research. JAMA. 325(7):623. doi:10.1001/jama.2021.0003. [PubMed: 33492329]

Kakol M, Upson D, Sood A (2021). Susceptibility of Southwestern American Indian Tribes to Coronavirus Disease 2019 (COVID-19). The Journal of rural health : official journal of the American Rural Health Association and the National Rural Health Care Association, 37(1), 197–199. 10.1111/jrh.12451.

Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE (2005a) Lifetime prevalence and age-of-onset distributions of dsm-iv disorders in the national comorbidity survey replication. Archives of General Psychiatry. 62(6):593. doi:10.1001/archpsyc.62.6.593. [PubMed: 15939837]

Kessler RC, Chiu WT, Demler O, Walters EE (2005b). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication. Archives of General Psychiatry, 62(6), 617. doi:10.1001/archpsyc.62.6.617. [PubMed: 15939839]

Keyes CL (2002). The mental health continuum: From languishing to flourishing in life. Journal of Health and Social Behavior, 43(2) 207–222. doi:10.2307/3090197. [PubMed: 12096700]

Kim H, Rackoff GN, Fitzsimmons-Craft EE et al. (2021). College Mental Health Before and During the COVID-19 Pandemic: Results From a Nationwide Survey. Cogn Ther Res. 10.1007/s10608-021-10241-5.

Kohn R, Saxena S, Levav I, Saraceno B (2004). The treatment gap in mental health care. Bulletin of the World Health Organization, 82(11), 858–866. [PubMed: 15640922]

Lipson SK, Gaddis M, Heinze J, Beck K, Eisenberg D (2015). Variations in Student Mental Health and Treatment Utilization Across US Colleges and Universities, Journal of American College Health, 63:6, 388–396, DOI: 10.1080/07448481.2015.1040411. [PubMed: 25942473]

Lipson SK, Kern A, Eisenberg D, Breland-Noble AM (2018). Mental health disparities among college students of color. Journal of Adolescent Health. 63(3):348–356. doi:10.1016/j.jadohealth.2018.04.014.

Lowe B, Unutzer J, Callahan CM, Perkins AJ, Kroenke K (2004). Monitoring depression treatment outcomes with the Patient Health Questionnaire-9. Medical Care, 42(12), 1194–1201. doi:10.1097/00005650-200412000-00006. [PubMed: 15550799]

Luck AJ, Morgan JF, Reid F, O'Brien A, Brunton J, Price C, et al. (2002). The SCOFF questionnaire and clinical interview for eating disorders in general practice: Comparative study. British Medical Journal, 325(7367), 755–756. doi:10.1136/bmj.325.7367.755. [PubMed: 12364305]

Miller MJ, Keum BTH, Thai CJ, et al. (2018). Practice recommendations for addressing racism: A content analysis of the counseling psychology literature. Journal of Counseling Psychology. 65(6):669–680. doi:10.1037/cou0000306. [PubMed: 30091623]

National Center for Education Statistics, U.S. Department of Education, 2020a. Enrollment in Degree-Granting Institutions Projection Model, 2000 through 2029. https://nces.ed.gov/fastfacts/display.asp?id=372#College_enrollment (accessed 4 January 2022).

National Center for Education Statistics, U.S. Department of Education, 2020b. Integrated Postsecondary Education Data System (IPEDS), Spring 2020, Fall Enrollment component. Digest of Education Statistics 2020, table 306.50. https://nces.ed.gov/programs/coe/indicator/csb (accessed 4 January 2022).

Spitzer RL, Kroenke K, Williams JB, Löwe B (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. Archives of Internal Medicine, 166(10), 1092–1097. doi:10.1001/archinte.166.10.1092. [PubMed: 16717171]

The Steve Fund and JED Foundation, 2020. Equity in Mental Health Framework A Joint Project of Recommendations for Colleges and Universities to Support the Emotional Well-Being and Mental Health of Students of Color. https://equityinmentalhealth.org/wp-content/uploads/2017/11/Equity-in-Mental-Health-Framework-v17.pdf (accessed 4 January 2022).

U.S. Surgeon General's Advisory, 2021. Protecting Youth Mental Health. https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf (accessed 28 January 2022).

Zhou S, Banawa R, Oh H (2021). The Mental Health Impact of COVID-19 Racial and Ethnic Discrimination Against Asian American and Pacific Islanders. Frontiers in Psychiatry, 12, 708426–708426. 10.3389/fpsyt.2021.708426. [PubMed: 34867510]

Highlights:

- National study of mental health from 2013–21 among students at 373 schools
- 50% prevalence increase from 2013–21, with largest increase in American Indians
- Highest rate of treatment for Asian, Black, Latinx at/below lowest rate for Whites
- Arab Americans experienced 22% prevalence increase and 18% decrease in treatment
- Implications to reduce mental health inequalities by race/ethnicity

Table 1.

Sample characteristics (N=359,777 at 373 campuses)

	All	AI/AN	Arab American	APIDA	Black	Latino/a/@	Multiracial	White
	N=359,777 (100.0%)	N=1,058 (0.4%)	N=3,797 (1.0%)	N=29,622 (7.1%)	N=24,009 (8.9%)	N=23,675 (7.3%)	N=34,268 (9.4%)	N=243,348 (66.1%)
Age								
18–21	60.1	39.4	55.7	60.8	53.0	56.0	63.0	61.1
22–25	20.1	18.8	24.4	22.4	18.4	20.9	19.7	19.9
26–30	8.8	13.7	9.8	9.9	9.2	10.4	8.7	8.4
31+	11.1	28.1	10.1	6.9	19.4	12.7	8.6	10.5
Gender identity								
Cisgender man	40.5	35.8	44.6	41.2	37.4	37.2	38.6	41.4
Cisgender woman	56.8	62.3	54.3	57.1	61.1	61.0	57.0	55.7
TGNC	2.7	2.0	1.1	1.8	1.5	1.8	4.4	2.9
Degree level								
Undergraduate	83.0	84.5	75.0	77.0	84.2	86.9	85.2	82.8
Graduate/other	17.0	15.5	25.0	23.0	15.8	13.1	14.8	17.2
Parental education								
First-gen	37.9	64.0	40.1	35.0	56.5	73.2	39.8	31.6
Non-first-gen	62.1	36.0	59.9	65.0	43.5	26.8	60.2	68.4

Notes: Sample sizes (N) are unweighted; all other table values are weighted percentages. “AI/AN” is American Indian/Alaskan Native; “APIDA” is Asian/Desi American/Pacific Islander; “TGNC” is transgender and gender nonconforming; “first-gen” is first generation (neither parental figure received a bachelor’s degree). Race categories (columns) are mutually exclusive, with “multiracial” comprised of students who selected more than one racial/ethnic identity.

Table 2.

Trends in mental health symptoms from 2013–2021 by race/ethnicity

	Year-by-year prevalence, weighted %								Percentage point difference	Percent change	Change in odds	
	2013	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21			aOR (95% CI)	*p*
Flourishing												
All	56.2	53.8	45.9	42.4	38.9	39.9	38.2	37.9	−18.2	−32.5%	0.57 (0.55, 0.59)	<0.001
AI/AN	85.3	70.9	44.8	30.2	45.3	43.4	30.5	34.5	−50.8	−59.6%	0.36 (0.19, 0.70)	0.003
Arab Am	58.5	61.7	35.0	49.1	44.4	43.4	36.7	40.7	−17.7	−30.3%	0.53 (0.37, 0.75)	<0.001
APIDA	46.3	47.0	38.0	36.1	33.1	36.3	32.8	34.0	−12.3	−26.6%	0.62 (0.55, 0.71)	<0.001
Black	57.0	57.2	50.3	49.0	45.3	46.4	46.0	47.1	−9.9	−17.3%	0.82 (0.71, 0.96)	0.014
Latino/a/@	56.2	58.7	43.0	43.5	41.8	38.3	37.8	36.2	−20.1	−35.7%	0.46 (0.39, 0.53)	<0.001
Multiracial	51.1	48.5	40.8	37.2	35.7	33.1	34.2	34.0	−17.0	−33.4%	0.63 (0.56, 0.71)	<0.001
White	57.7	54.3	47.1	42.9	38.9	40.5	38.4	37.4	−20.3	−35.2%	0.53 (0.51, 0.55)	<0.001
Depression												
All	17.4	19.9	25.8	30.9	37.3	36.5	37.3	40.8	23.4	+ 134.6%	2.46 (2.37, 2.55)	<0.001
AI/AN	6.2	24.9	30.5	30.7	37.0	45.7	50.0	43.5	37.3	+602.4%	3.48 (1.74, 6.95)	<0.001
Arab Am	25.7	27.2	28.7	32.8	40.9	43.0	44.3	43.3	17.7	+68.8%	2.02 (1.41, 2.89)	<0.001
APIDA	22.5	21.0	27.1	31.5	38.6	33.0	34.7	39.5	17.0	+75.4%	2.06 (1.83, 2.33)	<0.001
Black	24.0	20.3	29.5	29.2	34.4	34.5	35.2	34.7	10.7	+44.7%	1.53 (1.30, 1.80)	<0.001
Latino/a/@	21.5	24.7	31.3	33.2	40.1	40.8	41.6	44.4	22.8	+ 106.0%	2.33 (2.01, 2.71)	<0.001
Multiracial	23.1	23.1	32.7	36.4	42.2	46.8	43.7	48.2	25.1	+ 108.8%	2.41 (2.14, 2.71)	<0.001

	Year-by-year prevalence, weighted %								Percentage point difference	Percent change	Change in odds	
	2013	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21			aOR (95% CI)	*p*
White	15.4	18.8	24.5	30.1	36.3	35.1	36.2	40.4	25.1	+ 163.0%	2.68 (2.56, 2.79)	<0.001
Anxiety												
All	16.6	20.4	21.4	26.4	32.1	31.7	31.7	34.8	18.2	+ 109.5%	2.16 (2.08, 2.24)	<0.001
AI/AN	4.4	22.5	20.3	26.5	29.7	42.8	40.8	39.1	34.6	+781.7%	3.70 (1.87, 7.31)	<0.001
Arab Am	24.6	23.7	29.6	33.2	35.3	32.1	39.6	35.2	10.6	+43.2%	1.54 (1.06, 2.22)	0.023
APIDA	17.8	18.3	20.7	23.3	29.6	26.8	27.6	30.9	13.1	+74.0%	1.96 (1.72, 2.23)	<0.001
Black	10.1	15.2	20.3	22.6	26.4	28.3	25.6	27.3	17.2	+ 170.6%	1.62 (1.37, 1.92)	<0.001
Latino/a/@	19.2	24.6	25.5	26.8	30.3	36.5	32.3	35.2	16.0	+83.6%	1.88 (1.61, 2.19)	<0.001
Multiracial	20.0	25.4	26.0	30.5	35.4	38.9	36.6	39.8	19.7	+98.5%	2.03 (1.79, 2.30)	<0.001
White	16.4	20.0	20.9	26.5	32.6	31.0	32.0	35.9	19.5	+ 119.3%	2.36 (2.26, 2.47)	<0.001
ED												
All	13.8	19.3	19.6	21.3	24.5	24.3	25.9	26.9	13.2	+95.6%	1.78 (1.71, 1.85)	<0.001
AI/AN	17.4	43.3	33.2	24.6	18.7	21.3	33.9	34.6	17.2	+99.1%	1.75 (0.83, 3.67)	0.141
Arab Am	17.8	36.3	22.5	29.5	27.7	33.2	31.7	27.5	9.7	+54.7%	1.10 (0.75, 1.62)	0.618
APIDA	18.7	21.9	23.4	25.9	27.5	26.5	28.0	28.4	9.7	+51.9%	1.44 (1.27, 1.63)	<0.001
Black	12.7	16.5	14.7	16.8	18.6	18.4	21.0	20.3	7.6	+60.2%	1.44 (1.18, 1.75)	<0.001
Latino/a/@	17.9	23.0	23.3	24.4	28.3	29.3	29.7	33.4	15.5	+86.4%	1.96 (1.67, 2.30)	<0.001
Multiracial	14.7	23.9	22.7	24.5	25.3	28.4	29.1	30.2	15.5	+ 105.2%	1.75 (1.54, 2.00)	<0.001
White	12.8	17.9	19.0	20.7	24.1	23.6	25.2	26.6	13.9	+ 108.5%	1.89 (1.81, 1.99)	<0.001

	Year-by-year prevalence, weighted %								Percentage point difference	Percent change	Change in odds	
	2013	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21			aOR (95% CI)	*p*
NSSI												
All	16.2	18.4	20.2	21.1	25.4	24.0	24.1	23.5	7.4	+45.5%	1.37 (1.32, 1.43)	<0.001
AI/AN	24.4	22.0	26.7	22.1	16.3	22.9	25.0	21.2	−3.2	−13.2%	1.09 (0.50, 2.39)	0.826
Arab American	12.7	16.6	15.3	17.9	19.1	18.4	17.2	17.1	4.4	+34.3%	1.10 (0.69, 1.74)	0.690
APIDA	17.5	18.1	21.2	22.5	23.2	19.3	21.0	20.3	2.8	+ 16.1%	1.06 (0.93, 1.21)	0.402
Black	12.0	11.3	15.9	11.7	16.8	15.2	16.0	14.2	2.2	+ 18.5%	1.05 (0.86, 1.29)	0.637
Latino/a/@	14.6	16.6	19.2	19.4	21.4	23.6	19.8	21.3	6.7	+45.6%	1.37 (1.15, 1.63)	<0.001
Multiracial	20.8	23.0	26.2	27.1	30.1	31.6	29.5	29.0	8.3	+39.9%	1.25 (1.10, 1.42)	0.001
White	16.0	18.6	19.9	21.4	26.4	24.6	25.4	25.3	9.3	+58.0%	1.52 (1.45, 1.60)	<0.001
SI												
All	8.2	10.6	10.4	11.4	14.4	14.9	14.5	13.5	5.3	+64.0%	1.41 (1.34, 1.48)	<0.001
AI/AN	4.4	6.4	13.3	11.3	7.0	14.1	17.4	15.0	10.6	+238.4%	2.94 (1.18, 7.32)	0.02
Arab Am	4.8	8.6	9.6	13.7	9.5	12.0	12.2	9.2	4.4	+92.5%	0.96 (0.58, 1.60)	0.885
APIDA	10.1	9.2	12.2	11.6	12.8	15.4	12.9	12.7	2.5	+25.0%	1.26 (1.07, 1.49)	0.007
Black	8.8	11.1	12.8	10.0	14.7	14.2	14.8	13.4	4.6	+52.3%	1.22 (0.97, 1.52)	0.084
Latino/a/@	7.6	11.3	10.8	10.7	13.9	14.3	13.3	11.7	4.1	+54.7%	1.13 (0.93, 1.38)	0.231
Multiracial	10.2	13.3	13.7	14.9	17.6	20.8	19.3	17.5	7.3	+71.3%	1.39 (1.18, 1.62)	<0.001
White	7.8	10.3	9.7	11.1	14.2	14.3	14.1	13.3	5.4	+69.0%	1.46 (1.37, 1.55)	<0.001
>1												

	Year-by-year prevalence, weighted %								Percentage point difference	Percent change	Change in odds	
	2013	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21			aOR (95% CI)	*p*
All	40.2	45.9	47.8	52.6	58.8	58.0	59.1	60.2	20.0	+49.7%	1.93 (1.86, 2.00)	<0.001
AI/AN	33.8	66.9	51.6	51.5	50.9	58.5	69.5	63.3	29.5	+87.2%	2.58 (1.31, 5.07)	0.006
Arab Am	51.9	58.4	50.7	60.1	60.6	67.7	68.8	63.3	11.4	+22.0%	1.52 (1.04, 2.21)	0.03
APIDA	46.3	46.2	51.4	54.9	60.5	55.0	57.4	58.4	12.1	+26.2%	1.52 (1.35, 1.71)	<0.001
Black	41.0	40.7	45.7	44.7	52.3	51.4	52.4	50.4	9.4	+22.8%	1.30 (1.11, 1.53)	0.002
Latino/a/@	44.2	49.7	52.3	55.3	59.7	61.1	60.6	62.1	17.9	+40.4%	1.79 (1.54, 2.08)	<0.001
Multiracial	46.3	52.6	53.5	59.5	62.4	66.7	66.5	67.3	21.0	+45.3%	2.04 (1.80, 2.31)	<0.001
White	38.4	44.9	46.8	52.0	58.6	57.4	58.6	60.8	22.4	+58.5%	2.12 (2.03, 2.21)	<0.001

Notes: Table values are weighted annual prevalence percentages for each outcome by race/ethnicity. Percentage point difference represents the weighted percentage point difference from the first year of data analyzed (2013) to the last year (2020–2021) in the proportion of students meeting criteria for each mental health outcome; percent change (B-A/A) represents the percent change over time. aOR (adjusted odds ratio) and 95% CI (confidence intervals) computed in binary logistic regressions with the variable of survey year scaled to range from 0 (representing 2013) to 1 (representing 2020–2021); thus aOR represents a change in odds from the 2013–2021 survey period, adjusted by age, gender, degree program, and parental education. Race categories are mutually exclusive, with “multiracial” comprised of students who selected more than one racial/ethnic identity. “AI/AN” is American Indian/Alaskan Native; “APIDA” is Asian/Desi American/Pacific Islander; “ED” is eating disorder; “NSSI” is non-suicidal self-injury; “SI” is suicidal ideation; “≥1” is defined as a positive screen for depression (PHQ-9≥10), positive screen for anxiety (GAD-7≥10), positive screen for an eating disorder (SCOFF≥2), any past-year non-suicidal self-injury, and/or any past-year suicidal ideation.

Table 3.

Trends in help-seeking from 2013–2021 by race/ethnicity

	Year-by-year help-seeking, weighted %								Percentage point difference	Percent change	Change in odds	
	2013	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21			aOR (95% CI)	*P*
Past-year treatment												
All	40.7	45.1	45.6	47.6	51.0	52.3	50.5	50.2	9.6	+23.5%	1.25 (1.19, 1.31)	<0.001
AI/AN	32.2	40.5	40.8	55.7	56.8	38.8	43.6	48.3	16.1	+49.9%	0.91 (0.37, 2.21)	0.83
Arab American	49.2	27.5	34.3	37.5	31.2	40.2	32.2	40.2	−9.0	−18.4%	1.35 (0.81, 2.25)	0.254
APIDA	23.2	30.5	29.1	33.2	37.3	37.2	32.1	33.8	10.6	+45.7%	1.18 (1.00, 1.40)	0.05
Black	29.3	28.9	36.8	34.4	39.1	40.6	36.6	37.7	8.4	+28.8%	1.14 (0.90, 1.44)	0.290
Latino/a/@	25.2	37.9	44.6	37.8	36.4	40.1	41.2	35.9	10.7	+42.4%	1.12 (0.92, 1.37)	0.249
Multiracial	46.7	47.6	45.8	49.9	54.1	52.4	52.5	50.7	4.1	+8.7%	1.10 (0.94, 1.29)	0.237
White	44.6	48.9	48.2	50.9	55.3	56.3	55.1	55.8	11.2	+25.1%	1.38 (1.30, 1.46)	<0.001
Past-year therapy												
All	30.5	32.5	35.3	34.6	38.6	40.7	39.1	38.3	7.8	+25.6%	1.29 (1.22, 1.35)	<0.001
AI/AN	30.4	26.7	36.7	44.1	43.0	28.9	30.5	35.0	4.6	+ 15.2%	0.73 (0.30, 1.79)	0.492
Arab American	27.6	18.1	28.7	27.3	22.8	32.3	30.0	32.7	5.2	+ 18.8%	1.96 (1.16, 3.30)	0.012
APIDA	19.4	23.1	23.5	25.9	30.2	29.7	27.4	27.6	8.2	+42.4%	1.27 (1.06, 1.51)	0.008
Black	25.9	22.6	30.0	28.2	32.9	32.6	31.1	30.0	4.1	+ 15.9%	1.05 (0.83, 1.34)	0.678
Latino/a/@	18.5	25.5	33.7	30.4	29.0	31.0	32.9	28.9	10.4	+56.0%	1.28 (1.05, 1.58)	0.017
Multiracial	36.4	36.6	35.0	37.9	42.0	41.6	40.9	39.6	3.3	+9.1%	1.16 (0.99, 1.35)	0.068

	Year-by-year help-seeking, weighted %								Percentage point difference	Percent change	Change in odds	
	2013	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21			aOR (95% CI)	*P*
White	32.8	34.9	37.2	36.0	41.1	43.6	41.8	41.8	9.0	+27.3%	1.37 (1.29, 1.45)	<0.001
Past-year medication												
All	24.9	30.6	29.0	32.8	33.8	33.8	32.9	33.1	8.2	+33.0%	1.15 (1.10, 1.21)	<0.001
AI/AN	32.2	31.5	11.7	40.9	31.7	24.6	29.2	34.5	2.2	+6.9%	1.27 (0.48, 3.39)	0.633
Arab American	34.0	19.6	14.9	19.3	17.7	25.3	15.6	21.5	−12.5	−36.7%	1.00 (0.54, 1.85)	0.99
APIDA	9.9	18.4	13.0	17.3	19.8	20.1	15.4	16.8	6.9	+69.9%	1.06 (0.85, 1.31)	0.611
Black	12.6	18.6	17.7	18.3	19.1	17.9	16.6	18.9	6.3	+50.1%	1.04 (0.77, 1.39)	0.805
Latino/a/@	12.8	25.2	23.3	22.5	21.3	22.8	21.6	18.2	5.4	+42.3%	0.82 (0.66, 1.03)	0.088
Multiracial	25.6	28.7	29.0	32.7	35.0	33.7	34.1	32.9	7.3	+28.6%	1.13 (0.95, 1.34)	0.165
White	28.9	34.0	31.9	36.7	38.5	37.9	38.0	39.2	10.3	+35.7%	1.30 (1.22, 1.38)	<0.001
Lifetime diagnosis												
All	27.4	33.9	31.6	36.9	39.7	38.6	38.7	41.1	13.7	+49.9%	1.40 (1.39, 1.50)	<0.001
AI/AN	57.9	34.6	46.9	40.7	46.5	45.6	34.8	41.7	−16.2	−27.9%	0.72 (0.36, 1.45)	0.36
Arab American	37.8	36.1	31.2	26.6	25.2	30.8	26.9	29.8	−8.0	−21.1%	0.90 (0.59, 1.37)	0.626
APIDA	14.9	20.4	16.7	22.0	25.9	21.8	20.8	23.2	8.3	+55.6%	1.24 (1.08, 1.44)	0.003
Black	15.3	20.4	20.1	23.3	24.1	25.0	22.1	26.0	10.7	+70.3%	1.38 (1.14, 1.66)	0.001
Latino/a/@	18.7	29.0	29.4	31.7	30.2	29.3	31.1	33.1	14.4	+77.0%	1.40 (1.18, 1.65)	<0.001
Multiracial	27.6	36.8	34.8	40.9	44.9	43.7	44.5	45.9	18.3	+66.3%	1.50 (1.32, 1.70)	<0.001

	Year-by-year help-seeking, weighted %								Percentage point difference	Percent change	Change in odds	
	2013	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21			aOR (95% CI)	*P*
White	30.1	36.6	33.6	39.9	43.2	41.9	42.7	46.1	16.0	+53.2%	1.62 (1.54, 1.69)	<0.001

Notes: Table values are weighted annual percentages for each help-seeking outcome by race/ethnicity. Percentage point difference represents the weighted percentage point difference from the first year of data analyzed (2013) to the last year (2020–2021) in the proportion of students seeking treatment/being diagnosed; percent change (B-A/A) represents the percent change over time. aOR (adjusted odds ratio) and 95% CI (confidence intervals) computed in binary logistic regressions with the variable of survey year scaled to range from 0 (representing 2013) to 1 (representing 2020–2021); thus aOR represents a change in odds from the 2013–2021 survey period, adjusted by age, gender, degree program, and parental education. Race categories are mutually exclusive, with "multiracial" comprised of students who selected more than one racial/ethnic identity. "AI/AN" is American Indian/Alaskan Native; "APIDA" is Asian/Desi American/Pacific Islander. Past-year outcomes are among students with a positive screen for "≥1 mental health problem" defined as a positive screen for depression (PHQ-9≥10), positive screen for anxiety (GAD-7≥10), positive screen for an eating disorder (SCOFF≥2), any past-year non-suicidal self-injury, and/or any past-year suicidal ideation. Lifetime diagnosis is among all students regardless of symptoms.