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College student interest in teletherapy and self-guided mental health supports during the COVID-19 pandemic

Isaac L. Ahuvia, Jenna Y. Sung, Mallory L. Dobias, Brady D. Nelson, Lauren L. Richmond, Bonita London, & Jessica L. Schleider

Department of Psychology, Stony Brook University

Corresponding Author: Isaac L. Ahuvia. Email: isaac.ahuvia@stonybrook.edu

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Abstract

Objective: The COVID-19 pandemic has worsened college students' mental health while simultaneously creating new barriers to traditional in-person care. Teletherapy and online self-guided mental health supports are two potential avenues for addressing unmet mental health needs when face-to-face services are less accessible, but little is known about factors that shape interest in these supports. **Participants:** 1,224 U.S. undergraduate students (mean age=20.7; 73% female; 40% White) participated. **Methods:** Students completed an online questionnaire assessing interest in teletherapy and self-guided supports. Predictors included age, sex, race/ethnicity, sexual minority status, and anxiety and depression symptomatology. **Results:** Interest rates were 20% and 25% for at-cost supports (teletherapy and online self-help, respectively) and 70% and 72% for free supports (teletherapy and online self-help, respectively). Patterns emerged by age, anxiety symptom severity, and race/ethnicity. **Conclusions:** Results may inform universities' efforts to optimize students' engagement with nontraditional, digital mental health supports, including teletherapy and self-guided programs.

Keywords: mental health, teletherapy, self-guided, college student, COVID-19

College student interest in teletherapy and self-guided mental health supports during the COVID-19 pandemic

The SARS-CoV2 (COVID-19) pandemic has taken a severe toll on public health, with effects reaching far beyond unprecedented illness and mortality. Levels of mental health difficulties appear to be rising broadly as the pandemic has progressed, both in the general U.S. population and among college students specifically (Twenge & Joiner, 2020; Wang et al., 2020). The COVID-19 pandemic and its repercussions may undermine college student mental health in myriad ways (Wang et al., 2020). Concurrently, students now face the potential for serious illness, loss of loved ones, financial strain, social isolation, loss of on-campus resources, and sudden disruption of routines—creating a "perfect storm" for the emergence or exacerbation of psychological distress.

Even before the pandemic, only approximately a third of college students with mental health problems received treatment (Eisenberg et al., 2011). Since March 2020, social distancing measures to mitigate illness spread, including nationwide campus closures, have further suppressed opportunities for students to access face-to-face psychological support (Hadler et al., 2021). Together with the complexities of treating students forced to move off-campus, often across state lines, many students were initially left without access to usual providers. Identifying means of delivering mental health care to college students that circumvent these barriers—and ensuring those supports are *acceptable* and *likely to be used* by students facing diverse access barriers—is key to supporting positive emotional and educational trajectories in students nationwide. Thus, we examined the acceptability of two potential means for providing mental health care that avoid these issues: teletherapy and self-guided mental health programs.

Teletherapy and self-guided mental health programs are two mental healthcare delivery modalities that may circumvent traditional barriers to treatment. Teletherapy (also known as telehealth, e-mental health, etc.) is standard one-on-one or group therapy provided online or over the phone. Self-guided mental health programs (often web- or app-based) are designed to improve mental health, but they do not involve talking directly with a therapist. They are often available as brief online programs or as apps (Schleider et al., 2020). Mental health apps vary widely in terms of focus areas, treatment approaches, and adherence to evidence-based treatment practices (Bakker et al., 2016). Both intervention delivery modalities remove barriers to seeking care frequently endorsed by college students, such as logistical difficulties, too-long waiting-times, high costs, and viewing treatment as too large a time commitment (Czyz et al., 2013).

As the promise of these virtual treatment delivery modalities has received more attention from consumers, researchers, and providers alike, consumers have increasingly sought them out in recent years (Mohr et al., 2018). Researchers' attention to teletherapy and digital supports has accelerated dramatically because of the pandemic and social distancing practices (Gruber et al., 2020; Wind et al., 2020). In addition to teletherapy, there is an ever-increasing number of digital health apps available to college students, with some requiring a monthly fee and others offered at no cost to users (Radovic et al., 2016). Likewise, policymakers have taken note of the need for these supports during the pandemic, as many states have taken action to make teletherapy more widely accessible (*Telehealth Guidance by State during COVID-19*, 2020). Of particular note for the college student population are allowances made for teletherapy to be provided across state lines; this can be critical for college students who attend universities in different states than they reside. Together, these developments suggest a system-level embrace of this new approach to providing flexible support for college students.

However, the increase in supply for digitally-administered supports has not led to a proportional increase in usage (Ennis et al., 2019; Lattie et al., 2019; Yeager & Benight, 2018). The adage "if we build it, they will come" may not always hold true in the context of wide-scale program implementation, particularly with respect to digital health tools. Many widely-available mental health apps, for example, suffer from low retention rates; one analysis found median 30-day retention rates in the range of 4% (Baumel et al., 2019). Improvements to the accessibility of care do not necessarily mean that said care will be accessed.

Why, if there are digitally-administered supports available to college students (and if college students demonstrate a need for additional mental health supports), do college students not engage with these supports? One answer may simply be that the array of services offered to college students are not adequately attractive as treatment options. Without adequate interest, even effective supports may remain underutilized. Creators of digital interventions have often failed to explore what people with mental health difficulties want from such interventions until after they are already developed (Bevan Jones et al., 2020; Bucci et al., 2019).

What factors drive college students' interest in digitally-administered supports? A handful of studies have explored factors that may contribute to interest in teletherapy and self-guided mental health programs. Research on adults suggests that the personalization of digital supports to individuals' situations (e.g., providing the opportunity to engage at any time during the day), as well as individuals' initial beliefs about digital interventions (e.g., how effective individuals believe digital interventions are in general), are important predictors of uptake (Patel et al., 2020). Additional factors such as the perceived quality of the service, ease of use, and aesthetics inform whether or not individuals use digitally-administered supports (O'Connor et al., 2016; Schueller et al., 2018).

Aside from characteristics of the service, person-level characteristics have been shown to predict interest in digitally-administered mental health supports. Teletherapy is often deemed useful by students who face time- and travel-related barriers to face-to-face therapy (Dunbar et al., 2018). In addition, those with past experience receiving in-person counseling may be more open to engaging in teletherapy than those without that experience (Travers & Benton, 2014). Openness to using digitally-administered supports may be higher among women and those who have received face-to-face mental health supports in the past (Kern et al., 2018). Some findings indicate that students of color prefer digital mental health apps at a greater rate than white students (Hadler et al., 2021; Kern et al., 2018), potentially due to greater stigma towards traditional face-to-face treatments among communities of color (DeFreitas et al., 2018; Miranda et al., 2015). To this point, one evaluation that made online self-guided supports freely available over the internet attracted approximately 50% individuals of color (Schleider et al., 2021). Importantly, college students experiencing more distress appear *more* likely to use digital mental health supports, while the opposite pattern holds true for traditional mental health supports (Ryan et al., 2010). However, the severity of symptoms is not always a significant predictor when studied. Lastly, qualitative work has indicated that cost is a central concern for those who may be interested in pursuing this care (Melcher et al., 2020). However, more research is needed to determine what factors influence uptake of digitally-administered mental health supports in college students, specifically (Hollis et al., 2017).

Present Research Questions

The pandemic has dramatically increased risks to college students' mental health (Araújo et al., 2020; Zhai & Du, 2020), with studies finding majorities of students feeling increased stress and anxiety as a result of the pandemic (Son et al., 2020; Wang et al., 2020). Simultaneously, social

distancing measures have undermined access to in-person counseling. Thus, we examined the following research questions. First, what is the extent of college students' openness to various digital mental health supports, including teletherapy (synchronous virtual counseling with a clinician) and self-guided treatments (e.g., apps or online programs), during the early months of the COVID-19 pandemic in the United States (March to April 2020)? Second, how does students' interest in these interventions vary by *treatment modality type* (teletherapy vs. self-guided treatment), *symptom severity* (e.g., higher versus lower levels of depression and anxiety symptoms), presence versus absence of *minoritized student identities* (e.g., racial/ethnic or sexual minority identity), and *cost* (no-cost vs. cost of a typical behavioral health copay)? Results may inform targeted dissemination of different digital mental health tools to the particular subgroups most receptive to using them.

Methods

Procedures

Researchers collected data from a campus-wide survey administered within the first two months of its initial, pandemic-related campus closure. Responses were collected between March 26, 2020 and May 2, 2020. Campus mental health providers began to offer teletherapy services in March 2020. Recruitment was conducted over email, with communications sent from deans to all colleges within the university. Surveys could be completed on any internet-equipped device. Participants had a four-week window to complete the survey after being invited to participate. Students were not compensated directly for their participation. However, they were told that for each completed survey $1 would be donated to the undergraduate COVID-19 student hardship fund. While the survey was open to all members of the campus community (e.g. students, faculty, staff), our analysis is limited to only undergraduate students to optimize the specificity

and interpretability of results. This study was deemed exempt from the university's Institutional Review Board (IRB) review, as researchers did not collect any personally identifying data.

Measures

Independent variables included measures of age, sex, race/ethnicity, sexual minority status, anxiety sympotomotology, and depression symptomotology. Age was a continuous variable and sex, which referred to sex assigned at birth, was female or male. Due to the diverse set of sexual identities we anticipated our participants endorsing, and for the sake of power and interpretability, we coded sexual identity dichotomously as sexual minority status (yes/no). We originally planned on including a variable for gender minority status, but because of the small number of gender minority respondents, we decided to exclude this variable from our final analysis (doing so did not impact the significance or direction of any coefficients).

Race and ethnicity were assessed via two separate variables in our survey, per NIH reporting requirements and guidelines (NIH 2020). The ethnicity item assessed self-identification as either Hispanic or non-Hispanic, regardless of race; the race item assessed self-identification as White, Black, Asian, American Indian or Alaska Native, and/or Native Hawaiian or Other Pacific Islander. For the purpose of present analyses, race and ethnicity information were combined into a single variable with the following categories: Hispanic, White non-Hispanic, Black non-Hispanic, Asian non-Hispanic, and other race/ethnicity not listed. We opted to use a single-variable approach to avoid conflating responses from White non-Hispanic students and Hispanic students who do not belong to a second community of color, as would be done in an analysis using only race, and to avoid conflating responses from White non-Hispanic students and non-Hispanic students of color, which would be done in an analysis using only ethnicity. Further, we opted to collapse the remaining combinations of race/ethnicity into a single category

as we did not expect to have enough respondents from those groups to be statistically powered to examine them separately.

Anxiety was measured via the Generalized Anxiety Disorder-7 item scale (GAD-7; Spitzer et al., 2006), which asks participants to rate their anxiety levels in the past 2 weeks on a scale of 0 ("Not at all") to 3 ("Nearly every day"). Total score ranges from 0 to 21 with higher scores representing higher anxiety levels. The GAD-7 is a valid, reliable measure of generalized anxiety symptoms among large, community samples of college students (Byrd-Bredbenner et al., 2020). Cronbach's alpha for the GAD-7 in this sample was $\alpha = .92$. Depression was measured via the Patient Health Questionnaire-9 item scale (PHQ-9; Kroenke et al., 2001), which is a 9 item measure assessing symptoms of depression in the last two weeks on a scale of 0 ("Not at all") to 3 ("Nearly every day"). Total score ranges from 0 to 27 with higher scores representing higher levels of depression. The PHQ-9 is a valid, reliable measure of depressive symptoms among diverse groups of US college students (Keum et al., 2018). Cronbach's alpha for the PHQ-9 in this sample was $\alpha = .90$.

Our dependent variables were dichotomous measures of interest in (a) an online self-help program at $30/program (approximately commensurate with the average cost of a co-pay for one outpatient mental health care visit in the United States; (Horgan et al., 2016)), (b) an online self-help program for no cost, (c) teletherapy at $30/session, and (d) teletherapy at no cost. All questions began with "at this time, are you interested in trying…" followed by a description of the supports. The survey described online self-help as "self-guided mental health programs (e.g., online or through an app) [that are] designed by mental health professionals, but do not involve talking with a therapist." Teletherapy was described as "teletherapy with a trained therapist (meeting with a therapist over video-chat or phone)." For each item, responses could be "yes,"

"maybe," or "no." For our analysis, "yes" and "maybe" were coded as 1 while "no" was coded as 0.

Data Analytic Plan

All data processing and analytic methods were specified prior to analyses in a pre-registration, available at https://osf.io/48gxf/. Data processing and analysis was conducted in R (R Core Team, 2019). We employed a logistic regression approach where a set of student characteristics (age, sex, race/ethnicity, sexual minority status, anxiety symptoms, and depression symptoms) was regressed on four different measures of interest (interest in an online self-help program at $30/program, interest in an online self-help program at no cost, interest in teletherapy at $30/session, and interest in teletherapy at no cost). Additional exploratory analyses use this same logistic regression approach but with a different set of predictors: COVID-19-related stressors, pandemic-related barriers to care, and the type of problem the student would be seeking care for (e.g., anxiety, depression). All analyses are limited to complete cases. Holm-Bonferroni corrections were used to limit the familywise error rate to $\alpha = .05$ (Holm, 1979).

Results

Sample Characteristics

Table 1 describes sample characteristics. 1,404 undergraduates responded to the survey; upon limiting data to complete cases, the final sample included 1,224 undergraduate students. The total undergraduate student body numbered approximately 18,000 at the time of the survey (Stony Brook University, 2021). Student ages ranged from 17 to 49, while 95% of respondents were between 18 and 25 years old. While the undergraduate student body was approximately 50% female at the time of the survey, undergraduate respondents were 73% female. Racial demographics were generally well-reflected in the survey sample, particularly for White (39%

student body vs 40% survey), Asian (41% vs 38%), and Hispanic (14% vs 13%) students. However, Black students were slightly underrepresented by this survey (10% vs 3%).

Did support cost, support modality, or both relate to college students' interest in digital mental health support?

Full results of the pre-registered logistic regression analysis are presented in Table 2. Results indicated that the cost of supports, over and above type of support, predicted the level of student interest in a given type of mental health support, adjusting for student-level sociodemographic factors. Among undergraduate respondents, 70% and 72% replied "maybe" or "yes" to being interested in free online self-help programs and teletherapy, respectively. By contrast, only 25% of undergraduate respondents reported interest in online self-help programs at $30/program, and only 20% reported interest in teletherapy at $30/session.

Did students' sociodemographic characteristics relate to interest in digital mental health support?

Some student characteristics emerged as significant predictors of interest in digital mental health support. Older age predicted interest in both at-cost online self-help (OR = 1.08, p = .002) and at-cost teletherapy (OR = 1.07, p = .009). Men (verus women) appeared to endorse less interest in both digital self-help and teletherapy, regardless of cost, however this pattern was not statistically significant (ps > .05). Likewise, students identifying as sexual minorities tended to endorse greater interest in both digital self-help and teletherapy, but again this trend was not statistically significant (ps > .05).

With regards to student race/ethnicity, a pattern emerged in rates of interest by cost. When supports were free, more students of color reported interest (72% for online self-help and 73% for teletherapy) relative to White students (68% and 70%). By contrast, when treatment was

offered at cost, fewer students of color reported interest in supports (22% for online self-help and 15% for teletherapy) relative to white students (29% and 27%). This pattern held true for every individual racial/ethnic group. In the logistic regression, the effects of race/ethnicity only reached the level of statistical significance in the case of Asian students' interest in at-cost teletherapy ($OR = .46$, $p < .001$, indicating that being Asian was associated with less than half the odds of being interested in at-cost teletherapy relative to being White).

In addition, with respect to at-cost supports, Asian, Hispanic, and other students of color expressed sizeable preferences for self-guided supports over teletherapy. We conducted a post-hoc analysis in order to investigate this pattern. We conducted a set of McNemar's Chi-Square tests; for each of these three racial/ethnic categories, we tested whether interest varied significantly as a function of support modality (at-cost self-guided vs. at-cost teletherapy). McNemar's Chi-Square test is a paired test applied to a contingency table of two binary variables; the null hypothesis is that the probabilities of being classified into cells [i, j] and [j, i] are the same (Agresti, 1990). Results of this test indicated that Asian respondents reported significantly more interest in at-cost self-guided supports, versus at-cost teletherapy (X^2 (1, N = 470) = 19.25, $p < .001$). However, this pattern was not statistically significant for Hispanic (p = .186), or other (p = .070) racial/ethnic categories.

Did students' symptom levels relate to interest in digital mental health support?

For student symptomatology, reporting more severe anxiety symptoms was associated with interest in all four support types (self-guided at-cost: $OR = 1.06$, $p = .006$; teletherapy at-cost: $OR = 1.07$, $p = .006$; self-guided free: $OR = 1.07$, $p = .002$; teletherapy free: $OR = 1.08$, $p < .001$). More severe depressive symptoms did not significantly predict any outcome after controlling for the other variables in the model.

Did students' self-reported experience of COVID-19-related stressors relate to interest in digital mental health support?

Exploratory analyses investigated the potential role of COVID-19-related stressors, pandemic-related barriers to care, and the type of problem the student would be seeking care for (e.g., anxiety, depression). None of these exploratory variables emerged as significant predictors of interest in supports. Results were robust to the inclusion of the gender minority status variable.

Discussion

We surveyed a sample of undergraduate students attending a large university in the northeastern United States to investigate interest in digital mental health supports, including teletherapy (synchronous virtual counseling with a clinician) and self-guided treatments (e.g., apps or online programs), during the COVID-19 pandemic, when traditional in-person services were less readily accessible. This survey was conducted in the early months of the COVID-19 pandemic, at a time of both increased risk to college students' mental health and social distancing making in-person mental health counseling less available. Results indicated that students' interest in digital mental health support varied significantly by support cost, as well as by certain student-level characteristics.

Our sample of undergraduate students reported high levels of interest in both teletherapy and self-guided supports, particularly when these supports were offered at no cost. 70% of respondents in our survey reported interest in free self-guided mental health supports, and 72% reported interest in free teletherapy. This finding is in line with previous research that has found high rates of interest in online mental health supports (despite low rates of support utilization) among students. One survey found that 60% of surveyed students were open to online therapy (Dunbar et al., 2018). A similar survey found that 47% of university students considered

themselves “likely” to use an online intervention, while another 30% were unsure (Ryan et al., 2010). Comparing results across studies is not straightforward, however; critically, past studies were conducted outside of the context of a pandemic and associated social distancing measures. Studies in this area have also tended to use ad-hoc rather than standardized support descriptions and inconsistent response options when measuring interest. In addition, supports described in past studies have often been very broad, encapsulating a heterogeneous set of actual supports (e.g., both teletherapy and self-guided online supports). Future research should more narrowly define the treatments in question and consider measuring interest in more than one modality.

Cost significantly predicted interest in digital mental supports in this survey: college students’ interest rates were 3.6 times higher for free vs. paid teletherapy and 2.8 times higher for free vs. paid self-guided supports. The large effect of support cost on interest rates is in line with past qualitative work, which has identified cost as a primary driver of college students’ mental health app choices (Melcher et al., 2020). This finding is also consistent with nation-wide patterns in the United States, where cost is among the most important barriers to accessing care for those with unmet mental health needs (SAMHSA, 2017). This finding speaks to the importance of low-cost mental health services in addressing mental health needs among college students. For universities, this pattern suggests that offering self- or clinical-guided digital mental health supports for free, rather than at-cost, may see more interest and student uptake of these services. Universities interested in offering digital mental health supports should therefore work to identify sustainable means for making those services freely available.

We found some evidence for an association between student demographic characteristics and interest in digital mental health supports. Older students were significantly more likely to be interested in at-cost supports relative to younger students. When supports were free, students of

color were more likely to report interest than White students, and when supports were offered at cost, fewer students of color reported interest in supports. However, this pattern was only statistically significant in the case of Asian students' interest in at-cost teletherapy (which was significantly lower than that of White students). These findings may be explained by disparities in financial resources between White students and students of color. However, the present investigation did not evaluate students' financial resources; as such, additional work is needed to explore this possibility formally. Present results indicate that at-cost supports may be more likely to attract older students and less likely to engage students of color, particularly Asian students. Universities seeking to reduce mental health care barriers and increase service engagement, especially among students of color, should work to provide these services at no cost.

Regarding symptom severity, we found that increased anxiety symptomatology significantly predicted greater interest in each type of digital mental health support (teletherapy and online self-help). This supports a past finding that students experiencing more psychological distress appear *more* likely to use online interventions, despite generally appearing *less* likely to use traditional interventions (Ryan et al., 2010). Notably, our models found that anxiety symptomatology, but not depression symptomatology, predicted interest in supports when both variables were included in the same model. This does not preclude the possibility that depression symptomatology predicts interest in digital mental health supports among college students, rather this suggests that within this specific sample, we did not find depression symptomatology to be a significant predictor of interest after controlling for other factors including anxiety symptomatology. Universities should be aware that digital supports are more likely to engage students with higher anxiety symptomatology.

While our survey sheds light on the factors predicting student interest in digital mental health supports during the COVID-19 pandemic, it is not without limitations. First, data were cross-sectional; openness to digital mental health supports might have differed if assessed prior to the pandemic. Second, sample size constraints prevented us from examining potential between-demographic-group differences in digital mental health support interest levels (e.g., for Black-identifying versus White-identifying participants). Our approach to reporting on race and ethnicity precludes us from distinguishing between Hispanic students of different racial groups. There are also variables that may play a role in student interest in digital mental health supports - including students' financial resources and previous experience with mental health services - that were not examined in this study. For example, disparities in financial resources may explain why some respondents are more likely to prefer free services than others. Lastly, the composition of our sample — with all students being enrolled at the same university — limits broad generalizability of results.

The timing of this study also warrants further discussion. While the context of the COVID-19 pandemic may have increased participant interest in the remote mental health services examined by this study, it should also be noted that in spring 2020 many students expected the pandemic to end in a matter of weeks or months. Thus, it is possible that some students reported not being interested in remote services because they believed that in-person services would soon become available again.

Digital mental health supports such as teletherapy and online self-help seem primed to address the need for remote mental health supports accelerated by the COVID-19 pandemic. However, simply providing access to such tools has not yet led to wide-scale adoption (Ennis et al., 2019; Lattie et al., 2019; Yeager & Benight, 2018). Our findings suggest that making these

tools freely available may increase their uptake, and that this effect may be most pronounced among students of color. Universities hoping to better reach students in need of mental health supports during the pandemic should work to make digital supports freely accessible for students.

Future research on digital mental health supports must continue to identify the factors that predict interest in, and ultimately utilization of, such supports. Future research should narrowly define the supports in question in order to avoid conflating a heterogeneous group of treatments; researchers may consider querying about diverse kinds of digital support in the same questionnaire. Such research may identify support-level characteristics that predict interest, alongside the person-level characteristics of potential users. Lastly, research that measures uptake and completion of such supports may guide future attempts to address college student mental health challenges at scale, in ways that are maximally accessible and welcoming to the greatest number of students.

Declaration of Interest Statement

The authors declare no potential competing interests.

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Table 1. Sample characteristics

Variable	n	Proportion	Mean (S.D.)
Age	1224	NA	20.72 (2.98)
Sex			
Female	887	72.50%	NA (NA)
Male	337	27.50%	NA (NA)
Race/Ethnicity			
White non-Hispanic	490	40.00%	NA (NA)
Black non-Hispanic	41	3.30%	NA (NA)
Asian non-Hispanic	470	38.40%	NA (NA)
Hispanic	159	13.00%	NA (NA)
Other	64	5.20%	NA (NA)
Sexual Minority			
No	983	80.30%	NA (NA)
Yes	241	19.70%	NA (NA)
Anxiety symptoms (GAD-7)	1224	NA	7.98 (5.92)
Depression symptoms (PHQ-9)	1224	NA	9.98 (6.68)

Table 2: Logistic regressions predicting interest

		Self-Guided (Cost)		Teletherapy (Cost)		Self-Guided (Free)		Teletherapy (Free)	
Variable	n	Percent Interested	Odds Ratio	Percent Interested	Odds Ratio	Percent Interested	Odds Ratio	Percent Interested	Odds Ratio
All	1224	24.65%	NA	19.61%	NA	70.22%	NA	71.77%	NA
Age	1224	NA	1.08*	NA	1.07*	NA	1.01	NA	1.06
Sex									
Female	887	25.70%	NA	21.66%	NA	72.39%	NA	73.51%	NA
Male	337	21.89%	0.86	14.20%	0.64	64.50%	0.82	67.16%	0.88
Race/Ethnicity									
White non-Hispanic	490	28.51%	NA	26.68%	NA	67.41%	NA	69.86%	NA
Black non-Hispanic	41	23.81%	0.89	26.19%	0.96	73.81%	1.56	78.57%	1.93
Asian non-Hispanic	470	20.55%	0.79	12.29%	0.46*	69.28%	1.25	70.13%	1.23
Hispanic	159	24.38%	0.73	19.38%	0.59	78.12%	1.44	78.75%	1.32
Other	64	26.56%	1.01	15.62%	0.56	76.56%	1.62	76.56%	1.44
Sexual Minority									
No	983	22.90%	NA	17.53%	NA	67.78%	NA	69.71%	NA
Yes	241	31.82%	1.47	28.10%	1.59	80.17%	1.46	80.17%	1.31
GAD	1224	NA	1.06*	NA	1.07*	NA	1.07*	NA	1.08*

PHQ	1224	NA	0.98	NA	0.98	NA	1.03	NA	1.04

[a] Odds ratios and significance flags are calculated in reference to the reference category for each variable, after controlling for the other independent variables in the model
[b] Minimum sample size per cell for reporting odds ratios is 10, per pre-analysis plan
[c] p-values are adjusted via Holm-Bonferroni method
*p<.05