Help-Seeking and Access to Mental Health Care in a University Student Population

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Background: University students represent an important population in which to study access to mental health care. Understanding their unmet needs will enhance efforts to prevent and treat mental disorders during a pivotal period in life.

Objective: To quantify mental health service use and estimate how various factors are associated with help-seeking and access in a university student population.

Design: A Web-based survey was administered to a random sample of 2785 students attending a large, public university with a demographic profile similar to the national student population. Nonresponse bias was accounted for using administrative data and a nonrespondent survey.

Measures: Mental health was measured using the Patient Health Questionnaire screens for depressive and anxiety disorders. Mental health service utilization was measured as having received psychotropic medication or psychotherapy in the past year.

Results: Of students with positive screens for depression or anxiety, the proportion who did not receive any services ranged from 37% to 84%, depending on the disorder. Predictors of not receiving services included a lack of perceived need, being unaware of services or insurance coverage, skepticism about treatment effectiveness, low socioeconomic background, and being Asian or Pacific Islander.

Conclusions: Even in an environment with universal access to free short-term psychotherapy and basic health services, most students with apparent mental disorders did not receive treatment. Initiatives to improve access to mental health care for students have the potential to produce substantial benefits in terms of mental health and related outcomes.

Key Words: college students, mental health, help-seeking, access, barriers

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More than half of adults with mental disorders in the United States do not receive any treatment for their conditions. The National Comorbidity Survey Replication (NCS-R) showed that although the proportion receiving treatment increased between 1990 and 2003, only 41% of those who experienced a mental disorder in the past year used any services, and there was a median delay of 11 years between onset of mental disorders and accessing services.[1–3] These findings are concerning because mental disorders are responsible for a large proportion of the overall burden of disease in the United States,[4] and there are evidence-based therapies available for most of these disorders.[5] A better understanding of why individuals with mental disorders do or do not access care is essential for addressing these unmet needs.

The present study investigates help-seeking behavior and access to mental health services within a community-based sample of undergraduate and graduate students. University student populations have special significance for mental health policy, because the potential benefits of identifying and treating students with mental disorders are substantial. Most mental disorders first emerge between the ages of 15 and 24,[6] and approximately half of American youths attend some postsecondary education.[7] If reducing delays between first onset and treatment is a policy priority, understanding and addressing university student populations are essential. In addition, mental health in young adulthood is associated with substance use, academic achievement, employment, and other social outcomes later in life.[8–12]

Campus communities are different from communities in the general population in ways that may be important for mental health service utilization. Investigating help-seeking and access to care in campus settings may thus provide a unique perspective. For instance, although financial constraints have been cited as prominent barriers to mental health care in general populations,[13,14] the student population in the present study, like many other university student populations, had near-universal health insurance as well as automatic access to free campus mental health and primary care services. These free campus services include brief psychotherapy and counseling at the student psychologic counseling center and primary care visits at the university health clinic. Thus, understanding help-seeking and access to care within this context can illuminate issues that may be important in the broader population even if mental health parity and other initiatives to reduce financial barriers are successful.

Researchers have proposed 2 key stages of help-seeking: perceiving a need for care, and then acting on that

perception by accessing services.[15,16] Such models also highlight factors that may be important in determining help-seeking and access to care, including attitudes and beliefs about services, insurance status and ability to pay for services, and sociodemographic characteristics.[15–19] These conceptual models underlie our 4 main research objectives: (1) to estimate the prevalence of perceiving a need for and using services in a student population; (2) to estimate the prevalence of apparent unmet needs for services; (3) to identify which factors (awareness, beliefs, financial or insurance constraints, and sociodemographic characteristics) are associated with the likelihood of perceiving a need for and using services; (4) to identify the most prominent factors that students report to be barriers to using services.

Previous studies on help-seeking and access to mental health care in university student populations have documented substantial unmet needs[20,21] and identified a variety of barriers to service use.[22–30] These barriers include financial constraints, attitudes and knowledge about services (including stigma), concerns about privacy, and lack of time. With the exception of Greenley and Mechanic's 1976 study,[30] however, these studies have had important limitations. To our knowledge, the present analysis is the first study of help-seeking and access to mental health care among students since the Mechanic and Greenley study to include all of the following: a sample representative of the full student population (not just those who receive care), clinically validated instruments to measure mental health status, and adjustments for nonresponse bias. The study also contributes to the literature by examining a comprehensive range of factors that may affect help-seeking and access.

METHODS

Sample and Data Collection

We conducted a Web-based survey of undergraduate and graduate students at a large, Midwestern, public university in fall 2005. An initial sample of 5021 students (2495 undergraduates and 2526 graduate and professional students) aged 18 and older was randomly selected from the registrar's database of all currently enrolled students. In October 2005 we recruited the randomly selected students using an introductory letter accompanied by $2 as a token of appreciation, followed by up to 4 email reminders sent at 4-5-day intervals. We also notified all recruited students that they were being entered into a sweepstakes for cash prizes, regardless of participation. The timing of the study was chosen to avoid the beginning and end of the semester. All participants completed an online informed consent form. The study was approved by the university's Institutional Review Board.

Key Measures

Symptoms of depression were measured using the Patient Health Questionnaire-9 (PHQ-9), a 9-item instrument based on the DSM-IV criteria for a major depressive episode over the past 2 weeks. Following the standard algorithms for interpreting the PHQ-9,[31] we categorized people as screening positive for major depression, other depressive disorder (this includes less-severe depression such as dysthymia or depression not otherwise specified), or neither. This screening tool has been validated against diagnosis by mental health professionals[32–35] and other depression assessment tools[33–36] in a variety of populations. In the original validation study, the sensitivity and specificity were 73% and 98%, respectively, for major depression in a random sample of primary care patients.[31] Given an estimated 5% prevalence of major depression in our sample,[37] this translates to a positive predictive value of 66%. The PHQ-9 has not been validated specifically in college populations, but has been validated in a wide variety of other populations.[31,32,34,35,38]

Symptoms of generalized anxiety and panic disorder over the past 4 weeks were measured using the PHQ anxiety module.[31] In the original validation study, the sensitivity and specificity of the PHQ anxiety scale were 81% and 99% respectively for panic disorder, and 63% and 97% for generalized anxiety disorder.[31] Given an estimated prevalence of 2% for panic disorder and 5% for generalized anxiety disorder,[37] the positive predictive values would be 62% and 53%, respectively.

To measure impairments of academic functioning due to mental health problems, we asked respondents how often they had missed any classes or other academic obligations in the past 4 weeks due to mental or emotional difficulties, and how often their academic performance had been affected in the past 4 weeks by mental or emotional difficulties. Estimates of the prevalence and correlates of mental health problems in our sample are available elsewhere.[37]

Perceived need for mental health services in the past year was measured using a question from the Healthcare for Communities study,[39] a major national study of mental health service use: "In the past 12 months, did you think you needed help for emotional or mental health problems such as feeling sad, blue, anxious or nervous?" We coded the perceived need variable as 1 for those who answered "yes" and 0 for those who answered "no" or "don't know."

Past-year medication use was measured by asking respondents whether they had taken any from a list of the most common types of psychotropic medications. The most common examples were displayed alongside each response category. As in the Healthcare for Communities' question about medication use, we asked the respondent to count only those taken several times a week for at least 1 month. Those who reported using at least 1 medication were also asked what type of provider wrote their most recent prescription. We also asked respondents whether they had used therapy or counseling in the last year, followed by a question about number of visits if applicable. The full texts of questions measuring mental health service use are shown in Appendix A, which is available on the *Medical Care* website, www.lww-medicalcare.com.

We asked respondents about several factors that may be associated with the likelihood of receiving mental health services: knowledge about where to go for professional help, knowledge about the availability of free counseling offered by the university, having close friends or family members who have received mental health services, beliefs about the effectiveness of therapy and medication for depression, and

insurance coverage for mental health (see online Appendix A for the full set of questions). We also collected information on the following sociodemographic characteristics: gender, age, race/ethnicity, nationality (United States or international), sexual orientation, graduate or undergraduate status, year in current degree program, current financial situation, financial situation when growing up, and current relationship status. Finally, we asked respondents to select barriers to mental health service utilization that they had experienced in the past year. Respondents could endorse any number of the listed barriers.

Accounting for Nonresponse Bias

We constructed nonresponse weights to adjust for differences between respondents and nonrespondents using administrative data for the full student population and a brief survey of nonrespondents to the main survey. We obtained a 55% response rate for this brief nonresponse survey, and found, relative to the main sample, significantly lower prevalence of positive screens for depression and significantly less use of mental health services. These results highlighted the importance of adjusting for nonresponse bias. Full details about the construction of nonresponse weights are available in Appendix B, which is also available on the *Medical Care* website, www.lww-medicalcare.com.

Statistical Analysis

We used 2-tailed *t* tests to evaluate whether differences in factors (such as beliefs and attitudes) were statistically different from zero at the $P < 0.05$ level for mental health service users and nonusers. We conducted multivariate logistic regressions to explore predictors of perceived need and

service use conditional on having a perceived need. We restricted the latter regression to those with a perceived need to be consistent with the conceptual models of staged help-seeking that were noted earlier, but in sensitivity analysis we also estimated the predictors of service use for the full sample and for students with no positive screen for depression or anxiety. All analyses reflected the full study population by using the nonresponse adjustment weights described above and were performed using Stata 9.0. Poststratification weights were also used to reflect the mix of undergraduates and graduate students (approximately 2:1) of the overall university student population.

RESULTS

A total of 2785 students completed the measures in the main survey that were used in the present analysis, yielding a completion rate of 55.5%. Graduate students and females were more likely to respond, and black students were less likely to respond ($P < 0.05$). The results, weighted for nonresponse, reflect a population composed of 60.6% white (non-Hispanic), 6.3% black, 19.9% Asian or Asian-American, 3.5% Hispanic (any race), 5.4% multiracial, and 3.6% students who identified some other race. Forty-eight percent were female, 11.8% were international students, and 33.9% were graduate students. This student population was roughly similar in demographic characteristics to the national population of college students.[40]

Table 1 presents the perceived need for and use of mental health services, stratified by current mental health status. We found that 30% of respondents perceived a need for professional help for their mental or emotional health in

TABLE 1. Mental Health Service Use (Past Year), by Current Mental Health Status

	Full Sample (N = 2785)	Depression and Anxiety (N = 85)	Major Depression, No Anxiety (N = 112)	Other Depression, No Anxiety (N = 211)	Anxiety, No Depression (N = 60)	No Depression or Anxiety (N = 2317)
Think you needed help	0.30	0.89	0.72	0.51	0.63	0.25
Prescription medications						
Any in list below	0.09	0.51	0.22	0.10	0.34	0.07
Psychostimulants	0.02	0.09	0.03	0.02	0.08	0.01
Antidepressants	0.06	0.34	0.16	0.07	0.20	0.04
Antipsychotics	0.00	0.00	0.02	0.00	0.00	0.00
Antianxiety	0.01	0.10	0.03	0.01	0.05	0.01
Mood stabilizers	0.00	0.06	0.00	0.00	0.02	0.00
Sleep medications	0.02	0.20	0.05	0.03	0.07	0.02
Therapy/counseling visits						
Any visits	0.10	0.47	0.28	0.11	0.38	0.08
1 or 2	0.02	0.11	0.13	0.01	0.02	0.02
3–5	0.03	0.12	0.06	0.04	0.13	0.02
6–12	0.03	0.12	0.04	0.03	0.15	0.02
12+	0.02	0.12	0.06	0.03	0.09	0.02
Medication or therapy/counseling	0.15	0.63	0.36	0.16	0.52	0.12
Any visit to health professional	0.79	0.87	0.83	0.77	0.94	0.78

"Depression" is defined as a positive screen in the PHQ-9 for major depression or other depression. "Anxiety" is defined as a positive screen in the PHQ for panic disorder or generalized anxiety disorder.

All numbers in the table are estimated proportions.

the previous year. As expected, students with current mental health problems, as indicated by positive screens in the PHQ depression or anxiety instruments, were significantly more likely to perceive a need for services and to receive services.

Fifteen percent of students used either counseling or medication in the previous year. Nine percent of students took psychotropic medications, of which the most common types were antidepressants (6%), psychostimulants (2%), and sleep medications (2%). Of students taking medications, 48% reported receiving their most recent prescription from a primary care physician, 31% from a psychiatrist, 13% from another type of health provider (eg, psychiatric nurse), 9% without a prescription, and 2% did not know. Ten percent of students had at least 1 therapy/counseling visit. Of students with at least 1 therapy/counseling visit, 38% received services at the student psychologic counseling center, 17% at other university clinics, and 61% at nonuniversity providers. Of students without positive screens for depression or anxiety, 25% perceived a need for services and 12% used services in the past year.

Forty-nine percent of students said that they would know where to go for mental health care while enrolled at the university, and 59% were aware of the free counseling services available on campus (Table 2). Among those with positive screens for depression or anxiety disorders, service users were significantly more likely (*P* < 0.05) than nonusers to report that they had friends and family who had used services. Of nonusers, only 32% reported they would know where to go for professional mental health care and only 53% were aware of the free counseling services.

Service users were also significantly more likely than nonusers to report believing that therapy or counseling is quite helpful or very helpful and that psychiatric medications are quite helpful or very helpful (Table 2). Only 47% of nonusers of services believed that therapy is quite helpful or very helpful and only 37% believed that medication is quite helpful or very helpful.

Nearly all students (94%) had some form of health insurance. Undergraduates and graduate students had similar coverage rates (95% and 93%, respectively). Most (85%) of insured undergraduates had coverage through their parents, whereas the most common sources for graduate students were the student plan offered by the university (56%), parents'

plan (15%), and employers (13%). The university plan for graduate students was an HMO plan with small copayments for a limited number of mental health visits.

There were no significant differences in rates of insurance coverage between users and nonusers of mental health services (Table 3). Of students with health insurance and apparent unmet needs for services (last column of Table 3), most either did not know whether they had any coverage for mental health visits at the university or in the local community (54%) or thought they did not (13%). For those in the full sample who reported that their insurance was inadequate for their mental health needs (5%), explanations included that it did not cover certain types of services or providers (49%), it had a limit on the number of services covered (38%), the copay was too expensive (29%), it did not cover any mental health services (23%), it did not cover certain conditions (15%), the deductible was too expensive (10%), and it did not cover preexisting conditions (6%).

Table 4 displays multivariate logistic regression estimates of predictors of perceiving a need for mental health services in the past year (column 1), and using services in the past year among those who perceived a need for services (column 2). Sociodemographic factors that positively predicted a perceived need for services included being female (odds ratio [OR] = 2.34, *P* < 0.01), being 31 years of age or older (relative to those ages 18–22, OR = 1.69, *P* = 0.09), and reporting oneself to be bisexual (relative to heterosexual, OR = 2.09, *P* = 0.03) or gay/lesbian (relative to heterosexual, OR = 2.04, *P* = 0.03). Those who reported that their current financial status was "tight" were more likely to perceive a need for help, compared with those for whom finances were "not a problem" (OR = 1.34, *P* = 0.02). Asian and Pacific Islander students were less likely than white students to perceive a need for help (OR = 0.73, *P* = 0.06), and international students were less likely than domestic students to perceive a need for help (OR = 0.61, *P* = 0.01). Students who reported being in a relationship were less likely (OR = 0.82, *P* = 0.09) to perceive a need for mental health help compared with students who reported being single.

Among those students who perceived a need for treatment in the past year, those with probable current panic disorder or generalized anxiety disorder were more likely to use mental health services (OR = 5.73 and 2.97 respec-

TABLE 2. Awareness and Beliefs About Services

	Full Sample All (N = 2785)	Depression or Anxiety	
		Services (N = 174)	No Services (N = 294)
Knows where to go for professional help while at school	0.49	0.61*	0.32
Knows that university has free counseling	0.59	0.76*	0.53
Close friends have sought professional help	0.79	0.91*	0.80
Immediate family has sought professional help	0.56	0.74*	0.61
Believes therapy is quite helpful (or better) for depression	0.64	0.63*	0.47
Believes medication is quite helpful (or better) for depression	0.48	0.60*	0.37

"Depression" is defined as a positive screen in the PHQ-9 for major depression or other depression. "Anxiety" is defined as a positive screen in the PHQ for panic disorder or generalized anxiety disorder.
*Indicates that the estimate for service users is different from the estimate for nonservice users at *P* < 0.05.

TABLE 3. Health Insurance Coverage for Mental Health

	Full Sample All (N = 2785)	Depression or Anxiety	
		Services (N = 174)	No Services (N = 294)
Covered by health insurance	0.94	0.94	0.90
Insurance provides some coverage for local mental health visits			
Yes, it definitely would	0.15	0.40*	0.08
I think it would but am not sure	0.28	0.23	0.24
I have no idea	0.45	0.28*	0.54
I think it would not but am not sure	0.08	0.05	0.10
No, it definitely would not	0.03	0.04	0.03
Insurance meets needs for mental health services			
Yes	0.17	0.37*	0.15
No	0.05	0.19*	0.04
Not applicable (have not needed)	0.79	0.44*	0.81

    "Depression" is defined as a positive screen in the PHQ-9 for major depression or other depression. "Anxiety" is defined as a positive screen in the PHQ for panic disorder or generalized anxiety disorder.
    Questions about mental health coverage were only asked of respondents with health insurance.
    *Indicates that the estimate for service users is different from the estimate for nonservice users at $P < 0.05$.

tively, $P < 0.01$) than those with no positive screen for depression or anxiety. By contrast, those with probable "other depression" were less likely (OR = 0.65, $P = 0.06$) to use services than those with no positive screen. Females were more likely to use services than males (OR = 1.54, $P = 0.02$), older students (≥26 years old) were more likely to use services than students age 18–22 years old (OR = 2.86, $P < 0.01$), and those who reported that they were gay or lesbian were more likely to use services than those who reported they were heterosexual (OR = 1.98, $P = 0.09$). Although past financial status was not related to perceiving a need for services, it was related to actual use of services. Students who reported being poor while growing up were less likely (OR = 0.39, $P = 0.04$) to use mental health services than students who reported being financially comfortable while growing up, and students who reported that they were well-off while growing up were more likely to use services (OR = 2.49, $P < 0.01$). Asian and Pacific Islander students were less likely to use mental health services than whites (OR = 0.22, $P < 0.01$). Finally, married students were less likely (OR = 0.63, $P = 0.08$) to use services.

In sensitivity analyses, we also examined predictors of utilization for the full sample and for the subsample of people without a positive screen for a mental disorder. In both of these regressions, the same predictors were significant as those described above for the subsample with a perceived need, and the estimated magnitudes were similar (results available from authors upon request).

Students who had positive PHQ screens, but did not receive services, identified a range of reasons for not utilizing services (Table 5). The most frequently identified reason was that "stress is normal in college/graduate school" (51%), followed by not perceiving a need (45%), and the belief that the problem would get better by itself (37%). Other common reasons included not having time (32%), thinking no one "can understand my problems" (20%), and worrying about what others will think (20%).

DISCUSSION

We found that 15% of students attending a large Midwestern public university received psychotherapy or psychotropic medication in the past year. Service use was much higher for students who screened positive for depressive or anxiety disorders, but potential unmet needs for services still seemed substantial. For example, only 36% of students who screened positive for major depression (but no anxiety disorder) received either medication or therapy in the past year. This seemingly low level of service use existed even though our sample had nearly universal health insurance as well as access to free basic medical services and short-term therapy from campus providers.

We can compare our basic results to estimates for the general adult population in the NCS-R. The NCS-R found that 57% of individuals with 12-month major depression received mental health services.[3] This estimate included all people with major depression, including those with co-occurring conditions. When we included all people with positive screens for major depression in our sample, we found that only 45% had received services in the past year. There are a variety of reasons why our estimate is not perfectly comparable to that in the NCS-R (eg, the NCS-R used a diagnostic interview whereas we used a brief screen, and the general adult population likely includes people with more severe mental disorders), but the comparison roughly indicates that apparent unmet needs in the student population are of comparable prevalence to those in the general adult population.

Our findings suggest that a variety of factors were related to help-seeking behavior and access to services. First, many students were unaware of or unfamiliar with service options. Second, most students with apparent unmet needs for services reported that they believed that medication and therapy are only somewhat helpful or not at all helpful on average for people of their age with depression. This skepticism may be partly justified, given known quality problems

TABLE 4. Predictors of Perceived Need and Service Use (Past Year)

	Perceived Need (N = 2785)*		Service Use, Given a Perceived Need (N = 941)†	
	OR	**P**	**OR**	**P**
Major depression	**4.43**	0.00	1.24	0.45
Other depression	**2.33**	0.00	**0.65**	0.06
Panic disorder	**2.64**	0.04	**5.73**	0.00
Generalized anxiety disorder	**2.81**	0.00	**2.97**	0.00
Missed academic obligations due to mental health	**1.78**	0.00	**2.03**	0.00
Mental health affected academic performance	**2.63**	0.00	0.98	0.93
Female	**2.34**	0.00	**1.54**	0.02
Age, yrs				
18–22	1.00	—	1.00	—
23–25	1.02	0.94	1.34	0.39
26–30	1.31	0.31	**2.86**	0.00
31+	**1.69**	0.09	**3.07**	0.01
Race/ethnicity				
White, non-Hispanic, non-Arab	1.00	—	1.00	—
African-American/black, non-Hispanic	0.69	0.13	0.69	0.35
Hispanic/Latino	1.11	0.69	0.70	0.37
Asian or Pacific Islander	**0.73**	0.06	**0.22**	0.00
Arab/Middle Eastern or Arab-American	0.59	0.21	0.49	0.27
More than one of the above	0.87	0.57	1.26	0.52
International	**0.61**	0.01	0.67	0.25
Sexual orientation				
Heterosexual	1.00	—	1.00	—
Bisexual	**2.09**	0.03	1.41	0.39
Gay/lesbian	**2.04**	0.03	**1.98**	0.09
Current financial situation				
"It's a financial struggle"	1.23	0.25	0.81	0.49
"It's tight but I'm doing fine"	**1.34**	0.02	0.93	0.74
"Finances aren't really a problem"	1.00	—	1.00	—
Finances for a family growing up				
"Poor, not enough to get by"	1.01	0.99	**0.39**	0.04
"Enough, not many extras"	0.97	0.79	0.95	0.80
"Comfortable	1.00	—	1.00	—
"Well to do"	1.23	0.19	**2.49**	0.00
Relationship status				
Single	1.00	—	1.00	—
In a relationship	**0.82**	0.09	0.78	0.18
Married or domestic partnership	0.76	0.12	**0.63**	0.08
Divorced or widowed	1.18	0.80	0.76	0.70

    "Depression" is defined as a positive screen in the PHQ-9 for major depression or other depression. "Anxiety" is defined as a positive screen in the PHQ for panic disorder or generalized anxiety disorder.

    Other control variables in the regressions were dummy variables for year in program (1, 2, 3, 4, 5+), type of program (BA, MA, JD, MD, PhD or equivalent), and living arrangement (dormitory, fraternity/sorority, other university housing, off-campus, and living with parents).

    Bold typeface indicates that the odds ratio is different from 1.0 at $P < 0.05$.

    *Mean of dependent variable is 0.30.

    †Mean of dependent variable is 0.39.

with mental health care[41–43] and the fact that even with high-quality care a large proportion of people do not achieve full remission.[44] Third, over 90% of students had health insurance, but about half had no idea if they had insurance coverage for mental health visits, and the majority of the rest were not sure. It is also significant that most students were covered by parents' plans and may therefore have been worried that their parents would find out if they sought help.[24] Fourth, current financial circumstances did not seem to be an overwhelming factor in access to care, but growing up in a poor

TABLE 5. Reported Barriers to Services, for Those With Apparent Unmet Needs

Which reasons explain why you have not received medication or therapy in the past 12 months for your mental or emotional health?	
Stress is normal in college/graduate school	0.51
Have not had any need	0.45
The problem will get better by itself	0.37
I don't have time	0.32
I don't think anyone can understand my problems	0.20
I worry what others will think of me	0.20
I question the quality of my options	0.16
Other	0.16
I am concerned about privacy	0.16
I worry that my actions will be on my academic record	0.10
Haven't had the chance but plan to go	0.10
I worry that someone will notify my parents	0.09
There are financial reasons	0.08
Had bad experiences with medication and/or therapy	0.07
Providers aren't sensitive enough to cultural issues	0.05
I fear being hospitalized	0.04
The hours are inconvenient	0.03
Waiting time until I can get an appointment is too long	0.03
I have a hard time communicating in English	0.02
The location is inconvenient	0.02
No barriers that I can think of	0.02
Providers aren't sensitive enough to sexual identity issues	0.02
The number of sessions is too limited	0.01

The numbers sum to more than 1.0 because respondents could endorse more than 1 barrier.

family was strongly associated with lower service use. This suggests that patterns and norms about help-seeking may be largely established from the past, and are not necessarily re-dressed by the removal of financial constraints (as by free counseling and basic health services at the university). Fifth, Asian and Pacific Islander students were less likely and older students were more likely to perceive a need for and receive services. Both of these findings are consistent with previous research.[45,46] Finally, the most commonly reported reasons for not receiving services included lack of a perceived need, the belief that stress is normal in school, and a lack of time—explanations supported by prior research on student populations.[25]

The following limitations should be kept in mind when interpreting our findings. First, we measured mental health symptoms with validated screening tools, which are not equivalent to clinical diagnoses. A generic instrument such as the PHQ offers the advantage of being validated in a wide variety of populations, but such instruments may be missing important contextual information related to the college set-ting.[47] Second, we only asked about formal mental health services, whereas some students undoubtedly used informal help from support groups, religious counselors, and friends or family. In fact, we found some evidence that students in relationships were less likely to perceive a need for mental health services or

to use services. Third, the associations examined in this article are based on cross-sectional survey data and cannot determine causality. There are likely unobserved confounding variables and bidirectional relationships between variables (eg, between beliefs about effectiveness and use of services).

The findings suggest that educational and awareness campaigns may be especially effective for reducing unmet needs for mental health services, because factors related to knowledge and beliefs were strongly associated with perceived need and service use and were also commonly reported as reasons for not using services. Such campaigns could address the facts that many students do not know about the availability, potential effective-ness, and insurance coverage of their options.

These types of initiatives, however, can only be suc-cessful if the local resources are prepared to support increased demand for services. This may be a problem at many schools where psychological counseling centers are already over-whelmed by their current caseloads.[48] Greater investments in student mental health services may be necessary. In addition, effective mechanisms to identify students with the most serious needs are essential, so that with the removal of barriers to care, systems can optimize the match between services and those who are likely to benefit most. Further-more, it is important to acknowledge that universities are not the only agents with the ability to improve access to services for students. For example, health insurance plans and primary care clinics could help improve access to care.

Future research will need to explore the reasons why students from poor socioeconomic backgrounds seem much less likely to receive services, considering that financial barriers, at least in theory, are significantly reduced in the presence of free short-term psychotherapy and basic health services. Also, additional multisite research is needed to investigate the roles of institution-level factors, such as pol-icies and perceptions related to confidentiality and repercus-sions for being known to have a mental disorder.

Our findings reinforce the lesson that although univer-sal financial access to mental health services is a critical goal, policy makers must also attend to other issues that may impede access to services. Initiatives that improve insurance coverage and benefits will not alleviate unmet needs if they do not also address negative attitudes toward quality of mental health services and lack of awareness about the severity of symptoms or the availability of service providers. In addition, this study suggests a promising avenue for mental health services research. Identifying and studying populations with reductions in 1 or more common barriers to care can help to untangle the complex web of factors that either promote or inhibit appropriate and timely access to effective mental health services.

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