

Mental Health Need, Awareness, and Use of Counseling Services Among International Graduate Students

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Abstract. Objective and Participants: The authors examined the prevalence of mental health needs in international graduate students, their knowledge of mental health services, and their use of on-campus and off-campus counseling services. **Methods:** All registered graduate students in the Spring 2004 semester received an e-mail invitation to participate in a Web survey. Of the 3,121 completed surveys, 551 completed surveys were from international graduate students. **Results:** Approximately 44% of international graduate students responded that they had had an emotional or stress-related problem that significantly affected their well-being or academic performance within the past year. International students who reported a more functional relationship with their advisors were less likely to report having an emotional or stress-related problem in the past year and using counseling services. International students who reported higher financial confidence were also less likely to use counseling services. **Conclusions:** There is an unmet mental health need among international graduate students. Special mental health outreach efforts should be directed at international graduate students, with particular attention on the relationship between students and their advisors and on adequate financial support for students.

Keywords: college health, international students, mental health

Approximately 573,000 international students representing countries from around the world came to the United States to pursue academic studies

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in 2004.¹ More than half of all international students come from Asia, with the largest representation from China and India.² Although the majority of foreign students are engaged in undergraduate studies, international students account for approximately 14% of total graduate student enrollment.³

International students face a number of broad challenges, including language and cultural barriers, social isolation, financial hardships, and difficulties finding jobs postgraduation.^{4,5} Tseng and Newton⁶ highlight 4 specific challenges faced by international students: (1) general living adjustment, such as becoming accustomed to life in America and its food, housing, environment, and transportation; (2) academic adjustment marked by an adjustment to the American university system and the skills needed for success; (3) sociocultural adjustment, such as cultural norms and behaviors; and (4) personal psychological adjustment, such as homesickness, loneliness, or feelings of isolation and lost identity. The difficulty of coping with these challenges may be compounded by campus institutions and individuals who are unfamiliar with the particular challenges that international students face but are responsible for assisting these graduate students.⁷ Moreover, since September 11, 2001, international students have sometimes faced an unwelcoming atmosphere at American universities, in addition to increased surveillance dictated by the Patriot Act and difficulty obtaining student visas.⁸

Our purpose with this study was to document empirically the prevalence of mental health needs of international graduate students at a large university in the western United States, their knowledge of counseling services available on campus, and the factors that contribute to the use of counseling services. Although there exists a body of literature regarding international students, few researchers have specifically addressed international students engaged in graduate studies or the association between international students' mental health and their relationship with their

advisors. A unique aspect of our study is that we compared international student figures with those of domestic students to illuminate areas of convergence and divergence in mental health need, knowledge, and use.

To our knowledge, our study differs from previous work on a number of other important dimensions: First, we captured the mental health need that is present in the general graduate student population, regardless of counseling-service use. Second, unlike many epidemiological studies of mental health, we used self-reported data and did not rely on information provided by counselors and counseling centers. Such administrative data often narrowly focus only on clinical definitions of mental health problems. In gathering the self-reported information on mental health problems, we provided a generic description of emotional symptoms with a marker of self-perceived deficits in academic performance and general well-being. Third, respondents represented a diverse cohort of students from different cultural and academic backgrounds rather than specific ethnic groups or academic disciplines.

Mental Health Need in International Students

Although international students face numerous transitional challenges, research findings suggest that institutional and social support is positively related to emotional well-being.⁹ Adequate orientation and administrative support for international students are key factors in successful transitions. Equally important is the presence of knowledgeable counseling staff members who are able to address mental health concerns in international students.^{4,10}

Often, international students build social support quickly with other international students on campus. International students may rely heavily on their peers, rather than professionals, for both social support and for information on resources and opportunities.^{5,11} These ad hoc communities may attenuate effects of individualism and competitiveness that characterize American students. When comparing stress levels of American with international students, researchers^{4,12} found that American students expressed higher levels of academic stress than international students. Misra and Castillo¹² concluded that one possible reason for this difference in stress levels is cultural reinforcement of competition in American culture, whereas many international students come from cultures that value communalism and cooperation.

The Importance of Relationships With Advisors

International students report relying more on academic advisors and colleagues than on other campus support services.^{7,11} Particularly in terms of career assistance, international students reported relying significantly more on academic advisors than on campus career center staff members for suggestions on professional development and finding jobs after graduation.⁷ Likewise, international students relied on administrative links within their department, such as job postings, to find positions.⁷ Because international students often rely on their academic advisors as their pri-

mary institutional tie, advisors may be important factors in both emotional well-being during graduate school and in directing international students to appropriate resources on campus when necessary.¹³

Yi et al¹³ found that advisors directed approximately one quarter of the international students seeking counseling to counseling services. However, research on advisors shows that, although they are often aware of crisis situations, advisors are often unaware of more subtle manifestations of emotional problems that may reflect both cultural differences and the sensitivities of both expressing and detecting emotional problems.¹⁴ More functional relationships with advisors may be positively related to both emotional well-being in graduate students and, for those international students presenting with distress, positively related to counseling service use.

Use of Mental Health Services

Research suggests that international students are less likely to use counseling services than are domestic students. One reason that international students may not use counseling services is the lack of awareness of their needs for mental health services. Instead, international students seek help for the physical manifestations of emotional problems, such as fatigue or inability to sleep, and present at their primary care provider for mental health issues.^{4,9} A second explanation for disparities in use is that international students frequently retain health-related beliefs and practices from their home countries. This inclination may be particularly strong for students from countries where individuals often rely on traditional, non-Western approaches to health care.²

A third reason why international students may not use counseling services is the cultural stigma associated with emotional expression.¹¹ Although a high degree of stigma around mental health issues still exists in the United States, the degree of stigma may be lower here than in international students' home countries. Zhang and Dixon¹⁵ found that international students who expressed higher acculturation to American culture were more positive about seeking professional psychological help, regardless of gender or the amount of time spent in the United States. In their recent study of international students' counseling service use, Yi et al¹³ found that the majority of those seeking counseling were self-referred, suggesting that the cultural stigma about seeking mental health services may not be as restrictive as once believed.

METHODS

This study of international graduate students is part of a larger investigation of mental health issues in graduate students being conducted at a single, large western university. The university's Committee for the Protection of Human Subjects approved this study. We administered surveys over the Web. We invited all registered graduate students with valid e-mail addresses ($n = 9,231$) to participate in the survey. We sent 3 reminder e-mails to nonresponding students. We received 3,121 completed surveys, representing a 33.8%

response rate. Other surveys in which researchers used similar sampling plans have had similar response rates.^{16,17} In Spring 2004, 1,794 international graduate students were registered at the university. We received 551 surveys from respondents who self-reported that they were international students. The distribution between male (63.3%) and female (34.5%) international graduate student respondents was not significantly different from their representation at the university (66.8% and 33.2%, respectively).

Survey Instrument

The survey instrument included the following topics: (1) graduate student need for mental health services; (2) graduate student knowledge about mental health services available on campus; (3) graduate student use of and satisfaction with mental health and counseling services on campus; (4) factors that affect graduate student mental health, including social support and departmental climate; and (5) graduate student demographic characteristics. All measures were self-reported. We used self-reported information to directly assess the impact of perceptions of need, use, and personal identity. We paid particular attention in the analyses to differences and similarities between international and domestic graduate students, as well as focused on analyses specific to international graduate students.

One potential problem with survey research is that respondents can be inclined to provide socially desirable responses to questions. This problem can be particularly troublesome when surveys include sensitive questions that are potentially embarrassing for respondents who do not want to be seen as acting in a socially undesirable manner. As a result, sensitive questions can introduce measurement error in the analysis and reduce the reliability of responses. Measurement error can lead to over- or underestimates of true responses, as well as greater variance around estimates.

To combat the potential problems associated with this type of measurement error, we took 4 steps. First, the survey was self-administered. Self-administered surveys have proven to be effective because they do not require respondents to report sensitive information to another individual, making them more likely to answer honestly in response to potentially embarrassing questions.¹⁸ Second, by administering the survey online, we eliminated the possibility that respondents would be reluctant to answer sensitive questions out of fear of being overheard, as may happen with face-to-face survey interviews.¹⁹ Third, we ensured respondents of anonymity by providing them with randomly generated and encoded identifiers. Last, we reminded respondents of the confidential nature of the survey in the introductory e-mail, as well as in the survey instructions. Aday²⁰ found that individuals are more likely to respond to sensitive questions given sufficient assurances of anonymity.

Measures

Mental Health Need

We used several assessments of mental health need in the analyses. One dichotomous variable measured whether

the graduate students had experienced a stress-related problem that significantly affected their well-being or academic performance over the past year. ("In the past 12 months, have you had an emotional or stress-related problem that *significantly* affected your well-being and/or academic performance?") We also assessed self-reported mental health need from responses on the frequency of feelings of hopelessness, exhaustion, sadness, depression, and being overwhelmed (ie, never, infrequently, occasionally, frequently, all of the time). We summed the responses to these 5 questions to create an index of emotional distress, referred to as the depression index (Cronbach's $\alpha = .86$). Higher scores represent greater frequency of negative emotions. The depression index in the entire sample of graduate students ranged from a minimum score of 5 to a maximum score of 25, with a mean score equal to 13.1 ($SD = 4.1$). A convergent validity assessment between these 2 measures of emotional distress yielded a significant, positive correlation ($r = .56, p < .01$). The survey also included a question on whether the respondent knew of another graduate student who had experienced an emotional or stress-related problem in the previous year. ("Do you know of another graduate student who, in the past 12 months, has had an emotional or stress-related problem that significantly affected their well-being and/or academic performance?") We coded responses dichotomously. Last, respondents were asked if anyone else in the previous year had suggested that they seek care for a mental health problem. ("In the past 12 months has a supportive individual [friend, partner, family member] suggested that you seek counseling or psychiatric care?")

Functional Relationship With Advisors

Graduate students responded to survey statements about their faculty advisor, who could have been their primary academic advisor, official thesis or dissertation research advisor, unofficial research advisor, unofficial professional/career advisor, or other type of advisor. We summed scores of agreement to questions related to faculty advisor behavior to create an advisor relationship index. Questions on faculty advisor behavior included student assessments of their advisor's expressions of satisfaction with the student's performance; discussion of the strengths and weaknesses of the student's research/coursework; encouragement of intellectual self-confidence; facilitation of collaborations with other faculty members, postdoctoral students, and other researchers; consideration of the student's personal problems; and direction to funding sources and current job opportunities. The advisor relationship index for the entire graduate student sample ranged from 7 to 28 ($M = 20.1, SD = 4.3, \alpha = .85$). The mean advisor relationship index score for international graduate students was 20.0 ($SD = 4.4$) and was not significantly different between international and domestic graduate students. A convergent validity assessment with a theoretically related measure, satisfaction with one's advisor, yielded a significant, positive correlation ($r = .72, p < .01$). We also created an interaction term that

captured graduate students' relationships with advisors for those students who expressed having experienced a significant emotional or stress-related event in the past year that significantly affected their academic performance.

Additional Covariates

We used additional variables included in the analyses to examine the impact of competitiveness within respective graduate student programs. Students rated competitiveness between students in respective programs on a 1-to-6 scale from *very uncompetitive* to *very competitive*. The survey also asked about the frequency of contact with friends and family. Students rated contact with family and friends on a 1-to-5 scale, with 1 indicating *no contact* and 5 indicating contact *once a day*. Students also selected the school or college in which their program belonged. For smaller and interdisciplinary programs that might not have had an institutional "home," students chose the school to which they felt most institutionally tied. We grouped students in chemistry, engineering, natural resources, physical and biological sciences into the sciences and engineering discipline; students in the schools of business, journalism, optometry, law, environmental design, and public health into the professional discipline; students in the social science, social welfare, education, and public policy schools into the social sciences discipline; and students in the humanities disciplines, such as history, English, political science, into the humanities discipline. The graduate students also indicated the type of degree they were pursuing (ie, masters, doctoral, professional degrees). Analyses controlled for various demographic features including the number of semesters in school, number of children, hours spent in household activities, age, and ethnicity. We divided race/ethnicity into 6 categories: white/Caucasian, Asian/Pacific Islander, Hispanic, Middle Eastern, black/African American, and Other).

Knowledge of Counseling Services

We ascertained students' knowledge of services by their responses to the question, "Before filling out this survey, did you know that the university has counseling services available to all students?" We coded responses dichotomously. In addition, students marked all of the listed sources from which they had received information about mental health services.

Utilization

We collected information on services use through self-report. Students were asked if they had ever used on- or off-campus counseling services. We coded these responses dichotomously.

Data Analysis

We conducted analyses in 3 parts. First, we compared international graduate students' responses about their knowledge of mental health services and sources of information with domestic graduate students' responses. Second,

we conducted a logistic regression on the dichotomous dependent variable, whether the students had experienced a stress-related problem that significantly affected their well-being or academic performance in the past year. Third, we conducted a logistic regression model on the dichotomous dependent variable, use of any counseling services. Researchers in epidemiological and health services studies frequently use ORs because of their ease of interpretation. Because of the small number of black/African American, Middle Eastern, and Other graduate student respondents, we combined these groups as the comparison group in the logistic regressions.

RESULTS

Respondent Characteristics

Table 1 presents data on the characteristics of the respondents. Although there were no significant differences between international and domestic students in terms of mean age, international students differed from domestic graduate students on several important dimensions. There were disproportionately more international, male graduate students and more international graduate students in science and engineering programs. In addition, a greater proportion of international graduate students were enrolled in doctoral programs than masters or professional degree programs. A larger percentage of international graduate students were Asian, Hispanic, or Middle Eastern than white/Caucasian, black/African American, or Other. More international than domestic graduate student respondents were married, and more international graduate students than domestic graduate students reported having children. There was no significant difference in reports of sexual orientation. Last, more international graduate students had university-sponsored health insurance than did domestic graduate students. Nearly all (99%) of the graduate students who reported using on-campus services had university-sponsored health insurance, and all of the graduate students who reported using off-campus mental health services had university-sponsored health insurance. Although health insurance is an important covariate to include in analyses of health services use,²¹ we excluded it in these analyses because of a lack of variance among graduate students causing the regression models to be indeterminate.

Knowledge of Counseling Services

International students exhibited lower knowledge of on-campus counseling services than did domestic graduate students, as illustrated in Table 2. Approximately one quarter of domestic graduate students were not aware that on-campus counseling services were available to them, but a greater percentage (39%) of international graduate students were unaware of counseling services ($p < .01$). Both international and domestic graduate students reported that they learned about available counseling services through the university health center Web site, flyers, and orientation. International students were significantly less likely than domestic students to receive information through the

TABLE 1. Demographic Characteristics of International Graduate Students (*n* = 551) and Domestic Graduate Students (*n* = 2,493)

Demographic	International			Domestic		
	<i>M</i>	<i>SD</i>	%	<i>M</i>	<i>SD</i>	%
Age (y)	28.9	5.4		28.8	5.1	
Age distribution (y)						
< 20			0.9			2.2
21–25			27.4			24.1
26–30			45.6			48.6
31–35			17.6			18.1
36–40			4.2			3.5
> 40			4.4			3.6
Gender						
Female			35.3			57.1
Male			64.8			42.9
Degree program						
Doctoral			76.8			66.6
Masters			20.9			22.8
Professional			2.0			10.2
Other			0.2			0.1
Academic discipline						
Science and engineering			52.7			37.8
Professional			23.9			26.8
Social sciences			12.2			21.3
Humanities			8.0			12.1
Other			3.1			1.9
Race/ethnicity						
Asian			50.8			17.7
White/Caucasian			36.1			66.3
Hispanic			7.5			4.7
Middle Eastern			1.9			1.0
Black/African American			0.6			1.8
Other			3.2			8.5
Relationship status						
Single			60.9			66.0
Married			39.1			34.0
Children						
0			88.6			92.4
1–2			11.4			6.8
> 3			0.0			0.8
Sexual orientation						
Heterosexual			96.8			93.6
Homosexual			3.2			6.4
Insurance						
University-sponsored			86.6			80.9
Private			5.3			8.5
University-sponsored and private			4.4			8.8
Other			3.7			1.7
None			0.0			0.2

university health center Web site, through other graduate students, and “other” sources of information. International students reported learning less from each of the other categories listed in the survey, although none of these differences was statistically significant.

Mental Health Need

Table 3 presents responses to questions about mental health need from both international and domestic gradu-

ate students. Approximately 44% of international graduate students responded that they had had an emotional or stress-related problem that significantly affected their well-being or academic performance within the past year. Prevalence of emotional problems in international graduate students was not significantly different from that reported in domestic graduate students (46%). The severity of emotional problems as measured by mean scores on the depression index, however, was significantly different between international and domestic graduate students. Domestic graduate students more frequently reported negative emotional experiences. Fewer international graduate students reported that they knew of a colleague who had had a mental health problem within the past year, and fewer responded that they had considered seeking counseling services or that anyone had suggested that they seek counseling services. Of international respondents, 48% said they knew of another graduate student with a significant emotional or stress-related problem over the past year, as opposed to 61% of domestic graduate student respondents. Likewise, fewer international students than domestic graduate students reported that they had considered using mental health services (33% vs 56%) or that anyone else had suggested that they seek counseling (17% vs 28%). All differences were significant at $p < .01$.

More international graduate students (18%) than domestic graduate students (14%) reported that they would seek counseling for problems related to financial status. The category of financial problems was the only one for which international students responded more frequently and were significantly different from domestic graduate students. Other significant differences reflected higher problem presentation by domestic students for emotional or relationship problems.

International students were not significantly more likely to experience significant emotional or stress-related problems, controlling for enabling and other demographic factors in logistic regression analysis in previous research by the authors.²² We restricted the sample for analysis in this study to international graduate students. The findings shown in Table 4 demonstrate that the only significant indicator predicting a self-reported emotional or stress-related problem was a positive relationship with faculty advisor (odds ratio [OR] = 0.93, $p < .05$). Financial confidence (OR = 0.75), the age of international students (OR = 0.95), and being married (OR = 0.54) were positively related to emotional well-being, although findings were not statistically significant. Competitiveness with other students in their programs (OR = 1.24) and being an international graduate student in the humanities academic disciplines (OR = 2.61) were associated with negative emotional well-being, although these findings were also not statistically significant.

Use of Counseling Services

International graduate students reported significantly lower use of any counseling services than did domestic graduate students. Although 33% of international graduate students responded that they had considered seeking

TABLE 2. Percentage of Graduate Students With Knowledge About Available Mental Health Services and Sources of Information

Measure	International (%)	Domestic (%)
Knowledge of campus counseling services	61.0	78.6*
Source of information about campus counseling services ^a		
Web site	20.9	24.2*
Orientation	20.2	18.9
Flyer	21.1	18.9
Friend	12.3	14.8
University health center doctor/nurse	8.4	10.0
Other graduate students	5.1	10.0*
Graduate assistant	2.2	3.5
Roommate	1.5	1.5
Family	0.4	0.9
Faculty advisor	0.5	1.2**
Other	7.8	14.5*

^aFor students who reported that they were aware of campus counseling services.
* $p < .01$. ** $p < .10$.

TABLE 3. Self-Reported Need for Mental Health Services Over the Past Year

Demographic	International			Domestic		
	<i>M</i>	<i>SD</i>	%	<i>M</i>	<i>SD</i>	%
Emotional/stress-related problem			44.1			46.0
Depression Index Score	12.8	4.3		13.3*	4.0	
Colleague had emotional/ stress-related problem			48.0			61.1**
Considered seeking care			33.4			56.0**
Someone else suggested respondent seek care			16.5			27.8**
If considered, reason help sought						
Emotional			41.2			54.8**
Academic			34.9			34.8
Relationship			25.4			33.0**
Future career-related			25.1			26.1
Financial			17.8			13.6*
Sexual identity			1.8			1.9
Other			4.4			4.8

* $p < .05$. ** $p < .01$.

counseling, 17% actually reported using counseling services either on-campus or off-campus. Use of counseling services was significantly lower for international graduate students than for domestic graduate students (17% vs 36%), $\chi^2(1, N = 3,023) = 67.98, p < .01$.

Table 5 presents logistic regression results in relation to the factors related to mental health use among international graduate students. Higher financial confidence (OR = 0.48, $p < .01$) and more functional relationships with advisors (OR = 0.86, $p < .01$) were significantly associated with lower use of services. Asian international students were significantly less likely to use counseling services (OR = 0.19)

than were black/African American, Hispanic, and Other ethnic group international students. Use of counseling services was significantly and positively related to the number of semesters in school (OR = 1.22). All of the above findings were significant at $p < .01$. There was a marginally significant, positive relationship between use and being a female international student (OR = 2.32, $p < .10$) and for the interaction term of students who expressed having had an emotional problem in the past year and functional relationship with their advisors (OR = 1.05, $p < .10$). There was also a marginally significant, negative relationship between being married and use of counseling services (OR = 0.34, $p < .10$).

TABLE 4. Logistic Regression of Factors Affecting International Graduate Student Self-Reported of Significant Emotional or Stress-Related Problem in the Past Year

Demographic	OR
Financial confidence	0.75
Functional relationship with advisor	0.93*
Competitiveness in program	1.24**
Academic discipline	
Science and engineering	0.57
Social sciences	1.50
Humanities	2.61**
Other	0.74
Contact with family	0.80
Contact with friends	0.78
Semesters in school	1.05
Female	1.34
Married	0.54**
Hours spent on housework	1.00
Number of children	1.06
Age	0.95**
Asian	1.59
White/Caucasian	1.40
Doctoral student	1.38

Likelihood ratio = 41.59***

Note. The comparison group was composed of international unmarried male graduate students who were enrolled in nondoc-toral programs at professional schools and were members of the black/African American, Hispanic, Middle Eastern, or Other ethnic group. OR = odds ratio.

* $p < .05$. ** $p < .10$. *** $p < .01$.**TABLE 5. Logistic Regression of Factors Affecting Any Mental Health Service Use by International Graduate Students**

Measure	OR
Depression Index	1.04
Financial confidence	0.48*
Functional relationship with advisor	0.86*
Competitiveness between students	1.22
Academic discipline	
Science and engineering	1.13
Social sciences	0.97
Humanities	1.78
Other	6.53
Contact with family	0.71
Contact with friends	0.93
Stressed Advisor Index ^a	1.05**
Semesters in school	1.22*
Female	2.32**
Married	0.34**
Hours spent on housework	1.04
Number of children	2.13
Age	0.97
Asian	0.19*
White/Caucasian	0.65
Doctoral student	1.64

Likelihood ratio = 75.59*

Note. The comparison group was composed of international unmarried male graduate students who were enrolled in nondoc-toral programs at professional schools and were members of the black/African American, Hispanic, Middle Eastern, or Other ethnic group. OR = odds ratio.

^aStressed identifies those students who reported suffering from an emotional or stress-related problem in the previous year.
* $p < .01$. ** $p < .10$.

COMMENT

Knowledge of Counseling Services

Prior knowledge of counseling services is integral to use of services. Although 61% of international graduate students responded that they knew that counseling services were available on campus, that percentage was significantly lower than the 79% of domestic graduate students who responded that they knew of counseling services available on campus. This finding suggests that important barriers exist with respect to the transmission of information to international students.

The sources of information about counseling services were not significantly different between international and domestic graduate students, with the exception of Web sites and other graduate students. International students were significantly less likely to report getting information on counseling services from the university health services Web site and from other graduate students than were domestic graduate students. Web sites, orientation materials, and flyers were the 3 leading sources of information on counseling services for both domestic and international graduate students. These findings suggest that there are areas of opportunity for additional improved information from

primary care providers at the university health center, fellow graduate students, and faculty advisors. The findings also underscore the need for multifaceted media campaigns incorporating personal and nonpersonal mechanisms of information dissemination in reducing stigma and improving access to mental health services.

Mental Health Need

International graduate students did not report having mental health needs significantly different from those of domestic graduate students. Existing literature points to stressors, such as language difficulties, cultural transitions, and distance from social support network,^{6,23} that may put international students at greater risk for mental health problems. However, the data from our survey suggest that international graduate students in our sample were no more likely to present with mental health problems. Despite this fact, our results do suggest that international students are less likely to know of another graduate student with mental health problems, suggesting that international students may differ from domestic graduate students in the ways that they com-

municate mental health problems to others. International graduate students may also differ from domestic graduate students in the ways that they recognize mental health need in others. Stigmatization of mental illness, which may be related to decreased recognition of emotional problems in others, is a significant barrier to access to mental health services.

Although international graduate students may report experiencing mental health problems at similar rates to domestic students, they are significantly less likely to use counseling services. The gap between mental health need and use of counseling services is not unique. A similar gap exists in domestic graduate students. More than half (56%) of domestic graduate students reported that they had considered seeking mental health services; however, 36% of domestic graduate students reported using any type of counseling service. The wider gap for international students suggests that other factors may impede use of counseling services.

The types of problems for which international graduate students seek care are significantly different from those of domestic graduate students. International students are more likely to report having financial problems and less likely to report having emotional or relationship problems than domestic students. This underscores the different challenges that domestic and international students face and suggests university health-care administrators should account for these differences in designing counseling programs. International and domestic students reported they would seek care in equal frequency for concerns related to academic performance, future career-related problems, sexual identity issues, and other concerns.

The role of advisors for international students is a significant contributor to positive well-being and use of services. International students who report having functional relationships with their advisors are less likely to report a significant stress-related or emotional problem over the past year. Likewise, international students who report having more functional relationships with their advisors are less likely to use mental health services. For those students who expressed having a stress-related or emotional problem over the past year, their odds of using services increased with more functional relationships with their advisors, although this finding was only marginally significant.

Use of Counseling Services

Among all graduate students, there is a gap between students who have considered seeking care and those that actually do. Approximately half of those students who say they have considered seeking care for stress-related or emotional problems actually report using counseling services. Here again, financial confidence and the students' functional relationship with their advisors was significantly related to their use of counseling services.

Use of counseling services increases with the number of semesters in graduate programs. International graduate students who have difficulties completing their course of study

may be more likely to use services because they are more aware of the availability of counseling services or they may be more at risk for negative emotional events causing them to be delayed in their degree trajectory. The correlation between awareness of counseling services and semesters in program is positive and significant ($r = .21, p < .01$), suggesting that the relationship between awareness of counseling services and use of counseling services is mediated by the number of semesters in school. Acculturation, which also may be tied to the length of time spent at school, is a significant predictor of mental health service use.¹⁵

Last, international students who identified themselves as ethnically Asian were significantly less likely to use counseling services than other ethnic groups. The literature on the general public shows that ethnic minorities, including Asians, are significantly less likely to use mental health services than are white students.²⁴ There may be particular barriers to Asian students, including cultural and language differences, that may explain their significantly different use patterns.²⁵

Policy Implications for University Health Care Providers and Administrators

Literature on international students suggests that cultural differences exist in the perception of mental health problems; however, our research findings suggest that international graduate students do not report having mental health problems in significantly different proportions than do domestic graduate students. Many of the same issues, such as financial confidence and relationships with advisors, ratings of competitiveness within the graduate program, and contact with family and friends, are predictive of mental health need and use.²² As such, many of the policy needs and obstacles for improving graduate student mental health transcend domestic or international categories.

Graduate students interact with a number of faculty and staff members in different departments. Recognizing the particular obstacles of being an international student, university administrators often have dedicated programs or staff members to assist international students. Education about mental health issues in international students should be directed not only to faculty and staff members who have direct working relationships with international students but also to campus and student leaders. Collaborative educational campaigns that are developed with graduate student input, especially that of international students, may increase the effectiveness of outreach and education campaigns.

The process of destigmatizing mental health problems is an ongoing challenge but can positively affect use of appropriate services toward recovery. Education specific to international students about good mental health, including coping and stress-relief strategies, and about recognizing mental health problems should be a priority for universities with international students. Graduate program administrators should make a point to discuss openly with their students the particular challenges of the program and what types of assistance are available to them.

A Multifaceted Approach to Mental Health Education and Counseling Services

Information about mental health services should come from a multitude of sources, reflecting the many different ways that students access information. Education about campus mental health services should originate in a multimedia campaign that focuses on university health Web sites, orientation, general flyers around campus, and other media directed toward graduate students. Program or department Web sites should include readily visible links to campus counseling resources and should send regular postings to graduate students on workshops on coping with anxiety and stress relief, among others.

Role of Advisors and Fellow Graduate Students

Advisors play a pivotal role in the academic life of graduate students. The relationship between graduate student and advisor is closer in some disciplines than in others, but regardless of area of study, graduate students rely on their advisors to facilitate advancement through the program, professional development, funding for research and other activities, as well as cooperation with other faculty and staff. Our findings show that international students with better relationships with their advisors are less likely to report having had a stress-related or emotional problem over the past year and are less likely to use mental health services. Findings from a previous study²² on both domestic and international graduate students showed that, among all graduate students who experienced a stress-related or emotional problem that significantly affected their academic performance over the past year, those who had better relationships with their advisors were more likely to use counseling services.²² This relationship was not present in our findings of international students only. When examining the international student subsample, there was only a marginal effect of advisor relationships for those students reporting a stress-related or emotional problem over the past year. It may be that international students are more wary of admitting problems to their advisors or that advisors are less able to recognize mental health symptoms in their international student advisees. There is opportunity to make advisors more aware of the ways in which they can assist their international student advisees.

We found that international graduate students are more likely to find information on counseling services from formal institutional sources rather than through more informal sources, such as friends. Program peer mentors may be useful resources from which international students can get information not only on program requirements and navigating the US academic system but information on how to cope with stress and exam anxiety, and how to access services for help.

Reassess Departmental and Program Responsibilities for Advising and Financial Support for International Students

International students are more likely than domestic students to present to counseling centers because of financial

problems. International students often do not qualify for fellowship funding reserved for US citizens. Much of the burden for financing international graduate students falls on the department, the university, and on the graduate students themselves. Graduate program administrators should make a better effort to ensure students of adequate funding for the length of their studies in the form of guaranteed research or teaching positions. In addition, funds should be available for international graduate students who choose to take a leave of absence because of mental or physical health problems. International graduate students are not eligible for state benefit assistance programs, such as Medicaid, and are particularly vulnerable to access barriers to mental health services.

Limitations

There are important limitations with this study. First, the nonrandomized sample selection may have introduced selection effects, which may have been exacerbated by the moderate response rate. One likely cause of selection effects in this study was in nonresponse bias, which occurs when there is a systematic pattern in the characteristics of individuals who choose not to respond to surveys. Nonresponse bias means that reported findings may not reflect the true extent of the phenomenon existing in the population. Although we cannot control completely for nonresponse bias on the dependent variables, we are confident the sample was representative of the larger student population on an array of characteristics.²² In particular, the proportion of international graduate students was similar and not significantly different from their representation in the university population. The racial/ethnic composition of the respondents did not depart significantly from that of the university population.

We used graduate students' perceptions and self-report of stress and emotional distress to assess the effect of these self-reports on well-being and academic performance. Researchers in other studies of mental health need have used clinical measures of mental health need, such as stress questionnaires and symptom checklists, which correspond to clinical measures of emotional distress. Although the lack of a clinical or symptom checklist limits the ability to compare across studies that have differing criteria for mental health need, we believe that our questions assessing mental health need had high face validity and showed high convergent validity.

Another problem with the study is that the range of international students represented in our sample might have limited our findings. Although the international graduate students in our sample generally reflected the population of international graduate students at our large western university, it was unclear the extent to which it might reflect the international graduate student populations on other campuses. The report on graduate student enrollment by the Council of Graduate Students³ found that non-US citizens were more highly represented in research-intensive universities. The findings of our study may not be generalizable

to international graduate students in smaller universities or to those schools with a high concentration of international students seeking masters-level degrees.

Last, it was difficult to assess the degree of error associated with misperceptions in language on the survey. We pretested the survey on graduate students from different graduate programs on campus, including international students, for language clarity and ease of administration. There were no significant concerns with language clarity. Also, given the English requirements for admission into graduate degree programs, we are confident that the degree of error that may have been associated with language misperceptions was small.


NOTE

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