

## Comparing Mental Health Issues Among Undergraduate and Graduate Students

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**Background:** Stress and other mental health issues can negatively impact the health and academic performance of college students. **Purpose:** Examine relationships among stress, mental health, and academic classification in a national sample of college students. **Methods:** Analyses utilized secondary data from 27 387 college students responding to the Fall 2009 American College Health Association-National College Health Assessment (ACHA-NCHA) II. **Results:** In general, undergraduates reported significantly higher rates of feelings and behaviors related to poor mental health and negative effects on academic performance than graduate students. Graduate students and undergraduate students reported significantly different levels of stress.  $\chi^2(4) = 54.34$ , Cramer's  $V = .045$ ,  $p = .001$ . Graduate students (74.0%) were also more likely to seek mental health care services in the future than undergraduates (64.8%),  $\chi^2(1) = 101.12$ , Cramer's  $V = .061$ ,  $p = .001$ . **Translation to Health Education Practice:** Stress and mental health differences exist between undergraduate and graduate students. For universities, understanding such differences is critical to the delivery of effective health education programs.

### BACKGROUND

Stress and other mental health challenges pose a major problem for many undergraduate and graduate college students, and both their health and academic performance are affected negatively. The prevalence and severity of mental health challenges are increasing in the college student population.<sup>1</sup> Depression and anxiety affect nearly 16% of undergraduate and 13% of graduate students.<sup>2</sup> A study of approximately 3100 graduate students found that nearly half (44.7%) reported experiencing an emotional or stress-related problem during the previous 12 months.<sup>3</sup> Similarly, the number of first-year college students reporting being frequently overwhelmed is on the rise.<sup>4,5</sup> In 1998, 93% of college students seeking treatment through campus counseling services were diagnosed with one mental disorder. This percentage increased to 96% in 2009.

During this time period, most students were diagnosed with mood disorders, anxiety disorders, adjustment disorders, or problems related to impaired daily functioning.<sup>6</sup>

According to the National Survey of Counseling Center Directors,<sup>1</sup> 91% of directors agreed that the number of students with severe psychological problems continues to rise. Directors reported that 37.4% of students seeking campus counseling services have severe psychological problems, with nearly 5.9% so serious that they cannot remain in school or can only do so with extensive psychological/psychiatric assistance, and 31.2% experience severe problems but are able to remain on campus utilizing available treatment methods. Moreover, in the past 5 years directors have noted an increase in the following problems: crises requiring an immediate response, psychiatric medication use, learning disabilities, illicit drug use, self-injury, alcohol abuse, problems related to earlier sexual abuse, career planning issues, eating disorders, and sexual assault concerns on campus. One third (33%) of center directors also reported a marked increase in student to student violence on their campus.<sup>1</sup>

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## IMPACT OF MENTAL HEALTH ON COLLEGE CAMPUSES

Poor mental health can impact college campuses in a variety of ways, including student health outcomes, academic performance, and student retention and graduation rates. Mental health challenges have a negative impact on the health behaviors of college students. For example, a considerable number of college students report having engaged in self-injurious behavior in their lifetime.<sup>7</sup> Individuals who engage in such behaviors are more likely to report distress<sup>7</sup> and experience psychiatric disorders.<sup>8</sup> Major depression, panic disorders, and generalized anxiety disorder are strongly associated with cigarette smoking among college students. Similarly, generalized anxiety disorder is strongly associated with binge drinking,<sup>9</sup> which is related to alcohol-related academic challenges such as missing class and falling behind on schoolwork.<sup>10</sup> With smoking, drinking, limited social support, and maladaptive coping strategies related to academic performance and retention,<sup>11</sup> the risk of those experiencing mental health challenges also experiencing academic challenges is high.

Clinically depressed and anxious college students report significantly poorer performance on exams compared to nonclinically depressed and anxious students.<sup>12</sup> Haines et al.<sup>13</sup> found that depressed mood is negatively associated with academic performance. High levels of psychological distress are also significantly related to academic performance, with higher levels of distress associated with increased test anxiety, lower academic self-efficacy, less effective time management, and limited use of study resources.<sup>14</sup> Likewise, psychiatric disorders have been associated with college students prematurely ending their education, with anxiety, mood disorders, substance abuse, and conduct disorders being significant predictors of failure.<sup>15</sup> Similarly, personal and emotional adjustment has been found to be just as important for retention as academic adjustment.<sup>16</sup> Furthermore, current research posits that college students with mental illnesses report less engagement on campus and poorer relationships with others. Such factors are also associated with academic performance and lower graduation rates.<sup>17</sup>

With roughly 20.6 million people enrolled in U.S. colleges and universities—17.6 million undergraduate and 2.9 million graduate students<sup>18</sup>—it is important to understand whether mental health and stress impact undergraduate and graduate students differently. There is a perception that the experiences of undergraduate and graduate students are different. For example, because college is often a time of increased independence, decision making, and transitioning into an adult role, many undergraduate students have difficulty and find college to be stressful.<sup>19</sup> In addition, many mental health disorders typically have first onset during young adulthood.<sup>20</sup> Health risk behaviors such as smoking, drinking, and maladaptive coping have been associated with poorer academic achievement among college freshmen.<sup>11</sup> Similarly, studies among undergraduate

students show that depression is associated with a half-letter decrease in one's grade point average.<sup>21</sup> Moreover, depressed undergraduate students report higher rates of career indecision and dysfunctional career thoughts.<sup>22</sup>

Comparatively, graduate and professional school is a time to focus more in-depth on a content area and the stress experienced is often about academic pressure, finances, career planning, and graduate assistantship responsibilities.<sup>23-25</sup> A connection between academic workload and perceived stress exists among graduate students, with students who spent a great deal of time in classes, in labs, and working on assignments reporting high levels of stress.<sup>26</sup> Furthermore, graduate students often lack healthy balance in their personal lives, with many focusing the majority of their attention on academic work to the exclusion of hobbies, interests, and others in their lives. In many instances, graduate students are detached from the social and cultural activities that are often targeted to the undergraduate population on college campuses.<sup>25</sup>

This study aims to further explore these issues in a national sample of undergraduate and graduate students. The rewards and benefits for understanding the potential differences and similarities in undergraduate and graduate student stress and mental health issues are great. Understanding such differences and similarities can assist university administrators, health educators, and mental health specialists in delivering effective and appropriate services and programs, which, in turn, may assist universities in fostering better student health outcomes as well as increase academic performance and student retention rates.

## PURPOSE

This study aims to examine the relationship between stress, mental health issues, and classification as an undergraduate or graduate student among a national sample. The specific research question is

What differences exist between undergraduate and graduate students concerning mental health issues, diagnoses, services, and academic performance?

## METHODS

### Procedure and Participants

For this study, institutional review board (IRB) approval was secured to analyze the most recently available American College Health Association-National College Health Assessment (ACHA-NCHA) II data set (Fall 2009).<sup>27</sup> This data set contains information collected from 34,208 undergraduate and graduate students enrolled part time and full time at 57 2- and 4-year universities.<sup>28</sup> Only colleges and universities that randomly select students or

that survey students from randomly selected classrooms are included in the ACHA-NCHA II database. The ACHA-NCHA II uses a series of comparisons and statistical analyses (triangulation) to demonstrate the reliability and validity of the instrument. The ACHA-NCHA II appears to be reliable, valid, and of empirical value for representing the U.S. college population.<sup>29</sup>

For the purposes of this study, inclusion/exclusion criteria were applied to ensure that the sample related to the research focus. Students who did not identify their classification as an undergraduate or graduate/professional student were not included in the analyses; therefore, students who indicated "not seeking a degree" or "other" were not included. Likewise, individuals who were 50 years old or older were not included because the majority of college students (96.2%)<sup>19</sup> are under 50 regardless of status as an undergraduate or graduate student. Respondents attending universities outside the United States were also excluded.

## Measures

The ACHA-NCHA II includes demographic items as well as items associated with health, health education, and safety; alcohol, tobacco, and drugs; sexual behavior and contraception; weight, nutrition, and exercise; physical health; mental health; and impediments to academic performance. The authors selected all mental health-related items because they were relevant to the research question and focus of the study. As a result, mental health issues in 4 main categories were examined: feelings and behaviors related to poor mental health, mental health diagnoses, use of mental health services, and perceived impact of mental health on academics. These categories were labeled as such to best represent the intent of the items. In addition, demographic items included age, gender, disability, sexual orientation, year in school, relationship status, residence, and other student status (e.g., full- or part-time student, international).

### *Feelings and Behaviors Related to Poor Mental Health*

The participants were asked about feelings and behaviors often associated with a poor mental health state. This item asked the respondents to identify the frequency of 11 different feelings or behaviors: "felt things were hopeless"; "felt overwhelmed by all you had to do"; "felt exhausted (not from physical activity)"; "felt very lonely"; "felt very sad"; "felt so depressed that it was difficult to function"; "felt overwhelming anxiety"; "felt overwhelming anger"; "intentionally cut, burned, bruised, or otherwise injured yourself"; "seriously considered suicide"; and "attempted suicide." The participants could choose 1 of 5 responses: "no, never"; "no, not in the last 12 months"; "yes, in the last two weeks"; "yes, in the last 30 days"; or "yes, in the last 12 months." For this study, because we were interested in

experiences relevant to their current situation, the responses were collapsed into 3 categories: "no, never"; "no, not in the last 12 months"; and "yes, in the last 2 weeks, 30 days, or 12 months."

The students were also asked whether they had encountered situations that had been traumatic or very difficult to handle in the last 12 months; these included a variety of college life components (e.g., academics, career-related issues) and personal issues (e.g., family problems, intimate relationships). The participants indicated yes or no as a response. Another item specifically asked about the students' perceived stress levels. The item requested participants to consider the last 12 months and rate their overall stress level as "no stress"; "less than average stress"; "more than average stress"; or "tremendous stress."

### *Diagnosed Mental Health Issues*

The participants were asked whether they had been diagnosed or treated by a professional within the last 12 months for some mental health conditions, specifically, anxiety, bipolar disorder, depression, obsessive-compulsive disorder, panic attacks, or substance abuse/addiction. Individuals could respond: "no"; "yes, diagnosed but not treated"; "yes, treated with medication"; "yes, treated with psychotherapy"; "yes, treated with medication and psychotherapy"; or "yes, other treatment." For this study, because we were not examining treatment differences, we collapsed the responses into 3 categories: "no"; "yes, diagnosed but not treated"; and "yes, diagnosed and treated." There was also a yes-no question that asked whether the respondents had ever been diagnosed with depression.

### *Use of Mental Health Services*

Examining usage of mental health services was also included in the ACHA-NCHA II. Four items asked whether the participant had ever received psychological or mental health services from a variety of providers (i.e., counselor/therapist/psychologist, psychiatrist, other medical care provider, or minister/priest/rabbi/other clergy). These items had a response option of yes-no. The students were also asked whether they had ever received psychological or mental health services from their current college or university's counseling or health services and whether they would seek mental health services in the future if they had a problem that was "really bothering" them. Both questions offered yes-no response options.

### *Perceived Effects of Mental Health on Academic Performance*

The ACHA-NCHA II survey has a section that asks the respondents to consider how a variety of health issues have affected their academic performance in the last 12 months. The participants can respond: "this did not happen to me/not

TABLE 1  
Demographic Characteristics (N = 27 387)

Characteristic	Total Sample Mean (SD)	Undergraduate Mean (SD)	Graduate Mean (SD)
Age in years	21.56 (4.98)	20.84 (4.33)	27.33 (6.01)
Gender*		Undergraduate, % (n)	Graduate, % (n)
Female	64.0% (17 427)	64.7% (15 652)	58.6% (1775)
Male	35.8% (9755)	35.2% (8505)	41.3% (1250)
Transgender	0.1% (30)	0.1% (26)	0.1% (4)
Classification			
First-year undergraduate	31.4% (8586)		
Second-year undergraduate	18.2% (4991)		
Third-year undergraduate	18.6% (5103)		
Fourth-year undergraduate	14.8% (4052)		
Fifth-year undergraduate	5.9% (1615)		
Graduate/professional			11.1% (3040)
Disability/medical condition?			
Attention deficit-hyperactivity disorder (N = 27 106)*	5.4% (1459)	5.6% (1352)	3.5% (107)
Chronic illness (N = 27 151)	3.7% (1004)	3.6% (877)	4.2% (127)
Deaf/hard of hearing (N = 27 135)	1.5% (417)	1.6% (374)	1.4% (43)
Learning disability (N = 27 132)*	3.7% (991)	3.7% (922)	2.3% (69)
Motility disability (N = 27 117)	0.9% (246)	0.9% (206)	1.3% (40)
Blind/partially sighted (N = 27 127)	1.6% (447)	1.7% (418)	1.0% (29)
Psychiatric disorder (N = 27 100)	3.7% (993)	3.6% (876)	3.9% (117)
Speech/language disorder (N = 27 087)	0.9% (232)	0.8% (194)	1.3% (38)
Other disorder (N = 27 961)	2.1% (558)	2.2% (518)	1.3% (40)
Sexual orientation (N = 27 090)			
Heterosexual	93.7% (25 386)	93.8% (22 586)	93.1% (2800)
Gay/lesbian	1.9% (511)	1.8% (435)	2.5% (76)
Bisexual	2.9% (777)	2.9% (694)	2.8% (83)
Unsure	1.5% (416)	1.5% (366)	1.7% (50)
Full-time? (N = 27 251)*			
Yes	94.2% (25 668)	95.4% (23 104)	84.8% (2564)
Ethnicity			
White*	72.0% (19 721)	73.5% (17 893)	60.1% (1828)
Black*	8.9% (2436)	9.4% (2298)	4.5% (138)
Hispanic*	6.9% (1897)	7.3% (1784)	3.7% (113)
Asian/Pacific Islander*	10.7% (2918)	8.4% (2035)	29.0% (883)
American Indian, Alaskan Native, Native Hawaiian*	2.1% (573)	2.2% (543)	1.0% (30)
Biracial and multiracial*	3.2% (874)	3.4% (823)	1.7% (51)
Other	2.4% (662)	2.3% (561)	3.3% (101)
International student? (N = 27 175)			
Yes*	10.5% (2841)	7.3% (1757)	35.9% (1084)
Relationship status (N = 27 387)*			
Not in a relationship	49.3% (13 431)	50.8% (12 323)	36.6% (1108)
In relationship, not living together	35.0% (9548)	36.0% (8735)	26.9% (813)
In relationship, living together	15.7% (4292)	13.1% (3187)	36.5% (1105)

(Continued)

TABLE 1 (Continued)

Characteristic	Total Sample Mean (SD)	Undergraduate Mean (SD)	Graduate Mean (SD)
Current residence (N = 27 296)*			
Campus residence hall	37.8% (10 330)	42.1% (10 218)	3.7% (112)
Fraternity/sorority house	1.9% (520)	2.1% (506)	0.5% (14)
Other campus housing	4.1% (1123)	4.2% (1020)	3.4% (103)
Parent/guardian's home	15.6% (4264)	16.6% (4026)	7.8% (238)
Other off-campus housing	35.3% (9639)	30.5% (7400)	73.8% (2239)
Other	5.2% (1420)	4.5% (1091)	10.8% (329)

\* $p < .001$ .

applicable"; "I have experienced this issue but my academics have not been affected"; "received a lower grade on an exam or important project"; "received a lower grade in the course"; "received an incomplete or dropped the course"; or "significant disruption in thesis, dissertation, research, or practicum work." For this study, we examined how anxiety, concern for a troubled friend or family member, depression, relationship difficulties, sleep difficulties, and stress impacted these academic factors. The ACHA-NCHA II includes items that ask about the impact of other issues on academics, but these items were most relevant to the research question and focus of this study.

### Analysis

Descriptive analyses were calculated using the *PASW Statistics 18.0* for Windows.<sup>30</sup> To examine the primary research focus, 43 separate cross-tabulations were conducted to determine chi-square and Cramer's *V*. Cramer's *V* is robust regardless of table size and can be used with nondichotomous data.<sup>31</sup> In order to control for type I error, Bonferroni adjustment was performed (.05/43) setting statistical significance at  $p < .001$ .

## RESULTS

### Participant Demographics

After applying the inclusion/exclusion criteria, the total resulting sample was 27 387 students. These students were from 55 different universities from all regions of the United States. Most student respondents were enrolled in a 4-year college or university (94.6%). Almost two thirds (62.0%) attended public institutions, with 12.3% attending religiously affiliated institutions. Most of the participants were undergraduate students (88.9%,  $n = 24\ 347$ ). Other demographic data with a breakdown between undergraduate and graduate students are included in Table 1. There were significant differences in gender (higher percentage of females in the undergraduate sample), ethnicity (higher percentage of those identifying as Asian/Pacific Islander in the graduate population), relationship status (more graduate students in a relationship and living together), and location of residence (more graduate students living off-campus).

Because the primary research focus addressed mental health, differences between graduate and undergraduate students regarding related disability and medical conditions were also examined. Undergraduate respondents were significantly more likely to report having attention deficit-hyperactivity disorder,  $\chi^2(1) = 22.396$ ,  $p < .001$ , and a learning disability,  $\chi^2(1) = 18.038$ ,  $p < .001$ . No other differences related to disability were found.

The number of hours per week spent working or volunteering was also examined; there were significant differences for both number of hours worked,

TABLE 2  
Feelings and Behaviors Related to Mental Health

		% Response Among Students		$\chi^2$	Cramer's <i>V</i>
		Undergraduate	Graduate		
Felt hopeless ( <i>N</i> = 27 155)	No, never	34.6	39.0	69.50	.051*
	Yes, but not in last 12 months	19.2	22.8		
	Yes in the last 12 months	46.1	38.2		
Felt overwhelmed ( <i>N</i> = 27 250)	No, never	10.0	15.0	93.61	.059*
	Yes, but not in last 12 months	4.8	6.5		
	Yes in the last 12 months	85.2	78.5		
Felt exhausted ( <i>N</i> = 27 235)	No, never	13.9	15.7	10.74	.020
	Yes, but not in last 12 months	6.6	7.4		
	Yes in the last 12 months	79.5	76.9		
Felt lonely ( <i>N</i> = 27 251)	No, never	24.8	27.0	35.58	.036*
	Yes, but not in last 12 months	19.1	22.4		
	Yes in the last 12 months	56.1	50.6		
Felt sad ( <i>N</i> = 27 179)	No, never	22.2	25.3	40.82	.039*
	Yes, but not in last 12 months	17.8	20.7		
	Yes in the last 12 months	60.1	54.0		
Felt depressed ( <i>N</i> = 27 213)	No, never	49.0	48.1	13.23	.022*
	Yes, but not in last 12 months	21.8	24.6		
	Yes in the last 12 months	29.1	27.2		
Felt anxiety ( <i>N</i> = 27 212)	No, never	37.3	38.7	15.07	.024*
	Yes, but not in last 12 months	15.5	17.5		
	Yes in the last 12 months	47.2	43.8		
Felt anger ( <i>N</i> = 27 147)	No, never	41.4	46.0	88.72	.057*
	Yes, but not in last 12 months	20.5	24.6		
	Yes in the last 12 months	38.1	29.4		
Self-injury ( <i>N</i> = 27 254)	No, never	83.5	87.4	46.05	.041*
	Yes, but not in last 12 months	11.2	10.0		
	Yes in the last 12 months	5.3	2.7		
Considered suicide ( <i>N</i> = 27 269)	No, never	81.5	85.5	61.42	.047*
	Yes, but not in last 12 months	12.2	11.7		
	Yes in the last 12 months	6.4	2.8		
Attempted suicide ( <i>N</i> = 27 190)	No, never	92.4	93.7	10.29	.019
	Yes, but not in last 12 months	6.4	5.5		
	Yes in the last 12 months	1.3	0.7		

\* $p < .001$ ; \*\* $p = .001$ .

$\chi^2(6) = 1287.91$ ,  $p < .001$ , and number of hours volunteered per week,  $\chi^2(6) = 96.47$ ,  $p < .001$ , between undergraduate and graduate students. These data were collected in ranges, so means cannot be calculated, but the percentages indicate that more graduate students work more hours and more graduate students volunteer more hours, though more undergraduate students volunteer between 1 and 9 hr per week (32.7% vs. 28.1%).

### Feelings and Behaviors Related to Poor Mental Health

The participants were asked about feelings and behaviors often associated with a poor mental health state. Of these 11 items, 7 had significant values of Cramer's *V* when examining undergraduate and graduate student responses. For 5 of the 7 significant items, undergraduate students reported higher rates of negative feelings and behaviors in the previous 12 months but graduate students reported higher rates occurring before the previous 12 months. For

the items regarding self-injury and considering suicide, more undergraduate students reported lifetime occurrence and frequency in the previous 12 months. The response rates can be found in Table 2.

The participants were also asked whether situations arose that had been traumatic or very difficult to handle in the last 12 months. There were significant differences between undergraduate students and graduate students for all items except one—"personal health issue,"  $\chi^2(1) = 9.80$ ,  $p = .007$ . For all issues excluding career-related issues, more undergraduate students identified the issue as traumatic or difficult to handle within the last 12 months. More graduate students identified career-related issues as traumatic or difficult to handle within the last 12 months. See Table 3 for the response rates and chi-square values.

Another item specifically inquired about the participants' perceived stress level. The question asked the students to consider the last 12 months and rate their overall stress level as "no stress," "less than average stress," "more than

TABLE 3  
Issues Identified as Traumatic or Difficult to Handle Within the Last 12 Months

	% Response Among Students		$\chi^2$	Cramer's V
	Undergraduate	Graduate		
Academics ( $N = 27\ 245$ )	43.5	37.9	34.21	.035*
Career-related issues ( $N = 27\ 213$ )	21.0	32.9	220.91	.090*
Death of a family member or friend ( $N = 27\ 219$ )	16.2	11.1	53.71	.044*
Family problems ( $N = 27\ 231$ )	28.3	18.5	131.14	.069*
Intimate relationships ( $N = 27\ 222$ )	30.9	26.4	25.04	.030*
Other social relationships ( $N = 27\ 228$ )	24.7	15.6	122.29	.067*
Finances ( $N = 27\ 693$ )	36.6	31.3	32.69	.035*
Health problem of a family member or partner ( $N = 27\ 218$ )	18.4	15.6	14.70	.023*
Personal appearance ( $N = 27\ 209$ )	21.4	12.6	126.82	.068*
Personal health issue ( $N = 27\ 197$ )	16.6	14.4	9.81	.019
Sleep difficulties ( $N = 27\ 200$ )	24.5	19.6	34.78	.036*

\* $p < .001$ .

average stress," or "tremendous stress." This item was also found to be statistically significant,  $\chi^2(4) = 54.34$ , Cramer's  $V = .045$ ,  $p < .001$ . Undergraduate and graduate students reported similar levels of no stress (2.6% and 2.1%, respectively). However, more graduate students reported having tremendous stress (10.3% vs. 9.4%), more than average stress (44.2% vs. 39.3%), and less than average stress (10.2% vs. 9.1%). More undergraduate students reported having average stress (39.7% vs. 33.1%).

### Diagnosed Mental Health Issues

Participants' responses regarding diagnosis and treatment of specific mental health issues within the last 12 months— anxiety, bipolar disorder, depression, obsessive-compulsive disorder, panic attacks, and substance use/addiction— showed no significant differences between undergraduate and graduate students. The response rates for ever being diagnosed with depression were almost identical, 17.1% of undergraduates and 17.0% of graduate students,  $\chi^2(1) = .001$ , Cramer's  $V = .000$ ,  $p = .969$ .

### Use of Mental Health Services

Several items asked about usage of mental health services, specifically, what type of provider had been used, whether the respondent had accessed services on his or her current campus, and whether the student would consider seeking help from a mental health provider in the future. There were no significant differences between undergraduate and graduate students in the type of mental health provider that had been previously used (counselor/therapist/psychologist; psychiatrist; other medical provider [e.g., physician, nurse practitioner]; or minister/priest/rabbi/other clergy) and in the use of their current college/university's counseling or health services. There was a significant

difference when asked whether they would consider seeking mental health care in the future, with graduate students (74.0%) more likely to respond affirmatively than undergraduates (64.8%),  $\chi^2(1) = 101.12$ , Cramer's  $V = .061$ ,  $p = .001$ .

### Perceived Effects of Mental Health on Academic Performance

Students were asked about the impact of mental health issues and life experiences on their academics. Chi-square values were significant for all cross-tabulations. For all items except depression, more graduate students reported not experiencing the issue compared to undergraduate students. Likewise, fewer graduate students reported that the issue resulted in a lower course grade or lower grade on an exam or project; however, graduate students consistently reported more disruptions of thesis, dissertation, research, or practicum work than undergraduate students. See Table 4 for details.

## DISCUSSION

Although this study did not find significant differences regarding clinical diagnoses and treatment of specific mental health issues for undergraduate and graduate students, undergraduate students consistently reported higher rates of feelings and behaviors related to poor mental health. Undergraduates also reported experiencing traumatic situations within the last 12 months at higher rates than graduate students. These findings are consistent with the literature regarding undergraduate students' difficulty in transitioning from adolescence to adulthood and how the lack of previous experience and coping skills may increase undergraduate students' vulnerability to stress.<sup>32</sup> Having a strong social network, good physical health, and sense of control over one's personal life and academics have a

TABLE 4  
Mental Health Issues Effect on Academic Performance

		% Response Among Students		$\chi^2$	Cramer's V
		Undergraduate	Graduate		
Anxiety ( <i>N</i> = 27 063)	Not happened to me	59.8	60.9	171.79	.080*
	Experienced, no effect	21.7	27.0		
	Lower grade on exam/project	13.2	7.8		
	Lower grade in course	2.0	1.7		
	Incomplete or dropped course	1.5	0.7		
Concern for family member or friend ( <i>N</i> = 27 063)	Disrupt thesis, dissertation, research, practicum work	0.8	2.1	64.40	.049*
	Not happened to me	64.0	67.9		
	Experienced, no effect	25.6	25.3		
	Lower grade on exam/project	7.2	4.2		
	Lower grade in course	2.1	1.2		
Death of family member or friend ( <i>N</i> = 27 030)	Incomplete or dropped course	0.7	0.5	44.83	.041*
	Disrupt thesis, dissertation, research, practicum work	0.5	0.9		
	Not happened to me	83.4	86.6		
	Experienced, no effect	10.9	10.1		
	Lower grade on exam/project	3.3	2.1		
Depression ( <i>N</i> = 26 970)	Lower grade in course	1.4	0.4	99.96	.061*
	Incomplete or dropped course	0.6	0.3		
	Disrupt thesis, dissertation, research, practicum work	0.4	0.6		
	Not happened to me	77.0	76.4		
	Experienced, no effect	12.1	15.0		
Relationship difficulties ( <i>N</i> = 27 028)	Lower grade on exam/project	5.9	4.6	53.99	.045*
	Lower grade in course	3.1	1.6		
	Incomplete or dropped course	1.1	0.6		
	Disrupt thesis, dissertation, research, practicum work	0.7	2.0		
	Not happened to me	67.2	69.9		
Sleep difficulties ( <i>N</i> = 27 004)	Experienced, no effect	23.1	23.5	259.94	.098*
	Lower grade on exam/project	6.7	4.1		
	Lower grade in course	2.0	1.1		
	Incomplete or dropped course	0.3	0.3		
	Disrupt thesis, dissertation, research, practicum work	0.5	1.0		
Stress ( <i>N</i> = 27 047)	Not happened to me	9.6	59.8	244.92	.095*
	Experienced, no effect	29.9	30.7		
	Lower grade on exam/project	15.3	6.7		
	Lower grade in course	3.7	1.1		
	Incomplete or dropped course	0.6	0.3		
	Disrupt thesis, dissertation, research, practicum work	1.0	1.5		
	Not happened to me	29.9	31.3		
	Experienced, no effect	42.4	51.7		
	Lower grade on exam/project	19.9	11.4		
	Lower grade in course	5.3	2.4		
	Incomplete or dropped course	1.3	0.6		
	Disrupt thesis, dissertation, research, practicum work	1.2	2.5		

\**p* < .001.

positive effect on an undergraduate student's ability to tolerate stress,<sup>33</sup> and universities could incorporate improving that skill set in first-year experience programs.

As indicated previously, mental health challenges impact academic performance directly as well as through health risk behaviors. With undergraduate students reporting higher rates of feelings and behaviors related to poor mental health, health educators and university officials may wish to track health risk behavior trends on their campus to proactively identify students at risk for poor academic performance. Additionally, health promotion programs addressing maladaptive health

risk behaviors commonly exhibited by students with mental health issues, such as smoking, drinking, and self-injury, should be implemented and targeted toward undergraduate students, particularly college freshmen.<sup>11</sup>

Twenty-nine percent of graduate students in this study identified as Asian/Pacific Islander. Current research comparing depressive symptoms and psychological distress of European American and Asian American college students is conflicting. Studies indicate similar levels,<sup>34,35</sup> lower levels,<sup>34,35</sup> and higher levels<sup>36</sup> of depressive symptoms and distress among Asian Americans. Nevertheless, evidence



strongly suggests that Asian American college students have greater self-concealment,<sup>37,38</sup> less favorable help-seeking attitudes, greater mental health stigma, and lower levels of stigma tolerance and interpersonal openness<sup>38</sup> and are less likely to utilize psychological services than European American college students.<sup>37</sup> The large percentage of Asian/Pacific Islander graduate student respondents may explain the lower rates of reported mental health issues among graduate students. Another explanation may be that individuals who have less mental health issues and stressors may be able to continue with graduate or professional school compared to those who have less effective coping skills.

Though graduate students reported lower rates of mental health issues than undergraduates, they did report higher rates of stress. Given the nature of graduate school, this result does not seem surprising. Several studies have highlighted high rates of stress among graduate students.<sup>3,24,26,39</sup> The common sources of stress reported by graduate students include schoolwork, finances, graduate/teaching assistantships, career planning, and family issues.<sup>23-25</sup> Stress management programs targeting the common sources of stress should be provided to graduate students. Specific challenges to graduate school should be openly discussed along with the various forms of assistance available on campus. Similarly, graduate advisors can play an integral role. It is documented that among graduate students who experienced a stress-related or emotional problem that significantly affected their academic performance over the past year, those who had a better relationship with their advisors were more likely to use counseling services.<sup>3</sup> Because graduate students report high stress levels due to financial reasons, universities should ensure that graduate students have access to adequate mental health insurance and high-quality counseling services.<sup>25</sup>

Graduate students are also more detached from campus, which may negatively affect their mental health and stress levels. University-related activities and organizations often target the undergraduate student population. In an attempt to increase campus engagement among graduate students, universities should encourage and support graduate and professional student organizations that go beyond academic or professional matters. Similarly, health educators and university student affairs should develop campus-wide activities targeting the social and cultural needs of graduate students.<sup>25</sup>

The perceived negative effects of mental health issues on academic performance were reported more frequently by undergraduate students. These included lower grades on exams/projects, lower grades in courses, and a higher frequency of incomplete or dropped courses due to mental health challenges. Many undergraduate students are not involved in research or a practicum or writing a thesis or dissertation; thus, the disruption in thesis, dissertation, research, or practicum work due to mental health issues impacting more graduate students is expected. Academic programs need to understand this possible effect because it

may appear that graduate students are doing fine because grades on exams/projects or courses may not be low but the student may still be experiencing extreme stress or a mental health issue. Many universities provide tutoring, supplemental instruction, and academic assistance to undergraduate students. To alleviate stress among graduate students, such assistance, particularly focusing on the issues of academic writing and successful completion of a thesis or dissertation, should be provided.

Mental health disorders are widespread among college students. Though the majority of students with mental health challenges are aware of the need for treatment, most do not receive it.<sup>3,40</sup> The findings from this study indicate no differences on previous use of mental health services; however, graduate students are more likely to seek future services. Yorgason et al.<sup>41</sup> found that having fewer years in college was related to less knowledge about university mental health services, which may explain graduate students' greater receptiveness to services. This study's findings suggest the need for university health services to heavily promote and market services, particularly mental health and counseling services, available to students, especially undergraduate students, on campus.

Stigma also influences college students' abilities to access appropriate services.<sup>42,43</sup> A lack of understanding among family and friends, fear of appearing weak, and limited knowledge of how to access services are cited as additional major reasons for refusal to seek help. Interestingly, when students do seek assistance from university services, they often find great value in the academic and counseling services they receive.<sup>43</sup>

Technology has become an integral part of individuals', particularly young adults' and college students', lives. Technology such as smartphones, texting, Facebook, etc., have changed how individuals interact with one another socially as well as academically. Text messaging has been reported as an effective means of communicating with and supporting the needs of college students with mental health problems. Such an approach provides a means of maintaining continuous contact between the student and provider,<sup>44</sup> which may make the difference between academic success and failure.

The effective use of online learning communities to address student mental health has also been documented. Richards and Tangney<sup>45</sup> reported that online learning communities for mental health support and education appear to disinhibit participants and increase disclosure, act as a gateway for further support, and allow access for students who do not ordinarily use face-to-face services. Similarly, Moreno et al.<sup>46</sup> reported that college students frequently display symptoms consistent with depression on Facebook. Those who receive online support from friends are more likely to openly discuss their depressive symptoms. As a result, health educators and mental health specialists may use technology such as online learning communities or social networking sites in conjunction with a

social marketing campaign to highlight the services provided by the university and debunk the stigma surrounding mental health by providing an open and nonthreatening forum for disclosure. Likewise, on-campus buddy systems for first-year students, that may or may not include technology, could assist in increasing the number of undergraduate students seeking mental health services on campuses.<sup>43</sup>

### LIMITATIONS

As with any study, there were limitations in this project. There are concerns about the response rates and generalizability of data with the ACHA-NCHA II. The mean response proportion for this data set was 36% and the median response proportion was 23%, with much higher rates for paper administration (mean response proportion 90%) versus web survey administration (mean response rate 21%). This low response rate as well as the fact that the respondent group was not a true random sample of U.S. college students does affect generalizability. At the same time, previous studies have demonstrated that the ACHA-NCHA II provides similar results to nationally representative surveys<sup>47</sup>; however, these mainly address undergraduate issues.

A second limitation of this study relates to the correction method used in the data analyses. To control for type 1 error given the large sample size, Bonferroni adjustment was performed. The use of the Bonferroni correction may have yielded more conservative results compared to other correction methods. Another limitation may relate to responder bias. As this study and the literature suggest, graduate students are experiencing high levels of stress due to a variety of factors. Given the low levels of mental health issues, it is possible that graduate students who were too stressed opted not to respond to this survey. Graduate students experiencing extremely high levels of stress or a mental health issue may not have the energy or desire to complete the survey instrument. As a result, our findings may be more reflective of those graduate students with less severe mental health challenges. Additionally, gender and ethnic variables were not examined within this study. As stated previously, Asian American college students are less likely to self-disclose, report greater mental health stigma, and are less likely to utilize mental health services.<sup>37,38</sup> The large percentage of graduate students who identify as Asian/Pacific Islander may have impacted the results of this study. Future research should be conducted to examine ethnicity and gender and their impact on academic performance.

One final limitation is inherent in all quantitative studies—the absence of context for participants' responses. With stress and mental health issues, understanding the background that affects these issues is critical. As identified by Robotham,<sup>48</sup> further research on stress and college students needs to be qualitative and longitudinal.

### TRANSLATION TO HEALTH EDUCATION PRACTICE

Understanding potential differences in undergraduate and graduate student stress and mental health issues is critical to effective service delivery. Individual (self-esteem, coping abilities, self-perceptions, etc.), interpersonal (ability to function in a social environment, satisfaction with social and academic aspects of college, etc.), and institutional-level factors (academic requirements, institutional climate, peer and academic personnel support, availability of services, etc.) are associated with college students' mental health. Recent research suggests that simultaneously addressing individual and institutional-level influences to mental health through program and policy development may be most effective at addressing college students' mental health needs.<sup>49</sup> The results of this study suggest that mental health and stress differences among undergraduate and graduate students should be considered to effectively deliver such programs and services.

To address the needs of undergraduate students, health educators and university officials should incorporate first-year experience programs that focus on the nonacademic as well as academic needs of freshmen; track health risk behavior trends and implement health risk behavior programs known to impact academic performance; create innovative campaigns and programs designed to debunk the stigma of mental health and increase usage of mental health services; and incorporate the use of technology to better facilitate counseling services. Conversely, activities to increase student engagement on campus; support for graduate student organizations; opportunities for academic assistance surrounding writing and thesis/dissertation completion; supportive academic advisors; and access to counseling services should be provided to meet the mental health needs of graduate students.

In closing, health educators and university administrators should take an interest in the connection of mental health issues and other health-related behaviors to academic performance and retention rates. The rewards and benefits for understanding the potential differences and similarities are great. In addition to better student health outcomes, universities may see increases in academic performance and student retention because several associations between health issues and academic success and retention exist.

Helminiak and McNeil<sup>50</sup> recommended that health educators and university officials address the following in an attempt to enhance student health and academic success and retention: (1) integrate academics into the vision/mission of university health services and college health programs; (2) infuse effective health promotion strategies into health-related curricula; (3) link health promotion to the university's overall education goals; and (4) integrate health promotion into the vision/mission of the university. These priority areas are relevant to mental health and stress. By making the mental

health and well-being of college students a focus, universities and health educators are taking a proactive approach to student academic success and retention.

## REFERENCES

- Gallagher R. *National Survey of Counseling Center Directors, 2011*. Alexandria, VA: International Association of Counseling Services; 2011, Monograph Series No. 8T.
- Eisenberg D, Gollust SE, Golberstein E, Hefner JL. Prevalence and correlates of depression, anxiety, and suicidality among university students. *Am J Orthopsychiatry*. 2007;77:534–542.
- Hyun JK, Quinn BC, Madon T, Lustig S. Graduate student mental health: needs assessment and utilization of counseling services. *J Coll Stud Dev*. 2006;47:247–266.
- Sax L. Health trends among college freshmen. *J Am Coll Health*. 1997;45(6):252–262.
- Sax L. Our incoming students: what are they like? *About Campus*. 2003;8(3):15–20.
- American Psychological Association. College students exhibiting more severe mental illness, study finds. <http://www.apa.org/news/press/releases/2010/08/students-mental-illness.aspx>. Accessed August 16, 2012.
- Whitlock J, Eckenrode J, Silverman D. Self-injurious behaviors in a college population. *Pediatrics*. 2006;117:1939–1948.
- Skegg K, Nada-Raja S, Moffitt TE. Minor self-harm and psychiatric disorder: a population-based study. *Suicide Life Threat Behav*. 2004;34:187–196.
- Cranford JA, Eisenberg D, Serras AM. Substance use behaviors, mental health problems, and use of mental health services in a probability sample of college students. *Addict Behav*. 2009;34:134–145.
- Wechsler H, Dowdall GW, Maenner G, Gledhill-Hoyt J, Lee H. Changes in binge drinking and related problems among American college students between 1993 and 1997: results of the Harvard School of Public Health College Alcohol Study. *J Am Coll Health*. 1998;47(2):57–68.
- DeBerard MS, Spielman GI, Julka DL. Predictors of academic achievement and retention among college freshmen: a longitudinal study. *Coll Stud J*. 2004;38:66–80.
- Andrews B, Wilding JM. The relation of depression and anxiety to life-stress and achievement in students. *Br J Psychol*. 2004;95:509–521.
- Haines ME, Kashy DA, Norris MP. The effects of depressed mood on academic performance in college students. *J Coll Stud Dev*. 1996;37(5):219–226.
- Brachney B, Karabenick S. Psychopathology and academic performance: the role of motivation and learning strategies. *J Couns Psychol*. 1995;42:456–465.
- Kessler R, Foster C, Saunders W, Stang P. Social consequences of psychiatric disorders, I: educational attainment. *Am J Psychiatry*. 1995;152:1026–1032.
- Gerdes H, Mallinckrodt B. Emotional, social, and academic adjustment of college students: a longitudinal study of retention. *J Couns Dev*. 1994;72:281–288.
- Salzer M. A comparative study of campus experiences of college students with mental illnesses versus a general college sample. *J Am Coll Health*. 2012;60(1):1–7.
- US Department of Education National Center for Education Statistics. 2007 and 2009 Integrated Postsecondary Education Data System (IPEDS). [http://nces.ed.gov/programs/digest/d10/tables/dt10\\_200.asp?referrer=list](http://nces.ed.gov/programs/digest/d10/tables/dt10_200.asp?referrer=list). Accessed August 15, 2011.
- Pierceall EA, Keim MC. Stress and coping strategies among community college students. *Community Coll J Res Pract*. 2007;31:703–712.
- Kessler RC, Berglund P, Demier O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62:593–602.
- Hysenbegasi A, Hass SL, Rowland CR. The impact of depression on the academic productivity of university students. *J Ment Health Policy Econ*. 2005;8(3):145–151.
- Saunders DE, Peterson GW, Sampson JP, Reardon RC. Relation of depression and dysfunctional career thinking to career indecision. *J Vocat Behav*. 2000;56(2):228–298.
- Mazzola JJ, Walker EJ, Shockley KM, Spector PE. Examining stress in graduate assistants: Combining qualitative and quantitative survey methods. *J Mix Methods Res*. 2011;5(3):198–211.
- Oswalt SB, Riddock CC. What to do about being overwhelmed: graduate students, stress, and university services. *Coll Stud Aff J*. 2007;27(1):24–44.
- Fox JA. The troubled student and campus violence: new approaches. *Chron High Educ*. 2008;55(12):A42–A43.
- Kausar R. Perceived stress, academic workloads, and use of coping strategies by university students. *J Behav Sci*. 2010;20(1):31–34.
- American College Health Association. *American College Health Association—National College Health Assessment, Fall 2009*. Baltimore, MD: American College Health Association.
- American College Health Association. About ACHA-NCHA: participation history. [http://www.acha-ncha.org/partic\\_history.html](http://www.acha-ncha.org/partic_history.html). Accessed July 1, 2011.
- American College Health Association. Generalizability, reliability, and validity analysis. <http://www.acha-ncha.org/grvanalysis.html>. Accessed August 14, 2012.
- SPSS Inc. *PASW Statistics 18.0* [computer software]. Chicago, IL: SPSS Inc; 2009.
- Garson GD. Nominal association: phi, contingency coefficient, Tschuprow's T, Cramer's V, Lambda, uncertainty coefficient. <http://faculty.chass.ncsu.edu/garson/PA765/assocnominal.htm>. Accessed July 15, 2011.
- Towbes LC, Cohen LH. Chronic stress in the lives of college students: scale development and prospective prediction of distress. *J Youth Adolesc*. 1996;25(2):199–217.
- Welle PD, Graf HM. Effective lifestyle habits and coping strategies for stress tolerance among college students. *Am J Health Educ*. 2011;42(2):96–105.
- Sue S, Chu JY. The mental health of ethnic minority groups: challenges posed by the supplement to the surgeon general's report on mental health. *Cult Med Psychiatry*. 2003;27:447–465.
- Rosenthal BS, Schreiner AC. Prevalence of psychological symptoms among undergraduate students in an ethnically diverse urban public college. *J Am Coll Health*. 2000;49:12–18.
- Okazaki S, Kallivayalil D. Cultural norms and subjective disability as predictors of symptom reports among Asian Americans and white Americans. *J Cross Cult Psychol*. 2002;33:482–491.
- Masuda A, Anderson PL, Twohig MP, et al. Help-seeking experiences and attitudes among African American, Asian American, and European American college students. *Int J Adv Couns*. 2009;31:168–180.
- Masuda A, Boone MS. Mental health stigma, self-concealment, and help-seeking attitudes among Asian American and European American college students with no help-seeking experience. *Int J Adv Couns*. 2011;33:266–279.
- Stecker T. Well-being in an academic environment. *Med Educ*. 2004;38:465–478.
- Zivin K, Eisenberg D, Gollust SE, Golberstein E. Persistence of mental health problems and needs in a college student sample. *J Affect Disord*. 2009;117:180–185.
- Yorgason JB, Linville D, Zitzman B. Mental health among college students: do those who need services know about and use them? *J Am Coll Health*. 2008;57(2):173–181.
- Martin JM. Stigma and student mental health in higher education. *High Educ Res Dev*. 2010;29:259–274.

43. Quinn N, Wilson A, MacIntyre G, Tinklin T. "People look at you differently": students' experience of mental health support within higher education. *Br J Guid Couns.* 2009;37:405-418.

44. Nolan C, Quinn S, MacCobb S. Use of text messaging in a mental health service for university students. *Occup Ther Ment Health.* 2011;27(2):103-125.

45. Richards D, Tangney B. An informal online learning community for student mental health at university: a preliminary investigation. *Br J Guid Couns.* 2008;36:81-97.

46. Moreno MA, Jelenchick LA, Egan KG. Feeling bad on Facebook: depression disclosures by college students on a social networking site. *Depress Anxiety.* 2011;28:447-455.

47. American College Health Association. *National College Health Assessment: Reliability and Validity Analyses, 2000.* Baltimore, MD: American College Health Association; 2004.

48. Robotham D. Stress among higher education students: towards a research agenda. *High Educ.* 2008;56:735-746.

49. Byrd DR, McKinney KJ. Individual, interpersonal, and institutional level factors associated with the mental health of college students. *J Am Coll Health.* 2012;60(3):185-193.

50. Helminiak B, McNeil M. Linking health promotion with student academic success. Paper presented at: Annual Meeting of the American College Health Association; June 8-12; New Orleans, LA.

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