What to Do About Being Overwhelmed: Graduate Students, Stress and University Services

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Few studies have examined graduate students and stress. At a large, Southeastern university, 223 graduate students completed a survey about factors contributing their stress, current coping strategies and related university services. A majority felt stressed (48.9%) or very stressed (24.7%). There were significant differences in coping strategies of males and females. Many were interested in learning about and using new coping strategies such as massage, yoga and meditation. Additionally, affordable health insurance, improving the physical environment (i.e., parking), and increasing communication in the academic context could reduce stress levels. Discussion about how health centers, counseling centers and other Student Affairs departments can help the university address these issues to reduce overall graduate student stress is included.

Stress can be defined as, "the inability to cope with a perceived (real or imaginary) threat to one's mental, physical, emotional, and spiritual well-being which results in a series of physiological responses and adaptations" (Seaward, 2002, p. 4). This threat can be either positive (eustress) such as graduation or starting a new relationship, or negative, also called distress, with examples including academic probation or not being able to pay for school. Similarly, there are two major types of stressors: life events (such as relocation and death) and chronic strains (such as multiple roles and inadequate finances). Students attending a university can experience both eustress and distress in the chronic or life event forms. Life events can include starting college, possibly in a new area without a social support network or graduating. Chronic stress for students can include, but is not limited to, their living environment, academic pressures, and financial concerns.

Within the college population, mental health issues have been well documented (Benton, Robertson, Wen-Chih, Newton, & Benton, 2003; Gallagher, 2004; Kisch, Leino, & Silverman, 2005; Young, 2003). According to a recent national health college survey, 1 in 10 college students have been diagnosed with

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depression (National Mental Health Association [NMHA], 2006). Another study of 13,000 university students found that the number of students with depression had increased significantly from 1989 to 2001, as did the percentage of students who were suicidal (Benton, et al., 2003). A recent national study showed that 10.7% of college students surveyed had seriously considered attempting suicide in the last 12 months and 2.0% had attempted suicide in the last 12 months (American College Health Association [ACHA], 2006b). There has also been an increase, from 10% to 25%, in the number of students who were taking psychiatric medications (Benton, et al.). This finding is consistent with the more than 400% increase in spending (from $4 billion to $18 billion) nationally on prescription drugs used to treat mental illnesses from 1991 to 2001 (Mark, Coffey, Vandivort-Warren, Harwood, & King, 2005). While acceptance of prescription medication use for mental health may have changed during this time frame, the extreme increase supports an overall increase in mental health issues as well.

Some college students experience more severe mental health issues; however, many others experience the signs and symptoms of stress. A recent national study of college students indicated that many students felt overwhelmed with all they have to do, with almost half of students (46.5%) having this feeling at least 7 times a year, and 28.2% having this feeling 11 or more times a year. Likewise, 32.8% felt exhausted (not from physical activity) 9 or more times in the last year. Stress also negatively affects students' academics; 22.9% of students reported receiving a lower grade on an exam, 6.6% receiving a lower course grade and 1.3% receiving an incomplete or withdrawing from a course because of their stress (ACHA, 2006b). Similar data from 2003 and 2004 identified stress as the number one health impediment to a students' academic performance with 32.0% and 32.4% of students being affected, respectively (ACHA, 2005; ACHA, 2006a).

Other studies have demonstrated an increase in the stress level among college students over time. For example, students in the 1950's experiencing such strong anxiety to be categorized in the highest 16th percentile would only rank as having an average level of anxiety in the 1990's (Twenge, 2000). Similarly, the number of college students who marked "frequently" when asked how often they "felt overwhelmed by all I had to do" increased from 16% in 1985 to 25.3% in 1995 (Gallagher, 2004).

Regardless of classification, college students report feeling stressed about getting good grades and earning their respective degrees. Excessive homework, time pressure, financial difficulties, interpersonal problems and relationships with faculty were issues that also caused stress (Ross, Niebling & Heckert, 1999). Students who described themselves as being "stressed" experienced lower levels of self-esteem and perceived themselves as less healthy. They were

also more likely to engage in more unhealthy behaviors, such as eating junk food, binge drinking, not exercising regularly (Hudd, et al., 2000) and scored lower on a health reported quality of life scale (Damush, Hays, & DiMatteo, 1997). Several studies have shown that women are more likely than men to experience feelings of stress at all academic levels (Hudd, et al.; Mallinckrodt & Leong, 1992; Sax, 1997).

Most stress-related studies have focused on undergraduate students. The few studies that have examined stress in graduate and professional students demonstrate these students report stress related to role conflict, time constraint, financial pressure, and lack of family or program support (Hudd, et al., 2000). Similar to graduate students, non-traditional students report that the challenge of multiple roles often contributes to their stress (Dill & Henley, 1998). When graduate students try to cope with these pressures, they often experience internal conflict. If unresolved, they continually question their decisions and if resolved, the student may still experience physical and mental fatigue, burn out, depression, and guilt over their chosen priorities (Offstein, Larson, McNeil, & Mwale, 2004). One study found that only 29% of a professional student population sought mental health services. An additional 20% were interested in mental health services but did not seek them because of long waiting lists, scheduling problems, lack of knowledge of the services that were available, seeking services outside the university, time constraints, stigma or improved circumstances (Stecker, 2004).

While many colleges and universities offer services to address stress, determining how graduate students cope with stressors and, more importantly, how universities can assist graduate students with their stress is critical. The following mixed-methods exploratory study examined issues influencing graduate student stress, coping skills and services used by graduate students, and interest in other resources or services that could be offered by the University. The main research questions are as follows:

- How do graduate students perceive their level of stress and ability to manage that stress?
- What issues contribute to graduate students' perceived stress?
- What coping mechanisms are used by graduate students and how do these affect their stress level?
- What coping strategies are graduate students interested in learning more about and what coping strategies would graduate students utilize if available at the university?

- Are there differences between men and women regarding issues surrounding stress?

Method

Graduate students at a large research university in the southeastern U.S. were solicited to participate in a web-based survey about graduate students and stress during fall semester 2001. Two main solicitation methods were used: (a) email announcements with the web link were sent to the Graduate Student Association (GSA) listserv, and (b) email requests with the web link were sent to all graduate program coordinators and advisors asking them to distribute the request to graduate students in their respective programs. Because professional students (law, veterinary, pharmacy, medical and dental schools) may have different experiences (no graduate or research assistantships, more structured programs) than graduate students, professional students were not included in this study. The research protocol received Human Subjects approval and followed all Institutional Review Board guidelines.

The researchers did not have direct access to the students via email and the participation recruitment methods were used with the intent of reaching as many of the current graduate student population as possible. However, if the information was not forwarded by the graduate program coordinator and the student was not an active member of the GSA, he or she may not have received any notice of the survey. At the same time, students may have received more than one notice about the survey – from their program coordinator, through GSA or through friends. Because it is unclear how many invitations were received by individual students, insufficient data are available to determine the actual response rate for the survey; slightly less than 4% of the total graduate student population of this University was surveyed.

Instrument Design

The intent of this instrument was to specifically examine the effects of stress on graduate students in relation to the role and services of the University and Student Affairs departments in particular. As this area has not been studied previously, there were no existing and/or previously validated instruments to use for this project. As a result, a survey was created with the intent of examining these issues.

A pilot study was conducted. This preliminary investigation included a focus group which served to discern perceived levels of stress among graduate students and methods used to address their stress. The focus group produced ideas that provided guidance for survey development. The pilot survey consisted of 16 total items: four Likert like scale questions about perceived stress, issues affecting stress and health; three open ended questions; three multi-item checklist questions about coping strategies; and six demographic

variables. Twenty-five individuals completed the pilot survey, primarily for reading and comprehension. The results of the focus group and the survey were consistent across the majority of responses.

After revisions based on the pilot study, the instrument, Stress in Graduate Students Survey (Author, 2001), consisted of 26 total items. Three Likert like scale questions asked about perceived overall stress, stress management, and level of health. These items were not a scale, so it was not appropriate to determine the standardized alpha coefficient.

Nine items addressed the impact of nine specific issues on one's stress level. The list of nine items was developed based on the focus group discussions. Individuals were asked to rank on a scale of 1 to 5 if the issue contributed a lot or a little to their stress level. The nine issues were: career planning, children, extended family, finances, graduate/teaching assistantship, job, living arrangements, relational partner, and school work. These nine issues were not considered mutually exclusive, exhaustive, or a scale, so reliability analysis was not performed.

Part of the 26-item survey included three multi-item checklist questions which explored coping strategies currently used, coping strategies the respondent would be interested in learning more about, and coping strategies that would be used if offered by the University. Two open-ended questions addressed what services the University could offer to help students manage stress and what other changes on campus could be made in order to reduce stress. Nine questions related to demographics: age, sex, ethnicity, college, relationship status, number of children, years in graduate school at present university, total years of graduate school, and if they were an international student.

Data Analyses

The survey was modified to an online format using Perseus Survey Solutions; SPSS for Windows was used to analyze the data. Results from all quantitative questions are included below. Both parametric and nonparametric measures have been used. Any missing data has been eliminated pairwise. For t-tests, Levene's test for Equality of Variances was checked and if significant, the test statistic for unequal variances was reported. Unless otherwise reported, all other appropriate assumptions were met.

Responses from the two open-ended questions -- what services the university could offer to help with managing stress and what other changes on campus could reduce stress—were coded and analyzed for commonality. When the responses were coded from the perspective of the research purpose, several "key words" emerged. These key words were then sorted into themes according to their prevalence of occurrence. The themes and corresponding

responses were then reviewed by a second researcher for consistency; minimal adjustments were made by the second reviewer. A brief summary of these themes is presented in the results section.

Results

The following section details the participant demographics and the results related to each research question.

Participants

Responding to an email solicitation, 223 graduate students completed a survey about the effect of stress on graduate students. This sample comprised 3.73% of the total 5975 graduate student population for this university (University of Georgia, 2002). Because of the multiple techniques used to distribute the survey and because the researcher was unable to contact all graduate students directly, an accurate response rate can not be calculated.

Table 1

Demographic Characteristics of Sample

	Participants % (n)	University Demographics %
Male	26.5% (59)	40.9%
Female	71.7% (160)	59.1%
White	84.3% (188)	73.0%
Asian	5.4% (12)	1.3%*
African American	2.7% (6)	6.5%
Hispanic	2.2% (5)	1.1%**
Other	4.0% (9)	0.87%
International Student	9.4% (21)	17.1%***
Arts & Sciences	51.6% (115)	31.9%
Education	24.2% (54)	38.6%

Table 1 (continued)

Social Work	8.1% (18)	4.9%
Journalism & Mass Communication	3.1% (7)	2.0%
Family & Consumer Sciences	2.2% (5)	1.4%
Business	1.3% (3)	10.9%
Environment & Design	1.3% (3)	1.5%
Agriculture & Environmental Science	0.90% (2)	6.2%
Forestry & Natural Resources	0.0% (0)	2.2%
Unknown	11.7% (26)	n/a

* Identified as Asian American
** Identified as Spanish American
*** Identified as non-resident alien

Most participants were female (71.7%, n = 160), White (84.3%, n = 188) and students in either the College of Arts and Sciences (51.6%, n = 115) or the College of Education (24.2%, n = 54). Almost 10% (9.4%, n = 21) of respondents classified themselves as international students. Slightly over 14% (14.3%, n = 32) of the respondents had children. A comparison of available demographic characteristics to the overall graduate student population at this University and additional demographic information are provided in Tables 1 and 2.

Table 2

Additional Participant Demographic Information

	Range	X (SD)
Age	19 to 68	29.73 (7.78)
Years in graduate school	Less than 1 to 11	2.82 (2.26)
Years in graduate school at this institution	Less than 1 to 9	2.18 (1.94)
# of children (total sample)	0 to 4	0.32 (0.74)
# of children (only those with children)	1 to 4	1.88 (0.91)
		% (n)
Relationship status	Single, not dating anyone	22.8% (50)
	Single, not dating anyone exclusively	7.8% (17)
	Dating one partner exclusively	13.7% (30)
	Committed relationship or married, not living together	13.7% (30)
	Committed relationship or married, living together	42.0% (92)

Quantitative Results

The first research question asked how graduate students perceived their level of stress and their ability to manage that stress. Overall, the respondents reported high levels of stress; 24.7% (n = 55) rated themselves as being very

stressed and 48.9% (n = 109) rated themselves as a 4 on a 5 point scale with 5 being very stressed. Less than 1% (n = 2) reported having no stress. The students' perceived ability to manage stress was almost equally divided into thirds; 31.4% (n = 70) reported above average ability in managing their stress level, while 36.8% (n = 82) indicated average ability and 31.9% (n = 71) indicated that they did not manage their stress well. Interestingly, 88.3% (n = 197) believed the quality of their health was good, very good or excellent. Another 10.8% (n = 24) described their health as fair, with less than 1% (n = 2) who described their health as poor. The high level of perceived health seems in contrast to the high levels of stress reported and moderate levels of perceived ability to manage that stress. There were significant correlations between these three variables as shown in Table 3. In addition, there was a significant difference between males and females regarding overall level of stress, with females reporting higher levels of stress than male respondents [$t(95.68)^{*}$ = 2.47, $p < .05$]. There were no differences between the sexes for perceived ability to manage stress or overall health.

Table 3

Correlations Between Perceived Stress Level, Overall Health, and Ability to Manage Stress (N = 223)

	Overall Stress Level	Quality of Health	Managing Stress
Overall Stress Level	--	- 0.32**	- 0.25**
Quality of Health		--	0.36**
Managing Stress			--

** p < 0.01

Issues Influencing Stress

When asked about specific issues that impacted their stress, respondents rated school work as having the most impact on their stress, with a mean of 4.26 on a 5 point scale (SD = 1.02). Responses for all issues are listed in Table 4. Males and females differed regarding these issues. Finances [$t(87.52) = -2.34$, $p < .05$], job [$t(117) = -2.93$, $p < .01$], and school work [$t(210) = -2.26$, $p < .05$) contributed more to females' level of stress than males'.

[*] Levene's test for Equality of Variances was significant, so the value reported is for unequal variances.

Table 4

Issues Influencing Perceived Stress Level *

	Mean	Median	SD
School Work	4.26	5.00	1.06
Finances	3.67	4.00	1.27
Graduate/Teaching Assistantship	3.57	4.00	1.25
Job	3.50	4.00	1.32
Career Planning	3.04	3.00	1.44
Children (if applicable)	3.00	3.00	1.41
Relational partner	2.58	2.00	1.37
Extended Family	2.35	2.00	1.23
Living Arrangements	2.07	2.00	1.23

* Individuals could rate each issue on a 5 point Likert scale with 1 being "contributes little to my stress level" and 5 being "contributes a lot to my stress level."

In addition to the prelisted categories, participants could identify additional issues that contributed to stress in their lives. While some individuals took this opportunity to clarify ratings given to the listed issues, other participants listed other issues; major categories for these additional issues were (a) loneliness and adjustment to new surroundings, (b) time management and multi-tasking, (c) departmental and university issues, (d) health issues, and (e) world and international events.

Stepwise regression analysis for the nine issues contributing to graduate student stress was conducted to more closely examine which had an impact on the level of perceived stress. This analysis revealed "job" as the only significant predictor of perceived stress level ($\beta = -0.41$, $p < .05$, adjusted $R^2 = 0.14$).

Coping Strategies

Respondents were asked about coping strategies related to stress management. Three separate checklist questions asked individuals which coping strategies they currently used, which strategies they would be interested in learning more about, and which strategies they would use if offered by the University.

Table 5

Use of Current Coping Strategies

Coping Strategy	Male (n = 59)	Female (n = 160)	Total (n = 219)	$\chi 2$
Aromatherapy	5.1%	15.6%	12.8%	4.30*
Counseling/Therapy	6.8%	17.5%	14.8%	3.97*
Eat comfort foods	21.3%	73.8%	68.5%	7.61**
Exercise	55.9%	61.3%	59.8%	0.51
Massage	8.5%	17.5%	15.1%	2.74
Meditation	16.9%	11.3%	12.8%	1.26
Over-the-counter Medications	13.6%	15.0%	14.6%	0.07
Overeat	18.5%	27.5%	24.7%	2.58
Prescription Medications	8.5%	14.4%	12.8%	1.35
Reflexology	1.7%	1.3%	1.4%	0.06
Shop	11.9%	33.1%	27.4%	9.80**
Sleep	47.5%	59.4%	56.2%	2.49
Smoke cigarettes	13.6%	19.5%	17.9%	1.03
Stress management class	1.7%	0.0%	0.5%	2.72
Talk with friends	49.2%	78.8%	70.8%	18.26***
Veg out	67.8%	58.8%	61.2%	1.49
Use alcohol	39.0%	28.8%	31.5%	2.09
Use street drugs	5.1%	1.3%	2.3%	2.84
Watch TV	49.2%	68.1%	63.0%	6.66**
Yoga	5.1%	11.9%	10.0%	2.20

*$p < .05$; **$p < .01$; ***$p < .001$

The most common coping strategy currently used by participants to manage stress was talking with friends (69.5%, $n = 155$) followed by eating comfort foods (68.2%, $n = 152$). However, these strategies were used more by women than men. In fact, there were several significant differences between the sexes,

with females more likely to use aromatherapy, use counseling/therapy, eat comfort foods, shop, talk to friends and watch TV. While not statistically different from female use, the most common coping strategies used by men were "vegging out" (67.8%, $n = 40$) and exercise (55.9%, $n = 33$). Use of these coping strategies for both males and female as well as chi-square differences are listed in Table 5. Females (M = 6.12, SD = 2.12) also utilized significantly more coping strategies than males [M = 4.78, SD = 2.23; $t(216) = -4.09$, $p < .001$].

Table 6

Regression for Perceived Stress Level and Ability to Manage Stress

	Level of Stress			Ability to Manage Stress		
	B	*SE B*	*β*	*B*	*SE B*	*β*
Aromatherapy	-0.35	0.19	-0.13	0.29	0.21	0.10
Counseling/Therapy	-0.19	0.18	-0.07	0.36	0.20	0.14
Eat Comfort Foods	0.21	0.14	0.11	0.23	0.16	0.11
Exercise	0.09	0.13	0.05	-0.11	0.15	-0.05
Massage	0.20	0.18	0.08	0.00	0.20	0.00
Meditation	-0.15	0.21	-0.06	0.05	0.23	0.02
OTC Meds	-0.25	0.18	-0.10	-0.18	0.20	-0.06
Overeat	-0.14	0.15	-0.07	0.04	0.17	0.02
Prescription Meds	-0.11	0.20	-0.04	0.48	0.22	0.16*
Reflexology	0.71	0.64	0.09	0.73	0.71	0.08
Shop	-0.10	0.14	-0.05	-.08	0.16	-0.03
Sleep	0.11	0.14	0.06	-.06	0.15	-0.03
Smoke Cigarettes	-0.17	0.17	-0.07	0.57	0.19	0.22**
Stress Man. Classes	-1.81	1.14	-0.14	-2.08	1.26	0.14
Talk with Friends	0.13	0.14	0.07	-0.19	0.16	-0.09
Veg Out	-0.04	0.13	-0.02	-0.19	0.15	-0.09
Use alcohol	0.26	0.14	0.14	0.04	0.15	0.02
Use street drugs	-0.18	0.42	-0.03	-0.75	0.47	-0.11
Watch TV	-0.29	0.14	-0.16*	0.13	0.15	0.06
Yoga	-0.30	0.23	-0.10	-0.60	0.26	-0.18*
R^2		0.14			0.17	
F		1.57			2.02**	

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

The third research question also asked how coping mechanisms affected perceived stress and ability to manage stress. In order to answer this question, regression analysis was used to examine how the specific coping strategies used affected one's perceived level of stress. This regression equation contained 20 potential predictor variables which requires a minimum of 159 subjects for medium or large effect sizes (Green, 1991); with a sample of 220 used for these regression analyses, this criteria was met. For perceived stress level, the overall model was not significant. Regression analysis was also undertaken to examine how these same variables affect one's perceived level of managing stress. Prescription medication, smoking cigarettes and yoga were the significant predictors for this equation.

Table 7

Coping Strategies Students Interested in Learning More About

Coping Strategy	Male (n = 49)	Female (n = 146)	Total (n = 195)	$\chi 2$
Aromatherapy	16.3%	32.9%	28.7%	4.91*
Counseling/Therapy	32.7%	23.3%	25.6%	1.69
Exercise	26.5%	30.1%	29.2%	0.23
Healthy Eating Information	36.7%	39.7%	39.0%	0.14
Massage	42.9%	52.7%	50.3%	1.43
Meditation	37.5%	43.2%	41.8%	0.47
Over-the-counter Medications	16.3%	8.2%	10.3%	2.62
Prescription Medications	14.3%	8.2%	9.7%	1.54
Reflexology	16.3%	30.1%	26.7%	3.58
Sleep regularly	38.8%	33.6%	34.9%	0.44
Smoking cessation	4.1%	5.5%	5.1%	0.15
Stress management class	30.6%	44.5%	41.0%	2.93
Time management class	36.7%	37.7%	37.4%	0.01
Yoga	30.6%	43.2%	40.0%	2.40

*$p < .05$

The fourth research question asked about graduate students' interest in learning more about coping strategies and which strategies they would utilize if offered by the University. Regarding interest in learning more about specific coping strategies, of those responding to this item, massage was the strategy

identified most frequently (54.8%, n = 100). There was only one difference between the sexes – aromatherapy – with females more interested in aromatherapy than males. Respondents also identified which services they would utilize if offered by the University; the top response was massage (65.5%, n = 131). Response rates for all coping strategies with the Chi-square values are listed in Table 8.

Table 8

Coping Strategies Students Would Utilize if Offered By University

Coping Strategy	Male (n = 49)	Female (n = 148)	Total (n = 195)	$\chi 2$
Aromatherapy	29.8%	36.5%	34.9%	0.71
Counseling/Therapy	29.8%	35.1%	33.8%	0.46
Exercise – instruction about benefits	14.9%	14.9%	14.9%	0.00
Healthy Eating Information	27.7%	31.8%	30.8%	0.28
Massage	63.8%	66.9%	66.2%	0.15
Meditation instruction	44.7%	43.9%	44.1%	0.01
Over-the-counter Medications	10.6%	10.1%	10.3%	0.01
Prescription Medications	14.9%	11.5%	12.3%	0.38
Reflexology	14.9%	33.8%	29.2%	6.15*
Instruction on sleep regularly	31.9%	26.4%	27.7%	0.55
Smoking cessation	4.3%	6.8%	6.2%	0.39
Substance Use info/counseling	0.0%	1.4%	1.0%	0.64
Stress management class	27.7%	45.3%	41.0%	4.57*
Time management class	40.4%	38.5%	39.0%	0.06
Yoga	31.9%	55.4%	49.7%	7.87**

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

Open-ended questions

The survey included two open-ended questions: "What other services would you like the University Health Center to offer to help reduce/manage your level of stress?" and, "Are there other changes on campus that would reduce your level of stress? If so, please list." For each open-ended question, a

thematic analysis of the narrative responses was conducted. The text from each question was coded and analyzed for categories of commonality. A second researcher reviewed the categories and placement of responses for agreement; minimal adjustments were made.

In the first open-ended question, "What other services would you like the University Health Center to offer to help reduce/manage your level of stress?" three themes emerged: cost of health services, access to and availability of health services, and increasing alternative and specialized stress-reduction/recreational activities. Regarding cost, many students noted that the fees for some services and lack of health insurance or poor coverage from plans affected their ability to access existing services, especially counseling options. For example, one student stated, "Offer counseling which is affordable by graduate students with families. It is ridiculous that you charge….approximately 12% of the typical grad students' gross monthly income. I am not seeking the recommended counseling because we cannot afford it." Another student stated, "I don't need any more services. The Health Center is just fine. I just need decent health insurance so I can actually go to the Health Center."

Complicated schedules also prevent students from using services that they want or need. Students suggested increased hours, counseling services available by phone, and materials available for check-out for those who can't make scheduled stress programs. The final theme emphasized increased availability of yoga, Tai-Chi, and other forms of stress reduction. One student also suggested "an exercise program specifically designed and limited to students who are in poor shape…that incorporates relaxation techniques and fitness."

The final open ended question asked, "Are there other changes on campus that would reduce your level of stress? If so, please list." From this question, four major themes emerged. The first theme revisited the idea of increased access to affordable health insurance; one student stated "the biggest source of financial stress I have is trying to pay for health care every semester." The second theme also related to financial issues with students suggesting that increased stipends for graduate assistants and reduction or exemption from university fees would decrease their stress. The third theme involved concerns about the physical environment. Students believed that availability of parking, especially close to their offices, would be helpful. Many students identified stress related to parking, whether it be looking for a parking spot and/or traveling with many materials from the parking lot to their office. Students also identified lack of office space with Internet and network access and study locations as additional concerns.

The final theme encompassed that graduate students would benefit from an academic environment with improved communication, less bureaucracy and more respect for their contributions to the university community. Students felt that faculty members were not sensitive to the stress they experience, and that excessive paperwork and the many university procedures were cumbersome. In addition, communicating clearer expectations to the students regarding program of study requirements, assistantship duties, and university procedures would be beneficial. Finally, increasing the appreciation for the graduate students and their contributions was also emphasized; "The university administration needs to recognize that graduate students are a vital, essential part of the teaching and research community of this campus and we are distinctly different from undergrads in our needs. I often feel like we as a whole are this silent unseen workforce laboring late into the night grading papers and churning out data. It's a pretty lonely endeavor."

Discussion and Recommendations

Results from this study show that a majority of the graduate students who completed the survey reported high levels of stress with school work, finances, assistantships and job as the issues contributing most to their levels of stress. The high level of concern about academic performance was consistent with existing literature (Stecker, 2004).

Graduate students and nontraditional students are often thought to have multiple roles as their primary source of stress (Dill & Henley, 1998). In addition to being a student, this survey only considered worker, parent and partner as other roles. Only 14% of the participants have children, 32% were not involved in an exclusive relationship, and 44% said that job as a stress category was not applicable to them. Other roles, such as caretaker of a parent or other relative, were not measured, but for those measured, it appeared that the concept of multiple roles may not contribute as much to these graduate students' stress as previous literature indicates.

Graduate students report a variety of coping mechanisms to address their stress level with talking to friends as the most common overall and for women; however, the most common coping strategy for men was to "veg out." Many individuals also report less healthy behaviors such as using alcohol or smoking cigarettes. Three specific behaviors – using prescription medication, smoking cigarettes and yoga – had an impact on one's perceived ability to manage stress with individuals using prescription medication and smoking indicating better management. At the same time, individuals are interested in learning more about other healthy coping strategies and are often interested in accessing them through the university.

As university professionals, we need to examine ways to increase the likelihood of these students engaging in the healthy coping strategies that they are

interested in, versus negative ones (like using alcohol or cigarettes) or even neutral ones (like "vegging out"). Offering such alternatives is an important step, but publicizing them in avenues directed toward graduate students is equally vital. Graduate students often have classes in one department or building with much time spent in their office or lab. Fliers, newspaper advertisements and other typical strategies to advertise services may not be as successful with graduate students. Similar to previous research (Stecker, 2004), many of the coping strategies of interest to students in this study are already offered at the University, but students were not aware of them. While students share the responsibility of seeking out services, this finding reemphasizes comments about the need for increased communication.

These study results show differences between males and females in many areas, including level of stress, issues influencing stress, current coping strategies, interest in other coping strategies and the number of coping strategies utilized which is similar to previous research (Dusselier, Dunn, Wang, Shelley, & Whalen, 2005; Hudd, et al., 2000; Mallinckrodt & Leong, 1992; Sax, 1997). Because of the higher levels of stress perceived by females and the increased level of interest in some coping strategies, universities may want to direct information and services to females differently than males.

The open-ended responses provided more insight into the stressors of students; the students experienced stress from many areas of university and personal life. Some of the issues – such as parking – may seem to be a common frustration; however, the students perceived a strong impact of this issue on their stress level. While student affairs may not be able to decrease the stress from these other areas, having a better understanding of the context of graduate student stress can help practitioners work with other university entities to address this issue. For example, new graduate students often experience emotional stress during the transition period to graduate school (Baird, 1990; Golde, 2000), and many universities offer a campus orientation to new graduate students (Poock, 2004). Incorporation of stress management into the university orientation or the departmental orientation for graduate students may be a proactive first step. After this initial orientation, Student Affairs departments could continue to work with individual academic units to address stress levels in their students. Integration into the department is instrumental to a successful graduate education experience (Tinto, 1993); therefore, working with individual departments may be the best method to address graduate student stress effectively.

In addition, actively engaging students in decisions and policies, or at least providing a forum to discuss issues, should be encouraged (Descutner & Thelen, 1989). Student activities or other student affairs departments can support graduate student organizations as they take on this endeavor. While

faculty may acknowledge the stress of students, faculty may resist modifying the academic environment. Faculty and students often disagree about curriculum and program changes -- even if these changes are intended to reduce the level of stress experienced by students (Reeser, MacDonald, & Wertkin, 1992). Student affairs departments can facilitate productive dialog between the groups in order to reach an agreeable solution.

From an administrative perspective, universities need to examine how health insurance, funding, and the overall academic climate for graduate students can be managed. As funding issues on universities become increasingly demanding, the direct financial support for graduate students as well as benefits and other services these students receive may decrease. This may cause increased stress for graduate students while also creating additional issues for the campus to address.

Since graduate students were not aware of the stress-related services currently being offered, exploring strategies to increase their awareness were undertaken. In cooperation with a University-wide task force to address stress in the student population, a comprehensive website was developed to better provide information about stress and related university services. In addition, this information was shared with the Graduate School to increase awareness among faculty and administration. As a result, stress programs have been offered through the Graduate School. Similarly, the campus counseling services increased the number of free support groups offered to meet the specific needs of graduate students. While these strategies have been helpful on this campus, other universities need to examine what mechanisms would work best for their graduate students and campuses.

Limitations

There are several limitations of this study. Foremost, the lack of a definitive response rate is a critical concern. Almost 4% of the total graduate student body responded to the survey, but insufficient data are available to determine a response rate. Some graduate students may not have received the invitation to complete the survey, others may not identify themselves as stressed, and still others may have felt too overwhelmed to take the time to complete the survey. While this limits any generalizations that can be made from the findings, the exploratory nature of this study still provides worthwhile information as colleges and universities address the effects of stress on graduate students. Future research should utilize direct communication with the graduate students (such as emails to student accounts) which would eliminate this concern.

Another study limitation was that the participants were self-selected, responding to requests to participate via a listserv or other electronic announcements. These graduate students may be experiencing high levels of stress or feel strongly about some component of the university that they

wished to express through this survey. Graduate students from several departments (e.g., Agriculture, Business, and Forest Resources) were under-represented. The survey did not ask if students were masters or doctoral students, so differences between these groups cannot be examined. Likewise, the small group sizes make it difficult to examine how specific programs may affect stress differently.

Conclusion

Because stress is an issue for all students, universities need to further examine and understand the needs of graduate students. Future research efforts should move beyond perceived stress and perceived ability to manage stress to examining actual stress levels, including specific symptoms of stress. Likewise, the level of stress among professional students in law, medical, dental, veterinary or pharmacy programs should also be investigated. This examination should include use of current services addressing stress and the level of awareness about these services. Once a clearer picture of stress among these post- baccalaureate students is understood, further research to help develop effective interventions for graduate students is the next step. While some interventions have been shown to be effective with college students (Deckro et al., 2002), most interventions do not address the specific needs of graduate students.

This exploratory study begins to examine the connection between the effect of stress on graduate students and university services. Increasingly, stress is being viewed as a campus-wide health issue that requires the attention of a wide-range of university components and staff, often being led by student affair departments and professionals (National Association of Student Personnel Administrators, n.d.). As we address this issue, the inclusion of graduate students and their needs is a critical component. Universities need to examine what is being done on their campus – at the campus level and the departmental level -- to address the needs of this population. In addition, professionals should review information dissemination strategies for current services to ensure that graduate students are aware of all the services their campus provides.

References

American College Health Association. (2005). American College Health Association-National College Health Assessment (ACHA-NCHA) Spring 2003 Reference Group. *Journal of American College Health, 53*, 199 - 210.

American College Health Association. (2006b). *American College Health Association-National College Health Assessment: Reference group data report Fall 2005*. Baltimore, MD: Author

Author. (2001). *Stress in Graduate Students Survey*. Unpublished survey.

Baird, L. L. (1990). The melancholy of anatomy: The personal and professional development of graduate and professional school students. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. VI, pp. 361–392). New York: Agathon Press.

Benton, S. A., Robertson, J. M., Wen-Chih, T., Newton, F. B., & Benton, S. L. (2003). Changes in counseling center client problems across 13 years. *Professional Psychology-Research and Practice, 34*, 66-72.

Damush, T. M., Hays, R. D., & DiMatteo, M. R. (1997). Stressful life events and health-related quality of life in college students. *Journal of College Student Development, 38*, 181- 190.

Deckro, G. R., Ballinger, K. M., Hoyt, M., Wilcher, M., Dusek, J., Myers, P., Greenberg, B., Rosenthal, D. S., & Benson, H. (2002). The Evaluation of a mind/body intervention to reduce psychological distress and perceived stress in college students. *Journal of American College Health, 50*, 281-288.

Descutner, C. J., & Thelen, M. H. (1989). Graduate student and faculty perspectives about graduate school. *Teaching of Psychology, 16*, 58-61.

Dill, P. L., & Henley, T. B. (1998). Stressors of college: A Comparison of traditional and nontraditional students. *Journal of Psychology, 132*, 25-37.

Dusselier, L., Dunn, B., Wang, Y., Shelley, M. C., & Whalen, D. F. (2005). Personal, health, academic, and environmental predictors of stress for residence hall students. *Journal of American College Health, 54*, 15-24.

Gallagher, R. P. (2004). *National Survey of Counseling Center Directors.* Alexandria, VA: The International Association of Counseling Services, Inc.

Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research, 26*(3), 499-510.

Golde, C. M. (2000). Should I stay or should I go? Student descriptions of the doctoral attrition process. *The Review of Higher Education, 23*, 199–227.

Hudd, S. S., Dumlao, J., Erdmann-Sager, D., Murray, D., Phan, E., Soukas, N., & Yokozuka, N. (2000). Stress at college: Effects on health habits, health status and self-esteem. *College Student Journal, 34*, 217-238.

Kisch, J., Leino, E. V., & Silverman, M. M. (2005). Aspects of suicidal behavior, depression, and treatment in college students: Results from the Spring 2000 National College Health Assessment Survey. *Suicide and Life-Threatening Behavior*, *35,* 3-13.

Mallinckrodt, B., & Leong, F. T. L. (1992). Social support in academic programs and family environments: Sex differences and role conflicts for graduate students. *Journal of Counseling and Development*, *70*, 716-724.

Mark, T. L., Coffey, R. M., Vandivort-Warren, R., Harwood, H. J., & King, E. C. (2005) MHSA. Spending Estimates Team. U.S. spending for mental health and substance abuse treatment, 1991-2001. *Health Affairs, 24(Suppl.),* 133-142.

National Association of Student Personnel Administrators (n.d.) *NASPA's Health in Higher Education Knowledge Community.* Retrieved July 14, 2006, from http://www.naspa.org/help/hhekc/

National Mental Health Association. (2006). *Finding hope & help: College student and depression pilot initiative.* Retrieved July 14, 2006, from http://www.nmha.org/camh/college/index.cfm.

Offstein, E. H., Larson, M. B., McNeil, A. L., & Mwale, H. M. (2004). Are we doing enough for today's graduate student? *The International Journal of Educational Management, 18*, 396-407.

Poock, M. C. (2004). Graduate Student Orientation Practices: Results from a National Survey. *NASPA Journal, 41*, 470-486.

Reeser, L. C., MacDonald, F., & Wertkin, R. A. (1992). Enhancing student coping and modifying the stressful academic environment: Advice from students and faculty. *Journal of Teaching in Social Work, 6*, 87-97.

Ross, S. E., Niebling, B. C., & Heckert, T. M. (1999). Sources of stress among college students. *College Student Journal, 33*, 312-318.

Sax, L. J. (1997). Health trends among college freshmen. *Journal of American College Health, 45*, 252-262.

Seaward, B. L. (2002). *Managing Stress: Principles and Strategies for Health and Well-Being* (3rd ed.). Boston, MA: Jones and Bartlett Publishers.

Stecker, T. (2004). Well-being in an academic environment. *Medical Education*, *38*, 465-478.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Twenge, J. M. (2000). The age of anxiety? Birth cohort change in anxiety and neuroticism, 1952-1993. *Journal of Personality and Social Psychology, 79*, 1007-1021.

University of Georgia. (2002). UGA Fact Book 2001**:** College enrollment by term fiscal years 1993-94 - 2001-02. Retrieved June 12, 2008 http://www.uga.edu/oir/fb01/04enr/04enr12.htm

Young, J. R. (2003). Prozac campus: More students seek counseling and take psychiatric medication. *The Chronicle of Higher Education*, *49*, 37.