A SURVEY OF MIDWESTERN EDUCATION GRADUATE STUDENTS' COPING STRATEGIES AND SUBSEQUENT DEVELOPMENT OF A THREE FACTOR STRESS SCALE

by

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Approved by:

Advisor Date

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DEDICATION

I am dedicating this study to my former advisor, the late Dr. Donald R. Marcotte. Dr. Marcotte supported this study in many ways. He was very critical of my work on the dissertation, but also an inspiration, because he only accepted the best at what people can do through hard work and dedication. Dr. Marcotte believed that hard work and dedication is the key to success in life, because without it, people could see that one has no passion for what they do. Dr. Marcotte clearly had a passion for teaching Statistics to his students. He was always available to students when they had questions about a particular topic in Statistics. Dr. Marcotte never considered any question in relation to Statistics dumb, because he understood that the average person considered Statistics a complex field.

Dr. Marcotte had an extraordinary mind, which allowed him to view a situation that was simple that seemed difficult. His famous motto was “Never make a simple solution difficult.” I will always follow that motto wherever I may go.

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CHAPTER 1

Introduction

The topic of stress among college and university students has been the subject of research for many years. Researchers have found that high stress levels in students lead to poor academic performance, depression, attrition, and serious health problems (Hudd, Dumlaio, Erdman-Sager, Murray, Phan, Soukas, & Yokozuka, 2000; Misra, McKean, West & Russo, 2000; Pengilly & Dowd, 2000). Therefore, research on how students deal with their stress levels can have important implications for higher education. Many education graduate students undergo considerable stress due to the demands associated with home, school, and/or work (Altmaier, 1983). Studies indicate that women in education graduate programs have a higher level of self-imposed stress and report more physiological reactions to stressors than males (Hudd et al., 2000; Misra & McKean, 2000).

According to Pfeiffer (2001), stress comes in the form of negative tension that is caused by someone or something. Those who recognize stress as negative tension fail to realize that stress can generate a positive reaction to a stimulus. The positive reaction of stress can drive individuals to achieve and to enhance their potential to its fullest. Stress can be a positive aspect of learning if students experience stress as a challenge and exhibit an increased capacity to learn (Roberts & White, 1989). However, many experiences distress rather than challenge, which can lead students to feel threatened or helpless.

Academic work may reflect some of the high levels of stress that education graduate students have reported. Pfeiffer (2001) stated that most education graduate students experience grade pressures that cause students to have problems with stress. Too much stress can interfere with their preparation, concentration, and performance. Yet, positive stress can be helpful to
education graduate students by motivating them to peak performance. Pfeiffer (2001) also stated that education graduate students have a fear of failure in relation to their grades and academic work. To fall short of their own or others’ expectations in school, job, athletics, or any other activity one risks both external and internal costs: threat to academic or career prospects, disapproval, rejection, humiliation, guilt, and hurt to the self-esteem (Schafer, 1996). Fear of failure can help motivate the students to prepare and perform well. Yet, sometimes fear of failure can become extreme, which then creates unnecessary stress (Pfeiffer, 2001).

One of the main causes to academic stress is test anxiety. Pfeiffer (2001) stated that most education graduate students seem to be more emotionally vulnerable due to examinations. Increased anxiety from tests has a debilitating effect on their performance. Anxiety about the test reduces the capacity available for performing the tasks, resulting in decreased performance and self-fulfilling prophecy (Fisher, 1994). After completing an examination, there is a period of depression when students reflect on their performance and compare it to how their colleagues did. Poor confidence and a perception of poor performance can be an important reason for depression that occurs after an examination (Pfeiffer, 2001). More emphasis is needed on understanding the impact of examinations on education graduate students, and on the appropriateness of the current examination process (Fisher, 1994).

Some of the negative responses education graduate students have from the stressors can be characterized by a lack of overt skills in handling a stressful situation (Pfeiffer, 2001). This can be marked also by a poor performance or avoidance because students lack the skills to deal with these stressors. Stress management can be used to help education graduate students filter out some of the stress they have by changing their behavior. One of the first steps to begin coping and managing stress is knowing what one’s physical and emotional limits are. In order to
eliminate negative stress that may be occurring a student needs to identify the cause of the stressor (Pfeiffer, 2001). A strong psychological adjustment on the part of an individual is known to effectively help offset the dysfunctional effects of stress (Greenberg & Valletutti, 1980). Students must select the coping skills that most effectively fit their individual needs.

**Problem statement**

The purpose of this research was to identify 1) factors related to stress experienced by education graduate students and 2) coping resources and strategies that they use to handle their stress. This study was conducted on a sample of education graduate students, who were surveyed through voluntary participation, to see if there was a relationship between their stress level and age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, teacher status, and considering dropping out of the program.

The study also tried to identify coping skills, strategies, and resources that these students could use to cope with the stressors they encountered in graduate school. This information was used to make recommendations to education department heads in ways they can improve their program regarding students’ stress.

**Variables**

The independent variables for this research are age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, teacher status, and considering dropping out of the program. The dependent variable is the stress that students encounter while in graduate school.

**Research Questions**

The following research questions were addressed in this research: 1) what factors are
stress-related that students experience during graduate school, as it relates to age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, teacher status, and considering dropping out of the program? 2) What coping strategies do students use to deal with stress while in graduate school? and 3) What coping resources do students use to deal with stress while in graduate school?

Research Hypotheses

H₀: There is no relationship between the stress that students encounter while in graduate school and age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, teacher status, and considering dropping out of the program.

H₁: There is a relationship between the stress that students encounter while in graduate school and age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, teacher status, and considering dropping out of the program.

Definitions

Stress. Heins et al. (1984) report that stress is not something that can be measured directly; therefore, it is usually assessed using physiological measurements or self-report measures. Others contend that stress is identified only when individuals believe that any given situation will place demands on them that will tax or exceed the resources available to them (Lazarus, 1977). Therefore, stress is a belief that one’s resources will be insufficient in a specific situation (Street, 1995). Indeed, graduate school is not expected to be stress-free (Heins et al., 1984). In this research, stress was examined based on how challenging the experience was for an education graduate student.
Coping. Discussion of stress and adaptation requires careful analysis of the concept of coping. Lazarus (1977) defines coping as a reaction to stressors. This reaction is the individual’s attempt to master conditions of harm, threat, or challenge (Goosen & Bush, 1979). Coping mechanisms are those direct, active tendencies aimed at eliminating a stressful event (Lazarus, 1977).

The process of coping may consist of a rather large array of overt and covert behaviors. The process of coping is a very complex response that occurs when an individual attempts to remove stress or what is perceived as a threat from one’s environment. The actual reaction one has to an environmental event is as important as the event itself (Garland & Bush, 1982). Therefore, not only does one’s coping ability have implications for mental and physical health, but the person’s state of health can also affect one’s ability to cope.

Assumptions

There are two assumptions in this study.

1. Graduate school can be stressful, especially for students who are employed and/or have families.

2. Graduate students were able to answer the questions on the questionnaire in a timely manner.

Limitations

There is one limitation in this study.

1. Graduate students could only complete the questionnaire in the classroom.
The purpose of this study was to identify factors that are related to stress experienced by education graduate students and coping resources and strategies that they use to handle their stress. Although there is some research regarding possible stressors of education graduate students, there is very little research regarding stress in education graduate students' personal lives. This literature review specifically focused on areas related to personal stress, and coping strategies that students use to manage their stress. The areas discussed in the literature are work, home, school, and coping.

Work and Home Life

There are many sources of stress for graduate students. Two of those sources are work and home life. Hammer, Grigsby, and Woods (1998) surveyed 375 education graduate students at an urban university to investigate how work, school, and family factors caused role conflicts for students while in graduate school. The instrument used in this study was adapted from an eight-item measure of inter-role conflict pertaining to the spillover from work to family (Kopelman, Greenhaus, & Connolly, 1983). The measure had three subscales made up of 16 items each (i.e., Work-Family Conflict, School-Work Conflict, and School-Family Conflict). To create the work-family conflict measure, Hammer et al. (1998) added to the measure of Kopelman et al. (1983) eight items reflecting the inverse form of spillover-Hammer et al. (1998) replaced the word work with family and vice versa. The resulting measure was consistent with the work-family conflict scale used by Goff, Mount, and Jamison (1990). The internal consistency reliability estimate for the scale in the present study was .87. The participants were instructed to answer the work-family conflict measure if they worked and had a spouse, partner,
or dependent. Sixteen additional items reflected the degree of conflict between school and work (alpha = .91). The respondents were instructed to answer that part of the survey if they worked. Hammer et al. (1998) also assessed the degree of conflict between school and family with 16 more items reflecting the degree of conflict between school and family (alpha = .90). The participants were instructed to answer that part of the survey if they had a spouse, partner, or dependents. Hammer et al. (1998) developed the latter two scales with the procedure used by Goff et al. (1990)-i.e., Hammer et al. (1998) modified the original scale of Kopelman et al. (1983) by replacing the words work and family with school and work, and school and family, respectively. The overall work-family-school conflict measure was the average of the three scales (alpha = .94). In addition, Hammer et al. (1998) perceived effectiveness of support services with one item on a 5-point scale ranging from 1 (poor) to 5 (excellent). The students were asked to answer the following question: “How would you rate the overall effectiveness of the support services that this university provides to help you meet the demands of school (e.g., student legal services, tutorial services, child care, minority and multicultural programs, computing services, student/parent services, etc.)?” To measure satisfaction with the educational experience, Hammer et al. (1998) also asked the participants to respond to the following question using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree): “In general, I am satisfied with my educational experience at this university.” Demographic variables included age, sex, marital status, hours worked, number of children, and credit hours taken. Results demonstrated a negative relationship between perceived effectiveness of support services and the degree of work-school role conflict experienced by participants. Furthermore, satisfaction with educational experience was negatively related to work-school conflict. No other significant effects were found. Hammer et al. (1998) recommended restructuring class schedules to better
accommodate working students: stress management and coping skills workshops, and teaching students how to negotiate for flexibility in work schedules.

Other research revealed that students attending graduate school had a positive effect on work and home life (Kirby, Biever, Martinez, & Gomez, 2004). They investigated 1,100 education students to examine the impact of attending a Weekend College (WEC) program on their family, work, and social life. The WEC program was founded in 1979 to offer undergraduate degree completion programs for working adults. Graduate programs were added in 1983 and the undergraduate and graduate programs were later expanded to two regional campuses. The WEC degree programs limit the number of contact hours and usually meet seven per semester. The first session is a one hour course orientation; the remaining six class meetings occur every other weekend in four hour segments. The instrument used for this study was adapted from the work-family-school conflict measure by Hammer et al. (1998). The Hammer et al. measure is a 41-item questionnaire with an internal consistency reliability estimate of .87. Questions dealing with work and family inter-role conflict were eliminated as were several other items deemed not necessary for this study. The Hammer et al. survey items deal solely with negative inter-role conflict.

Kirby et al. (2004) added items assessing the positive impact of school on work and family. This resulted in 23 items to which participants responded on a Likert-type scale from strongly disagree (1) to strongly agree (5). Kirby et al. (2004) used reverse scoring procedures to assess the direction for some of the items. Three questions were added to assess overall satisfaction with work, school, and family, using a scale of very unsatisfied (1) to very satisfied (5). Finally, there were three open-ended questions requiring written responses on the impact of school on family, work, and social life. Regression analyses of the 566 completed surveys
revealed that satisfaction with school and support from family and the work place were predictive of lower levels of stress. Content analyses of responses to open-ended questions showed that expected stress was the result of time constraints but also highlighted the positive aspects of continuing one's education. Kirby et al. (2004) suggested that the support of family is important. They feel that student and family could attend a general orientation together and then attend the specific course orientations. This would enhance the families understanding of the demands on their student/family member.

Following the findings by Hammer et al. (1998), Kirby et al. (2004) also suggested that workshops on time management and stress management be offered to WEC students as well as advising them of university sponsored counseling services that are available to students.

Home (1997), revealed that work and home life stress factors can have a positive and negative effect on students attending graduate school. Home (1997) surveyed 443 women graduate students who were in the social work, nursing, and adult education programs. The researcher attempted to examine the relationships between stress, role strain, perceived role demands, and perceived support among women while in graduate school. Four instruments were used for this study. Stress was measured with Koeske and Koeske's (1989) 25-item scale (Cronbach's alpha =.92), derived from the anxiety, depression, and somatic subscales of the SCL-90R (Derogatis, 1977). Respondents were asked to rate, on a 1-5 scale, how much each symptom bothered them in the past two weeks.

Role strain was measured with three scales. The role conflict scale (8 items, Cronbach's alpha =.80) included two items measuring respondents' perception of feeling "pulled apart" by different obligations (adapted from Barnett and Baruch, 1985, and Coverman, 1989), and six items assessing how often specific conflict situations occurred this semester. The latter items,
adapted from Gilbert and Holahan (1979), referred to conflicts between role pairs (e.g., studies vs. family, studies vs. job, family vs. job).

The role overload scale included two items ($r = .65$) developed by Barnett and Baruch (1985), and Bohen and Viveros-Long (1981). Both items assessed respondents' perception of having too much to do. A measure of time actually spent on activities in each role domain was dropped prior to analysis because some respondents misunderstood the instructions.

The role contagion scale (6 items, Cronbach's alpha = .78) evaluated the extent to which respondents felt preoccupied with one role while performing another. These three scales were combined to form a role strain index that reflects both the three-dimensional theoretical definition of that construct and the principal-components analysis results, which point to a single underlying factor. Three types of independent variables were examined in this study. Life situation variables included factual questions regarding full- or part-time employee and student status, ethnic origin, income, age, study program and focus (i.e., courses, field work, or thesis), parenting and caregiving status, and age and number of children. Three scales were used to measure perception of demands.

The jobtime demands scale (13 items, Cronbach's alpha = .75, adapted from Johnson, 1982) assessed work schedule flexibility, frequency of inter-role conflicts, and irregular work demands. The student-role demands scale (3 items, Cronbach's alpha = .76) asked respondents how often they felt overwhelmed in various ways by their student work load this semester, and the family-role demands scale (4 items, Cronbach's alpha = .73) assessed respondents' perception of the intensity of these demands. Tangible institutional supports included a variety of workplace and university resources. Respondents were asked to indicate whether they had used each support item that semester. Items included distance education; recognition of past learning;
university day care; assignment date flexibility in crisis situations; study skills workshops; instructor accessibility; part-time study; access to workplace equipment, data, or personnel; study leave; and employer reimbursement of educational expenses.

Finally, respondents were asked their perception of the amount of support received from family/friends and university and workplace sources. These six items, adapted from Koeske and Koeske (1989), tapped both emotional/informational and tangible support received from each source (two items per source). On the basis of principal components analysis, the six items were combined to form three, which measured total support received from either family/friends ($r=.66$), the university ($r=.68$), or the workplace ($r=.60$).

This study found that women graduate students with higher perceived role demands had more stress and role strain, while those participating in distance education had less. Women graduate students with lower incomes indicated they had more stress, while those with stronger support from family and friends had less. The author suggests that because some tangible support might increase stress and role strain, educators should evaluate existing provisions carefully, while continuing to promote greater awareness of and responsiveness to these students' unique needs.

School

Another source of stress that students may encounter while attending graduate school is school itself. Ulku-Steiner, Kurtz-Costes, and Kinlaw (2000) surveyed 474 doctoral students at a large, southern, state university. The researchers attempted to examine the similarities and differences in graduate school experiences of male and female students in programs containing predominantly male faculty. Each of the seven measures on the questionnaire is described below, and reliability is indicated for each scale. For items on all measures, a 5-point Likert-type
scale was used with the markers 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, and 5 = *strongly agree*. A number of items were stated negatively and were therefore reverse coded during analysis. For each measure, scores were summed across items to create a composite score for each student. Some of the questionnaire items were based on prior work of researchers studying graduate student development (Anderson & Louis, 1994; Braskamp, Wise, & Hengstler, 1979; Gilbert et al., 1983; Rocha-Singh, 1994).

*Mentor support.* The mentor support measure included 15 items designed to assess the level of support the student receives from his or her mentor or advisor. These items included dimensions of affective support (e.g., “My mentor is rarely sensitive to the fact that I have other responsibilities and activities unrelated to my work”) as well as concrete support (e.g., “My mentor assists me in finding funding”). Alpha reliability for the scale was 0.89.

*Peer/collleague support.* Peer support was measured with a 14-item scale. Items included both affective (e.g., “My peers provide me with emotional support”) and concrete types of support (e.g., “I do collaborative work with my peers often”). The alpha reliability coefficient for the 14 items was 0.87.

*Family and partner support.* This 11-item scale evaluated the level of support that the student received from either a romantic partner or spouse or from the one or two family members with whom he or she was closest. Participants were asked to indicate the specific persons about whom they were answering the questions. A full two thirds of participants indicated that they were responding regarding the support of a spouse or romantic partner; others responded with regard to siblings or parents. Therefore, Ulku-Steiner et al. (2000) refer to the construct as “partner support.” Items on this scale were mostly focused on affective aspects of support (e.g., “My partner/family member is threatened by my academic/professional success”).
reliability coefficient for this measure was 0.85.

**Academic self-concept.** The student was asked to report his or her academic self-evaluation on this 7-item scale. Some of the items asked the student to compare him or herself with peers (e.g., “I feel competent at my coursework compared to my peers”), whereas other items assessed noncomparative dimensions (e.g., “I fear that I will fail”). Alpha reliability for the scale was 0.83.

**Family issues.** On this 8-item scale, students were asked to indicate the support afforded by members of their department to issues of family formation such as marriage and having children. Sample items include “I feel that my decision to get married was/would be supported within my department” and “I feel that my decision to start a family (i.e., have children) is/would be supported within my department.” The alpha coefficient for this scale was 0.69.

**Stress.** This 11-item scale assessed the student’s level of stress related to the graduate school experience (e.g., “I frequently worry about employment after graduation”; “I frequently feel overwhelmed by my academic work”). Alpha reliability for the 11 items was 0.86.

**Career commitment.** The final scale in the questionnaire included 15 items and evaluated respondents’ career commitment (e.g., “I have considered leaving my program within the past year”; “I intend to pursue this area after program completion”). The alpha reliability coefficient for the 15 items was 0.90.

In this study, women in male-dominated programs expressed lower academic self-concept, less sensitivity in their departments to family issues, and lower career commitment compared with all other students. Mentor support and academic self-concept predicted the career commitment of all students. Student reports were unrelated to the gender of their mentors. Implications for this study are the presence of female faculty and other supports for women in
male-dominated fields and a reduction in attrition in graduate programs. Also, given the importance of supportive mentors, graduate programs should focus on determining the qualities of excellent mentors.

Other research has shown how other factors, in relation to school, can be stressful for students during graduate study (Poyrazli, Arbona, Nora, McPherson, & Pisecco, 2002). They surveyed 122 graduate international students who attended school in the South and Northeastern United States. The researchers attempted to examine the extent to which gender, English proficiency, assertiveness, with whom the students socialize, and academic self-efficacy predicted psychosocial adjustment among graduate international students. The students consisted of master’s and doctoral students in the education field. Five instruments were used for this study.

*Demographics questionnaire.* In the demographics questionnaire, participants report about several variables including their age, gender, the number of years they had been in the United States, and self-reported English language proficiency level.

The *Rathus Assertiveness Schedule (RAS).* The *RAS* (Rathus, 1973) was used to measure assertiveness level. The *RAS* includes 30 items that are scored on a 6-point Likert-type scale, ranging from 1 (very uncharacteristic of me) to 6 (very characteristic of me). The *RAS* has moderate to high test-retest reliability ($r = .78$, $p < .01$) and split-half reliability ($r = .77$, $p < .01$). The internal reliability, Cronbach’s alpha, of the scale for the sample used in this study was .82.

*Academic Self-Efficacy Scale.* A modified version of the Self-Efficacy Scale (Jenson, 1991; Sherer & Maddux, 1982) was used to measure academic self-efficacy. The scale consists of 17 items, asking the participants to rate their experiences on a 5-point Likert-type scale ranging from 1 (never) to 5 (always). Evidence for the construct validity of the scale is
supported through relations between the subscales and other personality measures (i.e., the Internal External Control Scale) (Sherer & Maddux, 1982). Internal reliability of the scale was .86. Cronbach’s alpha internal reliability of the scale for the current sample was .88.

The Inventory of Student Adjustment Strain (ISAS). A modified version (Poyrazli, Arbona, Bullington, & Pisecco, 2001) of the ISAS created by Crano and Crano (1993) was used to measure adjustment. The scale measures stresses and adjustment strains that are experienced by international students. The scale has been shown to be reliable (Crano & Crano, 1993). The internal consistency of the instrument is high (r = .92, r = .88). The total scores on the first and second administration were strongly correlated (r = .63, p < .001). The scale gives an adjustment strain score that ranges from 50 (severe problems) to 300 (no adjustment strain). The internal reliability of the instrument in the current study was .94.

UCLA Loneliness Scale (Version 3). The UCLA Loneliness Scale was developed to measure the subjective feelings of social isolation (Russell, 1996). It includes 20 questions that are answered on a 4-point Likert-type scale, ranging from 1 (never) to 4 (always). Reliability and validity of the questionnaire were tested through data that were collected from prior studies with college students, nurses, teachers, and the elderly. Internal reliability of the scale ranged from .89 to .94. The test-retest reliability was .73. In addition, the scores on the UCLA Loneliness Scale Version 3 and the scores on the NYU Loneliness Scale and the Differential Loneliness Scale were strongly correlated (.65 to .72 respectively), providing evidence for construct validity (Russell, 1996). The internal reliability of the scale specific to the sample used in this study was .91.

In this study, students reported having low levels of adjustment problems and loneliness while in graduate school. Also, males reported being more lonely than females. In terms of
prevention, these findings had several implications. First, results suggested that enhancing students’ English proficiency would likely help them adjust better. Therefore, designing on-campus activities or providing a cultural workshop to students may provide opportunities for them to interact with others and enhance their English proficiency. Second, results also indicated that assertiveness is related to adjustment and loneliness. Therefore, a training workshop designed to teach students how to be assertive in American culture is likely to help them experience fewer adjustment problems and less loneliness. Last, results indicated that academic self-efficacy was related to adjustment, suggesting that workshops or training programs related to academic life and the U.S. educational system may help students become familiar with what to expect in their academic life and would likely increase their academic self-efficacy.

Coping

Coping with stress is essential for students during graduate study. The strategies they use to cope with the stress can have a tremendous effect on their physical, emotional, and psychological well-being (Heins, Fahey, & Leiden, 1984; Mallinckrodt, Leong, & Kralj, 1989). Graham, Furr, Flowers, and Burke (2001) surveyed 115 graduate students in a counseling education program at a large southeastern university. The researchers attempted to investigate the relationship between religion, spirituality, and the ability of these graduate students to cope with stress while attending graduate school. Five instruments were used for this study.

Spirituality was measured using the Spirituality Health Inventory (SHI; Veach & Chappel, 1992) and the Religious/Spiritual Affiliation Self-Report (Koenig, 1999). The SHI is an 18-item inventory, developed by Veach and Chappel, designed to measure spiritual health. In an examination of the validity and reliability of scores from the SHI,
the relationships between the SHI and other measures of well-being ranged from $r = -0.02$ to $0.42$. The reliability coefficient, as measured by coefficient alpha, ranged from 0.49 to 0.90.

The Religious/Spiritual Affiliation Self-Report identifies a list of five categories that describe an individual's religious/spiritual affiliation: 1. I express my spirituality through my religious beliefs. 2. I consider myself to be a spiritual person but I do not have a set of religious beliefs. 3. I am a religious person but I do not consider myself to be a spiritual person. 4. I am neither a religious or spiritual person. 5. I do not know what my beliefs are regarding religion and spirituality. The Religious/Spiritual Affiliation Self-Report is based on a scale that identifies four categories that individuals generally fall into: (a) spiritual but not religious, (b) religious but not spiritual, (c) both religious and spiritual, and (d) neither religious nor spiritual (Koenig, 1999). The fifth category of the Religious/Spiritual Affiliation Self-Report (I do not know what my beliefs are regarding religion and spirituality) has been added for the purposes of this study.

The Preventive Coping Resources Inventory (Lambert, McCarthy, Beard, & Carr, 2000) consists of 25 items and measures the available resources for coping with stress. Internal consistency estimates were found for the four factors that emerged from this analysis: self-confidence, 0.87; acceptance, 0.74; social comfort, 0.77; and perceived control, 0.84 (Lambert et al., 2000).

The Combative Coping Appraisal Inventory consists of 25 items that measure combative coping appraisals of resources that can be used when encountering a stressful situation. Combative coping appraisals are the action or behavior the individual considers for use to combat the stressful situation. The coping scales are based on the
Coping Resources Inventory for Stress (Matheny, Curlette, Aycock, Pugh, & Taylor, 1987). Research has shown coping appraisals to be an important area to evaluate for predicting how an individual emotionally reacts to stressful situations (McCarthy, Lambert, & Brack, 1997).

The Comfort Level Self-Report (Kelly, 1995) provides a list of vignettes describing “categories” of religious/spiritual clients whom counseling students may encounter in a counseling session and addresses the comfort level of counseling students. This self-report is based on a rating scale from 1 (very uncomfortable) to 5 (comfortable) and includes eight vignettes. The eight vignettes describe the following individuals: (a) religiously committed client, (b) religiously loyal client, (c) spiritually committed client, (d) spiritually/religiously open client, (e) externally religious client, (f) spiritually/religiously tolerant or indifferent client, (g) nonspiritual/nonreligious client, and (h) client hostile to religion. This self-report is based on eight categories of religious and spiritual individuals (Kelly, 1995). No reliability data were available for this measure.

The study found that religion and spirituality correlated positively with coping with stress. Counseling students who expressed spirituality through religious beliefs had greater spiritual health and immunity to stressful situations than counseling students who identified themselves as spiritual but not religious. Counseling students with a religious/spiritual affiliation indicated more discomfort counseling clients hostile to religion compared with counseling students with a spiritual-only affiliation.

Like spirituality and religion, counseling services were examined to see its effects on graduate students’ mental health in coping with stress. Hyun, Quinn, Madon, and Lustig (2006)
surveyed 3,121 full-time graduate students at a single large western university. The researchers attempted to examine the mental health needs, knowledge, and utilization of counseling services among graduate students while in graduate school. Nine measures were used for this study.

**Mental Health Needs.** The survey assessed self-reported mental health needs through responses on the frequency of feelings of hopelessness, exhaustion, sadness, depression, and being overwhelmed. The responses to these five questions were summed to create an index of emotional distress, or depression index (Cronbach’s $\alpha = 0.86$). Higher scores on the depression index represent greater frequency of negative feelings. The depression index ranged from a minimum score of 5 to a maximum score of 25 with a mean score equal to 13.1 (SD = 4.1).

In addition, the survey instrument also assessed self-reported need for mental health services by asking students whether or not they had experienced an emotional or stress-related problem in the previous year that significantly affected their well-being or academic performance. This response was coded dichotomously. A convergent validity assessment between these two measures of emotional distress yielded a significant, positive correlation ($r = 0.56, p < .01$).

The survey also included a question on whether the respondent knew of another graduate student who had experienced an emotional or stress-related problem in the previous year. This response was also coded dichotomously. Lastly, the survey asked respondents if anyone else in the previous year had suggested that they seek care for a mental health problem.

**Functional Relationships with Advisors.** Scores of agreement to questions related to faculty advisor behavior were summed to create an advisor relationship index. Questions on faculty advisor behavior included student assessments of their advisor’s expressions of satisfaction with the student’s performance; discussion of the strengths and weaknesses of the
student’s research/coursework; encouragement of intellectual self-confidence; facilitation of collaborations with other faculty members, post-docs, and other researchers; consideration of the student’s personal problems; and directing the student to funding sources and current job opportunities. The advisor relationship index ranged from 7 to 28 with a mean score of 20.1 (SD = 4.3; Cronbach’s α = 0.85). A convergent validity assessment with a theoretically-related measure, satisfaction with one’s advisor, yielded a significant, positive correlation (r = 0.72, p < .01).

Hyun et al. (2006) also created an interaction term that captured graduate students’ relationships with advisors for those students who expressed having experienced a significant emotional or stress-related event in the past year that significantly affected their academic performance.

Financial Status. Hyun et al. (2006) assessed financial status by asking students which of the following statements best reflected their financial status at school: (a) I am not sure I will have enough funds to complete my studies, (b) I probably will have enough funds to complete my studies, and (c) I am confident that I will sufficient funds to complete my studies. Responses were coded continuously based on increasing confidence in their financial situation.

Family Burden. The survey instrument assessed family burden by asking about the number of hours spent on household activities and childcare duties in a typical week over the last 12 months. Respondents reported spending a mean of 8.0 hours per week on household activities (SD = 9.1), which was significantly correlated with the number of children that graduate students had (r = 0.52, p < .01).

Academic Discipline. The survey instrument asked graduate students to select the school or college in which their program belonged. For smaller and interdisciplinary programs that may
not have an institutional "home," this allowed students to choose the school to which they felt most institutionally tied.

*Program Competitiveness.* The survey asked respondents to rate the competitiveness among students in their respective programs on a 6-point scale where 1 indicated very uncompetitive and 6 indicated very competitive.

*Social Support.* Students responded to questions about the frequency of communication with their friends and family. Frequency of contact with friends and family was coded on a 0 to 5 scale, where 0 indicated no contact at all and 5 indicated contact at least once a day.

*Race/Ethnicity and International Students.* Hyun et al. (2006) grouped race/ethnicity into five categories (White, Asian/Pacific Islander, Hispanic, African-American, and Other) and included an additional category for international students. Hyun et al. compared self-identified international graduate students with domestic graduate students.

*Utilization of Mental Health Services.* The survey instrument collected utilization information through self-report. Hyun et al. (2006) asked students if they had ever used on-campus counseling services, off-campus counseling services, or both.

This study found that almost half of graduate student respondents reported having had an emotional or stress-related problem over the past year, and over half reported knowing a colleague who had had an emotional or stress-related problem over the past year. Self-reported mental health needs were significantly and negatively related to confidence about one’s financial status, higher functional relationship with one’s advisor, regular contact with friends, and being married. Utilization of counseling services was positively associated with an index of depression symptoms, the number of semesters in school, and identifying as female. Students who had experienced a significant mental health event in the past year and had higher functional

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relationships with their advisors were significantly more likely to utilize counseling services.

Findings suggest a need for increased attention to graduate student mental health needs, especially the role of financial confidence in student well-being and the relationships of graduate students with their advisors.

Demographic information, such as, students’ ethnicity, can have an effect on how they cope with stress in graduate school. Barnes and Lightsey (2005) surveyed 114 African American graduate students at a southeastern university. The researchers attempted to investigate the relationship between perceived racial discrimination, coping, stress, and life satisfaction among graduate students in the field of education. Four instruments were used for this study.

The *Schedule of Racist Events* (*SRE*; Landrine & Klonoff, 1996) is an 18-item instrument that measures frequency of Africans Americans’ experience with varied forms of PD. For each item, participants rate how often they have experienced particular forms of discrimination (e.g., “How many times have people misunderstood your intentions and motives because you are Black?”) in the past year (*SRE Year*) and in their lifetime (*SRE Lifetime*) on a 6-point scale ranging from 1 (never) to 6 (almost all the time; i.e., more than 70% of the time). The 18 items are calculated into separate means for the two subscales, with higher mean scores indicating greater PD. As in Fischer and Shaw (1999), a third scale that measures items’ appraised level of stress was omitted due to structural ambiguity. Coefficient alpha was .95 for both the *SRE Year* and *SRE Lifetime* subscales (Landrine & Klonoff, 1996). Correlations with another unnamed measure of PD used in a study by Krieger (1990), which assessed experiences with PD across six areas of life (e.g., at work, at school, getting housing), were .64 for *SRE Year* and .71 for *SRE Lifetime*.

Another study using African American students reported a mean of 2.01 and a standard
deviation of .73 for SRE Year and a mean of 2.45 and a standard deviation of .95 for SRE Lifetime (Fischer & Shaw, 1999).

The Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) is a five-item, self-report measure of overall satisfaction with life. Questions are answered on a 7-point Likert scale (strongly disagree to strongly agree). Responses are summed to provide an overall score (M = 23.5, SD = 6.43), with higher scores indicating more satisfaction with life (Diener et al., 1985). The SWLS was significantly and positively correlated with nine other measures of subjective well-being, with correlation coefficients ranging from .50 to .75 for one sample (N = 176) and .47 to .66 for another (N = 163; Diener et al., 1985).

In the second sample, correlations with additional measures were as follows: self-esteem .54, symptom checklist -.41, neuroticism -.48, emotionality -.25, activity .08, sociability .20, and impulsivity -.03. The 2-month test-retest reliability coefficient was .82, and coefficient alpha was .87 (Diener et al., 1985).

The Coping Strategies Indicator (CSI; Amirkhan, 1990) is a 33-item measure of coping strategies that are used in specific stressful situations, and it consists of three 11-item subscales that were derived from factor analysis: Problem Solving, Seeking Social Support, and Avoidance. Participants are asked to think of a stressful situation that occurred within the past 6 months that caused them to worry. (For this study, participants were asked to think of a situation in which they were a victim of racist discrimination during the last year in order to maintain consistency with the time frame used with the SRE Year structure). For each item, respondents rate on a 3-point, Likert-type scale (1 = a lot, 2 = a little, and 3 = not at all) the degree to which they used a particular strategy in dealing with the stressful situation. Items for each subscale are summed to produce subscale scores for Problem Solving (M = 26.55, SD = 4.82), Seeking Social
Support (M = 23.42, SD = 5.63), and Avoidance (M = 19.03, SD = 4.37), with higher scores indicating a greater use of the respective coping strategies (Amirkhan, 1994). Test-retest reliabilities for these three subscales were .83, .80, and .82 for a student sample and .77, .86, and .79 for a community sample over 4 to 8 weeks, respectively. Coefficient alphas were .89, .93, and .84, respectively (Amirkhan, 1990).

The *Perceived Stress Scale* (*PSS*; S. Cohen, Kamarck, & Mermelstein, 1983) is a 14-item measure that assesses the degree to which situations in one’s life are appraised as stressful. Items are answered on a 5-point, Likert-type scale (never to very often). Items are summed to produce an overall mean, with higher scores indicating higher levels of stress. Mean *PSS* scores for women were 23.57 and 25.31 in college student samples and 25.6 in a community sample (SD = 7.31, 7.79, and 8.00, respectively). Mean *PSS* scores for men were 22.38 and 21.73 in college student samples and 24.0 in a community sample (SD = 7.55, 6.20, and 8.24, respectively). Coefficient alpha was .84, .85, and .86, and test-retest reliabilities were .85 after 2 days in a college student sample and .55 after 2 weeks among smoking cessation subjects. Cronbach’s alpha was .855 in the current study after removal of 2 items that had negative correlations with total scale score and whose inclusion lowered coefficient alpha.

The researchers found that when students used problem-solving coping, it reduced their stress level related to racism and that avoidance increased their stress level related to racism and life satisfaction. Coping strategies included counselors teaching students not to avoid seeking help when experiencing race discrimination, because it may affect stress and life satisfaction.

Other research has shown that students’ ethnicity, have an effect on how they cope with stress during graduate study. Poyrazli, Kavanaugh, Baker, and Al-Timimi (2004) surveyed 141 international students from four universities in the United States. The researchers attempted to
investigate how social support and demographic variables correlated with acculturative stress in international students. The students consisted of undergraduate, master’s, and doctoral students in the education field. Three instruments were used for this study.

**Demographics questionnaire.** This questionnaire was used to obtain information on basic demographics and English proficiency. Proficiency in English was measured by taking the average of four questions that asked the students to rate their proficiency based on a 4-point Likert-type scale in the areas of speaking, understanding, reading, and writing. The demographics questionnaire included a question that asked the students to report with whom they socialized most frequently by circling one of the options given to them: (a) Americans, (b) non-Americans (i.e., people from their own country or other international students), or (c) both groups equally.

**The Personal Resource Questionnaire-2000 (PRQ-2000; Weinert, 1987).** The PRQ-2000-Part 2 was used to measure social support. The questionnaire consists of 15 items on a 7-point Likert-type scale, ranging from strongly agree (1) to strongly disagree (7). The total scores of the measure range from 15 to 105, with higher scores indicating higher levels of perceived social support. The previous version of the scale has a test-retest reliability of \( r = .72 \). Evidence of adequate construct validity was provided by correlating the scores of the scale with scores obtained from the Beck Depression Inventory (Beck, 1967) and the Trait Anxiety Scale (Spielberger, Gorsuch, & Lushene, 1970).

In a recent study (Hovey, 2000), the internal consistency of the PRQ-2000 scale was reported as .85, and the current study yielded an internal consistency of .90 for the scale. **Acculturative Stress Scale for International Students (Sandhu & Asrabad, 1998).** This questionnaire consists of 36 items on a 5-point Likert-type scale ranging from strongly disagree
(1) to strongly agree (5). The total scores range from 36 to 180, with higher scores indicating higher levels of acculturative stress. Validity was supported by factor analysis. Evidence for reliability was provided by Cronbach's coefficient alpha ($r = .95$) and Guttman's split-half coefficient ($r = .94$). In a current study, the internal consistency reliability (Cronbach's alpha) of the *Acculturative Stress Scale for International Students* was .94.

The researchers found that social support and English proficiency uniquely contribute to the variance in students' acculturative stress. Results also indicated that students who primarily socialized with non-Americans and students from Asian countries experienced more acculturative stress compared with other subgroups. Therefore, counselors have the capacity to help international students combat acculturative stress by offering problem-relevant workshops and focusing on this stress during counseling sessions.

Paukert, Pettit, Perez, and Walker (2006) concurred with Barnes et al. (2005) and Poyrazli et al. (2004) that students' ethnicity have an effect on how they cope with stress in graduate school. Paukert et al. (2006) surveyed 96 ethnic minority graduate students from educational psychology classes at a southwestern university. The researchers attempted to examine associations among acculturative stress, attributional style, and positive and negative effect among minority graduate students. The students identified themselves as African American, Asian or Pacific Islander, Hispanic, Middle Eastern, and of mixed ethnicity. Six instruments were used for this study.

*Demographics questionnaire.* This instrument asked participants to list their age and country of origin and to circle their ethnicity. Country of origin was highly varied for those whose birthplace was not the United States and included over 15 countries that were diverse both geographically and culturally. Thus, they dichotomized country of origin into two groups based
on whether or not participants were born in the United States.

*Attributional Style Questionnaire (ASQ; Peterson et al., 1982).* The ASQ includes 12 situations and asks the participant to rate the locus of internality, globality, and stability of the cause of each situation on a 7-point Likert scale. Separate subscales can be calculated for each kind of attribution and the valence of the situation, or these can be summed to form composite attribution ratings for positive and negative events, respectively. Because there is less discrimination among different types of attributions for positive events (Peterson et al., 1982), they focused exclusively on attributions for negative events in this study. Further, Paukert et al. (2006) used separate subscales for internality, stability, and globality, instead of using the composite negative events score, because they wanted to understand the different features of attributional style among participants with high scores in acculturative stress (Carver & Scheier, 1991). Internal consistency in this study was lower for the Internality subscale (α = .51) than for the other two dimensions (Globality, α = .67; Stability, α = .72), which accords with previous findings (e.g., as for Internality, Stability, and Globality were .46, .59, and .69, respectively; Peterson et al., 1982). The ASQ has received considerable support for its test-retest reliability and construct, criterion, and content validity (Hewitt, Foxcroft, & MacDonald, 2004; Peterson et al., 1982, Sweeney et al., 1986).

*The Societal, Attitudinal, Familial, and Environmental Acculturative Stress Scale (SAFE; Padilla, Wagatsuam, & Lindholm, 1985).* Paukert et al. (2006) used the SAFE, a short version of the original 60-item scale, to measure acculturative stress. The short version of the SAFE scale measures acculturative stress in four contexts: social, attitudinal, environmental, and familial, along with perceived discrimination toward immigrant populations (Mena et al., 1987). Examples of items include statements such as, “Close family members and I have conflicting
expectations about my future," "I often feel that people pressure me to assimilate," and "Many people have stereotypes about my culture or ethnic group and treat me as if they are true."

Participants rated each item that applied to them on a 6-point Likert scale ranging from 1 (not stressful) to 5 (extremely stressful), with 0 (not applicable) as an option as well. The scale consists of 24 items (possible scores range from 0 to 120). The scale has shown high internal reliability for African American college students (Joiner & Walker, 2002), Asian American respondents, international students (Mena et al., 1987), a heterogeneous group of Hispanic respondents (Fuertes & Westbrook, 1996), and a multi-ethnic group of college students (Perez, Voelz, Pettit, & Joiner, 2002). In this sample, also consisting of a multi-ethnic sample of college students, Paukert et al. (2006) found similarly high internal reliability (α = .88).

Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The PANAS includes two 10-item scales, one for Positive Affect (PA; the extent to which a person feels enthusiastic, active, and alert) and one for Negative Affect (NA; the extent to which a person experiences subjective distress such as anger, disgust, guilt, and fear). Each item is rated on a scale from 1 to 5; thus, scores for PA and NA may range from 10 to 50 each (for reliability data, see Watson et al., 1988). Participants rated the degree to which they felt a particular mood state at the moment. In this study, internal consistency was high for PA (α = .89) and NA (α = .86).

State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991). The SSES is a 20-item scale that asks respondents to rate how they currently feel on a 5-point scale from 1 (not at all) to 5 (extremely). Scores range from 20-100, with higher scores reflecting higher global self-esteem. Previous researchers found that this scale has high internal reliability (α = .92) and validity (Heatherton & Polivy). The scale's internal reliability in this study was similarly high (α = .91).
Social Support Questionnaire (SSQ; Sarason, Levine, Basham, & Sarason, 1983). The SSQ is a 12-item scale that asks respondents to list total number of and satisfaction with available social supports in different situations. Consistent with previous work on acculturative stress (Yeh & Inose, 2003), Paukert et al. (2006) used only items measuring social support satisfaction (not number of supports) in this study. The social support satisfaction subscale displayed high internal consistency (α = .96).

This study found that male graduate students experienced higher acculturative stress associated with negative affect and global attributions than female graduate students. Attributional style did not account for the association between negative affect and acculturative stress. Positive affect and stable and internal attributional styles were not related to acculturative stress. Findings for this study suggest that two target areas need further investigation. First, the unique association of negative, but not positive, affect with acculturative stress suggests that efforts to minimize the adverse impact of acculturative stress may be better directed toward reducing negative mood states (e.g., relaxation training), rather than toward inducing positive mood states (e.g., scheduling pleasant activities). Second, cognitive techniques geared toward modifying global attributional style for negative events may be beneficial in reducing stress associated with acculturation and in preventing the subsequent development of psychopathology. The authors encourage researchers to examine these and other related issues, including the longitudinal relations between acculturative stress, attributional style, and affect.

Like ethnicity, gender of students, can have an effect on the social support they need from others while attending graduate school. Mallinckrodt and Leong (1992) surveyed 400 education graduate students residing in campus graduate housing at a large eastern university. The researchers assessed a) social support in their academic programs and in their family
environments, b) recent stressful life events, and c) depression and anxiety as psychological symptoms of stress.

The instruments used in this study were the Graduate Program Support Scale (Educational Testing Service, 1980), the Family Environment Support Scale (Bohen & Viveros-Long, 1981), the Life Events Survey Scale (Sarason, Johnson, & Siegel, 1978), and the Bell Global Psychopathology Scale (BGPS; Schwab, Bell, Warheit, & Schwab, 1979).

**Graduate Program Support.** The questionnaire was developed by the Educational Testing Service (1980) for its national survey of graduate training, modifying it and adding items based on our understanding of social in academic departments. The resulting measure contained 17 items spanning a range of functional types of social support, including emotional ("atmosphere of trust and cooperation"), appraisal ("supervision from faculty"), informational ("faculty's role in student’s professional development"), and instrumental support ("office space and facilities"). Participants responded to the items using a 5-point scale (1=very poor, 5=very good).

**Family Environment Support.** The instrument was originally developed to study role strain and the quality of family life experienced by working spouses (Bohen & Viveros-Long, 1981), adding items based on the understanding of social support in the family environment. The resulting 19-item measure provided a broad sampling of support types, including emotional ("supportive relations among family members"), appraisal ("communication among family members"), and instrumental support ("financial security"). Participants responded to the items using a 5-point scale (1=nearly as poor as they could be, 5=about as good as they could be). Only those graduate students who were married or living with a person they indicated as "spouse" were included in analyses of family environment variables (n=97).
Stressful Life Events. The measure of life events was adapted from the Life Events Survey Scale (Sarason, Johnson, & Siegel, 1978). Mallinckrodt and Leong (1992) measure listed 48 events including several specific to students (e.g., “final exams”). Respondents checked those items that they experienced in the past 12 months. Because a change such as “quit job” or “moved to a new city” may have been on balance a positive event, respondents also indicated whether each event they checked had been generally positive or negative. Given that the developers of the Life Events Survey Scale and others (Vionkur & Selzer, 1975) found that life events rated as positive were generally uncorrelated with negative outcomes, in this study only life events designated as negative were examined in detail.

Psychological Stress Symptoms. The Bell Global Psychopathology Scale (BGPS; Schwab, Bell, Warheit, & Schwab, 1979) consists of 33 self-report items comprising eight subscales of psychological symptoms (e.g., depression, anxiety, obsessive thoughts). Participants respond considering their “experience of the past month or so” using 5-point scales (0=never, 4=all the time). The BGPS provided an expeditious self-report measure of general psychological functioning in the original epidemiological study (Mallinckrodt et al., 1989). Schwab, et al. (1979) analyzed each of the subscales individually, but to limit the number of analyses in the current study, only the depression subscale (10 items) and the anxiety subscale (5 items) were used. Mallinckrodt and Leong (1992) believed that these two subscales would be more sensitive to the experience of graduate students under stress than would the others that reflect more severe pathology (e.g., paranoia, hallucinations). Mallinckrodt and Leong (1992) did not combine the items into a single index because they believed anxiety and depression represented distinct reactions to life stress. Depression may be more likely to result from the threat of an impending loss. A specific type of support (e.g., tangible aid) may be more likely to
mitigate one reaction (e.g., anxiety) than another.

In this study the depression and anxiety subscales were correlated only moderately, $r=.62$. The BGPS has demonstrated internal consistence (coefficient alpha) and test-retest reliability correlations all greater than .80. The total BGPS score was significantly correlated ($r=.74$) with a widely used measure of psychopathology, the Health Opinion Study, (Schwab et al., 1979) and was significantly correlated with stressful life events in a study of undergraduate and graduate students (Ostrow, Paul, Dark, & Behrman, 1986). The depression subscale has also been significantly correlated with the Beck Depression Inventory, $r=.71$ (Mallinckrodt, 1987). The researchers found that women reported significantly more stress, more symptoms of stress, and significantly less support from their academic departments and family environments than did men. Family support had only buffering effects, but no direct effects on stress symptoms for women. Graduate program and family support had direct effects, but no buffering effects on stress symptoms for men. These results indicate greater role strain for women, resulting from less support for their multiple roles and greater concerns about balancing academic and family demands.

Students’ academic loads are another factor that affected students stress levels and the mechanisms they used to cope with the stress. Kariv and Heiman (2005) surveyed 283 graduate students at a university in Israel. The researchers attempted to examine the relationships between stress, actual academic loads, and coping strategies among students in the education field.

The instrument used for this study consisted of three parts: (1) the students’ subjective assessment of the stress they experience i.e., perceived stress; (2) an investigation of the task-emotion and avoidance-related coping strategies they adopt; (3) an objective assessment of their
actual academic loads.

1. **Perceived Stress.** In accordance with Lazarus's (1990) definition, perceived stress was defined as a condition subjectively experienced by respondents who identify an imbalance between demands addressed to them and the resources available to them to encounter these demands. It was assessed in terms of the students' subjective experiences of their academic stress. The question was: “Would you please share with us your feelings of stress regarding your academic loads: How much stress do you feel due to your academic studies?” Students answered on a four-point Likert scale from not stressed at all (1) through very much stressed (4).

2. **Task- Emotion and Avoidance-Oriented Coping Strategies.** Coping strategies were measured using the Coping Inventory for Stressful Situations (Endler & Parker, 1999). This is a 53-item measure of coping style composed of three factors, (a) Task-oriented coping - its subscales tap active and offensive coping styles, stressing proactive responses to the stressors (e.g., “I focus on the problem and see how I can solve it”). (b) Emotion-oriented coping - this scale represents coping styles directed at altering negative emotional responses to stressors, such as negative thinking (e.g., “My efforts will surely fail”), lowered self confidence (e.g., “I cannot handle this problem”) or poor self image (E.g., “I am useless”). (c) Avoidance - this represents withdrawal behaviors and the redirection of personal resources towards different paths, such as sports, leisure time, etc. (e.g., “I buy something”). The scales for these three coping strategies range from 1 (seldom used) to 5 (always used). Higher scores represent a higher usage frequency for the specific coping strategy. Cronbach alpha coefficients obtained for the entire scale of coping strategies were: for task orientation, α = 0.87; avoidance, α = 0.83, indicating that the coping strategies questionnaire is a reliable measure of adult coping orientations for a college population.
3. Objective Stress Variables: Academic Loads. Academic loads were objectively assessed on an average weekly basis in terms of: (1) class hours; (2) study hours during semesters and (3) study hours during exam periods. Study hours included time spent in the library, in laboratories and at home, to meet academic demands.

Demographic variables. Data were collected with respect to each student’s age, gender and family status. Since most of the students in our sample were not parents, family status was not subsequently included in the model. This decision was supported by correlation calculations, which showed that the degree of correlation between family status, academic stress perceptions and coping strategies was negligible.

This study reported a correlation between perceived academic stress, academic loads, and demographic characteristics with the types of coping strategies adopted by students. Students reported having high stress levels with heavy academic loads. Older working students reported using task-oriented coping strategies in relation to academic loads when managing their stress, but younger students reported using emotion-oriented coping strategies or avoidance in relation to academic stress in managing their stress. Findings for this study suggest that, in stressful environments, each of the coping strategies functions independently, with the type of strategy adopted depending largely on the specific profile of each student’s stress perceptions and demographic characteristics.

Stress-related growth, can also be a factor in how students deal with stress during graduate study. Armeli, Gunthert, and Cohen (2001) surveyed 447 alumni and 472 graduate students from the alumni records and educational psychology classes at a large northeastern university. The researchers attempted to evaluate the dimensionality and the appraisal and coping antecedents of stress-related growth over a two-year period.
The questionnaire included the following items in order of appearance. Participants first answered demographic questions. Next, they were asked to provide a brief written description of their most stressful event in the past two years and to rate it on several dimensions and on the availability of personal and support resources at the time of its occurrence. They then completed a coping checklist corresponding to how they dealt with this event. Finally, participants completed the revised SRGS as it pertained to this event.

_Stressor Appraisals_. Armeli et al. (2001) used 23 items to assess participants’ event appraisals on the dimensions of (a) loss, (b) threat, (c) challenge, (d) centrality, (e) severity, (f) previous experience, (g) predictability, (h) personal and support related resources, and (i) several aspects of controllability. A total of 10 items came from Peacock and Wong’s (1990) Stress Appraisal Measure, and Horowitz, Wilner, and Alvarez's (1979) Impact of Event Scale (these items are denoted by single and double asterisks, respectively). Many of the appraisals of interest (loss, predictability, previous experience) are not tapped by these scales, Armeli et al. (2001) created 13 items to assess the remaining constructs. Participants rated their agreement with each item on 7-point scales; all items had the response choices of 1 (strongly disagree) to 7 (strongly agree), except for those noted. To assess the discriminant validity of the event appraisals, Armeli et al. (2001) conducted factor analyses.

Results in the adult sample revealed dimensions that ranged from (a) degree of loss to (h) severity. Factor analyses in the student sample replicated these factors with the exception of the severity and centrality dimensions. Items from these two factors failed to separate and were combined into one overall severity index. Two additional items, “At the time of its occurrence, how threatening was this event,” with scores ranging from 1 (not at all threatening) to 7 (extremely threatening), and “At that time, I felt it was an extreme challenge”, were kept as
single-item indicators of threat and challenge in both samples. Scales were formed by calculating the mean of the appropriate items. Reliabilities for both samples ranged from $\alpha = .60$ to $\alpha = .84$.

**Coping.** To assess how participants coped with their event, Armeli et al. used the 60-item COPE questionnaire (Carver Scheier, & Weintraub, 1989). The COPE has 15 subscales. The subscales ranged from (1) positive reinterpretation to (15) use of humor. Participants used a 4-point scale (1 = not at all to 4 = a lot) to rate how often they used each strategy in dealing with their most stressful event. Previous studies have demonstrated the internal and test-retest reliability of the COPE subscales (Carver et al., 1989).

Factor analyses in both samples supported the theoretical structure of the scale. Of the 15 subscales, only the active and planning dimensions failed to form their own factors (Carver et al., 1989). Armeli et al. (2001) combined these two subscales into a general problem-focused scale. Reliabilities for both samples ranged from $\alpha = .55$ to $\alpha = .95$.

**Stress-Related Growth.** Armeli et al. (2001) used a 43-item revised version of Park, Cohen, and Murch (1996) SRGS to assess stress-related growth. In the original 50-item version of the SRGS, all items were stated in the positive direction ("I learned that I was stronger than I thought I was," "I learned to be nicer to others"). However, previous studies of stress-related growth have found reports of change in both the positive and negative direction on domains such as personal strength, self-worth, and view of others (Joseph, Williams, & Yule, 1993). Use of a response scale that restricts responses to only positive change would result in a loss of information and would attenuate the covariation among related items and distort the factor structure. For the revised version of the SRGS, items were stated so that participants could report both positive and negative change. For example, the item, "I learned that I was stronger than I
thought I was,” from the original version of the SRGS was changed to “My belief in how strong I am”. The original item, “I learned to be nicer to others,” was changed to, “Treating others nicely.” Seven of the original items could not be rewritten in the new response format and were not included in the new version. The revised items related to (a) treatment of others, (b) religiousness, (c) personal strength, (d) belongingness, (e) affect-regulation, (f) self-understanding, and (g) optimism, ranged from (1) My belief in how strong I am to (43) Feeling as if I have a lot to offer other people.

Results from confirmatory factor analyses in both samples indicated that the revised SRGS should be regarded as a multidimensional instrument. Next, cluster analysis was used to identify event profiles based on appraisal and coping reports, and then compared these profiles on reports of growth. The researchers found that in both samples, stress-related growth was highest for profile one individuals who reported highly stressful events, for which they had adequate coping and support resources and for which they used adaptive coping strategies. The coping strategies that profile one individuals used for managing their stress was learning to be nicer to others and developing self-insight upon reflection.

The authors suggested that future research should assess appraisals and coping immediately after event occurrence and use more reliable appraisal and coping instruments. The authors also indicated that future research should examine reports of growth in more ethnically diverse samples. Although no statistics were provided on ethnicity, the samples were predominantly Caucasian with a middle class or high income.

Chapter Summary

The literature review confirmed there are possible stressors, in relation to work, home, and school that education graduate students experienced in their personal lives while attending
graduate school. Those stressors most commonly cited are: time management or lack of time; financial situation; academic concerns; hours spent working; self-perceptions of depression and anxiety; role strain conflict; fear of failure; feeling incompetent; and ambiguous expectations. The literature review also discussed different types of instruments used for measuring stress-related factors that students experience while attending graduate school. Reliability and validity were measured for the instruments in the literature review. Reliability values for the scales ranged between 0.50 and 0.96. Validity values for the scales ranged between 0.60 and 0.90.

In relation to the present study, Hammer, Grigsby, and Woods (1998) surveyed 375 education graduate students at an urban university to investigate how work, school, and family factors caused role conflicts for students while in graduate school. Kirby, Biever, Martinez, and Gomez (2004) investigated 1,100 education students to examine the impact of attending a Weekend College (WEC) program on their family, work, and social life. These studies investigated how role conflicts and attending a college program effect work, school, and family life on students' attending graduate school, but it neglects to discuss what factors are stress-related that education graduate students experience in their personal lives. These studies also neglect to discuss the type of stress they may endure if they were school teachers. These studies neglected to discuss the stress that is associated with issues such as grade school students, lesson plans, classroom teaching, classroom management, assignments, tests/quizzes, parent-teacher conferences, and their administrators. This study will examine possible stress-related factors experienced by education graduate students in their personal lives, and also examine the stress they may encounter if they were school teachers. This study will also use instruments that measure reliability and validity of identifying stress-related factors that students experience in their personal lives, which include the stress they may encounter if they were school teachers.
The literature review also discussed education graduate students' use of resources to cope with their stress. The literature yielded a substantial list of such mechanisms. Among them were social relationships, ranging from the most personal to peer relationships to professional relationships. Spirituality and religion, altering one's expectations, and positive reinterpretation were also coping resources graduate students used to manage their level of stress. Clearly, social support, whether from family, peers, peer mentors, supervisors, professors, or advisors, is a very important part of coping for education graduate students. The literature review also discussed different types of instruments used for measuring coping resources that students used to manage their stress while attending graduate school. Reliability and validity were measured for the instruments in the literature review. Reliability values for the scales ranged between 0.40 and 0.96. Validity values for the scales ranged between -0.02 and 0.90.

In relation to the present study, Mallinckrodt and Leong (1992) surveyed 400 education graduate students residing in campus graduate housing at a large eastern university. The researchers assessed a) social support in their academic programs and in their family environments, b) recent stressful life events, and c) depression and anxiety as psychological symptoms of stress. This study investigated how a) social support in their academic programs and in their family environments, b) recent stressful life events, and c) depression and anxiety as psychological symptoms of stress effect students' attending graduate school, but it neglects to discuss coping resources for students if they were school teachers. This study will examine coping resources of stress for students, and also examine the coping resources of stress they may need if they were school teachers. This study will also use instruments that measure reliability and validity of coping resources that students use to manage their stress, which include the coping resources they may use if they were school teachers.
This literature review covered material from the education field and other areas of professional training. This review examined aspects of the stress and coping research to provide a platform for the investigation into education graduate students' experience of stress and how they cope with such stress.
CHAPTER 3

Methodology

The researcher surveyed a sample of education graduate students through voluntary participation, to identify stress-related factors they experience in graduate school and the coping resources and strategies that they use to manage their stress. Other information, such as demographic and survey data, were collected from all participants. The instrument used for this study measured stress-related factors experienced by education graduate students. In addition, coping resources and strategies that education graduate students use to manage their stress were identified.

Setting

The setting for the study was the College of Education of a large university located in a metropolitan area in the Midwest. The College of Education was founded in 1933 to service the needs of individuals in one of the nations’ largest metropolitan areas. Approximately 3,800 students are enrolled annually in the programs. One-third are undergraduate students and two-thirds are in graduate programs. Additionally, the college facilitates one of the largest certification programs in the Midwest.

Participants

One hundred and twenty-two master’s, doctoral, and Ed. Specialist students were surveyed for this study. Of the 122 students who indicated their sex, 18% were male, and 82% were female. Of the 122 students who indicated their ethnicity, 26% were African-American, 61% were Caucasian, 4% were Asian/Pacific Islander, 3% were Hispanic, and 4% were Other. Of the 115 students who indicated their age, 32% were 18-28, 36% were 29-39, 13% were 40-50, and 12% were 51-61.


Data Collection

Stress scale. The stress scale adapted from (DeLongis, Folkman, & Lazarus, 1988; Klick, 2005) was used to measure factors related to stress that education students experience while in graduate school. The scale included two closed-ended questions that were scored on a 5-point Likert-type scale, ranging from 1 (rarely stressed) to 5 (often stressed), asking students to rate their current stress level, and rate their stress level during graduate school. The scale also had one open-ended question that asked to discuss the sources of stress (if any) related to the students’ graduate school experience and organize them according to the categories of home, school, and work, 32 items that are scored on a 5-point Likert-type scale, ranging from 1 (not related) to 5 (highly related) that asked students how much of their current level of stress while in graduate school is related to the 32 items. In a previous study (Showers & Zeigler-Hill, 2005), the internal consistency reliability for the Stress Scale was reported as .96. Evidence of construct validity was provided by correlating the scores of the scale with scores obtained from the Daily Uplifts Scale (DeLongis, Folkman, & Lazarus, 1988). The internal consistency reliability for the Stress Scale for this study using Cronbach’s alpha was reported as .896. Reliability for the Stress Scale for this study using Spearman Brown prophecy was reported as .802. For validity of the Stress Scale, factor analysis revealed the factor item content and loadings related to work stress ranged from .559 to .767, factor item content and loadings related to home stress ranged from .583 to .800, and factor item content and loadings related to school stress ranged from .810 to .864.

Coping scale. The coping scale adapted from (Klick, 2005) was used to measure the coping resources and strategies that students use to manage their stress. The scale included one closed-ended question that required a yes or no answer to using coping strategies in dealing with
stress, one open-ended question that asked students what coping strategies they used to manage their stress, one open-ended question that asked what support or resources that students used to manage their stress, and one open-ended question that asked what faculty members or the students' program can do to support them in managing their stress. Reliability for the Coping scale using Cronbach's alpha was reported as .661. Reliability for the Coping Scale using Spearman Brown prophecy was reported as .482. For validity of the Coping Scale, factor analysis revealed that factor item content and loadings related to coping strategies of stress ranged from -.752 to .797, and factor item content and loadings related to coping supports or resources of stress ranged from -.601 to .842.

Demographic data. The questionnaire contains the following demographic questions: gender, age, ethnicity, relationship status, number of children, whether the student is currently a teacher, full-time or part-time status, graduate degree seeking, drop out status, working for financial support, work flexibility, spouse/partner working for financial support, and spouse/partner a student.

Enrollment information. In addition to the demographic questions on the questionnaire, students were asked enrollment questions that included the following: consideration of dropping out of a program, if so, reasons for considering dropping out of a program, and reason(s) for staying in a program after drop out consideration.

Data Analysis

Factor analysis. In order to reduce the 32 stress items to a smaller set of components, a principal component analysis with varimax rotation was conducted. These components were examined to determine whether they are related to home, school, and/or work life. Reliability for this scale was determined using Cronbach's alpha, and reliability for the subscales was determined using Spearman-Brown prophecy.
Regression analysis. After factor analysis, regression analysis was used to determine whether age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, teacher status, and considering dropping out of the program predicts stress levels related to home, school, and/or work life. In order to obtain power of .80 in multiple regression, a sample size of 122 is sufficient with an estimated effect size of .35, and an alpha level set at .10. Assumptions for multiple regression include, normality, homoscedasticity, linearity, and multicollinearity.

Content analysis. In order to examine the responses to the open-ended questions about stress-related factors that students experience while in graduate school and coping strategies and/or resources they use to manage their stress, content analysis was conducted.

Procedures

A questionnaire was given to participants to assess their perceived level of stress, stressors, coping strategies, and coping resources. The data collection for the study took place by August 16, 2007. A letter was sent to instructors via email, explaining the purpose of the study and asking for their permission to survey their students. A notice of approval from the Human Investigation Committee was also sent to the instructors to inform them the study has been approved to survey their students. With the permission from the instructors, the following classrooms were surveyed for the study: Counseling Education, Special Education, Educational Administration, Art Education, Educational Evaluation and Research, Early Childhood Education, Instructional Technology, and Educational History and Philosophy.

The participants were surveyed by classroom visit. Each graduate student was given an envelope containing an informed consent, an information sheet and questionnaire with an explanation of the purpose of study. The students were told that they had to complete the
questionnaire at that time, but will be given ample time to finish the questionnaire. The students were told that their participation is voluntary.

After the students completed the questionnaire, the envelopes containing the information sheets and questionnaires were sealed in a large envelope and kept in a locked file cabinet.

_Pilot Study_

A pilot study was conducted to assess the participants’ perceived level of stress, stressors, coping strategies, and coping resources. The pilot study was also conducted to assess the reliability and validity of the instruments. The instruments are the questionnaire, the Stress Scale, and the Coping Scale. The data collection for the study took place on June 12, 2007. A letter was sent to instructors via email, explaining the purpose of the study and asking for their permission to survey their students. A notice of approval from the Human Investigation Committee was also sent to the instructors to inform them the study has been approved to survey their students. Permission from the instructor was granted, and the following classroom was surveyed for the study: Counseling Education.

Sixteen participants were surveyed in the same manner as this study. The participants completed the questionnaires in 15 minutes. Reliability, not validity, was determined for the study. Reliability for the Stress scale using Cronbach’s alpha was 0.877. Reliability for the Stress scale (split-half reliability), using Spearman-Brown prophecy was 0.837. Reliability for the Stress scale (split-half reliability), viewing correlation between two halves scale was 0.719. Reliability for the Coping scale, using Cronbach’s alpha was 0.602.
CHAPTER 4

Results

The purpose of this study was to fill a gap in the literature regarding stress on education graduate students’ personal lives. To accomplish this objective, it was necessary to identify (a) factors that relate to stress experienced by education graduate students, and (b) coping resources and strategies that education graduate students use to handle their stress. Specifically, a principal component analysis was conducted with varimax rotation to reduce the stress items to a smaller set of components. These components were examined to determine which are related to home, school, and/or work life. Next, regression analysis was used to determine whether age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, teacher status, and considering dropping out of the program predicts stress levels related to home, school, and/or work life. The data on coping skills are qualitative in nature, and serve as baseline information for future research.

Response Data

One hundred and twenty-two participants were surveyed for this study. Although the sampling plan was through voluntary participation, all of the questions were not answered on the questionnaire. As a result, the total sample size for each question may not equal 122.

Demographics

Tables 1-5 displays general demographic data about the composition of the sample: age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, and teacher status. Demographic data is reported using frequencies and percentages. 100 (82%) female; 45 (36%) age 29-39; 75 (61%) Caucasian; 54 (44%) married; 70 (57%) with no children; 79 (64%) with no children living in their household;
73 (59%) currently a school teacher; 48 (39%) currently not a school teacher; 46 (37%) currently not teaching at a school; 37 (30%) 1-5; 120 (98%) currently a student in an education program; 69 (56%) part-time student; 96 (78%) Master's; 6 (4%) dropped out of program, but returned between 2004-2007; 101 (82%) worked for financial support; 67 (54%) worked 33-43 hours per week; 40 (32%) somewhat flexible work schedule; 56 (45%) spouse or partner work for financial support; 33 (27%) spouse or partner works 33-43 hours per week; 56 (45%) spouse or partner a student; 10 (8%) student's spouse or partner was a full-time student.

Table 1

Demographic Data of Education Graduate Students

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency (n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Female</td>
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</tr>
<tr>
<td>Total n</td>
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<td></td>
</tr>
<tr>
<td>Age</td>
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<td></td>
</tr>
<tr>
<td>18-28</td>
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<td>32</td>
</tr>
<tr>
<td>29-39</td>
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<td>36</td>
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<tr>
<td>40-50</td>
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<td>13</td>
</tr>
<tr>
<td>51-61</td>
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</tr>
<tr>
<td>Total n</td>
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</tr>
<tr>
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<tr>
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<td>4</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
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<td>4</td>
</tr>
<tr>
<td>Total n</td>
<td>122</td>
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</tr>
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</table>

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### Table 2

**Demographic Data of Education Graduate Students**

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<th>Variables</th>
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<th>%</th>
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<tr>
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<td>Widowed</td>
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</tr>
<tr>
<td><strong>Number of children student has</strong></td>
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<td></td>
</tr>
<tr>
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<td>2</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>.8</td>
</tr>
<tr>
<td><strong>Total n</strong></td>
<td>122</td>
<td></td>
</tr>
<tr>
<td><strong>Number of children living with student</strong></td>
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<tr>
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<td>64</td>
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<td><strong>Total n</strong></td>
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<td>59</td>
</tr>
<tr>
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<td>48</td>
<td>39</td>
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<td><strong>Total n</strong></td>
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Table 3

Demographic Data of Education Graduate Students

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<tr>
<th>Variables</th>
<th>Frequency (n)</th>
<th>%</th>
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</thead>
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<td>How many years as a school teacher</td>
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<td>1-5</td>
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<tr>
<td>6-10</td>
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<td>11-15</td>
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</tr>
<tr>
<td>16+</td>
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<tr>
<td>Total n</td>
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<td>Currently a student in an education program</td>
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<td></td>
</tr>
<tr>
<td>Student status</td>
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<tr>
<td>Full-time student</td>
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<td>42</td>
</tr>
<tr>
<td>Part-time student</td>
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<td>56</td>
</tr>
<tr>
<td>Total n</td>
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</tr>
<tr>
<td>Graduate degree seeking</td>
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<td>Doctorate</td>
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<td>Ed. Specialist</td>
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<tr>
<td>Dropped out of program, but decided to go back, when did student do so</td>
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<td></td>
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<td>Summer, 2007</td>
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<td>1989</td>
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<tr>
<td>2004</td>
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<td>Work for financial support</td>
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<td>101</td>
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<td>No</td>
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<tr>
<td>Total n</td>
<td>122</td>
<td></td>
</tr>
</tbody>
</table>
Table 4

Demographic Data of Education Graduate Students

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency (n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hours per week student works</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>23</td>
<td>18</td>
</tr>
<tr>
<td>1-10</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>11-21</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>22-32</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>33-43</td>
<td>67</td>
<td>54</td>
</tr>
<tr>
<td>44-54</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>55-65</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total n</strong></td>
<td>122</td>
<td></td>
</tr>
<tr>
<td><strong>Flexibility of work schedule</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflexible</td>
<td>34</td>
<td>27</td>
</tr>
<tr>
<td>Little flexible</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Somewhat flexible</td>
<td>40</td>
<td>32</td>
</tr>
<tr>
<td>Flexible</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Very flexible</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total n</strong></td>
<td>119</td>
<td></td>
</tr>
<tr>
<td><strong>Spouse or partner work for</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>financial support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>56</td>
<td>45</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total n</strong></td>
<td>80</td>
<td></td>
</tr>
<tr>
<td><strong>Hours per week spouse or</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>partner works</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>68</td>
<td>55</td>
</tr>
<tr>
<td>1-10</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>11-21</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>22-32</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>33-43</td>
<td>33</td>
<td>27</td>
</tr>
<tr>
<td>44-54</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>55-65</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>66-76</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>77-87</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total n</strong></td>
<td>122</td>
<td></td>
</tr>
</tbody>
</table>
Table 5

Demographic Data of Education Graduate Students

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency (n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spouse or partner a student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>No</td>
<td>56</td>
<td>45</td>
</tr>
<tr>
<td>Total n</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Student status of spouse or partner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time student</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Part-time student</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Total n</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Enrollment Information

Table 6 displays enrollment information about the composition of the sample: considered dropping out of program. Enrollment information data was computed using frequencies and percentages. 94 (77%) respondents have not considered dropping out of an education program. However, 28 (23%) respondents considered dropping out of the program. The respondents indicated their reasons for dropping out of the program. 10 (8%) too much school work, 1 (0.8%) school work too difficult, 6 (4%) unable to balance job with school work, 2 (1%) unable to balance family with school work, and 13 (10%) other. The respondents indicated they considered dropping out of the program, but stayed, and their reasons for staying. 1 (0.8%) renewed teaching certificate, 15 (12%) personal satisfaction, 2 (1%) lighter course requirements, 2 (1%) put too much effort in quitting school, so I did not quit, 13 (10%) job, 4 (3%) too expensive to quit, 1 (0.8%) close to finishing, and 1 (0.8%) family constraints became less.
Table 6

*Enrollment Information of Education Graduate Students*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency (n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Considered dropping out of program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>28</td>
<td>23</td>
</tr>
<tr>
<td>No</td>
<td>94</td>
<td>77</td>
</tr>
<tr>
<td>Total n</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td>Reason for dropping out of program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Too much school work</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>School work too difficult</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Unable to balance job with school work</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Unable to balance family with school work</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Total n</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Considered dropping out of program, but stayed, why did student stay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renewed teaching certificate</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Personal satisfaction</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Lighter course requirements</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Put too much effort into quitting school, so I did not quit</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Job</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Too expensive to quit</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Close to finishing</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Family constraints became less</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Total n</td>
<td>39</td>
<td></td>
</tr>
</tbody>
</table>

*Responses to Stress Questions*

Figure 1 displays responses to the first stress question: "How would you rate your current
stress level?” The respondents were provided a Likert-type scale for their answer, in which “1” equaled “rarely stressed” to “5” equaled “often stressed.” 99 (78%) reported a sometimes stressed to often stressed level overall. Education graduate students appear to be under a fair to considerable amount of stress.

*Figure 1. Frequency of respondents by current stress level.*

![Bar chart showing frequency of respondents by current stress level](image)

Figure 2 displays responses to the second stress question: “How would you rate your stress level during graduate school?” The respondents were provided a Likert-type scale for their answer, in which “1” equaled “rarely stressed” to “5” equaled “often stressed.” 108 (85%) reported a sometimes stressed to often stressed level during graduate school. Education graduate students appear to be under a fair to considerable amount of stress during graduate school.
Figure 2. Frequency of respondents by stress level during graduate school.

Figure 3 displays responses to the question of discussing sources of stress related to home that students experience during graduate school. The respondents were provided space to give written responses to the question. The written responses were coded in the format as a Likert-type scale, in which “1” equaled “not related” to “5” equaled “highly related.” Seventy-seven (60%) reported a related to highly related level of stress to home during graduate school. Twenty-one (16%) reported a not related to somewhat related level of stress to home during graduate school. Education graduate students appear to be under a fair to considerable amount of stress during graduate school.
stress during graduate school.

*Figure 3. Frequency of respondents by source of stress at home.*

Figure 4 displays responses to the question of discussing sources of stress related to work that students experience during graduate school. The respondents were provided space to give written responses to the question. The written responses were coded in the format as a Likert-type scale, in which “1” equaled “not related” to “5” equaled “highly related.” Seventy-seven (63%) reported a related to highly related level of stress to work during graduate school. Nineteen (15%) reported a not related to somewhat related level of stress to work during graduate school. Education graduate students appear to be under a fair to considerable amount of stress during graduate school.
Figure 4. Frequency of respondents by source of stress at work.

Figure 5 displays responses to the question of discussing sources of stress related to school that students experience during graduate school. The respondents were provided space to give written responses to the question. The written responses were coded in the format as a Likert-type scale, in which “1” equaled “not related” to “5” equaled “highly related.” Sixty (48%) reported a related to highly related level of stress to school during graduate school. Forty (32%) reported a not related to somewhat related level of stress to school during graduate school. Education graduate students appear to be under a fair to considerable amount of stress during graduate school.
Figure 5. Frequency of respondents by source of stress at school.

Data Analysis

Factor analysis. In order to reduce the 32 stress items to a smaller set of components, a principal component analysis with varimax rotation was conducted. These components were analyzed to determine which ones are related to home, school, and/or work life. Each component was sorted by size, and suppressed factor loadings were less than .4. Tables 7 and 8 display factor item content and loadings for each component.

Work stress factors. Component for work displays eight factor loadings that are related to students' stress at work. The highest factor loading was at .767, and the lowest factor loading was at .559.

Home stress factors. Component for home displays six factor loadings that are related to
students’ stress at home. The highest factor loading was at .800, and the lowest factor loading was at .583.

*School stress factors.* Component for school displays two factor loadings that are related to students’ stress at school. The highest factor loading was at .864, and the lowest factor loading was at .810.
Table 7

*Factor Item Content and Loadings for each component where students’ stress is related to home, school, and/or -- work life*

<table>
<thead>
<tr>
<th>Factor Item Content</th>
<th>Component Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work</strong></td>
<td></td>
</tr>
<tr>
<td>Item 17-Stress related to meeting deadlines or goals on the job</td>
<td>.767</td>
</tr>
<tr>
<td>Item 14-Stress related to the nature of student's work</td>
<td>.754</td>
</tr>
<tr>
<td>Item 15-Stress related to student's work load</td>
<td>.723</td>
</tr>
<tr>
<td>Item 12-Stress related to classroom preparation (i.e., classroom management, lesson plans, etc.)</td>
<td>.720</td>
</tr>
<tr>
<td>Item 11-Stress related to grade school students, other teachers, administrators, etc.</td>
<td>.637</td>
</tr>
<tr>
<td>Item 32-Stress related to scheduling parent-teacher conferences with the grade school students' parents</td>
<td>.628</td>
</tr>
<tr>
<td>Item 13-Stress related to student's supervisor or employer</td>
<td>.609</td>
</tr>
<tr>
<td>Item 16-Stress related to student's job security</td>
<td>.559</td>
</tr>
</tbody>
</table>
Table 8

Factor Item Content and Loadings for each component where students’ stress is related to home, school, and/or work life

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item Content</th>
<th>Component Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>Item 26-Stress related to house work</td>
<td>0.768</td>
</tr>
<tr>
<td></td>
<td>Item 27-Stress related to taking care of paperwork</td>
<td>0.759</td>
</tr>
<tr>
<td></td>
<td>(i.e., paying bills, filling out forms)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Item 9-Stress related to family-related obligations</td>
<td>0.648</td>
</tr>
<tr>
<td></td>
<td>(i.e., take care errands)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Item 1-Stress related to student’s children (i.e., prepare for school)</td>
<td>0.800</td>
</tr>
<tr>
<td></td>
<td>Item 5-Stress related to time spent with family</td>
<td>0.749</td>
</tr>
<tr>
<td></td>
<td>Item 4-Stress related to student’s spouse</td>
<td>0.583</td>
</tr>
<tr>
<td>School</td>
<td>Item 31-Stress related to criticism from fellow graduate students, peers, and</td>
<td>0.864</td>
</tr>
<tr>
<td></td>
<td>family members concerning progress in graduate school</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Item 30-Stress related to criticism from advisors/professors (i.e., classwork,</td>
<td>0.810</td>
</tr>
<tr>
<td></td>
<td>type of degree seeking, etc.)</td>
<td></td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Regression analysis. After factor analysis, regression analysis was conducted to determine whether age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, teacher status, and considering dropping out of the program predicted stress levels related to home, school, and/or work life.

To obtain power of .80 in multiple regression, the sample size for the study was 122, with an estimated effect size of .35, and an alpha level set at .10. According to Hair, Anderson, Tatham, and Black (1998), in order to obtain a power of .80 in multiple regression, a sample size of 100 is sufficient with an estimated effect size of .35, and an alpha level set at .10. Assumptions for multiple regression include, normality, homoscedasticity, linearity, and multicollinearity were met for predictors of home, work, and school stress.

Predictors of home stress. After factor analysis, multiple regression analysis was used to predict home stress. In the analysis, gender, age, ethnic background, relationship status, number of children student has, number of children living with student, and student status were the predictor variables, and home stress was the dependent variable. Ethnic background ([beta] = -.175) was a significant predictor of home stress. Number of children living with student ([beta] = .410) was also a significant predictor of home stress. See Table 9 for summary of regression analysis for home stress.
Table 9

Summary of Regression Analysis for Variables Predicting Home Stress
(N = 122)

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
<th>SE B</th>
<th>( \beta )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.422</td>
<td>.432</td>
<td>.087</td>
</tr>
<tr>
<td>Age</td>
<td>-.225</td>
<td>.196</td>
<td>-.130</td>
</tr>
<tr>
<td>Ethnic background</td>
<td>-.278</td>
<td>.146</td>
<td>-.175*</td>
</tr>
<tr>
<td>Relationship status</td>
<td>.138</td>
<td>.187</td>
<td>.074</td>
</tr>
<tr>
<td>Number of children student has</td>
<td>-.228</td>
<td>.257</td>
<td>-.152</td>
</tr>
<tr>
<td>Student status</td>
<td>.223</td>
<td>.337</td>
<td>.061</td>
</tr>
<tr>
<td>Number of children living with student</td>
<td>.776</td>
<td>.274</td>
<td>.410*</td>
</tr>
</tbody>
</table>

Note. \( R^2 = .144. *p<.10 \)

Predictors of work stress. Multiple regression analysis was used to predict work stress. In the analysis, gender, age, ethnic background, relationship status, number of children student has, student status, currently a school teacher, work for financial support, flexibility of work schedule, and spouse or partner work for financial support were the predictor variables, and work stress was the dependent variable. Ethnic background ([\( \beta \) = -.175] was a significant predictor of work stress. Number of children student has ([\( \beta \) = -.206] was a significant predictor of work stress. Student status ([\( \beta \) = .183] was a significant predictor of work stress. Flexibility of work schedule ([\( \beta \) = -.166] was a significant predictor of work stress. Currently a school teacher ([\( \beta \) = -.140] was not a significant predictor of work stress. See Table 10 for summary.
of regression analysis for work stress.

**Table 10**

*Summary of Regression Analysis for Variables Predicting Work Stress (N = 122)*

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.417</td>
<td>.418</td>
<td>.087</td>
</tr>
<tr>
<td>Age</td>
<td>.168</td>
<td>.184</td>
<td>.099</td>
</tr>
<tr>
<td>Ethnic background</td>
<td>-.273</td>
<td>.140</td>
<td>-.175*</td>
</tr>
<tr>
<td>Relationship status</td>
<td>.069</td>
<td>.182</td>
<td>.037</td>
</tr>
<tr>
<td>Number of children student has</td>
<td>-.305</td>
<td>.162</td>
<td>-.206*</td>
</tr>
<tr>
<td>Student status</td>
<td>.660</td>
<td>.343</td>
<td>.183*</td>
</tr>
<tr>
<td>Currently a school teacher</td>
<td>-.514</td>
<td>.369</td>
<td>-.140</td>
</tr>
<tr>
<td>Work for financial support</td>
<td>-.700</td>
<td>.445</td>
<td>-.143</td>
</tr>
<tr>
<td>Flexibility of work schedule</td>
<td>-.237</td>
<td>.140</td>
<td>-.166*</td>
</tr>
<tr>
<td>Spouse or partner work for financial support</td>
<td>-.157</td>
<td>.235</td>
<td>-.061</td>
</tr>
</tbody>
</table>

**Note.** $R^2 = .216$. *p< .10

*Predictors of school stress.* Multiple regression analysis was used to predict school stress. In the analysis, gender, age, ethnic background, relationship status, number of children student has, currently a student in education program, and student status were the predictor variables, and school stress was the dependent variable. Ethnic background was a significant
predictor of school stress. See Table 11 for summary of regression analysis for school stress.

Table 11

Summary of Regression Analysis for Variables Predicting School Stress (N = 122)

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.625</td>
<td>.396</td>
<td>.144</td>
</tr>
<tr>
<td>Age</td>
<td>-.149</td>
<td>.173</td>
<td>-.096</td>
</tr>
<tr>
<td>Ethnic background</td>
<td>-.289</td>
<td>.132</td>
<td>-.204*</td>
</tr>
<tr>
<td>Relationship status</td>
<td>.057</td>
<td>.170</td>
<td>.034</td>
</tr>
<tr>
<td>Number of children</td>
<td>-.089</td>
<td>.151</td>
<td>-.066</td>
</tr>
<tr>
<td>Student has student</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>status</td>
<td>-.299</td>
<td>.309</td>
<td>-.092</td>
</tr>
<tr>
<td>Currently a student in an education program</td>
<td>-1.065</td>
<td>1.196</td>
<td>-.081</td>
</tr>
</tbody>
</table>

Note. $R^2 = .105$. *p<.10

Content analysis. In order to examine the responses to the open-ended questions about stress-related factors that students experience while in graduate school and coping strategies and/or resources they use to manage their stress, content analysis was conducted. Responses were computed using frequencies and percentages.

The first question asked respondents whether they used coping strategies to manage their stress during graduate school. (Yes 112 (91%), No 10 (9%)). Chi-Square test was conducted to analyze the frequency of students who used coping strategies to deal with stress. Coping strategies used to deal with stress was statistically significant, $\chi^2 (1, N =$
122) = 85.279, p = .000. Coping strategies used to deal with stress support the alternative hypothesis.

The second question asked respondents what coping strategies they used to deal with stress related to being in graduate school. (Exercise 78 (63%)), (family/friends 94 (77%)), (humor 75 (61%)), (positive self-talk 60 (49%)), (religion/spirituality 62 (50%)), (self-confidence 51 (41%)), (vent emotions 70 (57%)), and (other(s), please list 46 (37%)). A Chi-Square test was conducted to analyze the frequency of coping strategies students used to deal with stress related to being in graduate school. Table 12 displays Chi-square values of coping strategies students used to deal with stress related to being in graduate school.
Table 12

*Chi-Square values for coping strategies of students used to deal with stress related to being in graduate school*

\[ (N=122) \]

<table>
<thead>
<tr>
<th>Coping strategies</th>
<th>( \chi^2 )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise</td>
<td>9.475</td>
<td>0.002*</td>
</tr>
<tr>
<td>Family/friends</td>
<td>35.705</td>
<td>0.000*</td>
</tr>
<tr>
<td>Humor</td>
<td>6.426</td>
<td>0.011*</td>
</tr>
<tr>
<td>Positive self-talk</td>
<td>0.033</td>
<td>0.856</td>
</tr>
<tr>
<td>Religion/spirituality</td>
<td>0.033</td>
<td>0.856</td>
</tr>
<tr>
<td>Self-confidence</td>
<td>3.279</td>
<td>0.070*</td>
</tr>
<tr>
<td>Vent emotions</td>
<td>2.656</td>
<td>0.103</td>
</tr>
<tr>
<td>Other(s)</td>
<td>7.377</td>
<td>0.007*</td>
</tr>
</tbody>
</table>

Note. *\( p < .10 \).

Coping strategies associated with exercise, family/friends, humor, self-confidence, vent emotions, and other(s), support the alternative hypothesis. Positive self-talk, religion/spirituality, vent emotions do not.

The third question asked respondents what coping supports or resources they used to deal with stress related to being in graduate school. (Advisor 24 (19%)), (Fellow students 79 (64%)), (Mentor(s) 13 (10%)), (Professor(s) 37 (30%)), (Supervisor(s) 12 (9.8%)), and (Other(s) 24 (19%)). Chi-Square test was conducted to analyze the frequency of coping supports or resources students used to deal with stress related to being in graduate school. Table 13 displays Chi-square values of coping supports or resources students used to deal with stress related to being in graduate school.
graduate school.

Table 13

*Chi-Square values for coping supports or resources of students used to deal with stress related to being in graduate school*

(N=122)

<table>
<thead>
<tr>
<th>Coping supports or resources</th>
<th>$\chi^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advisor</td>
<td>44.885</td>
<td>0.000*</td>
</tr>
<tr>
<td>Fellow students</td>
<td>10.623</td>
<td>0.001*</td>
</tr>
<tr>
<td>Mentor(s)</td>
<td>75.541</td>
<td>0.000*</td>
</tr>
<tr>
<td>Professor(s)</td>
<td>18.885</td>
<td>0.000*</td>
</tr>
<tr>
<td>Supervisor(s)</td>
<td>78.721</td>
<td>0.000*</td>
</tr>
<tr>
<td>Other(s)</td>
<td>44.885</td>
<td>0.000*</td>
</tr>
</tbody>
</table>

Note. *p < .10.

Coping support or resources associated with an advisor, fellow students, mentor(s), professor(s), supervisor(s), and other(s), support the alternative hypothesis.

Figure 6 displays student responses related to other resources that helped them cope with stress during graduate school. The fourth question asked respondents what can faculty members or their programs do to support students' efforts to deal with stress related to being in graduate school. (More guidance throughout program 19 (15%)), (be more supportive 24 (19%)), (understand they have other classes to take 17 (13%)), (just being there makes a difference 3 (2%)), (not much 11 (9%)), (they are doing a fine job 2 (1%)), (charge less tuition 6 (4%)), (offer more classes during a certain time of the day 4 (3%)), (help students get a job for supplemental
income during graduate school 2 (1%), and (offer other programs 1 (0.8%)). Chi-Square test was conducted to analyze the frequency of what faculty members or their programs can do to support students' efforts to deal with stress related to being in graduate school. Faculty members or their programs can do to support student’s efforts to deal with stress related to being in graduate school was statistically significant, $X^2(10, N = 122) = 103.951$, $p = .000$. Faculty members or programs associated with supporting student’s efforts to deal with stress related to being in graduate school support the alternative hypothesis.

*Figure 6.* Faculty members or your program do to support student's efforts to deal with stress related to being in graduate school.

![Bar chart showing frequency of different support actions.]

*Figure 7* displays general comments that students had about stress, their graduate school.
experience, and the questionnaire. General comments students had about stress were the following: (Have not experienced a lot of stress 9 (7%)), (stress due to non-support from family/friends 2 (1%)), and (had a nervous breakdown and stopped classes for a year 1 (0.8%)). General comments students had about their graduate school experience were the following: (Do the best you can 20 (16%)), (having supportive teachers 10 (8%)), (just want to finish school 7 (5%)), (tuition cost 5 (4%)), (sometimes work load for school is too much 4 (3%)), (class availability 3 (2%)), (discuss progress in graduate school more 3 (2%)), (stress level may go up once more classes are taken 1 (0.8%)), and (make class part of student’s job 1 (0.8%)). General comments students had about the questionnaire were the following: (Stress relievers 1 (0.8%)), and (transcribe difference between stress and resources 1 (0.8%)). Chi-Square test was conducted to analyze the frequency of comments that students had about stress, their graduate school experience, and the questionnaire. Comments that students had about stress, their graduate school experience, and the questionnaire was statistically significant, \(X^2(14, N = 122) = 322.344, p = .000\). Comments that students had about stress, their graduate school experience, and the questionnaire support the alternative hypothesis.
Figure 7. Share comments you have about stress, your graduate student experience, and/or this questionnaire.
CHAPTER 5

Discussion

The primary focus of this study was to identify factors related to stress experienced by education graduate students and the coping resources and strategies that they use to manage their stress.

Results from factor analysis revealed that components related to students' work stress displayed eight factor loadings with the highest factor loading at .767, and the lowest factor loading at .559. However, this finding is not consistent with Kirby et al. (2004) that components related to students' work stress displayed seven factor loadings with the highest factor loading at .854, and the lowest factor loading at .757, mainly because some students' schedules at work are not as demanding as others.

Components related to students' home stress displayed six factor loadings with the highest factor loading at .800, and the lowest factor loading at .583. This finding is consistent with Kirby et al. (2004) that components related to students' home stress displayed five factor loadings with the highest factor loading at .819, and the lowest factor loading at .707, mainly because of the family demands that students encounter during graduate school.

Components related to students' school stress displayed two factor loadings with the highest factor loading at .864, and the lowest factor loading at .810. This finding is consistent with Kirby et al. (2004) that components related to students' school stress displayed four factor loadings with the highest factor loading at .864, and the lowest factor loading at .766, mainly because of the school demands that students encounter during graduate school.

Results from regression analysis revealed that ethnic background was a significant predictor of home, work, and school stress. This finding is consistent with Barnes et al. (2005),
Paukert et al. (2006) and Poyrazli et al. (2004) that ethnicity has an effect on the amount of stress students experience during graduate study, mainly because of lack of social support from individuals of different cultures.

The number of children living with student was a significant predictor of home stress. This finding is consistent with Home (1997) that the number of children living with the student has an effect on the amount of stress students experience during graduate study, solely because of high role demands and lower incomes students’ exhibit.

The number of children student has, student status, and flexibility of work schedule are significant predictors of work stress. These findings are similar to Hammer et al. (1998) and Kirby et al. (2004) that parental status, working for financial support, and student status have an effect on the amount of stress students experienced during graduate study, mainly because of work-family-school conflict students’ experience.

“Currently a school teacher” was not a significant predictor of work stress. This finding is consistent with Home (1997) and Kirby et al. (2004) that occupation has no effect on the amount of stress students experience during graduate study. This is mainly because of support from family and friends, as well as participating in distance education classes. These findings indicate that the level of stress that students who are school teachers experience is not considerably different from the amount of stress experienced by the non-teachers.

The relationship between stress and ethnicity, parental status, working for financial support, and student status support the alternative hypothesis. The relationship between stress and age, gender, relationship status, degree seeking, teacher status, and considering dropping out of the program do not support the alternative hypothesis.

Content analysis revealed that 77% of the students used family/friends as a strategy to
cope with stress in graduate school. This finding is consistent with Home (1997) and Kirby et al. (2004) that family/friends are an important coping strategy for students during graduate study. Sixty-four percent of the students used fellow students as a support or resource to cope with stress in graduate school. This finding is consistent with Mallinckrodt and Leong (1992) that fellow students from a graduate program are an important coping support or resource for students during graduate study.

Recommendations for Faculty of Education Graduate Programs

The following recommendations are suggested by the results of this research:

1. Faculty of education graduate programs should implement comprehensive stress management programs and/or workshops during student’s first year of graduate school and continuing until graduation. These programs and/or workshops should emphasize study skills, time management, healthy lifestyles, culture sensitivity, and effective coping styles.

2. Faculty of education programs need to explore strategies to improve the student-faculty relationship. Faculty need to develop trusting, supportive relationships with students to enhance the student’s academic progress, self-esteem and feelings of competence.

3. Faculty of education programs need to recognize the needs of the non-traditional student and to explore strategies to facilitate the transition to higher education.

4. Peer support groups should be established in education graduate programs.

5. Efforts should be made to identify at-risk students as early as possible. These students should be referred to student support services for tutoring, counseling, and/or financial aid.
Implications for Future Research of Education Programs

The following are implications for future research:

1. This research should be replicated on a regional and national basis. The population should be larger and more diverse to improve the generalizability of the findings.

2. The perceived stress levels and coping styles of students in undergraduate programs should be examined.

3. Further research should be conducted on faculty behaviors and teaching styles that students identify as increasing their perceptions of stress.
Dear Student:

My name is Andree' Sampson and I am currently an EdD student at Wayne State University, majoring in Evaluation and Research. I am conducting a survey of education graduate students, under the direction of Dr. Shlomo Sawilowsky, to examine the stress that education graduate students experience, while attending school. With your permission, I would like to know if you are willing to participate in this study.

If you take part in the study, you will be asked to complete a questionnaire that has questions about stressors and coping strategies they are currently employing. As a participant, you will be required to complete a questionnaire, which also includes demographic information. The goal of this research is to identify aspects of education programs that are likely to cause stress. This research may help individual students, such as yourself, to better recognize the signs of stress, alerting you to pay attention to any warning signs.

There are no known risks for participation in this study. The study has been approved by the Human Investigation Committee at Wayne State University. There will be no cost to you for participating in this research study. You will be identified in the research records by a code name or number. There will be no list that links your identity with this code. Taking part in this study is voluntary.

If you have any questions now or in the future, you may contact Andree' Sampson at (313) 341-7380 (H), (313) 570-7987 (Cell) or email my advisor, Dr. Shlomo Sawilowsky at shlomo@edstat.coe.wayne.edu.

By completing the questionnaire you are agreeing to participate in this study.
APPENDIX B

Questionnaire

ID#: _____

Directions: Please read and answer the following questions carefully. Check and/or write in one response to each question.

Section 1: Basic Demographic Information

1. What is your gender? □ Male □ Female
2. What is your age? ____ years
3. What is your ethnic background?
   □ African-American □ Asian/Pacific Islander
   □ Caucasian □ Hispanic
   □ Native American □ Other
4. What is your relationship status?
   □ Single □ Married □ Live with a partner
   □ Divorced □ Separated □ Widowed
5. How many children do you have? ____
6. How many children are living with you? ____
7. Are you currently a school teacher? □ Yes □ No
8. If yes, how many years have you been a teacher? ____ years
9. Are you currently a student in an education program? Yes □ No □
10. Are you a: □ full time student or □ part time student?
11. What graduate degree are you seeking? □ Master’s □ Doctorate □ Ed. Specialist
12. If you dropped out of an education program, but decided to go back, when did you do so?
13. Do you work for financial support? □ Yes □ No
14. If yes, how many hours per week do you work? ____
15. How flexible is your work schedule? Please ☑ one number.
   Inflexible----------------Somewhat flexible----------------Very flexible
   □ 1 □ 2 □ 3 □ 4 □ 5
Directions: Please read and answer the following questions carefully. Check and/or write in one response to each question.

**Section 1: Basic Demographic Information-Continued**

16. If you have a spouse or partner, does he or she work for financial support? □ Yes □ No
17. If yes, how many hours per week does he or she work? __________
18. If you have a spouse or partner, is he or she a student? □ Yes □ No
19. If yes, is he or she a: □ full time student or □ part time student?

**Section 2: Enrollment Information**

1. Have you ever considered dropping out of the program? □ Yes □ No
2. If yes, why? Please ✓ all that apply.
   - □ Too much schoolwork
   - □ School work too difficult
   - □ Unable to balance job with schoolwork
   - □ Unable to balance family with schoolwork
   - □ Other (please explain) ________________________________

3. If you considered dropping out of the program but stayed, why did you stay?
   ____________________________________________________
   ____________________________________________________
   ____________________________________________________
   ____________________________________________________
Directions: Please read and answer the following questions carefully. **Check and/or write in a response to each question.**

Section 3: Stress Questions

1. How would you rate your current stress level? **Please ✓ one number.**

   Rarely stressed------------Sometimes stressed-----------Often stressed
   □ 1  □ 2  □ 3  □ 4  □ 5

2. How would you rate your stress level during graduate school? **Please ✓ one number.**

   Rarely stressed------------Sometimes stressed-----------Often stressed
   □ 1  □ 2  □ 3  □ 4  □ 5

3. Discuss the sources of stress (if any), related to your graduate school experience. Organize them according to the following categories:

   Home: ___________________________________________________
   ___________________________________________________
   ___________________________________________________
   ___________________________________________________

   Work: ___________________________________________________
   ___________________________________________________
   ___________________________________________________
   ___________________________________________________

   School: _________________________________________________
   ___________________________________________________
   ___________________________________________________
   ___________________________________________________
Directions: Please respond to each of the items by using the scale below to describe your degree of agreement with each item. Please mark your response to each question by writing a number on the line next to that question.

### Section 3: Stress Indicators

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Related</td>
<td>Somewhat Related</td>
<td>Moderately Related</td>
<td>Highly Related</td>
<td></td>
</tr>
</tbody>
</table>

How much of your current level of stress while in graduate school is related to the following items below?

1. Your child(ren) (e.g., preparation for school, etc.)
2. Your parents or parents-in-law
3. Other relative(s)
4. Your spouse
5. Time spent with family
6. Health or well-being of a family member
7. Sex
8. Intimacy
9. Family-related obligations (e.g., take care errands, etc.)
10. Your friend(s)
11. Grade school students, other teachers, administrators, etc.
12. Classroom preparation (e.g., classroom management, lesson plans, lesson taught, class assignments, exams, grades, etc.)
13. Your supervisor or employer
14. The nature of your work
15. Your work load
16. Your job security
Directions: Please respond to each of the items by using the scale below to describe your degree of agreement with each item. Please mark your response to each question by writing a number on the line next to that question.

**Section 3: Stress Indicators-Continued**

<table>
<thead>
<tr>
<th>1 Not Related</th>
<th>2 Somewhat Related</th>
<th>3 Related</th>
<th>4 Moderately Related</th>
<th>5 Highly Related</th>
</tr>
</thead>
</table>

How much of your current level of stress while in graduate school is related to the following items below?

- 17. Meeting deadlines or goals on the job
- 18. Enough money for necessities (e.g., food, clothing, housing, health-care, taxes, insurance, etc.)
- 19. Enough money for graduate school
- 20. Enough money for emergencies
- 21. Enough money for extras (e.g., entertainment, recreation, vacations, etc.)
- 22. Financial care for someone who doesn’t live with you
- 23. Your health
- 24. Your neighborhood (e.g., neighbors, setting)
- 25. Your physical abilities
- 26. Housework
- 27. Taking care of paperwork (e.g., paying bills, filling out forms)
- 28. Amount of free time
- 29. Social commitments
- 30. Criticism from advisors/professors (e.g., classwork, type of degree seeking, preparation for examinations, etc.)
- 31. Criticism from fellow graduate students, peers, and family members concerning progress in graduate school
Section 3: Stress Indicators-Continued

32. Scheduling parent-teacher conferences with the grade school students’ parents
Directions: Please read and answer the following questions carefully. Please indicate on the line to the right of each item “how” each mechanism(s) is helpful.

**Section 4: Coping**

1. Do you use any coping strategies to deal with stress? □ Yes □ No

2. If yes, what coping strategies do you use to deal with stress related to being in graduate school?
   - □ exercise _______________________________________________________
   - □ family/friends __________________________________________________
   - □ humor ___________________________________________________________
   - □ positive self-talk _______________________________________________
   - □ religion/spirituality _____________________________________________
   - □ self-confidence _________________________________________________
   - □ vent emotions ___________________________________________________
   - □ other(s), please list: ____________________________________________

   ________________________________________________________________
   ________________________________________________________________
Directions: Please read and answer the following questions carefully. Please indicate on the line to the right of each item "how" each mechanism(s) is helpful.

Section 4: Coping-Continued

3. What are the supports or resources within your education program that help you deal with stress related to being in graduate school?

☐ advisor

☐ fellow students

☐ mentor(s)

☐ professor(s)

☐ supervisor(s)

☐ other(s), please list:

4. What else could faculty members or your program do to support your efforts to deal with stress related to being in graduate school?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Section 5: Comments

1. Please share any comments you have about stress and your graduate student experience, and/or this questionnaire:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Section 6: Results

1. Would you like to receive the results of this survey? ☐ Yes ☐ No
NOTICE OF EXPEDITED AMENDMENT APPROVAL

To: Andree' Sampson
   Adult Health/Administration

From: Ellen Barton, Ph.D._____________________________________________
      Chairperson, Behavioral Institutional Review Board (B3)

Date: April 17, 2007

RE: HIC #: 096206B3E

Protocol Title: Identifying School Related Stress Components and Examining Their Relationship to Coping Strategies used by Education Graduate Students

Risk Level/Category: No greater than minimal risk.

The above-referenced protocol amendment, as itemized below, was reviewed by the Chairperson/designee of the Wayne State University Institutional Review Board (B3) and is APPROVED effective immediately.

- Protocol - (1) Administrative/editorial - Change in title to "Identifying School Related Stress Components and Examining Their Relationship to Coping Strategies used by Education Graduate Students." (2) Enrollment Criteria - Education graduation students will be surveyed for this study instead of science education graduate students.

- Information Sheet (revised 4/11/07) - Modified to reflect updated title.
BIBLIOGRAPHY


267-283.


Texas at Austin.


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ABSTRACT

A SURVEY OF MIDWESTERN EDUCATION GRADUATE STUDENTS’ COPING STRATEGIES AND SUBSEQUENT DEVELOPMENT OF A THREE FACTOR STRESS SCALE

by

ANDREE’ A. SAMPSON

December 2007

Advisor: Dr. Shlomo Sawilowsky
Major: Evaluation and Research
Degree: Doctor of Education

The purpose of this research was to identify 1) factors related to stress experienced by education graduate students and 2) coping resources and strategies that they use to handle their stress. This study was conducted on one hundred and twenty-two education graduate students, who were surveyed through voluntary participation, to see if there was a relationship between their stress level and age, gender, relationship status, parental status, ethnicity, working for financial support, student status (full-time or part-time), degree seeking, teacher status, and considering dropping out of the program.

The study also tried to identify coping skills, strategies, and resources that these students could use to cope with the stressors they encountered in graduate school.

Regression analysis revealed that ethnic background was a significant predictor of home, work, and school stress. Number of children living with student was a significant predictor of home stress. Number of children student has, student status, and flexibility of work schedule were significant predictor of work stress. Currently a school teacher was not a significant
predictor of work stress. The relationship between stress and ethnicity, parental status, working for financial support, and student status support the alternative hypothesis. The relationship between stress and age, gender, relationship status, degree seeking, teacher status, and considering dropping out of the program do not support the alternative hypothesis.

Content analysis revealed that 77% students used family/friends as a strategy to cope with stress in graduate school. Sixty-four percent of the students used fellow students as a support or resource to cope with stress in graduate school.

Recommendations for this study includes faculty of education graduate programs should implement comprehensive stress management programs and/or workshops during student’s first year of graduate school and continuing until graduation, and faculty need to explore strategies to improve the student-faculty relationship. Implications for this study include the replication of this research on a regional and national basis, and the examination of perceived stress levels and coping styles of students in undergraduate programs.
AUTOBIOGRAPHICAL STATEMENT

ANDREE' SAMPSON
19541 Cranbrook #104
Detroit, MI 48221
andreesampson@sbcglobal.net
313-577-1605

Education
Prairie View A&M University, Prairie View, TX, B.S. in Chemistry, 1992

Summary of Qualifications
• Twelve years experience providing educational support services for the public sector.
• Five years experience supervising student assistants, volunteers, and clerical personnel.
• Coordinated database management for research projects.
• Excellent communication and organizational skills.

Accomplishments
• Developed training sessions for student assistants, volunteers, and clerical personnel for educational support services of research projects
• Presented research findings at meetings and conferences
• Developed grant proposals for research projects
• Developed questionnaires and surveys for research projects
• Developed software for computer generated educational material

Skills
Language: reading/speaking proficiency in German and Spanish
Computer: SPSS, Microsoft Office, WordPerfect 5.1 & 6.0, Harvard Graphics, Oracle, Banner, LISREL, AMOS 5.0, Fortran 77/90/95, HTML, Lotus 1,2,3

Honors
Member of the BETA KAPPA CHI Honor Society
Potential member of the Zeta Phi Beta Sorority