

Graduate School Stress, Dyadic Coping, and Well-being in Asymmetrical Graduate
Student Couples

by

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A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Counseling

Approved April 2017 by the
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May 2017

ABSTRACT

The demands and expectations of graduate school can be stressful for any student. Graduate students in a romantic relationship, in particular, contend with both individual and dyadic effects of graduate school stress, as stress has been found to be negatively associated with both individual and relational well-being. Asymmetrical graduate student couples, wherein one partner is in graduate school and the other is not, may be particularly vulnerable to relationship strain because of differences in their experience of graduate school. However, non-student partners can help the graduate student cope with stress through dyadic coping. This study sought to examine whether: a) there were associations between graduate school stress on individual (life satisfaction) and relational (relationship satisfaction) well-being, and b) whether these associations were moderated by positive and negative dyadic coping behaviors. Cross-sectional data from 62 asymmetrical graduate student couples were gathered using an online survey. Data were analyzed using Actor-Partner Interdependence Models (Kenny, Kashy, & Cook 2006). Separate models were conducted to examine overall associations between graduate stress and well-being, and additional analyses were conducted to examine potential moderation effects of perceptions of partner dyadic coping (actor effects) and partner self-reported dyadic coping (partner effects) on the overall associations between stress and life- and relationship satisfaction mentioned above. Results for the overall model suggested that graduate stress is associated with both individual- and relational well-being. Surprisingly, and against prior literature, positive dyadic coping did not buffer the negative association between graduate stress and well-being, and negative dyadic coping did not exacerbate the association. Implications of the findings for future research and for mental health counselors are discussed.

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CHAPTER 1

INTRODUCTION

There are a number of stressors that graduate students will encounter during their academic careers (Brannock, Litten, & Smith, 2000; El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012; McQuillan & Foote, 2008; Myers et al., 2012; Scheinkman, 1988). These stressors may include class and program deadlines, financial concerns, and lack of time for leisure activities, among others (El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012; Myers et al., 2012). Research on graduate students suggests that the stress generated from graduate school is associated with a range of negative effects, including increased anxiety and depression, reduced concentration, and decreased self-esteem (Shaikh & Deschamps, 2006). High levels of graduate school stress also appear to be negatively associated with more global assessments of individual well-being, such as life satisfaction (Kaya, Tansey, Melekoglu & Cakiroglu, 2015; Weinstein & Laverghetta, 2009).

Graduate students in romantic relationships must contend not only with the individual effects of stress, but with dyadic effects (i.e., stress spillover) as well. Current research suggests that couple interactions are interdependent (e.g., Bodenmann, 1995). In other words, romantic partners tend to have an impact on one another. As such, the stress experienced by one partner (here the graduate student partner) may spillover into his or her romantic relationship and affect his or her romantic partner as well (Bodenmann, 1995; Neff & Karney, 2004). The systemic-transactional model extends this idea to suggest that one partner's stress experiences and subsequent behavior in response to the stress impact his or her romantic partner's experience and vice versa. That is, partner

experiences are mutually coordinated as they respond to each other and help each other cope with stress (Bodenmann, 1995; Falconier, Randall, & Bodenmann, 2016). Couples experiencing high levels of stress, particularly long-term (chronic) stress, tend to experience decreased relationship quality over time (Bodenmann, 2000; Bodenmann, Lederman, & Bradbury, 2007). Research focused specifically on graduate student romantic relationships has also suggested that graduate students and their romantic partners experience relationship stress and decreased relationship satisfaction during their time in graduate school (Brannock, Litten, & Smith, 2000; Fuenfhausen & Cashwell, 2013; Sheinkman, 1988). One goal of the present study was to examine the association between graduate student stress and individual well-being (i.e., life satisfaction) and between graduate student stress and relational well-being (i.e., relationship satisfaction) in asymmetrical graduate student couples.

According to Scheinkman (1988), asymmetrical graduate student couples—couples wherein one partner is attending graduate school and the other is not—are particularly vulnerable to relationship strain due to differences in schedules, goals, and expectations between romantic partners. However, a few studies have suggested that there are ways in which graduate stress can be mitigated, including through receiving support from the non-student partner (Fuenfhausen & Cashwell, 2013; Norton, Thomas, Morgan, Tilley, & Dickens, 1998; Sori, Wetchler, Ray, & Neidner, 1996). One way of assessing support strategies provided by partners during times of stress is to examine partners' dyadic coping behaviors. Dyadic coping is defined as “the efforts of one or both partners to face and manage stress events as well as strains affecting one of the

partners or both together” (Bodenmann, 1995, p. 44). Partners can engage in either positive or negative dyadic coping behaviors, and it has been suggested that positive dyadic coping may help buffer partners against the spillover effects of stress (Bodenmann, 2008). Given this, a second goal of the present study was to examine the potential moderating effects of partner reported dyadic coping on measures of well-being using dyadic data collected from graduate student couples.

Understanding Stress

Stress has been conceptualized a number of ways in the literature. Selye (1950, 1974) proposed that a stressor, defined as an event that causes stress, creates a nonspecific physiological stress response in the body. When a stress response occurs, hormones like cortisol and adrenaline are released by the brain and physiological changes take place, including a temporary increase in blood pressure and heart rate. This physiological response leads an individual to evaluate the significance of the stressor as either a challenge or a threat. For the most part, research has focused on the perception of a stressor being a threat, because of the negative physical and psychological effects that tend to accompany the negative stress response (O’Sullivan, 2011; Shaikh & Deschamps, 2006). This form of stress has been called negative stress and distress (Loving & Wright, 2012).

Somewhat differently from Selye’s view which suggested that the physiological response occurs before any sort of cognitive appraisal, Lazarus and Folkman (1984) proposed that a potential stressor did not immediately create a physiological response. Instead, they suggested that the impact of a potential stressor is dependent upon how an

individual evaluates the stressor. According to Lazarus and Folkman's model (1984), stress occurs when an individual decides a particular situation or event exceeds the person's ability to handle the situation. This could be due to the perception that the situation or event is potentially harmful; endangers the individual's health/well-being physically, psychologically, and/or spiritually; or exceeds the individual's available resources (Lazarus & Folkman, 1984). However, regardless of whether the appraisal of a stressor comes before or after the stress response, research has suggested that individuals who experience consistently elevated levels of stress over time exhibit a variety of negative health effects. Stress may be a cause of anxiety in certain individuals (O'Sullivan, 2011; Shaikh & Deschamps, 2006), may decrease one's performance on a task, and often leads to physical and mental health problems over time (Loving & Wright, 2012; Shaikh & Deschamps, 2006).

Graduate school stress. Graduate students face a variety of stressors which emerge from the demands of their studies (Brannock, Litten, & Smith, 2000; El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012; Monk, 2004; Myers, et al., 2012; O'Sullivan, 2011; Scheinkman, 1988). Commonly reported graduate school related stressors include, but are not limited to: the pressure to meet homework and exam deadlines (El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012; Monk, 2004; Myers, et al., 2012; O'Sullivan, 2011), adjustment to changes in schedule and management of time (Brannock, Litten, & Smith, 2000; Monk, 2004; Nelson, Dell'Oliver, Koch, & Buckler, 2001; Scheinkman, 1988), sleep deprivation (Myers, et al., 2012), lack of time for leisure and/or social activities (Brannock, Litten, & Smith, 2000; El-Ghoroury, Galper,

Sawaqdeh, & Bufka, 2012; Myers, et al., 2012; Scheinkman, 1988), and financial concerns (Brannock, Litten, & Smith, 2000; El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012; Myers, et al., 2012; Scheinkman, 1988). Depending on the course of study, other stressors may include clinical training and internships (Myers, et al., 2012), dissertation work (Nelson, Dell'Oliver, Koch, & Buckler, 2001), conflict or isolation in interpersonal/professional relationships (Brannock, Litten, & Smith, 2000; El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012; Fabert, Cabay, Rivers, Smith, & Bernstein, 2011; Myers, et al., 2012), adjustment to relocation (Brannock, Litten, & Smith, 2000; Scheinkman, 1988), and readjustment to being in school for students who are returning to school after a period of time away (Scheinkman, 1988). Some studies include academic responsibilities and pressures, personal finances or debt, anxiety, and poor work/school-life balance as the most common stressors for graduate students (El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012) while others include daily hassles, coursework, the internship/training process, and time management as the most common stressors (e.g., Myers, et al., 2012; Nelson, Dell'Oliver, Koch, & Buckler, 2001; Scheinkman, 1988).

Stress spillover process. Stressors not only emerge from graduate school itself, but also from the interplay of the demands of graduate school with the demands of students' daily lives (McQuillan & Foote, 2008; Brannock, Litten, & Smith, 2000; Scheinkman, 1988). Stress spillover has been defined as a phenomenon in which an individual's experience of stressors outside of a relationship is associated with parallel experiences within their romantic relationship (Amistad & Semmer, 2010; Bolger, DeLongis, Kessler, & Wethington, 1989a; Neff & Karney, 2004). More specifically,

stress may decrease one's ability to interact with his or her partner in an adaptive manner (Bodenmann, 1995; Bolger, DeLongis, Kessler, & Wethington, 1989b; Buck & Neff, 2012). Research specifically on graduate student couples has indicated that graduate study can introduce stressors that affect not only the individual student, but their romantic relationships as well (Fuenfhausen & Cashwell, 2013). In the graduate school context, an example of the spillover phenomenon would be: Partner A (a male graduate student, for example) is stressed about an upcoming exam, comes home to his female partner (Partner B), and is so focused on thinking about his exam that he does not pay attention to his partner. Graduate students often wrestle with more than one stressor at a given time, which can have deleterious effects on their individual and relational well-being.

Stress and Individual Well-Being

Stress, particularly long-term, chronic stress has been associated with a variety of negative outcomes for individuals (e.g., Glaser & Kiecolt-Glaser, 2005). While the literature points out that there are optimum levels of stress where performance is enhanced (see LeFevre, et al., 2003), once stress passes the point of optimum performance, it begins to have negative effects on individuals. High levels of negative stress have been negatively associated with assessments of individual well-being, including life satisfaction (e.g., Kaya, Tansey, Melekoglu & Cakiroglu, 2015; Myers, et al., 2012; Scheinkman, 1988; Weinstein & Laverghetta, 2009), as well as physical (e.g., Denollet, et al., 2010; Glaser & Kiecolt-Glaser, 2005) and mental (e.g., van Praag, 2004; Zevolensky, Goodie, Ruggiero, Black, Larkin, et al., 2002) health. Research focused specifically on college and graduate student stress has reinforced other stress literature.

Graduate students experiencing high levels of stress have exhibited reduced concentration, decreased self-esteem and life satisfaction, and increased anxiety and depression, among other things (Shaikh & Deshamps, 2006; Weinstein & Laverghetta, 2009). As the focus of this study was on global assessments of well-being, life satisfaction was selected as the measure of individual well-being.

Stress and Relational Well-Being

The experience of stress has been inversely associated with relational well-being, such that as stress in a relationship increases, relationship satisfaction decreases (Falconier, Nussbeck, Bodenmann, Schneider, & Bradbury, 2015; Randall & Bodenmann, 2017). Stress has been shown to be negatively associated with the well-being of the relationship by impacting partners' communication (Randall & Bodenmann, 2009), their ability to spend time together (Brannock, Litten, & Smith, 2000), and their engagement, or disengagement, with each other (Scheinkman, 1988). Graduate students in particular have reported decreased relationship satisfaction while in graduate school (Brannock, Litten, & Smith, 2000; Scheinkman, 1988) due in part to lack of time and energy to spend with family (Legako & Sorenson, 2000) and financial strain (Gold, 2006). As relationship satisfaction has been widely accepted as a measure of relationship quality and stability (Hendrick, Dicke, & Hendrick, 1998) and of relationship well-being (e.g., Gable, Reis, Impett, & Asher, 2004), it was chosen as the measure of relational well-being for this study.

Relationship stress seems to be heightened for asymmetrical graduate student couples, wherein one student is in school while the other is not (Brannock, Litten, &

Smith, 2000; Scheinkman, 1988). Scheinkman (1988) reported that asymmetrical couples tend to be “more volatile, conflictual, and dissatisfied with the marriage” (p. 353) than couples where both partners are in school. Couples with one partner in graduate school have also been reported to experience communication issues and financial strain due, at least in part, to the demands of graduate work (Brannock, Litten, & Smith, 2000; McLaughlin, 1985).

Coping with Graduate School Stress: The Role of Dyadic Coping

Romantic partners can help one another cope with stress (Bodenmann, 2005). As such, the deleterious effects of graduate school stress may be mitigated by the positive support of an individual’s romantic partner. Based on the systemic transactional model of dyadic coping (Bodenmann, 1995), dyadic coping refers to the different ways in which partners provide support during times of stress. Often, the type of support provided depends upon the stress signals of one partner, the perception of those signals by the other partner, and the reaction of the second partner to the first partner’s stress signals (Bodenmann, 2008).

Dyadic coping can be categorized as being positive or negative (Bodenmann, 2008). Positive dyadic coping can further be categorized into three subsets: emotion-focused supportive coping, problem-focused supportive coping, and delegated coping (Bodenmann, 2005). *Emotion-focused supportive coping* is often shown through providing empathetic responses or by helping reframe the situation (Bodenmann, 2005). *Problem-focused supportive coping* includes providing advice and practical solutions to the stressor, or may entail the supporting partner actively helping the stressed partner

with some of the tasks contributing to the stress. *Delegated coping* is a form of coping where the supporting partner takes over some of the stressed partner's additional responsibilities, often at the direct request of the stressed partner. On the other hand, negative coping involves reactions that are actively hostile, ambivalent, and/or superficial (Bodenmann, 2005). A partner utilizing negative coping might engage in a requested task while also behaving in a manner that can be distancing, mocking, sarcastic, unwilling, resentful, and insincere, among others.

To help illustrate these forms of coping, consider the following example. Partner A, a female graduate student, has her comprehensive exam in two days and has a term paper due the same week. Her partner (Partner B) works as a developer at a large computer company. When Partner B comes home, he could 1.) respond to Partner A's stress with an *emotion-focused supportive response*, such as "Wow, you're really under a lot of pressure right now. I'm here for you." 2.) respond to Partner A's stress with a *problem-focused supportive response*, such as, "Focus on the most important tasks first. It might help to break each assignment into smaller parts." 3.) respond to Partner A with *delegated coping*, such as, "Sure! Don't worry about fixing dinner or cleaning up the house until you have this finished. I'll take over for you." Or 4.) respond to Partner A in a hostile, dismissive, or other *negative manner*, such as, "Serves you right. I told you two weeks ago that you needed to be working towards these deadlines." When the partner providing the support responds positively, it not only alleviates the stress of Partner A, but it also alleviates the secondary stress that Partner B might be experiencing. Both of these effects help improve the overall well-being of the relationship itself (Bodenmann,

2005). On the other hand, negative coping behaviors harm the relationship and decrease relationship satisfaction (Papp & Witt, 2010).

Associations Between Dyadic Coping and Well-Being

The existing literature on dyadic coping has suggested that partners' use of positive dyadic coping behaviors is beneficial for their romantic relationship (e.g., Bodenmann, Pihet, & Kayser, 2006; Papp & Witt, 2010). Positive dyadic coping has been associated with enhanced relationship quality and satisfaction in couples (Bodenmann, Meuwly, & Kayser, 2011; Papp & Witt, 2010; Rusu, et al., 2015) and, to a lesser degree, to individual well-being and physical health (Bodenmann, Meuwly, & Kayser, 2011). On the other hand, negative dyadic coping has been negatively associated with relationship satisfaction (Papp & Witt, 2010). Some research has also reported gender differences in the influence of dyadic coping on partners, such that for males relationship satisfaction was associated with only their own dyadic coping, while for females relationship satisfaction was associated with both their own and their partner's dyadic coping (Bodenmann, Pihet, & Kayser, 2006; Herzberg, 2012; Papp & Witt, 2010).

At current, research on dyadic coping within the context of graduate school has been limited to one study by Fuenfhausen and Cashwell (2013). Specifically, the authors examined how attachment style (anxious or avoidant), dyadic coping, and perceived stress influenced relationship satisfaction in a sample of 191 married counseling masters and doctoral students. The study suggested that even though the presence of maladaptive attachment styles was associated with decreased relationship satisfaction, the overall use of dyadic coping, as measured by participants' total scores on the Dyadic Coping

Inventory (Bodenmann, 2008), was a significant positive mediator within the relationship between attachment style and relationship satisfaction (Fuenfhausen & Cashwell, 2013). Expanding upon these results, the present study utilized a dyadic sample to examine the possible moderating effects of both partner reported positive and negative dyadic coping on the association between graduate school stress and measures of well-being.

The Present Study

The purpose of the present study was to examine the associations between graduate school stress and life- and relationship satisfaction, as well potential moderation effects of dyadic coping on these associations. Individuals are differently affected by stress (Kupriyanov & Zhdanov, 2014; Loving & Wright, 2012; O’Sullivan, 2011; Rodriguez, Kozusznik, & Peiró, 2013); as such, it was hypothesized that higher levels of stress would be negatively associated with lower levels of well-being, as measured by life and relationship satisfaction. Additionally, as romantic partners can be a tremendous source of support when coping with stress (Bodenmann, 2008; Falconier, Randall, & Bodenmann, 2016), the study examined whether the graduate student’s perception of his or her partner’s dyadic coping (actor effect) moderated the association between stress and well-being, specifically life satisfaction and relationship satisfaction. It also examined whether the non-student partner’s self-reported dyadic coping (partner effect) moderated the association between stress and well-being, specifically life satisfaction and relationship satisfaction.

In sum, the following research questions were examined and hypotheses were tested:

RQ1: How is graduate school stress related to individual life satisfaction and relationship satisfaction for the graduate student partner?

H1a: Based on the literature that suggests stress is negatively associated with life satisfaction (e.g., Kaya, Tansey, Melekoglu, & Cakiroglu, 2015, Weinstein & Laverghetta, 2009), it was hypothesized that graduate school stress, as reported by the graduate student partner would be negatively associated with reports of life satisfaction.

H1b: Based on the literature that suggests stress is negatively associated with relationship satisfaction (e.g., Brannock, Litten, & Smith, 2000; Randall & Bodenmann, 2009), it was hypothesized that self-reported graduate school stress, for the graduate student partner, would be negatively associated with reports of relationship satisfaction.

RQ2: Does positive dyadic coping (perceptions of partner coping and self-reported coping) moderate the association between graduate school stress and life- and relationship satisfaction?

H2a and b: Based on literature that suggests that positive dyadic coping can have positive associations on well-being (e.g., Bodenmann, Meuwly, & Kayser, 2011), it was hypothesized that perceptions of partner dyadic coping (actor effects) would moderate the association between the graduate student's self-reported graduate school stress and the graduate student's life- and relationship satisfaction, such that the graduate student's perceptions of his or her partner's positive dyadic coping would buffer the negative association between graduate

student stress and satisfaction, as measured by life- and relationship satisfaction. Additionally, it was hypothesized that partner self-report of positive dyadic coping from the non-graduate student partner (partner effects) would also moderate the association between reported graduate school stress and satisfaction for the graduate student, such that partner self-reported positive dyadic coping would buffer the negative association between graduate student stress and satisfaction (life and relationship).

RQ3: Does negative dyadic coping (self-reported and perceptions of partner coping) moderate the association between graduate school stress and life- and relationship satisfaction?

H3a and b: Based on literature that suggests that negative dyadic coping can have negative associations with well-being (e.g., Bodenmann, Meuwly, & Kayser, 2011; Fuenfhausen & Cashwell, 2013, Rusu, et al., 2015), it was hypothesized that the graduate student's perceptions of partner's negative dyadic coping (actor effects) would moderate the association between the graduate student's self-reported graduate school stress and the graduate student's life- and relationship satisfaction, such that the graduate student's perceptions of his or her partner's negative dyadic coping would amplify the negative association between graduate student stress and satisfaction (life and relationship). Additionally, it was hypothesized that the non-graduate student partner's self-report of negative dyadic (partner effects) would moderate the association between reported graduate school stress and life- and relationship satisfaction for the graduate

student partner, such that partner self-reported negative dyadic coping would amplify the negative association between graduate student stress and satisfaction (life and relationship).

For each moderating hypothesis the graduate student's outcomes on the dependent variables were of primary focus for this study. In this study, actor effects were measured by the graduate student's perceptions of his or her (non-graduate student) partner's dyadic coping on graduate student outcomes, and partner effects were measured by the non-graduate student partner's self-reported coping on graduate student outcomes. Prior literature has shown that there tend to be more robust effects for perceptions of dyadic coping on outcomes (Falconier, Jackson, Hilpert, & Bodenmann, 2015). However, this study examined both actor and partner effects in order to see if this effect of perceptions of coping on outcomes holds true for this study.

CHAPTER 2

METHOD

Recruitment and Participants

Participants were recruited through a number of methods, including word of mouth, flyers, emails to department listservs, and advertisements through Arizona State University's student portal, MyASU. Couples who met the following inclusion criteria were invited to participate: (1) one partner was a graduate student, and the other partner was not a student, (2) partners had been in their current romantic relationship for at least 6 months, (3) partners identified as being in a heterosexual relationship, (4) both partners were over the age of 18, and (5) both partners were willing to participate in the study.

Eighty-six heterosexual asymmetrical graduate student couples ($n = 172$ individuals) indicated interest in participating in the study. Of those 86 couples, 64 couples ($n = 128$ individuals) completed the study. Two of the 64 couples were excluded from analysis because at least one partner did not respond to one or more of the measures. The final sample consisted of 62 couples ($n = 124$ individuals).

Of the graduate students in the sample ($n = 62$ individuals), 74.2% ($n = 46$) were female and 25.8% ($n = 16$) were male (see Table 1 for a summary of demographic information). Graduate students who participated reported a range of how long they were in school, from being in their first semester to being in their 5th year, with a mean of being in school 1.56 years (i.e. in their second year), $SD = 1.18$. Several disciplines were represented in this sample. About 32% ($n = 20$) of the graduate students reported belonging to social science disciplines, including counseling, psychology, social work,

and sociology. Twenty-nine percent of the graduate students ($n = 18$) reported belonging to disciplines related to applied sciences, including engineering, applied math, health sciences, and technology. About 11% of the sample ($n = 7$) reported studying humanities-related topics, including English, writing, and linguistics. Law and political science graduate students comprised approximately 7% of the sample ($n = 4$). The remaining disciplines (arts, business, natural sciences, communication, teaching, and hospitality/tourism) were represented by one to three participants in each discipline (less than 5% of the sample per discipline).

Of the entire sample that was comprised of both graduate students and their romantic partners ($n = 124$), the age of participants ranged between 21.50 years and 59.67 years, with a mean age of 28.79 years ($SD = 6.19$). Relationship length ranged from 0.63 year (less than a year) to 18.17 years ($M = 5.33$ years, $SD = 3.72$). Most participants were either married (35.5%) or in a committed relationship and living together (34.7%). About one-fourth of the sample reported being in a committed relationship and not living together (23.4%) and the remaining participants were engaged (6.4%). Participants who were married reported being married for an average of 2.73 years ($SD = 3.52$). Twenty-nine participants (15 graduate students and 14 non-student partners) reported having children. Participants with children had between one and four children, with most participants having one or two children ($M = 1.72$, $SD = 0.84$). The sample was primarily White/European American (67.7%). About half of the sample (47.6%) reported having an income of \$50,000 or less. Participants' religion was also assessed. The largest percentage of participants were Christian (39.4%), followed by Agnostic (23.4%), Atheist

(16.9%), and “other” (10.5 %), with Hinduism, Islam, Buddhism, and Judaism all being reported at less than 5% frequency in this sample.

Table 1

Demographic Characteristics of Sample

Variable	<i>n</i>	%
Relationship Status		
Committed relationship, not living together	29	23.4
Committed relationship, living together	43	34.7
Engaged, not living together	4	3.2
Engaged, living together	4	3.2
Married	44	35.5
Ethnicity		
White/European American	85	68.5
Asian/Asian American	12	9.7
Hispanic/Latino(a)	11	8.9
Other	11	8.9
Black/African American	4	3.2
Native American or Pacific Islander	1	0.8
Income		
\$0-\$25,000	32	25.8
\$25,000 - \$50,000	27	21.8
\$50,000 - \$75,000	26	21.0
\$75,000 - \$100,000	22	17.7
\$100,000 - \$150,000	14	11.3
> \$150,000	3	2.4
Graduate Student Gender		
Female	46	74.2
Male	16	25.8

Procedures

Data collection took place online in two parts: (1) a screening survey and (2) a research questionnaire. Interested participants contacted the researcher via email at gradstressandcopingstudy@gmail.com. Interested participants were provided with an

overview of the study and were asked to confirm their interest in the study. Once participants confirmed they were interested in participating, couples were assigned a unique ID (ex: couple 1: 001, graduate student partner: 001, non-student partner: 501) and provided a link to the screening questionnaire (Appendix A), which contained a copy of the informed consent (Appendix G). The screening questionnaire took approximately 5 minutes to complete and verified participant eligibility to participate in the study. The questionnaire was set up such that participants could not access the screening survey without first reading the informed consent and indicating that they were willing to participate. If eligible, participants were then sent a link to the online research questionnaire, which consisted of the measures below. The research questionnaire took approximately 30 minutes to complete. As incentive to participate in the study, all individuals who completed the study were given a \$5 Amazon.com e-gift card (\$10 per couple).

Measures

Screening questionnaire. Participants were screened to ensure they met the criteria for the study. As noted above, inclusion criteria were as follows: (1) couples had been in a heterosexual relationship (2) for at least the past 6 months, (3) both members of the couple were willing to participate, (4) participants were 18 years of age or older, and (5) one partner was in graduate school while the other partner was not in school (see Appendix A).

Research questionnaire. The research questionnaire (see Appendix B) contained standard demographic questions and the following scales.

Stressors. In order to measure graduate stress, the 22-item Graduate Stressor Scale (El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012) was used. The measure includes common major and minor life events that graduate students may encounter in graduate school or in their daily lives, such as research pressures, teaching responsibilities, anxiety, and relationship issues.

Two versions of this assessment were given: one for the graduate student, and one for the non-student partner. Graduate student participants were asked to rate how much their functioning had been disrupted by various potential stressors including academic/coursework responsibilities or pressures and finances or debt. Non-student partners were asked “how much has **your partner’s** functioning been disrupted by each of the following?” Non-student partners were then asked to respond to the same list of stressors. Responses for each item were scored on a 5-point scale (0=*none*, 1=*minimally*, 2=*moderately*, 3=*significantly*, 4=*severely*). Scores for each item were summed to create a total stress score. Higher scores indicated that participants perceived their functioning to have been more affected by the listed stressors, whereas low scores indicated that these stressors had not greatly disrupted participants’ perceived functioning. In the original study where this scale was first developed (El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012), responses were examined from 387 Psychology graduate students from 39 different states, distributed across the major regions of the United States, and also included students from Puerto Rico and Washington, D.C.. Reliability from the original study was acceptable, with a Cronbach’s alpha of .77. For the present study, the measure

showed good reliability for the graduate student ($\alpha=.82$) and the non-graduate student partner ($\alpha=.86$) (See Table 2).

Life satisfaction. The Satisfaction with Life Scale was used to assess individual life satisfaction (SWLS; Diener, Emmons, Larson, & Griffin, 1985). The SWLS is a 5-item scale designed to assess how satisfied an individual is with different aspects of their life. Sample items include “In most ways my life is close to my ideal” and “So far I have gotten the important things I want in life.” The SWLS is scored on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Scores for each item are summed to create a total life satisfaction score. Low scores (5-9) on the scale are indicative of dissatisfaction with life while high scores (31-35) are indicative of high life satisfaction. Scores between these ranges are indicative of middling degrees of life satisfaction. The SWLS scale was developed on a sample of 176 undergraduates at a midwestern university. The reliability of the items in the original study was good, with a Cronbach’s alpha of .87. For the present study, the reliability of the items was good, with a Cronbach’s alpha of .81 (See Table 2).

Relationship satisfaction. To assess relationship satisfaction, the Relationship Assessment Scale was used (RAS; Hendrick, 1988). The RAS is a commonly used 7-item measure that is designed to assess how satisfied an individual is with his or her romantic relationship. Sample items include “How well does your partner meet your needs?” and “How many problems are in your relationship?” Items were responded to on a 5-point scale, which ranged from 1 (*low satisfaction*) to 5 (*high satisfaction*). Items 4 and 7 are reverse scored. All items are then summed together to create a total score. Higher scores

on the scale indicate higher satisfaction with the relationship. In the validation study, the RAS exhibited high internal consistency, with a Cronbach's alpha of .86 and a high test-retest reliability of $\alpha=.84$ (Hendrick, 1988). The RAS was developed over two studies, first using a sample of 125 students from a large southwestern university, and second using a sample of 57 couples from a large southwestern university. The RAS showed good reliability in the current sample as well, $\alpha=.80$.

Dyadic coping. The English version of the Dyadic Coping Inventory (DCI) was used to assess partners' reported dyadic coping behaviors (Randall, Hilpert, Jimenez, Walsh, & Bodenmann, 2016). The DCI is a 37-item inventory that assesses the use of both positive dyadic coping and negative dyadic coping, as well as partner's stress communication and coping behaviors when both partners are experiencing joint stressors (common dyadic coping). Positive and negative dyadic coping are further separated into perceived partner coping ("what my partner does when I am stressed") and self-reported coping ("what I do when my partner is stressed"). For the purpose of this study, both the perceived partner and self-reported positive and negative dyadic coping subscales were utilized.

Perceived partner positive dyadic coping (actor effect). Sample items for the perceived partner positive coping subscale include "My partner shows empathy and understanding" and "My partner expresses that he/she is on my side." Items were responded to on a 5-point scale ranging from 1 (*not at all/very rarely*) to 5 (*very often*). Perceived partner positive dyadic coping was calculated by combining the scores on the self-reported emotion-focused, problem-focused, and delegated dyadic coping scales

(Papp & Witt, 2010) and calculating the mean scores. Potential scores for this subscale range between 1 and 5. Higher scores indicate higher levels of perceived partner positive dyadic coping behaviors. While the English validation sample, based on 938 individuals, did not combine the emotion focused, problem focused, and delegated coping subscales into an overall positive coping subscale (Randall et al., 2016), a study by Papp and Witt did so and found reliabilities of $\alpha = .89$ for men and $\alpha = .80$ for women. The present study sample reported a mean of 3.66 ($SD = .71$, range 1.67 to 5.00), which suggests that couples reported moderate-to high levels of positive coping. Reliability for the perceived partner positive dyadic coping subscale was good, ($\alpha = .78$).

Self-rated partner positive dyadic coping (partner effect). Sample items for the self-reported positive coping subscale include “I show empathy and understanding” and “I express that I am on my partner’s side.” Self-reported positive dyadic coping was calculated by combining the scores on the self-reported emotion-focused, problem-focused, and delegated dyadic coping scales (Papp & Witt, 2010) and calculating the mean scores. Potential scores for this subscale ranges between 1 and 5. Higher scores indicate higher levels of self-reported positive dyadic coping behaviors. The study sample reported a mean of 3.85 ($SD = .52$, range 2.50 to 5.00), which suggests that participants tended to self-report moderate to high levels of positive coping. The self-rated positive coping scale fell a little below the recommended cutoff of .70 (Nunnally, 1978), ($\alpha = .68$).

Perceived partner negative dyadic coping (actor effect). Sample items from the perceived partner negative coping subscale include “My partner does not take my stress seriously” and “My partner blames me for not coping well enough with stress.” Items

were responded to on a 5-point scale ranging from 1 (*not at all/very rarely*) to 5 (*very often*). Partner perceived negative dyadic coping was calculated by taking the mean scores of the items related to partner perceived negative coping. Potential scores for these subscales range between 1 and 5. Higher scores indicate higher levels of perceived partner dyadic coping behaviors. The validation study for the English version (Randall, et al., 2016) found reliabilities for this scale to be acceptable, $\alpha = .80$ for men and $\alpha = .77$ for women. The study sample reported a mean of 1.95 ($SD=.82$, range 1.00 to 4.50), which suggests that, overall individuals perceived low levels of negative coping from their partners. For this sample, reliability for the perceived partner negative coping subscale was good, ($\alpha=.80$).

Self-rated partner negative dyadic coping (partner effect). Sample items of self-rated negative coping include “I do not take my partner’s stress seriously” and “I blame my partner for not coping well enough with stress.” Items were responded to on a 5-point scale ranging from 1 (*not at all/very rarely*) to 5 (*very often*). Self-reported negative dyadic coping was calculated by taking the mean scores of the items related to self-reported negative coping. Potential scores for this subscale range between 1 and 5. Higher scores indicate higher levels of self-reported negative dyadic coping behaviors. The validation study for the English version (Randall, et al., 2016) found reliabilities for the self-reported negative coping scale to be acceptable, $\alpha = .81$ for men and $\alpha = .73$ for women. The present study sample reported a mean of 1.81 ($SD=.69$, range 1.00 to 4.25), which suggests that individuals reported fairly low levels of negative coping overall.

Reliability for the self-rated negative coping subscale was in the acceptable range (Nunnally, 1978), ($\alpha=.70$).

Table 2

Mean, Standard Deviation, Range, and Cronbach's Alpha of Measures

Measure	Mean	SD	Range	α
GSS	20.53	8.54	5-48	.82
GSS (Partner rating)	18.81	10.18	2-57	.86
SWLS	24.84	5.59	5-34	.81
RAS	30.02	3.64	18-35	.80
Perceived Partner Positive DC	3.66	.71	1.67-5.00	.78
Perceived Partner Negative DC	1.95	.82	1.00-4.50	.80
Self-Rated Positive DC	3.85	.52	2.50-5.00	.68
Self-Rated Negative DC	1.81	.69	1.00-4.25	.70

Note: GSS= Graduate Student Stressors Scale; SWLS=Satisfaction with Life Scale; RAS=Relationship Assessment Scale; DC=dyadic coping

Data Analysis

Prior to testing the hypotheses, participant data for the above scales were assessed for normality. Both skewness and kurtosis scores for the graduate student's self-reported stressors were within the +/- 3.29 conventional range proposed by Tabachnik and Fidell (2007), $z_{skew}=.11$, $z_{kurtosis}=.98$. However, for the partner rated graduate student stressors, the data were positively skewed, $z_{skew}=3.40$. Skewness also fell outside the +/- 3.29 conventional range proposed by Tabachnik and Fidell (2007) for the RAS, $z_{skew}=-4.92$, the self-rated negative coping subscale, $z_{skew}=3.76$, and the perceived partner negative coping subscale, $z_{skew}=4.22$. Skewness for the other scales (SWLS, self-rated positive dyadic coping, and perceived partner dyadic coping) as well as kurtosis for all of the data fell within the conventional range of +/- 3.29 (Tabachnik & Fidell, 2007). Because multi-

level modeling works best when the dependent variable approximates a Gaussian curve, logarithmic transformation was conducted on relationship satisfaction. The independent and moderating variables that did not approximate a normal curve were not transformed.

As dyadic data are interdependent due to partner responses being correlated, actor-partner interdependence models (APIM) were used to analyze the data (see Kenny, Kashy, & Cook, 2006). APIM is an analytic approach for dyadic data which simultaneously estimates the influence of one partner's independent variable responses on both their own dependent variable and on the other partner's dependent variable (Kenny, Kashy, & Cook, 2006). The dyadic data were arranged in a pairwise fashion and partners were nested within dyads. In addition, partners were dummy coded based on their role in the relationship, such that graduate students =1 and non-student partners=0. This allowed our models to examine associations between stress, dyadic coping, and well-being for the graduate student partner.

While APIM can be estimated using several different types of analyses, multilevel modeling (MLM) was selected as the form of analysis for this study because it allows for the examination of effects at the individual and dyadic levels (Kenny, Kashy, & Cook, 2006). For this study, several MLMs were run. First, two MLMs were run to examine associations between graduate stress and individual- and relational- well-being, respectively (main effects). To test the second hypothesis regarding positive dyadic coping as a moderator of stress and well-being, two MLMs were run for each dependent variable (life satisfaction and relationship satisfaction): one for perceptions of partner positive dyadic coping (actor effect) and one for partner's self-reported positive dyadic

coping (partner effect). To test the third hypothesis regarding negative dyadic coping as a moderator of stress and well-being, two MLMs were run for each dependent variable (life satisfaction and relationship satisfaction): one for perceptions of partner negative dyadic coping (actor effect) and one for partner's self-reported negative dyadic coping (partner effect) (see Figure 1).

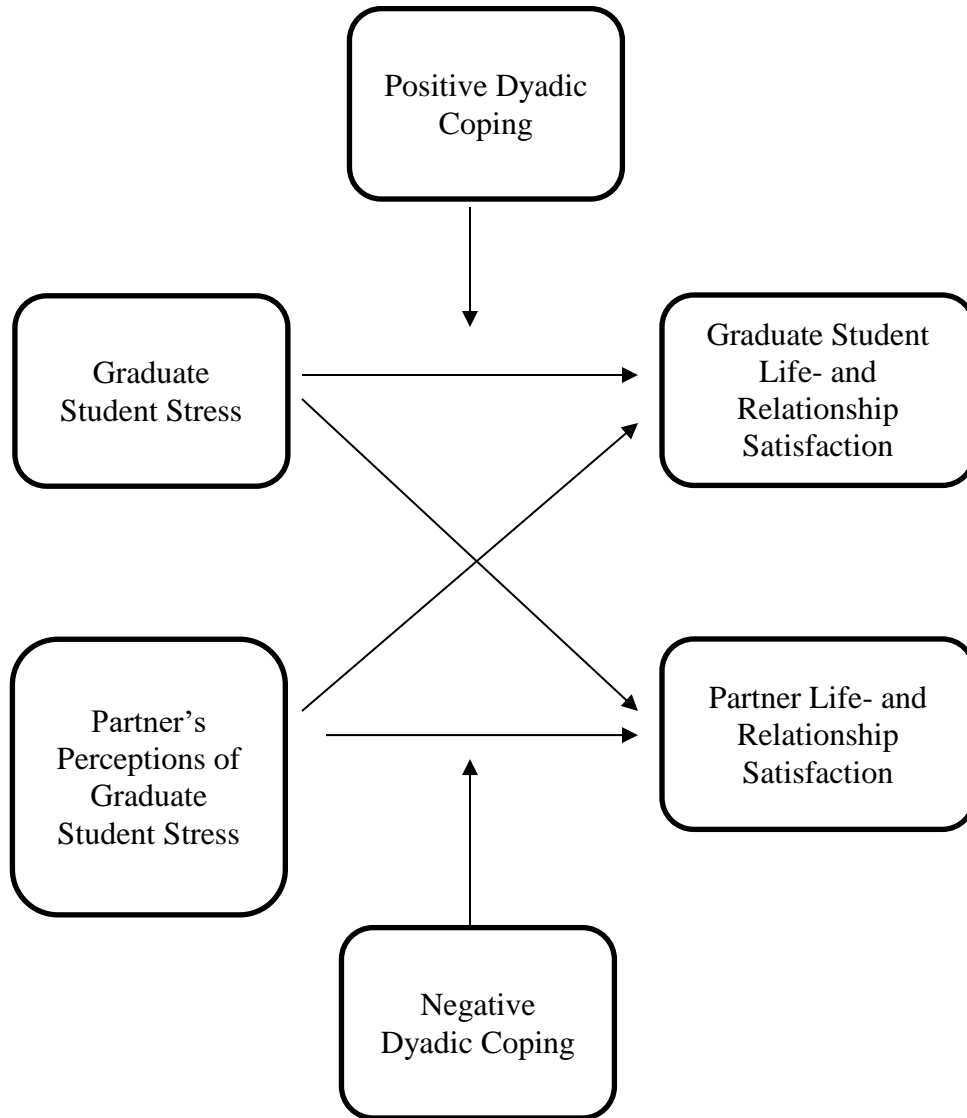
The independent variable (graduate student stress) and moderators (self-reported and perceptions of partner dyadic coping (positive and negative)) were grand mean centered prior to analysis to make results more interpretable. Analyses were conducted in SAS Proc Mixed Version 9.3 (SASInstitute, 2011).

Controls. It is important to control for variables that may be significantly associated with the dependent variable because they can strongly influence the results of analyses. Gender, length of relationship, and age were controlled for in the initial models on life- and relationship satisfaction. Gender was included as a control, as research has shown gender differences in outcomes related to stress (Weinstein & Laverghetta, 2009), such that women endorsed higher levels of stress than men. In addition, gender effects have been found between dyadic coping and relationship satisfaction (e.g.: Falconier, Jackson, Hilpert, & Bodenmann, 2015; Papp & Witt, 2010), such that women's relationship satisfaction is associated with both their own and their partner's coping, while men's relationship satisfaction is associated only with their own dyadic coping. Length of relationship was controlled for, as studies by Totenhagen and colleagues (2015) and Norton and colleagues (1998) both found negative associations between relationship length and relationship satisfaction. Age was controlled for as well, as it has

been associated with differences in life satisfaction (e.g., Berenbaum, Chow, Schlownleber, & Flores, 2013). None of these controls had statistically significant associations with life satisfaction or relationship satisfaction; therefore, for parsimony, the control variables were removed from the subsequent analyses.

Figure 1

APIM moderation model



CHAPTER 3

RESULTS

Frequency of Graduate Student Stressors

Before examining the research hypotheses, the prevalence of various stressors within the sample was assessed (see Table 3). Six stressors were reported by more than half of the graduate student partners as having disrupted their functioning at least moderately; academic/coursework responsibilities or pressures (93.6%), anxiety (79.1%), research responsibilities or pressures (64.5%), poor work/school-life balance (61.3 %), burnout or compassion fatigue (59.8%), and finances or debt (56.4%). An additional four stressors were reported by at least one-fourth of the graduate student sample; professional isolation or lack of social support (35.5%), depression (30.7 %), physical health issues (30.7%), and family issues (25.8%).

The perceived graduate student stress ratings submitted by the non-student partner were also examined (see Table 3). None of the stressors were perceived to have moderately, significantly, or severely affected the graduate student by more than half of the non-student partner sample. There were three stressors that were reported by at least one-fourth of the sample to have moderately, significantly or severely affected the functioning of their romantic partner: academic/coursework responsibilities or pressures (35.5%), anxiety (33.8%), and finances or debt (25.0%). At least one fifth (20%) of the non-student partner sample reported poor work/school-life balance (23.4%), burnout or compassion fatigue (21.0%) and research responsibilities or pressures (20.9%) as having at least moderately affected their graduate student romantic partner.

A paired sample t-test was run on each item to examine mean differences between graduate student and non-student partner scores on each item. The t-tests on graduate student self-reported stressors and the partner's perceived graduate stressors were statistically significant for academic/coursework responsibilities or pressures ($t(61)=3.59$, $p<.01$) and for poor work/school-life balance ($t(61)=2.17$, $p<.05$), such that graduate students reported that they experienced significantly more academic/coursework related stress and more stress related to having a poor work/school-life balance than their partners thought they experienced (see Table 3).

Table 3

Descriptive Statistics for Graduate School Stressors

Stressor	<u>Graduate Student</u>			<u>Non-Student Partner</u>			t
	Percent of Sample	Mean Severity Rating	SD	Percent of Sample	Mean Severity Rating	SD	
Academic/ Coursework responsibilities or pressures	93.6	2.5	.74	35.5	2	1.01	3.59**
Anxiety	79.1	2.23	1.09	33.8	2.11	1.03	0.73
Research responsibilities or pressures	64.5	1.77	1	20.9	1.53	1.21	1.52
Poor work/school- life balance	61.3	1.81	.88	23.4	1.48	1.02	2.17*
Burnout or compassion fatigue	59.8	1.56	1.14	21.0	1.44	1.07	0.78
Finances or debt	56.4	1.81	1.13	25.0	1.71	1.11	0.64
Professional isolation or lack of social support	35.5	1.24	1.08	16.1	1.21	1.18	0.18
Depression	30.7	1.06	1.07	12.9	.95	1.19	0.75

Physical health issues	30.7	1	1.13	7.2	.73	.96	1.88
Family issues	25.8	1.16	.98	12.1	1.05	1.06	0.77
Teaching responsibilities or pressures	20.9	.71	.91	9.6	.76	1.02	-0.44
Death, loss, or grief	14.5	0.39	.88	8.8	.56	1.00	-1.42
Personally traumatic event	12.9	.40	.86	5.6	.39	.93	0.12
Addictive/compulsive behaviors	11.3	.44	.74	5.6	.34	.79	0.7
Marital/relationship problems	10.5	.85	.83	9.6	.89	.91	-0.25
Discrimination	6.5	.32	.59	4.0	.37	.89	-0.42
Alcohol or substance abuse	4.8	.21	.63	4.0	.24	.65	-0.3
Other interpersonal issues	4.8	.69	.64	4.0	.68	.67	0.15
Suicidal ideation	3.2	.21	.63	1.6	.10	.47	1.19
Ethical issues	1.6	.11	.37	1.6	.15	.57	0.13
School complaint or disciplinary action	0	.03	.18	0.8	.06	.31	-0.7
Legal issues	0	.02	.13	0.8	.06	.51	0

Correlations Among Study Variables

Pearson Bivariate Correlations were used to examine correlations among study variables. Graduate students and their non-student partners were analyzed separately in this analysis to account for differences between partners. In addition, graduate students reported on their own stressors, while non-graduate student partners reported on their partner's stress, so correlations between these scores and the other variables could not be examined together.

Graduate student partner. There was a significant negative correlation between graduate school stress and life satisfaction ($r=-.47, p<.01$), which is representative of a medium effect size (Cohen, 1988). There was also a significant positive correlation between graduate stress and perceived partner negative coping ($r=.32, p<.05$), which is representative of a medium effect size (Cohen, 1988). There were also statistically significant correlations between each of the subscales of the DCI in the expected directions, such that the two forms of positive coping were positively associated with each other, the two forms of negative coping were positively associated with each other, and positive and negative coping were inversely associated with each other. Finally, there were statistically significant correlations between each of the DCI subscales and relationship satisfaction in the expected directions (see Table 4).

Non-student partner. There was a significant negative correlation between perceived partner graduate school stress and life satisfaction ($r=-.31, p<.05$). This is representative of a medium effect size (Cohen, 1988). There was also a significant negative correlation between the non-student partner's perceptions of the graduate student's stress and relationship satisfaction ($r=-.34, p<.01$), which represents a medium effect (Cohen, 1988). There was also a statistically significant positive correlation between perceived partner graduate school stress and perceived partner negative coping ($r=.37, p<.01$). This is a medium effect size (Cohen, 1988). For non-student partners, there was also a significant positive correlation between life satisfaction and relationship satisfaction ($r=.49, p<.01$). This is representative of a medium effect size (Cohen, 1988). There were also statistically significant correlations between each of the subscales of the

DCI in the expected directions, such that the two forms of positive coping were positively associated with each other, the two forms of negative coping were positively associated with each other, and positive and negative coping were inversely associated with each other. Finally, there were significant correlations between each of the DCI subscales and relationship satisfaction in the expected directions (see Table 4).

Table 4

Correlations between IV, moderators, and DVs

	1	2	3	4	5	6	7	8
1. GSS	-							
2. GSS Partner rated		-	-.31*	-.34**	-.10	-.24	.37**	.21
3. SWLS	-.47**		-	.49**	0.18	.17	-.12	.09
4. RAS				-	.56**	.43**	-.56**	-.40**
5. Perceived Partner Positive DC			.18					
6. Self- Reported Positive DC	.17		.29*	.57**	-	.47**	-.50**	-.41**
7. Perceived Partner Negative DC	-.01		.10	.33**	.42**	-	-.29*	-.46**
8. Self- Reported Negative DC	.32*		-.24	-.55**	-.66**	-.33**	-	.59**
	.23		-.18	-.54**	-.41**	-.30*	.56**	-

Notes: Correlations for the graduate student partners are below the diagonal line.

Correlations for the non-student partners are above the diagonal line.

GSS=graduate student's self-reported stressors; GSS, partner rated =non-student partner's perception of the graduate student's stress; DC = dyadic coping; SWLS= life satisfaction; RAS=relationship satisfaction.

** $p < .01$ (two-tailed)* $p < .05$ (two-tailed)

RQ1: Associations between Graduate School Stress and Satisfaction

Life Satisfaction. In alignment with Hypothesis 1a, results suggested that there was a statistically significant negative association between graduate school stress and life satisfaction for graduate students, $b = -.14$, $p < .05$. This suggests that for every unit increase in graduate school stress, graduate student life satisfaction decreased by 0.14. Additionally, for non-student partners, there was a significant association between their perceptions of the graduate student's stress and their own life satisfaction, $b = -0.29$, $p < .001$. This suggests that for every unit increase in their perceptions of graduate school stress, non-student partner life satisfaction decreased by 0.29. In other words, non-student partners who perceived their partners were more stressed also reported lower levels of life satisfaction, while non-student partners who perceived lower levels of stress in their graduate student partners reported higher levels of life satisfaction.

Relationship satisfaction. Results for Hypothesis 1b suggested that there was a statistically significant association between graduate school stress and relationship satisfaction for graduate student partners, $b = 0.01$, $p < .01$. This means that as the graduate student reports of stress increased by one unit, relationship satisfaction also increased by .01 unit. These results partially support H1b. There was an association between graduate stress and relationship satisfaction for graduate students; however, interestingly, it was in the opposite direction of what had been hypothesized. Associations between non-student partner perceptions of graduate stress and relationship satisfaction were not statistically significant.

RQ2: Associations Between Graduate Stress and Satisfaction as Moderated by Positive Dyadic Coping

Life satisfaction. The following two models investigated whether positive dyadic coping (DC), both perceived and self-reported, moderated the association between self-reported graduate student stress and life satisfaction.

Perceived partner positive DC (actor effect). Results from this model were not statistically significant, $F(1, 55) = 0.11, p = .91$. This indicates that the graduate student's perceptions of their partner's positive dyadic coping did not moderate the association between graduate school stress and the graduate student's life satisfaction.

Partner self-reported positive DC (partner effect). Results examining the association between graduate stress and life satisfaction as moderated by the non-student partner's self-reported positive dyadic coping were not statistically significant, $F(1, 54) = 2.75, p = .10$. This indicates that the non-student partner's self-reported positive dyadic coping did not moderate the association between graduate school stress and the graduate student's life satisfaction.

In summary, the hypothesis that positive dyadic coping (perceived and partner self-reported) would negatively moderate the association between self-reported graduate stress and life satisfaction was not supported.

Relationship Satisfaction. The following two models examined whether positive dyadic coping (perceived partner coping and partner's self-reported coping), separately, moderated associations between graduate stress and relationship satisfaction.

Perceived partner positive DC (actor effect). Results from this model were not statistically significant, $F(1, 55) = 0.33, p = .57$. This indicates that the graduate student's perceptions of their partner's positive dyadic coping did not moderate the association between graduate school stress and the graduate student's relationship satisfaction.

Partner self-reported positive DC (partner effect). Results examining the association between graduate stress and relationship satisfaction as moderated by the non-student partner's self-reported positive dyadic coping were not statistically significant, $F(1, 55) = 0.28, p = .60$. This indicates that the non-student partner's self-reported negative dyadic coping did not moderate the association between graduate school stress and the graduate student's relationship satisfaction.

In summary, the hypothesis that positive dyadic coping (perceived and partner self-reported) would negatively moderate the association between self-reported graduate stress and relationship satisfaction was not supported.

RQ3: Associations Between Graduate Stress and Satisfaction as Moderated by Negative DC

Life Satisfaction. The following two models examined whether negative dyadic coping (perceived partner coping and partner's self-reported coping), separately, moderated associations between graduate stress and life satisfaction.

Perceived partner negative DC (actor effect). Results from this model were not significant, $F(1, 55) = 1.33, p = .25$. This indicates that the graduate student's perceptions of their partner's negative dyadic coping did not moderate the association between graduate school stress and the graduate student's life satisfaction.

Partner self-reported negative DC (partner effect). Results examining the association between graduate stress and life satisfaction as moderated by the non-student partner's self-reported negative dyadic coping were not significant, $F(1, 56) = 0.28, p = .79$. This indicates that the non-student partner's self-reported negative dyadic coping did not moderate the association between graduate school stress and life satisfaction for the graduate student partner.

In summary, the hypothesis that negative dyadic coping (perceived and partner self-reported) would positively moderate the association between self-reported graduate stress and life satisfaction was not supported.

Relationship Satisfaction. The following two models examined whether negative dyadic coping (perceived partner coping and partner's self-reported coping), separately, moderated associations between graduate stress and relationship satisfaction.

Perceived partner negative DC (actor effect). Results from this model were not statistically significant, $F(1, 54) = 0.58, p = .45$. This indicates that the graduate student's perceptions of his or her partner's negative dyadic coping did not moderate the association between graduate school stress and the graduate student's relationship satisfaction.

Partner self-reported negative DC (partner effect). Results were not significant, $F(1, 54) = 1.16, p = .25$. This indicates that the non-student partner's self-reported negative dyadic coping did not moderate the association between graduate school stress and the graduate student's relationship satisfaction.

In summary, the hypothesis that negative dyadic coping (perceived and partner self-reported) would positively moderate the association between self-reported graduate stress and relationship satisfaction was not supported.

CHAPTER 4

DISCUSSION

Many graduate students experience stress while in school (Brannock, Litten, & Smith, 2000; El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012). Graduate students in a romantic relationship, in particular, must contend with not only individual effects of stress but with dyadic effects of stress as well (e.g. Gold, 2006; Scheinkman, 1988), as stress has been found to be negatively associated with both individual- and relational well-being (e.g., Kaya, Tansey, Melekoglu & Cakiroglu, 2015; Gold, 2006). One way in which couples can help mitigate the effects of stress is by engaging in dyadic coping behaviors (Bodenmann, 2005).

This study examined the associations between graduate school stress and individual- and relational well-being, as defined by life- and relationship satisfaction, as well as potential moderation effects of dyadic coping on those associations. Because interactions between romantic partners are interdependent (Kenny, Kashy, & Cook, 2006), a dyadic approach to data collection and analysis (APIMs) was utilized. This allowed for the examination of both an individual's influence on his or her own outcomes (actor effect) and the romantic partner's influence on the individual's outcomes (partner effect).

Results from these analyses indicated that a graduate student's self-reported stress was associated negatively with life satisfaction and positively with relationship satisfaction (actor effect). For the non-student partner, there was a significant negative association between the non-student partner's perceptions of the graduate student's stress

and the partner's life satisfaction (actor effect), but not between perceptions of stress and relationship satisfaction for the non-student partner. Surprisingly, and contrary to hypotheses, results suggested that neither positive nor negative dyadic coping (both perceived and self-reported coping) moderated the associations between graduate stress and satisfaction for the graduate student. Implications of these results are discussed below.

Graduate Student Stressors

Of the 22 stressors examined with the Graduate Stressor Scale, only six items were endorsed as being moderately, significantly, or severely stressful by more than half of the graduate students in this study. Those stressors were academic/coursework responsibilities or pressures, anxiety, research responsibilities or pressures, poor work/school-life balance, burnout or compassion fatigue, and finances or debt (see Table 3 for percentages). Other than anxiety, which may or may not have been graduate school-related based on how the item was assessed, all of these stressors were related to academic stress. Many of the stressors relating to daily life were endorsed at much lower rates, ranging from 0% for legal issues to about 31% for physical health issues and depression, with other non-academic stressors falling somewhere in between. For the most part, these findings are in line with other studies that have examined graduate student stressors (e.g., El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012).

Graduate Student Stress and Well-Being

Life satisfaction. The results supporting the hypothesis that there was a negative association between graduate stress and life satisfaction were consistent with prior

literature examining stress and life satisfaction in college students (e.g., Weinstein & Laverghetta, 2009). Weinstein and Laverghetta (2009) suggested that that college stress was negatively associated with student life satisfaction within a sample of American college students. The present study is one of the first to use dyadic data to examine negative associations between stress and life satisfaction specifically for graduate students. As such, these results can help inform practice for counselors working with graduate student clients.

Relationship satisfaction. Graduate student stress was positively associated with relationship satisfaction, such that reports of higher levels of graduate stress were associated with higher reported relationship satisfaction for graduate students. This differs from other research on graduate student couples, which suggest that there is a negative association between stress and relationship (or marital) satisfaction in graduate student couples (e.g., Gold, 2006) or that there is no association between the individual's subjective experience of overall stress (rather than stressors) and relationship satisfaction (Fuenfhausen & Cashwell, 2013). Surprisingly, these results also differ when compared to much of the literature that has found a robust effect for the negative association between external stressors and relationship satisfaction in couples (e.g., Neff & Karney, 2004; Randall & Bodenmann, 2017). It may be that there is a mediating variable involved in this association that was not accounted for in this study. Variables such as communication skills (Lederman, Bodenmann, Rudaz, & Bradbury, 2010) and self-efficacy, particularly as it pertains to partners' beliefs about their relationship skills (Roggero, Vacirca, Mauri, & Ciairano, 2012) have been shown to positively mediate

associations between stress and relationship satisfaction. As these variables were not examined in this study, it is unknown as to whether they may have been associated with the present findings.

Dyadic Coping as a Moderator

Much of the dyadic coping literature notes the relevance of dyadic coping in determining relationship satisfaction for couples, such that positive dyadic coping is positively associated with relationship satisfaction and negative coping is negatively associated with relationship satisfaction (e.g., Bodenmann, 2008; Bodenmann, Meuwly, & Kayser, 2011; Falconier, Jackson, Hilpert, & Bodenmann, 2015; Papp & Witt, 2010). In addition, the effect of dyadic coping as a moderator between stress and relationship satisfaction has been examined in prior research (e.g., Bodenmann, Meuwly, Bradbury, Gmelch, & Lederman, 2010; Falconier, Randall, & Bodenmann, 2016), such that positive dyadic coping tends to buffer the association between stress and relationship satisfaction while negative coping tends to magnify the association.

Surprisingly, results from the present study found that neither positive nor negative dyadic coping moderated associations between graduate school stress and individual and relational well-being for the graduate student partner. In the analyses, we examined both actor (the graduate student's perceptions of the non-student partner's coping) and partner (the non-student partner's self-reported coping) effects of positive and negative dyadic coping. The framework from the systemic transactional model (Bodenmann, 1995) suggests that individuals first exhaust individual coping mechanisms before turning to romantic partners and/or other resources for support. One possible

suggestion for these null results is that graduate student partners are choosing to cope individually with their stress or are choosing to seek support from peers or professors (e.g., Dawson, Bernstein, & Bekki, 2015; Zhao, Golde, & McCormick, 2007).

Alternatively, it may be the case that dyadic coping moderates the partner's perceptions of the graduate student's stress, rather than the graduate student's self-reported stress as was hypothesized in this study. For example, if the graduate student is stressed, but the non-student partner does not perceive the graduate student's stress, the non-student partner may not necessarily engage in dyadic coping. Examination of the moderation effects of dyadic coping on associations between the partner's perceptions of graduate stress and life- and relationship satisfaction may be warranted, specifically as they pertain to the current sample.

Limitations and Future Directions

This study is not without limitations. As this study was cross-sectional in nature, there are limitations to the inferences that can be made from the data and limitations to generalizability of the results to other populations. With cross-sectional data, results are limited to correlational inferences, rather than causal conclusions (Leary, 2012). This means that it cannot be inferred that graduate-school related stress decreases life satisfaction or increases relationship satisfaction from this study, but the study offers evidence that graduate school stress is associated with life- and relationship satisfaction for graduate students. The cross-sectional nature of this study may also limit the generalizability of these results with respect to time and location/situation. Because cross-sectional data are taken at a single point in time, the variability of stress across a semester

or across the duration of a graduate student's education cannot be assessed. In addition, participants from this study were primarily recruited from Arizona State University; as such, the results from this study may not be generalizable to graduate students at other similar universities.

Related to the study sample, it is also possible that the students who chose to take part in the study were inherently less stressed and more relationally satisfied, as represented by the relatively low mean levels of stress and high mean levels of life- and relationship satisfaction. Prior literature on married couples has suggested that couples who are more satisfied with their relationships are more likely to participate in research (Yucel & Gassanov, 2010). Therefore, graduate students who would have otherwise reported more extreme stress levels may not have chosen to take part in this research study due to time, resource, or energy limitations.

While gender was controlled for in this study and was not significantly associated with life- or relationship satisfaction in the models, it may be that with a larger sample, or with a more even distribution of male and female graduate students, there might have been some gender effects, particularly since research has found gender differences in associations between stress and: (1) dyadic coping (e.g.: Bodenmann, 1995), (2) life satisfaction (e.g.: Burke & Weir, 1977; Kaya, Tansey, Melekoglu & Cakiroglu, 2015), and (3) relationship satisfaction (e.g.: Falconier, Nussbeck, Bodenmann, Schneider, & Bradbury, 2015; Randall & Bodenmann, 2017) as well as between dyadic coping and relationship satisfaction (e.g.: Falconier, Jackson, Hilpert, & Bodenmann, 2015; Papp & Witt, 2010).

In addition, there may be other confounding variables that were not examined in this study but could have influenced the results of this study. These potentially confounding variables include the graduate student's year in school, program type (e.g., sciences vs liberal arts), and relationship status (dating vs married). Research has suggested that graduate students tend to report lower marital and relationship satisfaction in their first year of school (Brannock, Litten, & Smith, 2000), so it is possible that this influenced graduate students' relationship satisfaction. Other research has suggested that graduate students report receiving more support from their partners in their first year of school than in the second year (e.g., Norton, Thomas, Morgan, Tilley, & Dickens, 1998). In addition, there are some differences in perceived levels of stress between students in different degree programs. For instance, female graduate students in science, math, engineering, and technology fields experience more stress and isolation than do women in other fields (Fabert, Cabay, Rivers, Smith, & Bernstein, 2011). Finally, differences have been reported in the number and types of problems reported by married, cohabiting, and dating (not cohabiting) couples (Hsueh, Morrison, & Doss, 2009), which may also lead to differences in life- and relationship satisfaction between these couples. Future analyses may want to investigate these variables as well.

Limitations may also exist with respect to the measures used to assess the study's constructs. For example, the graduate stressor scale (El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012) included assessments of life stressors, such as family issues, in addition to academic stressors. By including all the types of stressors in creating the composite variable of stress, it may be that variance from reports of non-academic stressors that

impair graduate student functioning was unintentionally incorporated into the measure of graduate stress. It is possible that the influence of graduate school-specific stressors was diluted by the influence of stressors related to daily life, thereby making overall graduate stress scores seem weaker than they actually were. Only a handful of stressors were endorsed as being moderately, significantly, or severely stressful by more than half of the graduate students in the study: academic/coursework responsibilities or pressures, anxiety, research responsibilities or pressures, poor work/school life balance, burnout or compassion fatigue, and finances or debt. It may be that focusing specifically on these more highly endorsed stressors, or focusing solely on the variables related directly to aspects of graduate school training, would allow for a more meaningful analysis of the types of stress graduate students are experiencing, and the types of dyadic coping that are being utilized, if at all. While overall graduate student stress scores seemed low in this sample, it may be that scores were deflated due to the inclusion of both major and minor stressors related to daily life. If this is the case and graduate students were significantly more stressed than the current graduate stressor scores indicated, it may help explain why dyadic coping was not a significant moderator of the association between graduate stress and life- and relationship satisfaction. Research has suggested that in times of high stress, dyadic coping is not a significant moderator of the associations between stress and relationship satisfaction (Bodenmann, Meuwly, Bradbury, Gmelch, & Lederman, 2010). Therefore, if further analyses of responses to only the graduate-school related stressors do a better job of tapping into graduate school stress and students were more highly stressed than was observed with the full stressor measure, it may be that graduate students were

too overwhelmed to perceive or partake in dyadic coping with their romantic partners, and thus dyadic coping would not effectively moderate associations between stress and life- and relationship satisfaction.

There are also some limitations attached with the Dyadic Coping Inventory (DCI; Randall, Hilpert, Jimenez, Walsh, & Bodenmann, 2016). The DCI measures how partners typically cope with stress. As such, it does not effectively tap into how partners cope with specific stressors. For instance, partners may cope differently with new or novel stressors, than with stressors that persist over time. A study by Norton and colleagues (1998) reported that romantic partners were more likely to offer support to the graduate students in their first year of school than in their second year of school. While this study did not focus directly on dyadic coping, it may be that when stressors are new and novel, partners are more willing to partake in supportive behaviors than when a stressor becomes chronic.

Future analyses should examine associations between the non-student partner's perceptions of the graduate student's stress and both partners' life- and relationship satisfaction, in addition to examining the moderation effects of dyadic coping partner's perceptions of graduate stress and life- and relationship. Due to the interactional nature of dyadic coping (Bodenmann, 1995), it is possible that partner perceptions of stress are more closely associated with the partner's dyadic coping behaviors than the graduate student's self-reported stressors.

Future studies may also wish to include eustress, or positive stress, as an additional factor in their research. As there are optimal levels of stress which enhance

performance (LeFevre, et al., 2003), it is likely that not all of the stress experienced by graduate students is negative. In fact, stress may be a motivating factor in graduate student success. Studies on undergraduate students have suggested that students with high levels of stress perform better than those who are less stressed (Monk, 2004; O'Sullivan, 2010). In addition, O'Sullivan (2010) found that eustress was significantly correlated with life satisfaction. As such, it may be that graduate students who endorse higher levels of eustress, as opposed to distress, may also report higher levels of life- and relationship satisfaction.

Implications for Mental Health Counselors

Despite the nonsignificant results for the moderating effects of dyadic coping (positive or negative), the results of this study may still carry important implications for mental health counselors working with graduate student populations. A study reporting on a national survey comparing mental health issues among undergraduate and graduate students found that graduate students tended to endorse higher levels of stress than did undergraduate students (Wyatt & Owalt, 2013). In addition, a report on mental health seeking behaviors within the entire University of California system reported that almost a quarter of the graduate students were unaware that the university offered mental health services and only 27% had utilized services at the university (Student Mental Health Committee, 2006).

Mental health counselors may also need to become aware of the potential spillover effects of stress (Amistad & Semmer, 2007; Neff & Karney, 2004; Randall & Bodenmann, 2017) that may affect graduate students and their romantic partner. As stress

has been associated with numerous negative individual (e.g., Denollet, et al., 2010; Glaser & Kiecolt-Glaser, 2005; Kaya, Tansey, Melekoglu & Cakiroglu, 2015; van Praag, 2004; Zevolensky, Goodie, Ruggiero, Black, Larkin, et al., 2002) and relational (Brannock, Litten, & Smith, 2000; Randall & Bodenmann, 2009; Scheinkman, 1988) outcomes, it is important for university mental health professionals to reach out to graduate students more actively, so they are aware of the services offered. This could be done through including information regarding available mental health services at student orientations and promoting wellness events aimed at graduate students. In addition, it will be important for mental health professionals working with graduate students and/or their romantic partners to assess the levels of stress experienced by their clients and find ways to help graduate students mitigate the negative effects of stress. Programs such as Couples Coping Enhancement Training (CCET) have been able to help couples improve their relationship quality and reduce stress (Bodenmann, 2008). CCET is an evidence-based stress prevention program for couples. Similar to other interventions for couples, CCET is designed to improve interpersonal competencies, through teaching communication and problem-solving skills, improving stress management, and increasing couple awareness of issues of fairness, equity, and respect. However, the unique aspect of CCET is that this training occurs at both the individual and dyadic levels. Mental health counselors may want to adopt dyadic techniques such as these to help graduate student couples cope with stress more effectively.

Conclusion

Graduate students' experience of graduate school related stress is negatively associated with their life satisfaction and non-student partners' perceptions of the graduate student's stress are negatively associated with the non-student partner's life satisfaction, which provides additional evidence for considering stress as a relational construct (Randall & Bodenmann, 2017). Specifically in asymmetrical graduate student couples, the stress experienced by the graduate student can spillover into his or her romantic relationship and influence the non-student partner's life satisfaction as well. As such, mental health counselors working with graduate students in a committed romantic relationship may want to work with these individuals from a systemic perspective by taking into account the notion that one person's experience of stress not only affects themselves but their romantic partner as well. Mental health counselors may also want to help graduate students better manage the stress they will inevitably face, by teaching various coping skills (e.g., CCET, Bodenmann, 2008), which may reduce the impact of graduate school-related stress on graduate students' romantic relationships.

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APPENDIX A
SCREENING SURVEY

Screening Survey

1. Are you currently in your first year of graduate school?
 - a. Yes
 - b. No
2. Is your partner currently in his or her first year of graduate school?
 - a. Yes
 - b. No
3. How old are you (in years)?
 - a. _____ years
4. How old is your partner (in years)?
 - a. _____ years
5. What is your gender?
 - a. Female
 - b. Male
6. What is your partner's gender?
 - a. Female
 - b. Male
7. How long have you and your partner been in a romantic relationship?
 - a. _____ years
 - b. _____ months

APPENDIX B

GRADUATE STUDENT RESEARCH QUESTIONNAIRE

Demographic Questions

1. How old are you?
 - a. ____ years
 - b. ____ months
2. What is your sex?
 - a. Male
 - b. Female
 - c. Other (please specify) _____
3. Which best describes your racial/ethnic background? (mark one or more):
 - a. Asian/Asian-American
 - b. Black/African-American
 - c. Hispanic/Latino(a)
 - d. Native American or Pacific Islander
 - e. White/European-American
 - f. Other (please specify)_____
4. What is your relationship status?
 - a. In a committed relationship – not living together
 - b. In a committed relationship – living together
 - c. Engaged – not living together
 - d. Engaged –living together
 - e. Married
5. What is the highest level of education you have completed?
 - a. Less than high school
 - b. High school diploma or equivalent (e.g. GED)
 - c. Vocational/technical school
 - d. Associate's degree
 - e. Some college
 - f. Bachelor's degree
 - g. Some graduate or professional school
 - h. Graduate or professional degree (e.g. MA, Ph.D., MD, JD)
6. How long have you been in graduate school (in years)? (e.g.: If you started in Spring of 2016, then you would enter .5 year. If you started in Fall of 2014, then you would enter 2)
 - a. Please specify: _____
7. If you are currently enrolled in graduate school, what is your course of study?
 - a. Please specify: _____
8. What is your typical yearly household income before taxes?
 - a. \$0-\$25,000
 - b. \$25,000-\$50,000
 - c. \$50,000-\$75,000
 - d. \$75,000-\$100,000
 - e. \$100,000-\$150,000
 - f. Greater than \$150,000

9. With what religious faith do you identify?
 - a. Agnostic
 - b. Atheist
 - c. Christianity
 - d. Judaism
 - e. Islam
 - f. Buddhism
 - g. Hinduism
 - h. Other (please specify)_____
10. How long have you and your partner known each other?
 - a. ____ years
 - b. ____ months
11. How long have you and your partner been in a romantic relationship together?
 - a. ____ years
 - b. ____ months
12. If you are married to your partner, how long have you been married?
 - a. ____ years
 - b. ____ months
13. Do you and your partner have any children?
 - a. Yes
 - b. No
14. How many children do you have?
 - a. _____

Stressors
(El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012)

Since starting graduate school, how much has your functioning been disrupted by each of the following?

- | | | | | | |
|--|---------|--------------|---------------|------------------|-------------|
| 1. Academic/coursework responsibilities or pressures | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 2. Finances or debt | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 3. Anxiety | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 4. Poor work/school-life balance | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 5. Family issues | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 6. Research responsibilities or pressures | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 7. Burnout or compassion fatigue | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 8. Professional isolation or lack of social support | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 9. Depression | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 10. Physical health issues | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 11. Marital/relationship problems | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 12. Other interpersonal issues | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |
| 13. Death, loss or grief | 0. None | 1. Minimally | 2. Moderately | 3. Significantly | 4. Severely |

14. Teaching responsibilities or pressures
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
15. Discrimination
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
16. Personally traumatic event
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
17. Addictive compulsive behaviors
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
18. School complaint or disciplinary action
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
19. Suicidal ideation
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
20. Alcohol or substance abuse
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
21. Legal issues
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
22. Ethical issues
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely

Satisfaction with Life Scale
(Diener, Emmons, Larsen, & Griffin, 1985)

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

____ In most ways my life is close to my ideal.

____ The conditions of my life are excellent.

____ I am satisfied with my life.

____ So far I have gotten the important things I want in life.

____ If I could live my life over, I would change almost nothing.

Relationship Assessment Scale
(Hendrick, 1988)

Please mark on the answer sheet the letter for each item which best answers that item for you:

1. How well does your partner meet your needs?
1—Poorly 2 3—Average 4 5—Extremely well
2. In general, how satisfied are you with your relationship?
1—Unsatisfied 2 3—Average 4 5—Extremely satisfied
3. How good is your relationship compared to most?
1—Poor 2 3—Average 4 5—Excellent
4. How often do you wish you hadn't gotten in this relationship?
1—Never 2 3—Average 4 5—Very often
5. To what extent has your relationship met your original expectations?
1—Hardly at all 2 3—Average 4 5—
Completely
6. How much do you love your partner?
1—Not much 2 3—Average 4 5—Very much
7. How many problems are there in your relationship?
1—Very few 2 3—Average 4 5—Very many

Dyadic Coping Inventory
(Randall, Hilpert, Jimenez, Walsh, & Bodenmann, 2016)

The next questions are designed to measure how you and your partner cope with stress. Please indicate the first response that you feel is appropriate. Please be as honest as possible.

1 _____ 2 _____ 3 _____ 4-
_____ 5
Very Rarely Rarely Sometimes Often
Very Often

This section is about how YOU communicate your stress to your partner.

1. I let my partner know that I appreciate his/her practical support, advice, or help
2. I ask my partner to do things for me when I have too much to do.
3. I show my partner through my behavior when I am not doing well or when I have problems.
4. I tell my partner openly how I feel and that I would appreciate his/her support.

This section is about what YOUR PARTNER does when you are feeling stressed.

5. My partner shows empathy and understanding.
6. My partner expresses that he/she is on my side.
7. My partner blames me for not coping well enough with stress.
8. My partner helps me to see stressful situations in a different light.
9. My partner listens to me and gives me the opportunity to communicate what really bothers me.
10. My partner does not take my stress seriously.
11. My partner provides support, but does so unwillingly and without enthusiasm.
12. My partner takes on things that I normally do in order to help me out.
13. My partner helps me analyze the situation so that I can better face the problem.
14. When I am too busy, my partner helps me out.
15. When I am stressed, my partner tends to withdraw.

This section is about how YOUR PARTNER communicates when he/she is feeling stressed.

16. My partner lets me know that he/she appreciates my practical support, advice, or help.
17. My partner asks me to do things for him/her when he has too much to do.
18. My partner shows me through his/her behavior that he/she is not doing well or when he/she has problems.

19. My partner tells me openly how he/she feels and that he/she would appreciate my support

This section is about what YOU do when your partner is stressed.

20. I show empathy and understanding.
21. I express to my partner that I am on his/her side.
22. I blame my partner for not coping well enough with stress.
23. I tell my partner that his/her stress is not that bad and help him/her to see the situation in a different light.
24. I listen to my partner and give him/her space and time to communicate what really bothers him/her.
25. I do not take my partner's stress seriously.
26. When my partner is stressed I tend to withdraw.
27. I provide support, but do it so unwillingly and without enthusiasm because I think that he/she should cope with his/her problems on his/her own.
28. I take on things that my partner would normally do in order to help him/her out.
29. I try to analyze the situation together with my partner in an objective manner and help him/her to understand and change the problem.
30. When my partner feels he/she has too much to do, I help him/her out.

This section is about what YOU and YOUR PARTNER do when you are both feeling stressed.

31. We try to cope with the problem together and search for shared solutions.
32. We engage in a serious discussion about the problem and think through what has to be done.
33. We help one another to put the problem in perspective and see it in a new light.
34. We help each other relax with such things like massage, taking a bath together, or listening to music together.
35. We are affectionate to each other, make love and try that way to cope with stress.

This section is about how you evaluate your coping as a couple.

36. I am satisfied with the support I receive from my partner and the way we deal with stress together.
37. I am satisfied with the support I receive from my partner and I find as a couple, the way we deal with stress together is effective.

APPENDIX C

NON-STUDENT PARTNER RESEARCH QUESTIONNAIRE

Demographic Questions

15. How old are you?
 - a. ____ years
 - b. ____ months
16. What is your sex?
 - a. Male
 - b. Female
 - c. Other (please specify) _____
17. Which best describes your racial/ethnic background? (mark one or more):
 - a. Asian/Asian-American
 - b. Black/African-American
 - c. Hispanic/Latino(a)
 - d. Native American or Pacific Islander
 - e. White/European-American
 - f. Other (please specify)_____
18. What is your relationship status?
 - a. In a committed relationship – not living together
 - b. In a committed relationship – living together
 - c. Engaged – not living together
 - d. Engaged –living together
 - e. Married
19. What is the highest level of education you have completed?
 - a. Less than high school
 - b. High school diploma or equivalent (e.g. GED)
 - c. Vocational/technical school
 - d. Associate's degree
 - e. Some college
 - f. Bachelor's degree
 - g. Some graduate or professional school
 - h. Graduate or professional degree (e.g. MA, Ph.D., MD, JD)
20. Are you currently pursuing a graduate or undergraduate degree?
 - a. Yes
 - b. No
21. If you are currently enrolled in school, what is your course of study?
 - a. Please specify: _____
22. What is your typical yearly household income before taxes?
 - a. \$0-\$25,000
 - b. \$25,000-\$50,000
 - c. \$50,000-\$75,000
 - d. \$75,000-\$100,000
 - e. \$100,000-\$150,000
 - f. Greater than \$150,000
23. With what religious faith do you identify?

- a. Agnostic
 - b. Atheist
 - c. Christianity
 - d. Judaism
 - e. Islam
 - f. Buddhism
 - g. Hinduism
 - h. Other (please specify)_____
24. How long have you and your partner known each other?
- a. _____ years
 - b. _____ months
25. How long have you and your partner been in a romantic relationship together?
- a. _____ years
 - b. _____ months
26. If you are married to your partner, how long have you been married?
- a. _____ years
 - b. _____ months
27. Do you and your partner have any children?
- a. Yes
 - b. No
28. How many children do you have?
- a. _____

Stressors
(El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012)

Since starting graduate school, how much has **your partner's** functioning been disrupted by each of the following?

1. Academic/coursework responsibilities or pressures
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
2. Finances or debt
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
3. Anxiety
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
4. Poor work/school-life balance
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
5. Family issues
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
6. Research responsibilities or pressures
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
7. Burnout or compassion fatigue
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
8. Professional isolation or lack of social support
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
9. Depression
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
10. Physical health issues
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
11. Marital/relationship problems
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
12. Other interpersonal issues
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
13. Death, loss or grief
0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely

14. Teaching responsibilities or pressures
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
15. Discrimination
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
16. Personally traumatic event
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
17. Addictive compulsive behaviors
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
18. School complaint or disciplinary action
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
19. Suicidal ideation
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
20. Alcohol or substance abuse
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
21. Legal issues
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely
22. Ethical issues
 0. None 1. Minimally 2. Moderately 3. Significantly 4. Severely

Satisfaction with Life Scale
(Diener, Emmons, Larsen, & Griffin, 1985)

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

____ In most ways my life is close to my ideal.

____ The conditions of my life are excellent.

____ I am satisfied with my life.

____ So far I have gotten the important things I want in life.

____ If I could live my life over, I would change almost nothing.

Relationship Assessment Scale
(Hendrick, 1988)

Please mark on the answer sheet the letter for each item which best answers that item for you:

2. How well does your partner meet your needs?
1—Poorly 2 3—Average 4 5—Extremely well
2. In general, how satisfied are you with your relationship?
1—Unsatisfied 2 3—Average 4 5—Extremely satisfied
3. How good is your relationship compared to most?
1—Poor 2 3—Average 4 5—Excellent
4. How often do you wish you hadn't gotten in this relationship?
1—Never 2 3—Average 4 5—Very often
5. To what extent has your relationship met your original expectations?
1—Hardly at all 2 3—Average 4 5—
Completely
6. How much do you love your partner?
1—Not much 2 3—Average 4 5—Very much
7. How many problems are there in your relationship?
1—Very few 2 3—Average 4 5—Very many

Dyadic Coping Inventory
(Randall, Hilpert, Jimenez, Walsh, & Bodenmann, 2016)

The next questions are designed to measure how you and your partner cope with stress. Please indicate the first response that you feel is appropriate. Please be as honest as possible.

1 _____ 2 _____ 3 _____ 4-
_____ 5
Very Rarely Rarely Sometimes Often
Very Often

This section is about how YOU communicate your stress to your partner.

- 38. I let my partner know that I appreciate his/her practical support, advice, or help
- 39. I ask my partner to do things for me when I have too much to do.
- 40. I show my partner through my behavior when I am not doing well or when I have problems.
- 41. I tell my partner openly how I feel and that I would appreciate his/her support.

This section is about what YOUR PARTNER does when you are feeling stressed.

- 42. My partner shows empathy and understanding.
- 43. My partner expresses that he/she is on my side.
- 44. My partner blames me for not coping well enough with stress.
- 45. My partner helps me to see stressful situations in a different light.
- 46. My partner listens to me and gives me the opportunity to communicate what really bothers me.
- 47. My partner does not take my stress seriously.
- 48. My partner provides support, but does so unwillingly and without enthusiasm.
- 49. My partner takes on things that I normally do in order to help me out.
- 50. My partner helps me analyze the situation so that I can better face the problem.
- 51. When I am too busy, my partner helps me out.
- 52. When I am stressed, my partner tends to withdraw.

This section is about how YOUR PARTNER communicates when he/she is feeling stressed.

- 53. My partner lets me know that he/she appreciates my practical support, advice, or help.
- 54. My partner asks me to do things for him/her when he has too much to do.
- 55. My partner shows me through his/her behavior that he/she is not doing well or when he/she has problems.

56. My partner tells me openly how he/she feels and that he/she would appreciate my support

This section is about what YOU do when your partner is stressed.

- 57. I show empathy and understanding.
- 58. I express to my partner that I am on his/her side.
- 59. I blame my partner for not coping well enough with stress.
- 60. I tell my partner that his/her stress is not that bad and help him/her to see the situation in a different light.
- 61. I listen to my partner and give him/her space and time to communicate what really bothers him/her.
- 62. I do not take my partner's stress seriously.
- 63. When my partner is stressed I tend to withdraw.
- 64. I provide support, but do it so unwillingly and without enthusiasm because I think that he/she should cope with his/her problems on his/her own.
- 65. I take on things that my partner would normally do in order to help him/her out.
- 66. I try to analyze the situation together with my partner in an objective manner and help him/her to understand and change the problem.
- 67. When my partner feels he/she has too much to do, I help him/her out.

This section is about what YOU and YOUR PARTNER do when you are both feeling stressed.

- 68. We try to cope with the problem together and search for shared solutions.
- 69. We engage in a serious discussion about the problem and think through what has to be done.
- 70. We help one another to put the problem in perspective and see it in a new light.
- 71. We help each other relax with such things like massage, taking a bath together, or listening to music together.
- 72. We are affectionate to each other, make love and try that way to cope with stress.

This section is about how you evaluate your coping as a couple.

- 73. I am satisfied with the support I receive from my partner and the way we deal with stress together.
- 74. I am satisfied with the support I receive from my partner and I find as a couple, the way we deal with stress together is effective.

APPENDIX D
IRB APPROVAL

APPROVAL: EXPEDITED REVIEW

Ashley Randall
 CLS - Counseling and Counseling Psychology
 480/727-5312
 Ashley.K.Randall@asu.edu

Dear Ashley Randall:

On 2/27/2016 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Graduate School Stress, Dyadic Coping, and Well-being in Asymmetrical First Year Graduate Student Couples
Investigator:	Ashley Randall
IRB ID:	STUDY00003933
Category of review:	(7)(b) Social science methods, (7)(a) Behavioral research
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> • Recruitment Duties, Category: Other (to reflect anything not captured above); • Consent Form, Category: Consent Form; • Recruitment Flyer, Category: Recruitment Materials; • Master List Template, Category: Other (to reflect anything not captured above); • Grad Stress and Coping Study IRB Application, Category: IRB Protocol; • Graduate Student Questionnaire, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Partner Questionnaire, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);

The IRB approved the protocol from 2/27/2016 to 2/26/2017 inclusive. Three weeks before 2/26/2017 you are to submit a completed Continuing Review application and required attachments to request continuing approval or closure.

If continuing review approval is not granted before the expiration date of 2/26/2017 approval of this protocol expires on that date. When consent is appropriate, you must use final, watermarked versions available under the “Documents” tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Megan Segraves
Megan Segraves

APPENDIX E
IRB MODIFICATIONS



APPROVAL: MODIFICATION

Ashley Randall
CLS - Counseling and Counseling Psychology
480/727-5312
Ashley.K.Randall@asu.edu

Dear Ashley Randall:

On 4/22/2016 the ASU IRB reviewed the following protocol:

Type of Review:	Modification
Title:	Graduate School Stress, Dyadic Coping, and Well-being in Asymmetrical First Year Graduate Student Couples
Investigator:	Ashley Randall
IRB ID:	STUDY00003933
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none">• Consent Form, Category: Consent Form;• Graduate Student Questionnaire, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);• Master List Template, Category: Other (to reflect anything not captured above);• Grad Stress and Coping Study IRB Application, Category: IRB Protocol;• Recruitment Flyer, Category: Recruitment Materials;• Partner Questionnaire, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);• Recruitment Duties, Category: Other (to reflect anything not captured above);

The IRB approved the modification.

When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Megan Segraves
Megan Segraves

APPROVAL: EXPEDITED REVIEW

Ashley Randall
 CISA: Counseling and Counseling Psychology
 480/727-5312
 Ashley.K.Randall@asu.edu

Dear Ashley Randall:

On 12/2/2016 the ASU IRB reviewed the following protocol:

Type of Review:	Modification
Title:	Graduate School Stress, Dyadic Coping, and Well-being in Asymmetrical Graduate Student Couples
Investigator:	Ashley Randall
IRB ID:	STUDY00003933
Category of review:	(mm) Minor modification
Funding:	Name: Graduate Education
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> • Consent Form, Category: Consent Form; • Graduate Student Questionnaire, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Master List Template, Category: Other (to reflect anything not captured above); • Grad Stress and Coping Study IRB Application, Category: IRB Protocol; • Recruitment Flyer, Category: Recruitment Materials; • Partner Questionnaire, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Recruitment Duties, Category: Other (to reflect anything not captured above);

The IRB approved the protocol from 2/27/2016 to 2/26/2017 inclusive. Three weeks before 2/26/2017 you are to submit a completed Continuing Review application and required attachments to request continuing approval or closure.

If continuing review approval is not granted before the expiration date of 2/26/2017 approval of this protocol expires on that date. When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Megan Segraves
Megan Segraves

APPENDIX F
IRB CONTINUATION



APPROVAL:CONTINUATION

Ashley Randall
CISA: Counseling and Counseling Psychology
480/727-5312
Ashley.K.Randall@asu.edu

Dear Ashley Randall:

On 1/26/2017 the ASU IRB reviewed the following protocol:

Type of Review:	Continuing Review
Title:	Graduate School Stress, Dyadic Coping, and Well-being in Asymmetrical Graduate Student Couples
Investigator:	Ashley Randall
IRB ID:	STUDY00003933
Category of review:	(7)(b) Social science methods, (7)(a) Behavioral research
Funding:	Name: Graduate Education
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> • Recruitment Duties, Category: Other (to reflect anything not captured above); • Consent Form, Category: Consent Form; • Recruitment Flyer, Category: Recruitment Materials;

The IRB approved the protocol from 1/26/2017 to 2/25/2018 inclusive. Three weeks before 2/25/2018 you are to submit a completed Continuing Review application and required attachments to request continuing approval or closure.

If continuing review approval is not granted before the expiration date of 2/25/2018 approval of this protocol expires on that date. When consent is appropriate, you must use final, watermarked versions available under the “Documents” tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Page 1 of 2

Sincerely,

IRB Administrator

cc: Megan Segraves
Megan Segraves

APPENDIX G
INFORMED CONSENT

Title of research study: Graduate School Stress, Dyadic Coping, and Well-being in Asymmetrical First Year Graduate Student Couples

Investigator: *Megan Seagraves (PI) and Ashley K. Randall, Ph.D. (Faculty PI)*

Why am I being invited to take part in a research study?

We are inviting you to take part in a research study because you are over 18 years old, in a heterosexual romantic relationship for at least 6 months, and either you or your partner is a graduate student.

Why is this research being done?

The purpose of this study is to better understand how graduate students in romantic relationships cope with graduate school stress. In particular, we are interested in understanding how partner's coping strategies may help the graduate student partner cope with stress associated with graduate school, and how this may or may not affect individual life satisfaction and partner's relationship satisfaction.

How long will the research last?

This study takes place in two parts: 1) a screening survey and 2) a research questionnaire. We expect that individuals will spend approximately 5 minutes completing the screening survey and 30-40 minutes completing the research questionnaire. In total, your participation will last 35-45 minutes.

How many people will be studied?

We expect about 100 couples (200 people) will participate in this research study.

What happens if I say yes, I want to be in this research?

You will be sent two different questionnaires that you should complete independently of your partner. The first questionnaire is a screening survey designed to ensure that you meet the requirements for this study. The second questionnaire is the research survey in which you will be asked to answer demographic questions as well as questions about your thoughts and feelings and/or your perception of your partner's thoughts and feelings. You are free to decide whether you wish to participate in this study.

After you complete the study, you will receive a \$5 Amazon.com e-gift card. Your partner will also receive a \$5 Amazon.com e-gift card after he or she completes the study.

What happens if I say yes, but I change my mind later?

You can leave the research at any time. It will not be held against you.

Is there any way being in this study could be bad for me?

There are no known risks associated with participating in this study. However, as in all research, there is the possibility that you may encounter or be subject to unforeseen risks.

Will being in this study help me in any way?

We cannot promise any benefits to you or others from your taking part in this research. However, some may find it helpful to answer questions about how they cope with stress and/or help their partner cope with stress.

What happens to the information collected for the research?

All information collected from this study is confidential. Only the Primary Investigators of this study will have access to your online responses to survey items. You will not be asked to provide personal information, except for the information needed to send potential compensation (First Name, Last Name, and Email Address). To further protect your anonymity, you will be assigned a unique ID number so that your name and email address are not associated with the responses you make on the survey. This helps ensure that no one reviewing the data will know who provided what responses to items. This de-identified data may be shared with other researchers.

In addition, the aggregated results of this research study may be used in reports, presentations, and publications, but your name will not be used and no one will know which responses were yours.

Who can I talk to?

If you have questions, concerns, or complaints, talk to the research team: Megan Segraves (Primary Investigator) at GradStressAndCopingStudy@gmail.com or Dr. Ashley K. Randall (Faculty Primary Investigator) at Ashley.K.Randall@asu.edu.

This research has been reviewed and approved by the Social Behavioral IRB. You may talk to them at (480) 965-6788 or by email at research.integrity@asu.edu if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide input about this research.

This form explains the nature, demands, benefits, and any risk of the project. By checking the box below you knowingly agree to assume any risks involved. Remember, your participation is voluntary. You may choose not to participate or may withdraw your consent and discontinue participation at any time without penalty or loss of benefit. In checking the box below, you are not waiving any legal claims, rights, or remedies. A copy of this consent form can be sent to you upon request.

I have read the CONSENT FORM above and agree with all the terms and conditions. I acknowledge that by completing the survey, I am giving permission for the investigator to use my information for research

purposes. Additionally, I consent for other researchers to access to my de-identified data upon approval by the PIs (Megan Segraves and Ashley K. Randall, Ph.D., Faculty Supervisor).

APPENDIX H
RECRUITMENT FLYER

Graduate Student Stress and Coping Study

- *Are you an ASU graduate student?
Or is your romantic partner an ASU
graduate student?*
- *Have you been with your romantic
partner for at least 6 consecutive
months?*
- *Interested in participating in
romantic relationship research?*



If you answered “yes” to all of the above questions then you may be eligible to participate in a research study seeking to understand stress, coping strategies, and relationship satisfaction in couples where one partner is in graduate school.

During this study you and your partner will complete:

- A screening survey (~5 minutes to complete)
- An online survey about your current relationship (~30 - 40 minutes to complete)

**Upon completion of the study, you will
receive a \$5 Amazon.com e-gift card.**

For further information please contact:
[**GradStressAndCopingStudy@gmail.com**](mailto:GradStressAndCopingStudy@gmail.com)