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ACADEMIC STRESS AND GRADUATE STUDENT MARITAL SATISFACTION: PRELIMINARY TESTING OF A CONCEPTUAL MODEL

A Dissertation

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

By

Barton J. Turner
Norman, Oklahoma
2003

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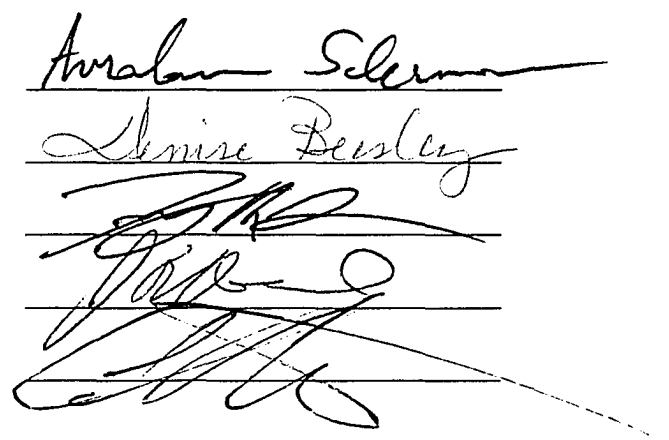
ACADEMIC STRESS AND GRADUATE STUDENT MARITAL SATISFACTION: PRELIMINARY TESTING OF A CONCEPTUAL MODEL

A Dissertation APPROVED FOR THE DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

BY



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Abstract

This study tested a model relating academically related stress to marital satisfaction in married graduate students. A total of 217 participants, including 134 married and 83 unmarried graduate students, participated in the study. Married graduate students were found to be experiencing less overall stress, and have better emotional functioning than their unmarried counterparts. However, despite these differences the proposed model was not supported. Although a significant relationship between spousal support and marital satisfaction was found, no relationships among academic stress, emotional functioning, or marital satisfaction were found.

Academic Stress and Graduate Student Marital Satisfaction: Preliminary Testing of a Conceptual Model

CHAPTER I: INTRODUCTION

Although considerable anecdotal evidence exists regarding the effect of graduate school on marital relationships, little if any empirical evidence exists seeking to determine the nature of the relationship between the two. In the absence of a large research literature, support for such a study can be drawn from a considerable research base on factors that affect marital satisfaction, and the effects of work stress on marital satisfaction. These differing research literatures can then be combined with the few studies that investigate the nature of academic related stress in both undergraduates and graduates.

Marital Satisfaction

Marital satisfaction, as a broad construct, has received considerable research interest through the years. Based on this research history, Whisman (1997) proposed a model of marital satisfaction that was comprised of three factors, environmental variables, intrapersonal variables, and interpersonal variables. Later research by Sokoliski and Hendrick (1999) supported

the existence of these three different types of factors and marital satisfaction.

Environmental variables. Environmental variables, as described by Whisman (1997) include factors such as illness, work related stress, and other such variables. Certainly the potential impact of work related stress has been well investigated, with the findings generally supporting the belief that stress from work can negatively effect marital satisfaction in a variety of ways (Barling, & MacEwen, 1992; Mauno & Kinnunen, 1999). For example, Karney and Bradburg (1995), in a review of 115 longitudinal studies on marital quality and stability, reported that the presence of stress predicts lower marital stability and satisfaction over time.

Intrapersonal variables. Intrapersonal variables, as detailed by Whisman (1997), and Sokoliski and Hendrick (1999), include factors that are generally thought to be within the individual, such as mood states, sexual satisfaction and love style. Negative mood states, such as the "Big Five" traits, including trait anxiety, neuroticism, emotional instability, and negative affectivity have received considerable research attention. Kim, Martin, and Martin (1989) found that the moodiness and emotional instability often associated with

negative mood states such as depression and anxiety are related to unstable, dissatisfying marriages.

Sexual satisfaction has been repeatedly linked to marital satisfaction (Birchler, & Webb, 1977; Cupach & Comstock, 1990; Morokoff & Gillilland, 1993). Although sexual satisfaction is often linked with marital satisfaction, it is not required for a couple to experience marital satisfaction, and is not sufficient for marital satisfaction to exist (Morokoff & Gillilland, 1993).

Another of Whisman's (1997) intrapersonal variable is love. Contreras, Hendrick, and Hendrick (1996) suggest that the type of love experienced is related to marital satisfaction. Their study builds on Lee's (1973) multidimensional description of love, which postulated that love could take many forms including practical, possessive/dependent, altruistic, friendship-oriented, passionate, and game playing. Sokolski and Hendrick (1999) report that the existence of passionate love, friendship-oriented love, and altruistic love were all positively related to marital satisfaction for both spouses.

A final intrapersonal variable described by Whisman (1997) is commitment. Commitment to the marital

relationship has been shown to be moderately correlated with sexual satisfaction and marital satisfaction (Sokolski & Hendrick, 1999).

Interpersonal variables. Interpersonal variables are best thought of as variables that occur between people, rather than within a person. A key interpersonal variable is communication, which also includes disclosure or sharing between partners (Whisman, 1997). Communication has been shown to serve as a buffer between spouses with personality differences. Effective communication can mediate these personality differences and in doing so, can result in increased marital quality and marital satisfaction (Karney & Bradbury, 1995). In addition, Russell-Chapin, Chapin, and Sattler (2001) report that a negative correlation exists between marital distress and a communication, suggesting that high levels of marital distress were related to a lack of communication.

Another interpersonal variable found to be linked to marital satisfaction is the perceived adequacy of social support from family, friends, and one's spouse (Dehle, Larsen, & Landers, 2001; Sokoliski & Hendrick, 1999). Depressive symptoms and perceived stress were judged to be lower by those who perceived adequate levels of social

support (Dehle, 2001). Additionally, the presence of an adequate level of social support was related to higher levels of marital quality. In particular, Julian and Markman (1991) reported that emotional support of one's spouse, among other factors, is highly related to marital satisfaction.

A final type of interpersonal variable is equity (Dancer & Gilbert, 1993). Equity refers to each partner doing a fair share of responsibilities such as housework (Sokoliski & Hendrick, 1999). Such equity has been found to be highly positively correlated with marital satisfaction (Sokoliski & Hendrick, 1999).

Stress and Marital Satisfaction

Although little research has been done that specifically addresses the effects of graduate school related stress on marital quality, stability, and satisfaction, the effect of work related stress on marital satisfaction is a topic that has received considerable attention in the research literature. One of the key issues related to the effects of work related stress on marital satisfaction is referred to as the "spillover effect." Barling and MacEwen (1992) found evidence of this spillover effect, where negative work-experiences were associated with lowered levels of

marital satisfaction. Subsequent studies have found inconclusive evidence for a direct spillover effect between work stress and marital satisfaction. A more likely scenario is that work related stress affects marital quality through its effect on the various components shown to related to marital satisfaction (Frone, Yardley, & Markel, 1997). For example, the effects of job related stress on marital functioning may occur through exhaustion and psychosomatic symptoms (Mauno & Kinnunen, 1999), psychological distress such as depression and anxiety (Frone, Yardley, & Markel, 1997), and difficulty making decisions or reaching consensus on important matters (Williams, 1995).

Hughes and Galinsky (1994) and Barling and MacEwen (1992) suggest that negative work experiences, usually conceptualized and measured as work stress or stressors, exert an influence on marital functioning via their effect on individual well-being. In such cases, well-being serves a moderating function between work experiences and marital functioning. Well-being is used to describe a variety of variables, such as job satisfaction, depressive symptomatology, and psychosomatic health among others.

The potential relationship between work related stress and well-being and/or marital satisfaction has been explored in some depth. Several work related issues have been associated with well-being and/or marital satisfaction, including job insecurity (Hughes & Galinsky, 1994), reduced job autonomy (Stets, 1995), conflict between work roles and family roles (MacEwen & Barling, 1988), and work demands encroaching on family time (Swanson, 1999). Stets (1995) reports that reduced levels of job autonomy often result in an increased level of controlling behaviors in the home. Daniels and Guppy (1994) also report finding that lower levels of job autonomy are associated with psychological distress such as tension, anxiety, and in some cases depression.

Work-family role conflict can often result when the demands of the workplace interfere with one's role within the family. Dual-career families in particular seem to be a prime example of this struggle to balance job and family roles and responsibilities. Although dual career families experience several negative outcomes such as role strain, role confusion and psychological distress, some mediating factors appear to exist that may moderate these effects (Frone, Yardly & Markel, 1997). In particular, satisfaction with the dual-career lifestyle

and effective coping strategies have been found to mediate the stressors related to dual-career lifestyles, and thus positively effect the perception of family role-strain, marital quality and overall marital satisfaction (Perrone & Worthington, 2001).

Mauno & Kinnunen (1999) present a list of job-related stressors including, job insecurity, autonomy, time pressures, and work-family conflict. These stressors may be helpful to consider in understanding the types of stress graduate students may experience. Mauno and Kinnunen (1999), as well as Latin and Duraup (1996), suggest that these types of job-related stressors affect marital satisfaction through job related exhaustion and the resulting psychosomatic symptoms. They further indicate that the effect of these stressors is equal for both sexes (Mauno & Kinnunen, 1999).

One particular aspect of marital satisfaction, sexual functioning, has been linked to several stress related factors. Constant daily hassles, or small daily irritations, were found to predict sexual desire as measured by desired frequency of intercourse and frequency of sexual desire (Morokoff & Gillilland, 1993). Job related stressors were found to be negatively related to sexual functioning (Morokoff & Gillilland, 1993). As

the number of daily hassles and other job related stressors increase, sexual desire and sexual functioning decrease, which can lead to, decreased marital satisfaction.

School-related stress. Older university students, including non-traditional students and graduate students, report stressors that include fear of academic failure, loneliness, and perceived powerlessness (Winefield, 1993). Academic related stress has been found to be negatively correlated with feelings of self-esteem (Kreger, 1995). Many of these stressors seem to relate directly to several of the job related stressors proposed by Mauno & Kinnunen (1999). In particular Mauno and Kinnunen's (1999) variable regarding job insecurity appears to be similar to Winefield's (1993) fear of academic failure. Additionally, Mauno and Kinnunen's (1999) variables measuring job autonomy and good leadership relations may share some similarities with Winefield's (1993) variable of perceived powerlessness. Additionally, a large body of anecdotal evidence exists suggesting that graduate study is in fact highly, stressful, tiring and, may produce psychological reactions in students.

Winefield (1993) reports graduate students generally have higher levels of study satisfaction than do undergraduates. This appears due to increased control, finances, skill usage, and because they have a clearer sense of identity within the university community. However, Winefield (1993) further states that graduate students still report considerably high stress, particularly fear of academic failure. Other aspects of the students' lives were also relevant, such as their assessment of the adequacy of their relations with confidants and peers, and their financial state (Winefield, 1993). Evidence suggests that students in different types of graduate programs experience differing degrees of school related stress. Despite agreement on this issue, it is yet unclear which types of graduate programs are the most stressful. In a survey of medical students, residents, and MS/PhD students, Toews (1994) reported that all three groups reported elevated levels of perceived stress. Of the groups, the MS/PhD graduate students reported the highest levels of stress. He later replicated this finding with a much larger sample (Toews, 1997). Other studies have reported different findings. Some studies have indicated that medical students have reported less subjective feelings of stress than law

students or other graduate students (Helmers, Dahnoff, Steinert, Ldyton, & Young, 1997). Heins, Fahey and Leiden (1984) reported that law students reported higher levels of stress compared with medical students and other graduate students. In particular, they were concerned with time and economic pressures, followed by academic concerns. Medical students were most concerned with the lack of time they spent at home. Toews (1994) reports the highest ranked stressors for graduate students included self-expectations, examination and evaluation anxiety, time available for school and other demands, and the volume of work required.

In general, older university students, including graduate students, tend to show greater levels of psychological distress than similar aged peers (Winefield, 1993). For male students this distress appears to be at least somewhat related to economic factors while women students were more concerned with the demands and responsibilities outside of their graduate program (Mallinckrodt, Leong, & Kraij, 1989).

In addition to the students' role in their graduate program, many graduate students are also fulfilling other roles outside of the program. Inter-role conflict has been shown to lead to higher levels of job demand/load

stress (Steffy & Ashbaugh, 1986). Further, marital behaviors influence inter-role conflict, which, in turn, influence marital satisfaction and job stress. Such a finding supports the notion of a causal relationship between family related variables and work related variables (Steffy & Ashbaugh, 1986). As with work related stress, the effects of school related stress were found to be mediated by the availability of support, such as social support and emotional support from family and friends (Winefield, 1993). Winefield (1993) also reported strong correlations between study satisfaction and supportive behaviors by teaching staff, however it was not noted to what extent this mediated the degree of school related stress. Finally, Winefield (1993) reported that stressors of medical school were more severe for single students, while stress levels were found to decrease in single students if they were to marry. Such a finding suggests that social and emotional support from a spouse may also serve to mediate experience levels of stress.

School stress and marital satisfaction

With the documented effect of work related stress, and the interaction between stress and marital satisfaction, the question naturally arises regarding the

effect of graduate school related stress and marital satisfaction. Although few studies exist which explore this issue, those that do exist generally suggest a relationship similar to that of work stress and marital satisfaction.

Some evidence linking graduate training to marital distress and decreasing marital satisfaction has been reported. Using a qualitative research methodology, Legako and Sorenson (2002) interviewed six graduate student/spouse dyads in an American Psychological Association clinical psychology program to assess how the stressors of graduate training had affected their marital relationships. Legako and Sorenson (2000) reported that the stresses of graduate training appeared related to decreases in relationship satisfaction. Further, in a study of theology students, Craddock (1996) reported that low stress students reported high marital quality and satisfaction compared with high stress students. Global marital satisfaction declined over time for the students experiencing a high degree of stress. Additionally, Craddock (1996) suggest that factors within the relationship may serve to buffer the effect of accumulating stress. As well, Katz, Monnier, Libet, Shaw, and Beach (2000) found that perceived spousal

support is positively associated with an individual's own marital and emotional adjustment. Norton, Thomas, Morgan, Tiller, and Dickins (1998) reported finding that the single most buffering effect was emotional support from a partner. However, at follow-up it was found that the degree of partner support tended to decrease over time.

Summary of Research Findings

The variables that affect martial satisfaction can generally be grouped into three types; environmental variables, intrapersonal variables, and interpersonal variables. One environmental variables, work related stress, has been found to have a negative impact on marital satisfaction. Work related stress negatively effects marital satisfaction by affecting a variety of intrapersonal variables, including negative mood states such as anxiety and depression, exhaustion, and other psychosomatic symptoms. Work related stress can result from a variety of issues within the work place, such as reduced autonomy, work-family conflict, time pressures, and job insecurity. Similar stressors may also be found in the academic setting. Stressors faced by graduate students may include fear of academic failure, and perceived powerlessness, as well as other issues such as

financial concerns and evaluation anxiety. The multitude of stressors that result from work and academic setting can be reduced through adequate social and/or emotional support. The experience of graduate training has been shown to have detrimental effects on marital relationships. However, research has also suggested that social and emotional support is the best buffer between these stressors and marital adjustment and satisfaction.

Purpose

This study sought to examine the relationship between academic stress and marital satisfaction in graduate students. In order to examine the nature of this relationship, a conceptual model for understanding the relationship between academic stress and marital satisfaction in graduate students was developed. This model was derived through a review of the existing literature on marital satisfaction, the effects of work stress on different components of marital satisfaction, and the effects of academic stress on both undergraduate and graduate students. The model attempted to explain the relationship between academic stress and marital satisfaction by establishing a relationship between academic stress and psychological distress, then determining the presence of buffering effect from social

support of one's spouse. In examining the relationship between academic stress and marital satisfaction, two primary questions were addressed. The first question was whether there is a direct spillover effect between academic stress and marital satisfaction. In other words, did the presence of increased levels of academic stress directly affect marital satisfaction? The second question followed the first. If no evidence of a direct spillover effect was found, then did academic stress correspond with higher levels of intrapersonal distress such as depression and anxiety, and were the effects of intrapersonal distress buffered by the presence of social support from one's spouse?

CHAPTER II: METHODOLOGY

Sampling. The sample for the current study consisted of a random sample of all graduate students enrolled at large state university in the South-Central region of the United States. A sample of 400 graduate students, both married and unmarried, was randomly selected to receive solicitations to participate in the study. A total of 217 participants completed the survey.

Measures. A survey was constructed using subscales from various instruments. These subscales were chosen due to their ability to measure the specific components of the conceptual model. Additionally, a brief demographic questionnaire was designed. Demographic questions included questions regarding the participants gender, marital status, age, ethnicity, course of study, family income, United States citizenship, and whether English was the respondents' primary or secondary language.

The *Graduate Stress Inventory-Revised* (GSI-R) (Rocha-Singh, 1994) was used to measure academically related stress. The GSI-R was developed and normed in the course of three studies by Rocha-Singh (1994). The specific items on the GSI-R were selected by first carefully reviewing the research that identified certain

elements found to be important for graduate student adjustment. This review resulted in four domains being identified, including professional/academic, environmental, familial, and monetary. Items were then developed that were thought to reflect these specific domains. The initial study examining the factor structure involved 450 participants, with a nearly equal number of men and women from a variety of ethnic backgrounds. Using factor analysis, this first study found that only three factors existed. The environmental and academic/professional subscales remained intact, however the family and monetary subscales were combined into one subscale.

The GSI-R was further refined in a follow-up study that included 257 participants. The subscales identified in the initial study were verified. Results suggest that the Academic Stress subscale has a coefficient alpha of .74. In addition, the concurrent validity of the GSI-R was determined using the Speilberger Trait Anxiety Scale (STAS). Moderately high correlations were found for each subscale. Of the three total subscales, the Academic Stress subscale had the highest correlation of .45. Rocha-Singh (1994) states that such correlations suggest that the various subscales of the GSI-R are measuring a

similar construct as the STAS, but low enough to suggest that the various subscales are measuring a construct that can be distinguished from trait anxiety.

A final study in the Rocha-Singh (1994) article determined test-retest reliability for the GSI-R. A sample of 67 students were administered the GSI-R over a one week interval. Test-retest reliability for the Academic Stress subscale was .85. For the current study only the Academic Stress (AS) subscale was selected for use, due to its apparent ability to measure the degree of stress posed by academically related demands and situations. The AS contains seven items, which required the respondent to using a 7-point Likert-type scale. Higher scores are indicative of greater stress. The *Duke-UNC Health Profile* (DUNCHP) (Parkerson, et al, 1981) was selected to measure the intrapersonal variable of emotional functioning. The DUNCHP is a 63-item instrument designed to measure adult health status across a variety of domains, including symptom status, physical function, emotional function and social function. For this study only the Emotional Function (EF) subscale was used. The EF subscale is largely based on the concept of self-esteem. The authors selected self-esteem as the indicator of emotional functioning based on the

importance placed on self-esteem in a variety of personality theories (Parkerson, et al, 1981).

Items were selected for the DUNCHP by first reviewing items from other health instruments. These items were reviewed and selected for use in the DUNCHP using a series of twelve criteria. Items included in the EF subscale were selected primarily from the Tennessee Self-Concept Scale, the Zung Self-Rating Depression Scale, and California Psychological inventory, and the Self-Esteem Inventory. The reliability and validity of the DUNCHP was determined through a series of studies using responses from a sample of 395 ambulatory patients in a family medicine center. The Chronbach's alpha for internal consistency was .85 for the EF subscale. The criterion validity of the EF subscale was measured by correlating the EF subscale with other measures of emotional functioning. The EF subscale was highly correlated with the Tennessee Self-Concept Scale (.89), and the Zung Self-Rating Depression Scale (.57). Parkerson et al (1981) point out that the very high correlation between the EF subscale and the Tennessee Self-Concept Scale occur because both instruments are designed to measure the same construct, and because the EF subscale contains some items from the Tennessee Self-

Concept Scale. Higher scores on the EF subscale are indicative of better emotional functioning. (Parkerson, et al, 1981).

The *Multidimensional Scale of Perceived Social Support* (MSPSS) (Zimet, Dahlem, Zimet, and Farley, 1988) subscale measuring the social support received from one's spouse was used to measure perceived social support received from the student's spouse. The Significant Other (SO) subscale. The MSPSS contains a total of 12 items, which required participants to respond using a 7-point Likert-type scale, and higher scores are indicative of greater perceived support. The MSPSS was developed to measure the extent of perceived social support from family, friends, and significant others. Items for the MSPSS were developed through the use of existing theory and research. Using factor analysis, potential items were added or subtracted such that three factors were present. These factors, or subscales, measure social support from family, social support from friends, and social support from a significant other. Zimet, Dahlem, Zimet, and Farley (1988) report sub-scale reliability coefficients of .91 for the Significant Other subscale, and a test-retest reliability of .72.

Construct validity was established by correlating the Depression and Anxiety subscales of the Hopkins Symptom Checklist (HSCL). Zimet, Dahlem, Zimet, and Farley (1988) report that perceived support from family was significantly inversely related to both depression and anxiety. Perceived support from friends was significantly related to depression symptoms, but not to anxiety symptoms. Finally, perceived support from a significant other was significantly related to depression but not anxiety. Each of these results was consistent with the findings that were expected based on the prior research.

The Dyadic Satisfaction (DS) subscale from the *Dyadic Adjustment Scale* (DAS) (Spanier, 1976) was selected to measure marital satisfaction. The DAS is comprised of a variety of items designed to assess the quality of the relationship as perceived by married or cohabitating couples. Items on the DAS were initially selected from a pool of nearly 300 items. Three judges then examined all items a judged each item for content validity. With the pool of items reduced to approximately 200 items, a preliminary instrument was constructed and administered to a sample of 218 married persons as well as a small sample of 94 unmarried

persons. Items were included in the final version of the DAS based on their ability to discriminate between married and unmarried respondents. Factor analysis was then performed on the 40 remaining items and four factors emerged. The resulting DAS contained 32 items measuring factors including Dyadic Satisfaction, Dyadic Cohesion, Dyadic Consensus, and Affectional Expression (Spanier, 1976).

The criterion validity of the DAS was established by administering the DAS to a sample of married and unmarried participants. Results indicated that the married participants differed significantly in their responses compared with the non-married participants. Thus, it was concluded that each of the items on the DAS was highly correlated with the criterion. Construct validity was determined by comparing results on the DAS to results on the Lock-Wallace Marital Adjustment Scale. The correlation between the two scales was .86, indicating a high degree of convergent validity between the DAS and the Lock-Wallace. Reliability estimates for the DAS subscales were as follows; Dyadic Consensus (.90), Dyadic Satisfaction (.94), Dyadic Cohesion (.86), and Affectional Expression (.73). Higher scores on the

Dyadic Satisfaction subscale are indicative of greater satisfaction.

Procedures. A list was obtained containing names and e-mail addresses of graduate students who were enrolled during either the summer 2002 or fall 2002 semester at a large university in the South-Central region of the United States. A random sample of 400 students was selected from the list, and solicitation messages were sent to those individuals' university e-mail accounts requesting their participation in the study. Two weeks later a follow-up message was sent, followed by a final reminder two weeks later. Twenty gift certificates, valued at $20.00 each, were offered as incentives for participation. Participants could, at their option, elect to be entered in a random drawing for the gift certificates at the conclusion of the study.

Data analysis. All data was coded and analyzed using the Statistical Program for the Social Sciences (SPSS). Descriptive statistics were generated to fully describe the sample. Reliability analyses were conducted on each of the subscales used in the study, while a path analysis was used to test the conceptual model.

Human relations. The current study posed no threat to participants. Following receipt of IRB approval from

the Norman campus, a list of prospective participants was secured through the administrative office. The randomly selected sample of participants were contacted via e-mail and provided with the web-address of the survey as well as the password necessary to access the survey. Participants were also given the opportunity to complete the survey in a paper and pencil format if they so chose.

In order to maximize the response rate, participants received two reminder e-mails at two-week intervals asking them to complete the survey. They were also encouraged to participate through the use of incentives. A total of 20 gift certificates valued at $20.00 each were used as incentives. At their option, participants who chose to participate were asked to provide an e-mail address to allow the author to contact them if their name was selected in one of the random drawings for the available incentives.

CHAPTER III: RESULTS

Response Rate A total of 400 graduate students, or just fewer than 10% of the total population, were sampled from the population of eligible graduate students. Potential participants were solicited via university e-mail accounts and provided with the necessary web address for the survey as well as the necessary login and password. Of the initial 400 solicitations 14 were undelivered for various reasons, such as invalid e-mail addresses. The remaining 386 solicitations were delivered to the participants' university e-mail accounts. A total of 225 participants responded to the solicitation messages, resulting in a response rate of 58.2%. Eight responses were determined to be invalid or largely incomplete, bringing the total usable sample to 217.

Sample Description The final sample was comprised of 134 (62%) married and 83 (38%) unmarried participants. Many of the distributions were considerably skewed, kurtotic, or both. Precise skew and kurtosis statistics, along with corresponding descriptive statistics, are presented in Table 1.

Participants who were married had known their spouse an average of 10.35 (SD = 7.03) years, and had been

married to their current spouse for an average of 7.01 (SD = 6.43) years. The gender breakdown of the sample included 107 (49%) women, 109 (51%) men, and one participant who failed to specify a gender. The ethnic composition of the sample included 16 African Americans, 42 (19%) Asian/Pacific Islanders, 140 (64%) Caucasians, eight (4%) Hispanics, one (1%) Middle Easterner, nine (4%) Native Americans, and nine (4%) who failed to specify any ethnicity. One hundred and forty participants (65%) were citizens of the United States, and 166 (77%) indicated that English was their primary language. Ninety-five (44%) participants indicated that their spouse or significant other was also a graduate student and 83 (38%) indicated that they had children. One hundred twenty-seven (59%) respondents were completing Master's level degrees while 89 (41%) were enrolled in Doctoral programs.

The average age of the participants was 31.03 (SD = 7.94). Married participants (M = 32.81, SD = 8.32) were significantly older than unmarried participants (M = 28.26, SD = 6.43), $t(208) = -4.46$, $p < .001$. Graduate students worked an average of 28.72 (SD = 16.46) hours per week, with married graduate students working significantly more hours at a job other than their

academic coursework (M = 31.15, SD = 15.83) than unmarried graduate students (M = 25.09, SD = 16.83), t(203) = -2.62, $p < .01$. Finally, the sample reported an average income of $39,812.17 (SD = $30,887.20) per year. Married graduate students reported significantly higher incomes (M = $49,237.70, SD = $33,687.51) than did unmarried graduate students (M = $22,649.25, SD = $13,179.71), t(187) = -7.71, $p < .001$) (see Table 1).

Insert Table 1 about here

A 2 X 2 factorial ANOVA was used to determine differences between gender and marital status on the Academic Stress subscale of the Graduate Student Stress Inventory-Revised (GSI-R). Significant differences between married and unmarried graduate students existed for this measure, with unmarried graduate students scoring significantly higher (M = 33.42, SD = 8.11) than married graduate students (M = 31.10, SD = 8.21), F(1, 212) = 4.55, $p = .034$ (see Table 2). Rocha-Singh (1994) does not report averages or standard deviations in her three study article establishing the structure of the sub-scales and reliability of the instrument.

Insert Table 2 about here

On the Emotional Functioning subscale of the Duke-North Carolina Health Profile (DNCHP), the total sample reported an average score of 0.73 (SD = 0.12). A 2 X 2 factorial ANOVA was used to determine differences among scores due to marital status and gender. Once again, married students reported significantly higher scores (M = 0.75, SD = 0.12) than did their unmarried counterparts (M = 0.70, SD = 0.11), $F(1, 208) = 6.51$, $p = .014$ (see Table 3). The comparative meaning of these scores is unknown, because Parkerson, et al fails to include means and standard deviations in their 1981 study that establishes the existence of the subscales and the reliability of the instrument.

Insert Table 3 about here

The married portion of the sample reported average scores of 5.53 (SD = 2.05) on the Significant Other subscale of the Multidimensional Scale of Perceived Social Support (MSPSS). By means of comparison, Simet, Dahlem, Simet and Farley (1988) reported an average score

of 5.75 (SD = 1.21) in their standardization sample. The married portion of the current sample had an average score of 39.40 (SD = 4.92) on the Dyadic Satisfaction subscale of the Dyadic Adjustment Scale respectively (DAS). The average score in the standardization sample was 40.5 (SD = 7.2) (Spanier, 1976).

Instrument Reliability Alpha coefficients were calculated for each standardized scale used in order to verify reliability of measurement. The resulting Alpha coefficients for each scale are as follows; GSI-R .81, DNCHP .77, MSPSS .97, and DAS .83.

Test of Proposed Model The predicted path model relating academic stress and marital satisfaction was largely unsupported. Although the overall model was found to be significant (p = .001) (see Table 5), the path analysis revealed only one significant relationship existed between the predictor variables and marital satisfaction. Spousal Social Support was found to significantly predict Marital Satisfaction (p < .001) (see Table 4 & 5). No evidence of a direct spillover effect between academic stress and marital satisfaction was found. No significant relationships were found among the remaining variables in the model. The resulting model is depicted in Figure 1.

Insert Table 4 & 5 about here

Insert Figure 1 about here

CHAPTER IV: DISCUSSION

This study sought to determine whether or not a direct spillover effect existed between academically related stress and marital satisfaction. In addition, it sought to determine if academically related stress impacted marital satisfaction indirectly through intrapersonal distress and social support of the spouse.

The results of the study do not support the existence of a direct spillover effect between academically related stress and marital satisfaction. These results are in contrast with findings reported by Barling and MacEwen (1992) who reported evidence of negative work-experiences being associated with lowered levels of marital satisfaction. The lack of evidence supporting the direct spillover effect would seemingly indicate that academically related stress might affect marital satisfaction indirectly though other variables. However, the results of the current study also did not support the proposed model which sought to link academically related stress with marital satisfaction through intrapersonal distress, which in turn is mediated by social support of one's spouse. Only one significant relationship, between social support of one's spouse and marital satisfaction, emerged. The remaining

relationships were not significant. Therefore, the results also do not support the presence of a relationship between academically related stress and intrapersonal distress, between intrapersonal distress and marital satisfaction, or between intrapersonal distress and perceived social support of a spouse.

It is quite interesting that support for a significant relationship between academically related stress and intrapersonal distress, or between interpersonal distress and marital satisfaction was not found. Numerous authors, including Frone, Yardley and Markel (1997); Mauno and Kinnunen (1999), Hughes and Galinsky (1994), and Barling and MacEwen (1992) all suggest that a variety of work related stressors are significantly related to general mental health and intrapersonal distress. As well, numerous authors such as Hughes and Galinsky (1994), Barling and MacEwen (1992), suggest a relationship between intrapersonal distress and marital satisfaction. However, the current study failed to support either of these previous research findings.

The present study did find support for the relationship between the social support of a spouse and marital satisfaction as reported by Winefield (1993).

This suggests that perceived support from one's spouse is related to marital satisfaction. This finding is not only consistent with Winefield (1993), it is also consistent with Julian and Markman (1991), and Dehle, Larsen, and Landers (2001). Support for one's spouse has, in conjunction with other factors, long been associated with high self-rating of marital satisfaction and martial quality.

Despite the lack of evidence to support the proposed model, some interesting differences between married and unmarried graduate students did arise. Married graduate students, in general, appear to be older, better adjusted emotionally, and less bothered by academically related stress. In addition, they report working more hours outside of the classroom, and report considerably higher incomes. Therefore, despite the lack of evidence to support the model, it appears that married graduate students are generally functioning better emotionally, and reporting less academically related stress, despite the fact that they tend to work longer hours, and have greater responsibilities in their home lives. At this time the precise reasons for these differences is unknown. It is suspected that other variables that were not included in the current model may help explain these

differences. Additionally, it is also suspected that the AS subscale from the GSI-R may not have been the most desirable measure of stress. It may have been that this instrument measures only stress associated with events, rather than providing a measure of the current level of stress experienced due to academically related causes.

Differences due to gender may well exist in the current study. However, they were not explored as a variable in the model because the purpose of the current study was only to support a general model linking academic stress and marital satisfaction. It was decided that gender differences would be better explored in the context of understanding how the model might function differently for males and females, therefore it was decided not to include gender differences in this preliminary model. Given the evidence suggesting that stress and anxiety may differ between men and women, perhaps it would have been advisable to include gender as a predictor variable in the model. As well, the age of the participant might also have been included in the model, as those older students may have reported lower stress levels due to life-experience and a greater ability to put graduate school related stress in perspective.

Conclusions The lack of support for the proposed model suggests that academically related stress does not influence marital satisfaction directly, or indirectly. However, it is interesting to note that married graduate students reported lower levels of academically related stress as well as higher levels of intrapersonal functioning, suggesting that marital status might in fact play some role in their perception of stressful events as well as their general psychological functioning. Such a finding suggests that although the variables that comprised the model generally were not significantly related, it is possible that some difference exists between married and unmarried graduate students, which results in better stress tolerance, and better psychological functioning.

It is possible that the failure to find support for the model arose for a variety of reasons. The instruments selected may not have adequately measured the constructs they were thought to measure. For example, the Academic Stress subscale of the Graduate Student Stress Inventory-Revised (GSI-R) appears to measure stress levels associated with certain academically related events. Although the GSI-R is moderately correlated with measures designed to assess the degree of

current stress and anxiety, it is possible that the differences between these two concepts may be sufficient to negate the presumed relationship between stress and emotional functioning as proposed in the model. Similarly, this possible difference between perceived stress associated with an event and the degree of acute stress may also have minimized the relationship between academic stress and marital satisfaction.

Further, the lack of support for the model may have arisen due to the absence of important variables in the model, or the presence of unnecessary variables in the model. Both the presence of unnecessary variable or the absence of important variables can negatively impact the results of regression-based model testing.

Finally, although the current study experienced a 58% response rate, it could be that those who responded represented a certain sub-set of the graduate student population and were therefore not representative of the entire population. The degree to which this affected the results of the current study cannot be known.

Limitations One limitation to this study is that the results are likely only be generalized to graduate students in universities in the South-Central Region of the United States. Although attempts were made to

randomly select the sample, the entire sample was derived from one university. Therefore, the results can only be generalized to that one university, and graduate students in universities in other regions or countries may differ in unknown ways from those sampled.

Implications for future research The failure of this study to find support for relationships that previous research has strongly suggested might exist indicates a need for further exploration of the effects of academic stress on marital relationships. Future research might explore the general basic differences between married and unmarried graduate students to further clarify the differences between experienced stress levels, and emotional functioning. The presence of these two differences provides evidence of potential differences between married and unmarried graduate students.

Additionally, further research to examine the nature of academic related stress might be necessary in order to clarify the characteristics of this type of stress, and to better understand how it functions before further attempts to relate it to marital satisfaction.

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APPENDICIES

Appendix A

Prospectus

Running head: Academic Stress and Marital Satisfaction

PROSPECTUS

Academic Stress and Graduate Student Marital Satisfaction: Preliminary Testing of a Conceptual Model

Barton J. Turner

University of Oklahoma

Academic Stress and Graduate Student Marital Satisfaction: Preliminary Testing of a Conceptual Model

Barton J. Turner

CHAPTER I: INTRODUCTION

Although considerable anecdotal evidence exists regarding the effect of graduate school on marital relationships, little if any empirical evidence exists seeking to determine the nature of the relationship between the two. In the absence of a large research literature, support for such a study can be drawn from a considerable research base on factors that affect marital satisfaction, and the effects of work stress on marital satisfaction. These differing research literatures can then be combined with the few studies that investigate the nature of academic related stress in both undergraduates and graduates.

Marital Satisfaction

Marital satisfaction, as a broad construct, has received considerable research interest through the years. Based on this research history, Whisman (1997) proposed a model of marital satisfaction that was comprised of three factors, including environmental variables, intrapersonal variables, and interpersonal variables. Later research by Sokoliski and Hendrick

(1999) supported the existence of these three different types of factors and marital satisfaction.

Environmental variables. Environmental variables, as described by Whisman (1997) include factors such as illness, work related stress, and other such variables. Certainly the potential impact of work related stress has been well investigated, with the findings generally supporting the belief that stress from work can negatively effect marital satisfaction in a variety of ways (Barling, & MacEwen, 1992; Mauno & Kinnunen, 1999). For example, Karney and Bradburg (1995), in a review of 115 longitudinal studies on marital quality and stability, reported that the presence of stress predicts lower marital stability and satisfaction over time.

Intrapersonal variables. Intrapersonal variables, as detailed by Whisman (1997), and Sokoliski and Hendrick (1999), include factors that are generally thought to be within the individual, such as mood states, sexual satisfaction and love style. Negative mood states, such as the "Big Five" traits, including trait anxiety, neuroticism, emotional instability, and negative affectivity have received considerable research attention. Kim, Martin, and Martin (1989) found that the moodiness and emotional instability often associated with

negative mood states such as depression and anxiety are related to unstable, dissatisfying marriages.

Sexual satisfaction has been repeatedly linked to marital satisfaction (Birchler, & Webb, 1977; Cupach & Comstock, 1990; Morokoff & Gillilland, 1993). Although sexual satisfaction is often linked with marital satisfaction, it is not required for a couple to experience marital satisfaction, and is not sufficient for marital satisfaction to exist (Morokoff & Gillilland, 1993).

Another of Whisman's (1997) intrapersonal variable is love. Contreras, Hendrick, and Hendrick (1996) suggest that the type of love experienced is related to marital satisfaction. Their study builds on Lee's (1973) multidimensional description of love, which postulated that love could take many forms including practical, possessive/dependent, altruistic, friendship-oriented, passionate, and game playing. Sokolski and Hendrick (1999) report that the existence of passionate love, friendship-oriented love, and altruistic love were all positively related to marital satisfaction for both spouses.

A final intrapersonal variable described by Whisman (1997) is commitment. Commitment to the marital

relationship has been shown to be moderately correlated with sexual satisfaction and marital satisfaction (Sokolski & Hendrick, 1999).

Interpersonal variables. Interpersonal variables are best thought of as variables that occur between people, rather than within a person. A key interpersonal variable is communication, which also includes disclosure or sharing between partners (Whisman, 1997). Communication has been shown to serve as a buffer between spouses with personality differences. Effective communication can mediate these personality differences and in doing so, can result in increased marital quality and marital satisfaction (Karney & Bradbury, 1995). In addition, Russell-Chapin, Chapin, and Sattler (2001) report that a negative correlation exists between marital distress and a communication, suggesting that high levels of marital distress were related to a lack of communication.

Another interpersonal variable found to be linked to marital satisfaction is the perceived adequacy of social support from family, friends, and one's spouse (Dehle, Larsen, & Landers, 2001; Sokoliski & Hendrick, 1999). Depressive symptoms and perceived stress were judged to be lower by those who perceived adequate levels of social

support (Dehle, 2001). Additionally, the presence of an adequate level of social support was related to higher levels of marital quality. In particular, Julian and Markman (1991) reported that emotional support of one's spouse, among other factors, is highly related to marital satisfaction.

A final type of interpersonal variable is equity (Dancer & Gilbert, 1993). Equity refers to each partner doing a fair share of responsibilities such as housework (Sokoliski & Hendrick, 1999). Such equity has been found to be highly positively correlated with marital satisfaction (Sokoliski & Hendrick, 1999).

Stress and Marital Satisfaction

Although little research has been done that specifically addresses the effects of graduate school related stress on marital quality, stability, and satisfaction, the effects of work related stress on marital satisfaction is a topic that has received considerable attention in the research literature. One of the key issues related to the effects of work related stress on marital satisfaction in referred to as the "spillover effect." Barling and MacEwen (1992) found evidence of this spillover effect, where negative work-experiences were associated with lowered levels of

marital satisfaction. Subsequent studies have found inconclusive evidence for a direct spillover effect between work stress and marital satisfaction. A more likely scenario is that work related stress effects marital quality through its effect on the various components shown to related to marital satisfaction (Frone, Yardley, & Markel, 1997). For example, the effects of job related stress on marital functioning may occur through exhaustion and psychosomatic symptoms (Mauno & Kinnunen, 1999), psychological distress such as depression and anxiety (Frone, Yardley, & Markel, 1997), and difficulty making decisions or reach consensus on important matters (Williams, 1995).

Hughes and Galinsky (1994) and Barling and MacEwen (1992) suggest that negative work experiences, usually conceptualized and measured as work stress or stressors, exert an influence on marital functioning via their effect on individual well-being. In such cases, well-being serves a moderating function between work experiences and marital functioning. Well-being is used to describe a variety of variables, such as job satisfaction, depressive symptomatology, and psychosomatic health among others.

The potential relationship between work related stress and well-being and/or marital satisfaction has been explored in some depth. Several work related issues have been associated with well-being and/or marital satisfaction, including job insecurity (Hughes & Galinsky, 1994), reduced job autonomy (Stets, 1995), conflict between work roles and family roles (MacEwen & Barling, 1988), and work demands encroaching on family time (Swanson, 1999). Stets (1995) reports that reduced levels of job autonomy often result in an increased level of controlling behaviors in the home. Daniels and Guppy (1994) also report finding that lower levels of job autonomy are associated with psychological distress such as tension, anxiety and in some cases depression.

Work-family role conflict can often result when the demands of the workplace interfere with one's role within the family. Dual-career families in particular seem to be a prime example of this struggle to balance job and family roles and responsibilities. Although dual career families experience several negative outcomes such as role strain, role confusion and psychological distress, some mediating factors appear to exist that may moderate these effects (Frone, Yardly & Markel, 1997). In particular, satisfaction with the dual-career lifestyle

and effective coping strategies have been found to mediate the stressors related to dual-career lifestyles, and thus positively effect the perception of family role-strain, marital quality and overall marital satisfaction (Perrone & Worthington, 2001).

Mauno & Kinnunen (1999) present a list of job-related stressors including, job insecurity, autonomy, time pressures, and work-family conflict. These stressors may be helpful to consider in understanding the types of stress graduate students may experience. Mauno and Kinnunen (1999), as well as Latin and Duraup (1996) suggest that these types of job-related stressors affect marital satisfaction through job related exhaustion and the resulting psychosomatic symptoms. They further indicate that the effect of these stressors is equal for both sexes (Mauno & Kinnunen, 1999).

One particular aspect of marital satisfaction, sexual functioning, has been linked to several stress related factors. Constant daily hassles, or small daily irritations, were found to predict sexual desire as measured by desired frequency of intercourse and frequency of sexual desire (Morokoff & Gillilland, 1993). Job related stressors were found to be negatively related to sexual functioning (Morokoff & Gillilland, 1993). As

the number of daily hassles and other job related stressors increase, sexual desire and sexual functioning decrease, which can lead to, decreased marital satisfaction.

School-related stress. Older university students, including non-traditional students and graduate students, report stressors that include fear of academic failure, loneliness, and perceived powerlessness (Winefield, 1993). Academic related stress has been found to be positively correlated with feelings of self-esteem (Kreger, 1995). Many of these stressors seem to relate directly to several of the job related stressors proposed by Mauno & Kinnunen (1999). In particular Mauno and Kinnunen's (1999) variable regarding job insecurity appears to be similar to Winefield's (1993) fear of academic failure. Additionlly, Mauno and Kinnunen's (1999) variables measuring job autonomy and good leadership relations may share some similarities with Winefield's (1993) variable of perceived powerlessness. Additionally, a large body of anecdotal evidence exists suggesting that graduate study is in fact highly, stressful, tiring and, may produce psychological reactions in students.

Winefield (1993) reports graduate students generally have higher levels of study satisfaction than do undergraduates. This appears due to increased control, finances, skill usage, and because they have a clearer sense of identity within the university community. However, Winefield (1993) further states that graduate students still report considerably high stress, particularly fear of academic failure. Other aspects of the students' lives were also relevant, such as their assessment of the adequacy of their relations with confidants and peers, and their financial state (Winefield, 1993). Evidence suggests that students in different types of graduate programs experience differing degrees of school related stress. Despite agreement on this issue, it is yet unclear which types of graduate programs are the most stressful. In a survey of medical students, residents, and MS/PhD students, Toews (1994) reported that all three groups reported elevated levels of perceived stress. Of the groups, the MS/PhD graduate students reported the highest levels of stress. He later replicated this finding with a much larger sample (Toews, 1997). Other studies have reported different findings. Some studies have indicated that medical students have reported less subjective feelings of stress than law

students or other graduate students (Helmers, Dahnoff, Steinert, Ldyton, & Young, 1997). Heins, Fahey and Leiden (1984) reported that law students reported higher levels of stress compared with medical students and other graduate students. In particular, they were concerned with time and economic pressures, followed by academic concerns. Medical students were most concerned with the lack of time they spent at home. Toews (1994) reports the highest ranked stressors for graduate students included self-expectations, examination and evaluation anxiety, time available for school and other demands, and the volume of work required.

In general, older university students, including graduate students, tend to show greater levels of psychological distress than similar aged peers (Winefield, 1993). For male students this distress appears to be at least somewhat related to economic factors while women students were more concerned with the demands and responsibilities outside of their graduate program (Mallinckrodt, Leong, & Kraij, 1989).

In addition to the students' role in their graduate program, many graduate students are also fulfilling other roles outside of the program. Inter-role conflict has been shown to lead to higher levels of job demand/load

stress (Steffy & Ashbaugh, 1986). Further, marital behaviors influence inter-role conflict, which, in turn, influence marital satisfaction and job stress. Such a finding supports the notion of a causal relationship between family related variables and work related variables (Steffy & Ashbaugh, 1986). As with work related stress, the effects of school related stress were found to be mediated by the availability of support, such as social support and emotional support from family and friends (Winefield, 1993). Winefield (1993) also reported strong correlations between study satisfaction and supportive behaviors by teaching staff, however it was not noted to what extent this mediated the degree of school related stress. Finally, Winefield (1993) reported that stressors of medical school were more severe for single students, while stress levels were found to decrease in single students if they were to marry. Such a finding suggests that social and emotional support from a spouse may also serve to mediate experience levels of stress.

School stress and marital satisfaction

With the documented effect of work related stress, and the interaction between stress and marital satisfaction, the question naturally arises regarding the

effect of graduate school related stress and marital satisfaction. Although few studies exist which explore this issue, those that do exist generally suggest a relationship similar to that of work stress and marital satisfaction.

Some evidence linking graduate training to marital distress and decreasing marital satisfaction has been reported. Using a qualitative research methodology, Legako and Sorenson (2002) interviewed six graduate student/spouse dyads in an American Psychological Association clinical psychology program to assess how the stressors of graduate training had effected their marital relationships. Legako and Sorenson (2000) reported that the stresses of graduate training appeared related to decreases in relationship satisfaction. Further, in a study of theology students, Craddock (1996) reported that low stress students reported high marital quality and satisfaction compared with high stress students. Global martial satisfaction declined over time for the students experiencing a high degree of stress. Additionally, Craddock (1996) suggest that factors within the relationship may serve to buffer the effect of accumulating stress. As well, Katz, Monnier, Libet, Shaw, and Beach (2000) found that perceived spousal

support is positively associated with an individual's own marital and emotional adjustment. Norton, Thomas, Morgan, Tiller, and Dickins (1998) reported finding that the single most buffering effect was support from a partner, as measured by . However, at follow-up it was found that partner support tended to decrease over time.

Summary of Research Findings

The variables that affect martial satisfaction can generally be grouped into three types; environmental variables, intrapersonal variables, and interpersonal variables. One environmental variables, work related stress, has been found to have a negative impact on marital satisfaction. Work related stress negatively effects marital satisfaction by affecting a variety of intrapersonal variables, including negative mood states such as anxiety and depression, exhaustion, and other psychosomatic symptoms. Work related stress can result from a variety of issues within the work place, such as reduced autonomy, work-family conflict, time pressures, and job insecurity. Similar stressors may also be found in the academic setting. Stressors faced by graduate students may include fear of academic failure, and perceived powerlessness, as well as other issues such as financial concerns and evaluation anxiety. The multitude

of stressors that result from work and academic setting can be reduced through adequate social and/or emotional support. The experience of graduate training has been shown to have detrimental effects on marital relationships. However, research has also suggested that social and emotional support is the best buffer between these stressors and marital adjustment and satisfaction.

Purpose

The proposed study seeks to examine the relationship between academic stress and marital satisfaction in graduate students. In order to examine the nature of this relationship, a conceptual model for understanding the relationship between academic stress and marital satisfaction in graduate students has been proposed and illustrated in Appendix 1. This model was derived through a review of the existing literature on marital satisfaction, the effects of work stress on different components of marital satisfaction, and the effects of academic stress on both undergraduate and graduate students. The proposed model seeks to explain the relationship between academic stress and marital satisfaction by establishing a relationship between academic stress and psychological distress, then determining the presence of a buffering effect from

social support of one's spouse. In examining the relationship between academic stress and marital satisfaction, two primary questions will be addressed. The first question is whether there is a direct spillover effect between academic stress and marital satisfaction. In other words, does the presence of increased levels of academic stress directly affect marital satisfaction? The second question to be addressed closely follows the first. If no evidence of a direct spillover effect is found, then does academic stress correspond with higher levels of intrapersonal distress such as depression and anxiety, and are the effects of intrapersonal distress buffered by the presence of social support from one's spouse? The model's design will then allow a determination to be made regarding which source of social support might be more effective in buffering this intrapersonal distress.

CHAPTER II: METHODOLOGY

Research Design

The proposed study will employ a correlational design in evaluating the effect of academic related stress on marital satisfaction in graduate students. Potential threats to internal validity that are inherent in this type of design include instrumentation, and the lack of random assignment. The threat posed by instrumentation will be minimized by ensuring that the instruments have sufficient reliability and validity data, and that the instruments were standardized for use on the population being evaluated in this study. In addition, scale alphas will be computed to ensure the reliability of each scale with the sample employed in the study.

Additionally, because data for this project will be collected through the use of a survey method, the types of respondents who choose to participate will also affect the internal validity of the project. Because potential participants will have the option to participate, those who choose to participate may not be fully representative of the population as a whole. Instead, those who choose to participate will likely differ from those who choose

not to, although the exact extent and nature of these differences cannot be known.

Sampling. The sample for the proposed study will consist of a random sample of all graduate students currently enrolled at the University of Oklahoma. A total of 100 married participants will be needed in order to ensure an adequate level of power is present, .80 or greater for all analyses, to detect differences among potential differences that exist among the three groups.

Measures. A survey will be constructed using subscales from various instruments designed to measure the specific components of the conceptual model, as well as demographic questions. Demographic questions will include questions regarding the participants gender, marital status, age, ethnicity, course of study, family income, United States citizenship, and whether English is a primary or secondary language.

The Academic Stress (AS) subscale from the Graduate Stress Inventory-Revised (GSI-R) (Rocha-Singh, 1994) will be used to measure academically related stress. The AS contains seven items, which require the respondent to using a 7-point Likert-type scale. The GSI-R was developed and normed in the course of three studies by Rocha-Singh (1994). The specific items on the GSI-R were

selected by first carefully reviewing the research that identified certain elements found to be important for graduate student adjustment. This review resulted in four domains being identified, including professional/academic, environmental, familial, and monetary. Items were then developed that were thought to reflect these specific domains. The initial study examining the factor structure used 450 participants, with a near equal number of men and women from a variety of ethnic backgrounds. Using factor analysis, this first study found that only three factors existed. The environmental and academic/professional subscales remained intact, however the family and monetary subscales were combined into one subscale.

The GSI-R was further refined in a follow-up study that included 257 participants. The subscales identified in the initial study were verified. Results suggest that the Academic Stress subscale has a coefficient alpha of .74, In addition, the concurrent validity of the GSI-R was determined using the Speilberger Trait Anxiety Scale (STAS). Moderately high correlations were found for each subscale. Of the three total subscales, the Academic Stress subscale had the highest correlation of .45. Rocha-Singh (1994) states that such correlations suggest

that the various subscales of the GSI-R are measuring a similar construct as the STAS, but low enough to suggest that the various subscales are measuring a construct that can be distinguished from trait anxiety.

A final study in the Rocha-Singh (1994) article determined test-retest reliability for the GSI-R. A sample of 67 students were administered the GSI-R over a one week interval. Test-retest reliability for the Academic Stress subscale was .85.

The intrapersonal variable regarding participant's emotional health will be measured using the Emotional Function (EF) subscale from the Duke-UNC Health Profile (DUNCHP) (Parkerson, et al, 1981). The DUNCHP is a 63-item instrument designed to measure adult health status across a variety of domains, including symptom status, physical function, emotional function and social function. The DUNCHP Emotional Function subscale is largely based on the concept of self-esteem. The authors selected self-esteem as the indicator of emotional function based on the importance placed on self-esteem in a variety of personality theories (Parkerson, et al, 1981).

Items were selected for the DUNCHP by first reviewing items from other health instruments. These

items were reviewed and selected for use in the DUNCHP using a series of twelve criteria. Items included in the EF subscale were selected primarily from the Tennessee Self-Concept Scale, the Zung Self-Rating Depression Scale, and California Psychological inventory, and the Self-Esteem Inventory. The reliability and validity of the DUNCHP was determined through a series of studies using responses from a sample of 395 ambulatory patients in a family medicine center. The Chronbach's alpha for internal consistency was .85 for the EF subscale. The criterion validity of the EF subscale was measured by correlating the EF subscale with other measures of emotional functioning. The EF subscale was highly correlated with the Tennessee Self-Concept Scale (.89), the Zung Self-Rating Depression Scale (.57). Parkerson et al (1981) point out that the very high correlation between the EF subscale and the Tennessee Self-Concept Scale occur because both instruments are designed to measure the same construct, and because the EF subscale contains some items from the Tennessee Self-Concept Scale. (Parkerson, et al, 1981).

Social support from one's spouse will be measured using the Significant Other (SO) subscale from the Multidimensional Scale of Perceived Social Support

(MSPSS), developed by Zimet, Dahlem, Zimet, and Farley (1988). The MSPSS contains a total of 12 items which requires participants to respond using a 7-point Likert-type scale. It was developed to measure the extent of perceived social support from family, friends and significant others. Items for the MSPSS were developed through the use of existing theory and research. Using factor analysis, potential items were added or subtracted such that three factors were present. These factors, or subscales, measure social support from family, social support from friends, and social support from a significant other. Zimet, Dahlem, Zimet, and Farley (1988) report sub-scale reliability coefficients of .91 for the Significant Other subscale, and a test-retest reliability of .72.

Construct validity was established by correlating the Depression and Anxiety subscales of the Hopkins Symptom Checklist (HSCL). Zimet, Dahlem, Zimet, and Farley (1988) report that perceived support from family was significantly inversely related to both depression and anxiety. Perceived support from friends was significantly related to depression symptoms, but not to anxiety symptoms. Finally, Perceived support from a significant other was significantly related to depression

but not anxiety. Each of these results was consistent with the findings that were expected based on the prior research.

Marital satisfaction will be measured using the Dyadic Satisfaction (DS) subscale from the Dyadic Adjustment Scale (DAS) (Spanier, 1976). The DAS is comprised of a variety of items designed to assess the quality of the relationship as perceived by married or cohabitating couples. Items on the DAS were initially selected from a pool of nearly 300 items. Three judges then examined all items a judged each item for content validity. With the pool of items reduced to approximately 200 items a preliminary instrument was constructed and administered to a sample of 218 married persons as well as a small sample of 94 unmarried persons. Items were included in the final version of the DAS based on their ability to discriminate between married and unmarried respondents. Factor analysis was then performed on the 40 remaining items and four factors emerged. The resulting DAS contained 32 items measuring factors including Dyadic Satisfaction, Dyadic Cohesion, Dyadic Consensus, and Affectional Expression (Spanier, 1976).

The criterion validity of the DAS was then tested by administering the DAS to a sample of married and unmarried participants. Results indicated that the married participants differed significantly in their responses compared with the non-married participants. Thus, it was concluded that each of the items on the DAS was highly correlated with the criterion, which was the criterion used in establishing criterion validity. Construct validity was determined by comparing results on the DAS to results on the Lock-Wallace Marital Adjustment Scale. The correlation between the two scales was .86, indicating a high degree of convergent validity between the DAS and the Lock-Wallace. Reliability estimates for the DAS subscales were as follows; Dyadic Consensus (.90), Dyadic Satisfaction (.94), Dyadic Cohesion (.86), and Affectional Expression (.73).

Data analysis. All data will be coded and analyzed using Statistical Program for the Social Sciences (SPSS). Descriptive statistics will be used to fully describe the sample. Reliability analyses will be conducted on each of the subscales used in the study, while a path analysis will be used to test the conceptual model.

Human relations. The proposed study poses no threat to participants. Following receipt of IRB approval from

the Norman campus, a list of prospective participants will be secured through the administrative office. The randomly selected sample of participants will be contacted via e-mail and provided with the web-address of the survey as well as the password necessary to access the survey. Participants will also be given the opportunity to complete the survey in a paper and pencil format if they choose.

In order to maximize the response rate, participants receive periodic reminder e-mails asking them to complete the survey. They will also be encouraged to participate through the use of incentives. A total of 20 gift certificates valued at $20.00 each will be used as incentives. At their option, participants who choose to participate will be asked to provide an e-mail address to allow the author to contact them if their name is selected in one of the random drawings for the available incentives.

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Appendix B

Survey Instrument

Demographics Questionnaire
University of Oklahoma, Norman Campus
Research Study by Barton Turner, M.S.

Thank you for taking the time to complete this survey. Although it is preferable for you to provide answers to all items, you may refuse to provide an answer to any question.

Demographic Information

1. Please indicate your age: _____
2. Please indicate your gender: _____
3. Please circle the ethnic/cultural group which best describes you:
   a. African American
   b. Caucasian
   c. Asian/Pacific Islander
   d. Hispanic
   e. Middle Eastern
   f. Native American
4. Are you a Naturalized citizen of the United States of America? _____
5. Is English you primary language? _____
6. How many hours do you work per week (include assistantships if applicable) _____
7. Are you currently married? _____
   - if yes: How many years have you been married to your current spouse? _____
   - How long have you known your current spouse? _____
8. Is your spouse also a graduate student? _____
9. Do you have children? _____
   - if yes: please indicate how many: _____
10. Please indicate your current degree program:
    1. M.S./M.Ed./M.A.
    2. Ph.D./Ed.D. (other doctoral degree)
    3. J.D.
11. Please indicate your major course of study: _____
12. Please estimate your total family income: _____

Graduate Student Stress Inventory-Revised
Academic Stress Subscale

Please rate the amount of stress associated with the statements below using the following scale:

1	2	3	4	5	6	7
Not at all Stressful			Neutral			Extremely Stressful

_____ 1. Fulfilling responsibilities at home and at school
_____ 2. Taking exams.
_____ 3. Fear of failing to meet program expectations.
_____ 4. Handling relationships.
_____ 5. Handling the academic workload.
_____ 6. Writing papers.
_____ 7. Meeting deadlines for course assignments.

Duke North-Carolina Health Profile
Emotional Function Subscale

Here are some statements you could use to describe how you feel about yourself. Please read each statement carefully and select the response that best fits how the statement describes you. Answer each item as best you can. There are NO right or wrong answers.

0	1	2	3	4
No, doesn't describe me at all		Somewhat describes me		Yes, Describes me exactly

_____ 1. I am a pleasant person.
_____ 2. I don't feel useful.
_____ 3. I get on well with people of the opposite sex.
_____ 4. My family doesn't understand me.
_____ 5. I like who I am.
_____ 6. I feel hopeful about the future.
_____ 7. I try to look my best.
_____ 8. I am a clumsy person.
_____ 9. I have difficulty making decisions.
_____ 10. I like meeting new people.
_____ 11. I'm not an easy person to get along with.
_____ 12. I'm a failure at everything I try to do.
_____ 13. I'm basically a healthy person.
_____ 14. I wish I had more sex appeal.
_____ 15. I give up too easily.
_____ 16. I like the way I look.
_____ 17. I'm not as smart as most people.
_____ 18. I have difficulty concentrating.
_____ 19. I'm satisfied with my sexual relationships.
_____ 20. I am happy with my family relationships.
_____ 21. I don't treat other people well.
_____ 22. I am comfortable being around people.
_____ 23. I can take care of myself in most situations.

Multidimensional Scale of Social Support
Significant Other Subscale

Indicate how you feel about each statement using the following scale. If you are not married you may skip this section.

1	2	3	4	5	6	7
Very Strongly Disagree		Mildly Disagree		Mildly Agree		Very Strongly Agree

_____ 1. My spouse is around when I am in need.
_____ 2. I can share joys and sorrows with my spouse when necessary.
_____ 3. My spouse is a real source of comfort to me.
_____ 4. My spouse cares about my feelings.

Dyadic Adjustment Scale
Dyadic Satisfaction Subscale

Most persons have disagreements with their relationships. Please indicate below approximately how often the following items occur between you and your partner. If you are not married you may skip this section.

1	2	3	4	5	6
All of the time	Most of the time	More often than not	Occasionally	Rarely	Never

_____ 1. How often do you discuss or have you considered divorce, separation, or terminating the relationship.

_____ 2. How often do you or your mate leave the house after a fight?

_____ 3. In general, how often do you think things between you and your partner are going well?

_____ 4. Do you confide in your mate?

_____ 5. Do you ever regret that you married?

_____ 6. How often do you and your partner quarrel?

_____ 7. How often do you and your mate "get on each other's nerves?"

_____ 8. Do you kiss your mate? (use the scale below)

Every Day	Almost Every Day	Occasionally	Rarely	Never
4	3	2	1	0

9. The following numbers represent different degrees of happiness in your relationship. The middle point, "happy," represents the degree of happiness of most relationships. Please select the number that best describes the degree of happiness, all things considered, of you relationship.

0	1	2	3	4	5	6
Extremely Unhappy		A little Unhappy		Very Happy		Perfect

10. Please select the number of ***one*** of the following statements that best describes how you feel about the future of your relationship.

5 I want desperately for my relationship to succeed, and *would go to almost any length* to see that it does.

4 I want very much for my relationship to succeed, and *will do all that I can* to see that it does.

3 I want very much for my relationship to succeed, and *will do my fair share* to see that it does.

2 It would be nice if it succeeded, but *I can't do much more than I am doing now* to keep the relationship going.

1 It would be nice if it succeeded, but *I refuse to do any more than I am doing now* to keep the relationship going.

0 My relationship can never succeed, and *there is no more that I can do* to keep the relationship going.

Consent form for research being conducted under the auspices of the
University of Oklahoma - Norman Campus

Academic Stress and Graduate Student Marital Satisfaction: Preliminary Testing of a Conceptual Model

Barton J. Turner, M.S., Principal Investigator

Barton Turner, M.S., through the University of Oklahoma, Norman Campus, is currently conducting the study **Academic Stress and Graduate Student Marital Satisfaction: Preliminary Testing of a Conceptual Model.** This form will provide you with information about the study so that you may make an informed decision whether or not to participate.

The results from this study will allow those who work with people in your current situation, such as counselors and other mental health workers, to better understand the relationship between academic related stress and marital satisfaction in graduate students.

If you decide to participate in this project, you will be asked to complete a questionnaire and answer some questions related to your current thoughts and feelings about your academic experience, yourself and your spouse. It is expected that the completing of the items will take approximately 30-40 minutes.

While there are no foreseeable risks of participation, a few participants may experience mild emotional distress. In the unlikely event that you do experience mild emotional discomfort, you may contact agencies such as Goddard Counseling and Testing Services at (405) 325-2911.

It is also possible that participants will benefit from their participation as a result of reflecting on the questions being asked. This reflection may result in a better understanding of themselves and their present situation. Further, your participation will allow for better understanding of others who experience a situation similar to yours. Finally, you may be selected to receive one of 10 gift certificates to local restaurants in exchange for your participation. You will be given the opportunity to provide your e-mail address at the end of the survey if you would like to be included in the drawing. However, providing your e-mail address is not required in order to participate in this study.

Your participation in this project is strictly voluntary. Refusal to participate will not affect your legal rights, your status as a graduate student, or any other issues related to your graduate training. Further, your responses will be kept strictly confidential within the limits of the law, and will be destroyed at the conclusion of the study. At no time will individual results be shared with any one, including spouses, professors, or other university administration. You may withdraw from this study at any time without penalty. To participate, you must be 18 years of age or older, married, and currently enrolled as a graduate student.

If you have any questions about this project, please contact me at 405-325-2911, or my faculty advisor at 405-325-5974. Additionally, if you have any questions regarding your rights as a research participant, please call the Office of Research Administration at (405) 325-4757, or e-mail them at *irb@ou.edu*.

Barton J. Turner, M.S.
Doctoral Student; Counseling Psychology

CONSENT STATEMENT

I hereby agree to participate in the above-described research. I understand my participation is voluntary and that I may withdraw at any time without penalty or loss of benefits. Please click the "I accept" button below to begin the survey.

Initial Solicitation Message

Greetings fellow graduate student!

My name is Barton Turner, and I am a doctoral student in Counseling Psychology in the College of Education here at the University of Oklahoma. I am presently working on my dissertation **"Academic Stress and Graduate Student Marital Satisfaction: Preliminary Testing of a Conceptual Model."** Your name has been selected at random from the population of graduate students on the Norman Campus, and I am requesting that you take approximately 10-15 minutes of your time to complete my survey. You may do so at your convenience, as my survey is on the internet at the following address: http://itsurvey.ou.edu/barton. Simply follow the instructions on the screen to access the survey, and enter **survey** when prompted for a username, and **bartondissertation** when prompted for the password. If you would rather, you may respond to this message to make arrangements to complete the survey in a paper/pencil format.

The first 100 married participants, and the first 100 unmarried participants will each be eligible to enter a drawing for one of 20 gift certificates valued at $20.00 each to a local restaurant of your choice. If you are uncomfortable with the notion of completing the survey via the internet, simply respond to this e-mail and I can forward a paper and pencil version of my survey.

This will be the first attempt at constructing such a model with graduate students, and I am hopeful it will be useful for better understanding the dynamic nature of the relationship between the academic stress we all experience and relationship satisfaction.

Because I will be unable to verify who has responded and who has not, you will be sent two reminder e-mails. The first should arrive in two weeks, with the second reminder following a week later. If you have responded, please simply disregard these reminder messages.

Thank you for any assistance you can provide me in this endeavor.

Barton Turner, M.S.
Doctoral Candidate
Counseling Psychology

First Follow-up Message

First Follow-Up E-mail

One week ago I sent an e-mail requesting your assistance in completing an on-line survey as part of my Doctoral dissertation. My dissertation is entitled, **"Académic Stress and Graduate Student Marital Satisfaction: Preliminary Testing of a Conceptual Model."** If you have already done so, I appreciate your assistance! However if you have not yet done so, *please* take 10-15 minutes to complete my survey at: http://itsurvey.ou.edu/barton *Simply follow the instructions on the screen, and enter* **"survey"** when prompted for a username, and **"bartondissertation"** when prompted for the password. I have modified the link, so those who had difficulty the first time should now be able to access the web page.

As you know, the validity of survey research is largely contingent on the response rate among the participants. The first 100 married participants, and the first 100 unmarried participants will each be eligible to enter a drawing for one of 20 gift certificates valued at $20.00 each to a local restaurant of your choice.

Please take a few minutes to assist me in completing this project. If you are uncomfortable with the notion of completing the survey via the internet, simply respond to this e-mail and I can forward a paper and pencil version of my survey.

Thank you for any assistance you can provide;

Barton Turner, M.S.
Doctoral Candidate
Counseling Psychology

Final Follow-Up E-mail

Two weeks ago I sent an e-mail requesting your assistance in completing an on-line survey as part of my Doctoral dissertation. My dissertation is entitled, **"Academic Stress and Graduate Student Marital Satisfaction: Preliminary Testing of a Conceptual Model."** If you have already done so, I appreciate your assistance! However if you have not yet done so, *please* take 10-15 minutes to complete my survey at: http://itsurvey.ou.edu/barton

Simply follow the instructions on the screen, and enter **survey** when prompted for a username, and **bartondissertation** when prompted for the password. I have modified the link, so those who had difficulty the first time should now be able to access the web page.

As you know, the validity of survey research is largely contingent on the response rate among the participants. The first 100 married participants, and the first 100 unmarried participants will each be eligible to enter a drawing for one of 20 gift certificates valued at $20.00 each to a local restaurant of your choice.

Please take a few minutes to assist me in completing this project. If you are uncomfortable with the notion of completing the survey via the internet, simply respond to this e-mail and I can forward a paper and pencil version of my survey.

Thank you for any assistance you can provide. This will be the final reminder you will receive regarding this matter.

Barton Turner, M.S.
Doctoral Candidate
Counseling Psychology

Appendix C

Tables and Figures

Table 1.

Descriptive Statistics Related to the Sample

Variable	Mean	St. Dev.	Skew	Kurtosis
Age (n = 210)	31.03	7.94	1.34	1.38
Hours Worked (n = 205)	28.72	16.46	1.71	2.75
Years Married (n = 114)	7.29	6.74	1.71	2.75
Years Known Spouse (n = 116)	10.54	7.22	1.68	3.72
Income (n = 189)	$39,812.17	$30,887.20	1.58	2.99

Table 2.

Results of 2 X 2 Factorial ANOVA for GSI-R Scores

Source	df	F	p	η^2
Gender	1	2.45	.119	.011
Marital Status	1	4.55	.034	.021
Gender X Marital Status	1	0.71	.790	.000
Error	212	(66.36)		

Values in parenthesis represent mean square errors.

Table 3.

Results of 2 X 2 Factorial ANOVA for DNCHP Scores

Source	df	F	p	η^2
Gender	1	3.20	.075	.015
Marital Status	1	6.51	.014	.029
Gender X Marital Status	1	0.002	.963	.000
Error	208	(0.014)		

Values in parenthesis represent mean square errors.

Table 4.

Correlations Among Academic Stress, Emotional Functioning, Social Support of Spouse, and Marital Satisfaction for Married Participants (N = 134)

Variable	GSI-R	DNCHP	MSPSS	DAS
Academic Stress	1			
Emotional Functioning	.099	1		
Social Support of Spouse	.052	.063	1	
Marital Satisfaction	.084	.091	.343**	1

Note: ** Correlation is significant at the 0.01 level

Table 5.

Regression of Marital Satisfaction, Academic Stress, Emotional Functioning, and Social Support of Spouse

Model Summary

R	R Square	Adjusted R Square	Std. Error of Estimate
0.356	0.127	0.103	4.707

Predictors: (Constant), Social Support, Academic Stress, Emotional Functioning

Change Statistics

R Square Change	F Change	Df1	Df2	Sig of F Change
.127	5.23	3	108	.002

Predictors: (constant), Social Support, Academic Stress, Emotional Functioning

Dependant Variable: Marital Satisfaction

Coefficients

	Beta	T	Sig.
(Constant)		7.416	.000
Academic Stress	0.071	0.778	0.438
Emotional Functioning	0.056	0.621	0.536
Social Suport	0.335	3.716	0.000

Dependent Variable: Marital Satisfaction

Figure 1. Beta weights for path model.

