THE MODERATING ROLE OF SOCIAL SUPPORT ON THE RELATIONSHIP OF PERCEIVED STRESS AND LIFE SATISFACTION OF PSYCHOLOGY GRADUATE STUDENTS

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ABSTRACT

Pursuing a doctoral degree in psychology can be a gratifying but arduous process. Research has shown that social support can be a robust protective factor when individuals experience stress. The purpose of this study was to examine the relationship between perceived stress and life satisfaction among graduate counseling psychology students, and to identify whether social support and a psychological sense of community (SOC) in the doctoral program are protective factors of life satisfaction. The results indicated that psychology graduate students experience higher degrees of satisfaction when they perceive themselves as having more available and adequate family and friend support. The findings also signified that students who report a better global experience of program support, as measured by SOC, are more satisfied with their lives than students that report lower SOC. Graduate students with lower levels of perceived stress are more likely to be satisfied with their lives than those with higher levels of perceived stress, but none of the proposed social support sources moderated this relationship.

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Chapter 1

Introduction

Graduate school is not only a time for increased stress, but a time of increased risk for the development of physical and psychological health problems due to the toll this stress can take (Mallinckrodt, Leong, & Kralj, 1989). In graduate students, succumbing to stress can lead to detriments in psychological functioning, such as symptoms of anxiety, depression, and negative mood, as well as physical functioning, such as sleep difficulties and physical problems (Goplerud, 1980; McKinzie, Altamura, Burgoon, & Bishop, 2006; Stecker, 2004). Stecker (2004) found that an alarming number of graduate students reported symptoms of depression, stress, substance use, and even suicidal ideation. Halleck (1976) found that after college freshman, graduate students were the most likely to utilize psychological services.

Stress associated with academic life has also been empirically shown to be negatively associated with important positive indicators of health. Diener (2000) identified that enhancing quality of life, or more specifically satisfaction with life, is vital to prevention of illness and cultivating health. Satisfaction with life is a significant component of an overall sense of well-being (Diener), and dissatisfaction with life may be considered a generalized symptom of stress (Matheny et al., 2002). Empirical evidence supports this assumption: in examining satisfaction with life across the five domains (i.e., self, standard of living, health, leisure, and family life) Brown (1988) found satisfaction to be related to perceived stress. In fact, satisfaction in the domains was found to be a greater predictor of perceived stress than sociodemographic variables. In a study done by Cohen, Kamarck, and Mermelstein (1983), perceived stress was associated

with lower life satisfaction and increased depressive symptomology**.** Matheny et al. and Chang (1998) found an inverse relationship between perceived stress and reported satisfaction with life among college students. Kent, Gorenflo, Daniel, and Forney (1993) indicated similar findings that increased perceived stress was negatively associated with life satisfaction among graduate students. The stressful academic life of a graduate student warrants research with outcomes that reflect psychological well-being.

The transactional model of stress (Lazarus, 1991; Lazarus & Folkman, 1984) views stress as being related to our cognitive perceptions of our ability to cope with a potentially threatening situation. Hobfoll (1989) asserts that the appraisal of coping resources is a more influential factor in determining whether demands will trigger stressful reactions than the appraisal of the stressor itself, saying, "Resources, then are the single unit necessary for the understanding of stress" (p. 516). Social support has been touted in research as one of the most important resources to buffer against the negative effects of stress. Psychological sense of community (SOC; Chavis & Newbrough, 1986; Sarason, 1974), a specific form of social support that addresses how connected a member feels to a particular group, has also been associated with lower levels of psychological distress. Therefore, the purpose of this study was to examine the potential moderating role of social support and SOC in the relationship between perceived stress and life satisfaction. In this study, a moderator is a phenomenon that interacts with perceived stress and alters the relationship between perceived stress and life satisfaction (Baron & Kenny, 1986). Information about a potential moderator of the relationship between perceived stress and life satisfaction can help professionals intervene in order to prevent

or alleviate the negative impacts of perceived stress on graduate students' life satisfaction.

Stress

Stress is ubiquitous to the human experience. Stress seems to prepare organisms to respond appropriately to threat and ultimately activates physiological responses that keep us alive. However, stress is more complex than a series of responses, because as humans we derive meaning from these responses. Folkman and Lazarus (1985) define stress as a relationship between the person and the environment that is appraised by the person as relevant to his or her well-being, and in which the person's resources are taxed and exceeded. Our appraisal of what causes the stress, how much control we have, and other psychosocial factors mediate our biological responses.

The transactional model of stress (Lazarus, 1991; Lazarus & Folkman, 1984) views stress as being related to our cognitive perceptions of our ability to cope with a potentially threatening situation. Experienced stress must be "perceived" through a complex combination of self attributions, outcome expectancies, and perceived ability to cope with events. Folkman and Lazarus (1985) address the complexity of the issue, and note that subjects felt both threat and challenge emotions in the face of adversity. Often the degree to which they felt either emotion related to how successful they thought the outcome would be, which was mediated by how much control they thought they had to impact the outcome. It seems that the stress response is a heightened combination of the threat and challenge feelings and the perceived adequacy of one's resources.

Driving down the highway, taking a test, or opening birthday presents all activate the sympathetic nervous system, the primary way stress is produced (Byars, 2005). For

some, stressors are perceived as positive and are coped with effectively. For others, the same stressor may be viewed as negative due to a perceived lack of resources to adequately cope with the challenge. While positive stressors, called eustress, such as getting a promotion or receiving praise can inspire and motivate, excessive stress in any form can lead to negative outcomes (Insel & Roth, 1991). A stressor that once offered a positive challenge can quickly become negative if we do not perceive ourselves as having the resources to cope. Due to the overwhelming amount of demands on a graduate student, what was once perceived as motivating can quickly overpower available resources.

Stress and Graduate School

Graduate school is often experienced as a time of increased demands, expectations, and stress (Toews, Lockyer, Dobson, & Brownwell, 1997). Some stressors result from stressful life events, such as death of a loved one or health problems, or developmental life transitions, such as marriage. Others are what Lazarus, Cohen, Airman, and Wohlwill (1977) would identify as daily hassles and more directly link to the graduate school experience itself, such as time constraints, financial burdens, program environment, and competition among peers. Although daily hassles are far less dramatic than major life changes, their chronic nature may have more impact on health and well-being (Delongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Kanner, Coyne, Schaefer, & Lazarus, 1981). These chronic stressors permeate a graduate student's daily life, potentially taxing available resources.

Graduate students face many interpersonal stressors. Whitman, Spendlove, and Clark (1984) named some of these, such as an impersonal atmosphere, reduction in time

and opportunity for developing and maintaining intimate relationships, poor relationships with teachers and advisors, and being placed in ambivalent roles with professors as teaching or research colleagues. Lack of support (Mallinckrodt & Leong, 1992) or negative encounters with professors (Mallinckrodt, Leong, & Kralj, 1989) can be particularly stressful for female students. In Groplerud's (1980) study, first year graduate psychology students who were relatively socially isolated reported significantly more intense life changing events, more cumulative stress, and more psychological and physical problems. Faculty-student relationships were found to have the greatest impact, and the frequency of faculty contacts correlated significantly with fewer life change events, less cumulative stress, fewer psychological and physical problems, and greater satisfaction with graduate school overall. Mallinckrodt, Leong, and Fretz (1985) link attrition rates of 50% in some doctoral graduate programs with a lack of social support and deficits in coping skills among students.

For psychology graduate students, rigorous academic challenges are compounded by the unique challenges of clinical training. Mental health professionals (psychiatrists, psychologists, and psychotherapists) have consistently been found to have higher rates of anxiety, depression, and relationship problems than the general population (Deutsch, 1985; Thoreson, Budd, & Krauskopf, 1986). White and Franzoni (1990) found similar results for masters-level students in psychology.

Greenburg and Valletutti (1980) stated that people in the counseling field suffer unique stressors, such as role ambiguity, role overload, responsibility to others, and exposure to human grief that make them prone to stress-related illnesses. Kleespies, Smith, and Becker's (1990) survey of psychology interns found that interns who had

experienced a patient's suicide reported stress levels higher than those among professional clinicians with similar experiences, and equivalent to patients who had personally experienced bereavement. Multiple studies have also identified that new trauma therapists are susceptible to vicarious traumatization, resulting in a variety of symptoms including those similar to post-traumatic stress disorder (McCann & Pearlman, 1990; Pearlman & MacIan, 1995; Schauben & Frazier, 1995).

Combine the stress inherent in the role of a graduate student with the stress of being involved in a helping profession and it becomes apparent that psychology graduate students are at high risk for stress, high attrition, and dissatisfaction with life. The purpose of this study was to examine if social support, an important resource identified by researchers as a potential buffer to perceived stress, has a moderating influence on the perceived stress – life satisfaction relationship in graduate psychology students.

The Buffering Model of Stress

According to Cohen (2004), social support can serve as a buffer of stress, and directly affect psychological well-being (also in Cohen & Wills, 1985). Using the transactional model of stress, the social buffering model argues that the belief that others will provide necessary resources may increase the perceived ability to cope with demands, changing the appraisal of the situation and ultimately decreasing the effects of stress (Cohen; Cohen & Wills; Wethington & Kessler, 1986). Cohen, Sherrod, and Clark (1986) found that the buffering effects of support occur even after controlling for the effects of social anxiety, social competence, and self-disclosure.

Social Support and Stress

Multiple researchers have documented the effect social support can have on stress. Hodgeson and Simoni (1995) showed that a lack of social support is related to distress among graduate students. Nelson, Dell'Oliver, Koch, and Buckler (2001) supported this in their finding that graduate students with more interpersonal contact and social support reported less psychological distress. Wilks (2008) found that friend support significantly moderated the relationship between academic stress and resilience. A study exploring stress and psychology graduate students found that the group with the highest stress level is women who are working full-time and who are not in a committed relationship, which the authors attributed partially to the lack of support from a significant other (Hudson & O'Regan, 1994).

Halleck (1976) asserted that the dissolution of primary relationships is the main cause of emotional distress in graduate students. An international study exploring factors that determine success and failure at the doctoral level showed anecdotal evidence of the negative impact of graduate school on relationships. One participant, recently separated from his wife, had thrown his newly won diploma on a backyard fire (Dinham & Scott, 1999). In a similar study, students reported that graduate school negatively influenced relationships, with one psychology student attributing a fellow classmate's leaving the program to the stress it caused in her marriage (Gardner, 2009).

Programs that overlook facilitating interaction among students are particularly problematic, as peer support is often cited as the main system of support for those who persist (Gardner, 2007). Nelson et al. (2001) found graduate students who perceived themselves as supported by their peers have higher grade point averages than those who do not. The results also indicated that psychology graduate students with higher academic

success reported greater levels of support from family and close friends. Baird (1969) found that when students have strong social connectedness within their program they are not only more successful academically, but demonstrate a greater commitment to their field of study.

Stecker (2004) advocated for the need to provide preventative and clinical services to graduate students based on his finding that low levels of social support were associated with symptoms of depression and stress. His conclusion is echoed by a study examining the effects of group counseling on counseling psychology graduate students' stress. The study showed that graduate students who experienced the supportive nature of group counseling had fewer symptoms of stress than those who received no group counseling, which was attributed in part to an increased sense of social support (Byars, 2005).

Psychological Sense of Community

A specific form of social support, psychological sense of community (SOC; Chavis & Newbrough, 1986; Sarason, 1974), may also be an important buffer for perceived stress of the graduate psychology student. Psychological sense of community is not only associated with geographic locations, such as a neighborhood, but is also used to identify relational factors and influences of a network (Gusfield, 1975). A study by McCarthy, Pretty, and Catano (1990) found stronger SOC significantly correlated with less psychological distress in college students. In addition, Clark, Murdock, & Koetting (2009) found that SOC experienced by counseling psychology graduate students was associated with higher levels of career choice satisfaction.

Life Satisfaction and Social Support

Research has suggested that personality is one of the strongest predictors of subjective well-being and life satisfaction (Deiner, 1996; Deiner & Larsen, 1993; McCrae & Costa, 1991). For example, research has shown that the personality trait of extraversion is positively correlated with life satisfaction, whereas the personality trait of neuroticism is negatively correlated with life satisfaction (Diener, Emmons, Larsen, & Griffen, 1985; Pavot & Diener, 1993). Although personality has been found to be a consistent predictor of life satisfaction, personality does not account for all of the variance in subjective well-being.

In addition to internal resources like extraversion, external or environmental factors may interact with stress and moderate its effects on life satisfaction. Argyle (2001) found relatedness to be an important factor that influences subjective well-being. Deneve (1999) echoes this in his assertion that affiliation is strongly related to subjective well-being. Identifying external protective factors such as social support on the stress – life-satisfaction relationship is important because unlike stable personality traits that are often influenced by genetics, social support might be more amenable to change through interventions (Treistman, 2004).

Significance of the Study

Pursuing a doctoral degree in psychology can be a gratifying but arduous process. Academic demands are complicated by limited financial support, dynamic professional roles, and social obstacles, all sources of emotional and psychological duress (McKinzie, Altamura, Burgoon, & Bishop, 2006). Research has shown that social support can be a robust protective factor when individuals experience stress. The purpose of this study was to examine the relationship between perceived stress and life satisfaction among graduate

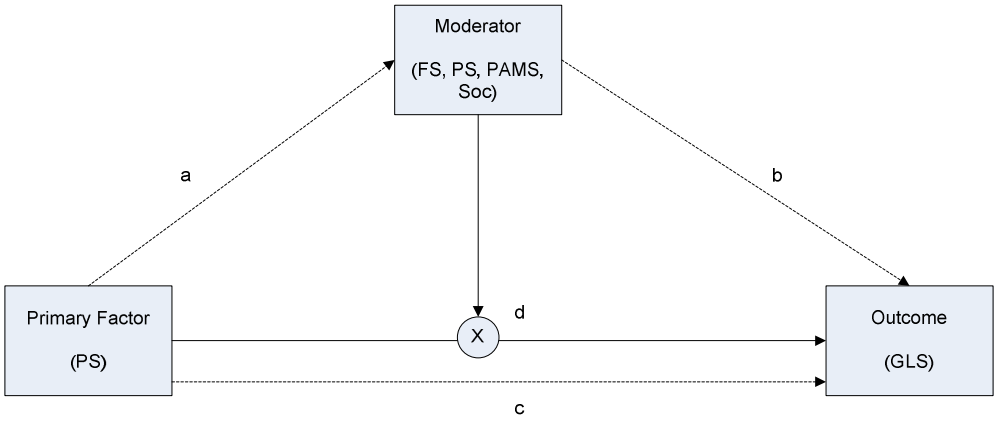
counseling psychology students, and to identify whether social support and a psychological sense of community (SOC) in the doctoral program are protective factors of life satisfaction. It was hypothesized that in the face of stress, more social support and stronger SOC result in higher levels of life satisfaction.

Conceptual Model

A moderator is a variable that alters the strength of the relationship between the independent variable and dependent variable (Frazier, Tix, & Barron, 2004). Glass and Singer (1972) echo this in their observation that the effect of an independent variable on a dependent variable can be based on the presence or level of a third variable, or moderator. Wang, Badley, and Gignac (2006) illustrated three similar moderator models using the primary factor, outcome, and potential moderator. The model used in the present study (Figure 1) is based on Wilks's (2008) fusion of Glass and Singer's (1972) description of moderation with Wang and colleagues' illustrative models.

The model in the current study (Figure 1) hypothesizes that the effect of the primary factor (perceived stress) on the outcome depends on the presence or level of the moderator. The moderators tested separately are four forms of social support: family/friend support (FS), peer support, professor/advisor/mentor/supervisor support (PAMS), and collegiate psychological sense of community (SOC). The outcome in the model is global life satisfaction.

Figure 1: Conceptual Model: Moderating Role of Social Support on the Relationship of Perceived Stress and Life Satisfaction of Counseling Psychology Graduate Students



Abbreviations: PS – perceived stress; FS – family/friend support; PS – peer support; PAMS - professor/advisor/mentor/supervisor; SOC – collegiate psychological sense of community; GLS – global life satisfaction

The dashed lines are three paths noted for descriptive purposes, as they are not statistically critical when testing moderation (Wang, et al., 2006): perceived stress→social support (path *a*), social support→global life satisfaction (path *b*), and perceived stress→global life satisfaction (path *c*). As in Wilks's (2008) model, the solid line represents the critical path in moderation analysis; the *circled X* represents the interaction of perceived stress and the moderator on global life satisfaction (path *d*). Four separate models were used for social support: family and friend support, peer support, professor/advisor/mentor support, and SOC.

Research Hypotheses

Based on the model, this study proposed the following hypotheses.

1. Given that previous studies provide evidence of a relationship between perceived stress and global life satisfaction, there will be a significant negative correlation between level of perceived stress and global life satisfaction.

2. Given that previous studies have found that social support is related to positive mental health outcomes:

a. There will be a significant positive correlation between frequency of family/friend support and global life satisfaction.
b. There will be a significant positive correlation between adequacy of family/friend support and global life satisfaction.
c. There will be a significant positive correlation between frequency of peer support and global life satisfaction.
d. There will be a significant positive correlation between adequacy of peer support and global life satisfaction.
e. There will be a significant positive correlation between frequency of professor/advisor/mentor/supervisor support and global life satisfaction.
f. There will be a significant positive correlation between adequacy of professor/advisor/mentor/supervisor support and global life satisfaction.
g. There will be a significant positive correlation between level of SOC and global life satisfaction.

3. Social support is expected to significantly moderate the relationship between perceived stress and life satisfaction. Given that social support has been established as a protective factor, it is proposed that social support will have a buffering effect on the relationship between perceived stress and global life satisfaction so that:

a. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more frequency of friend/family support than for those who report less frequency of friend/family support.

b. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more adequate friend/family support than for those who report less adequate friend/family support.
c. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more frequent peer support than for those who report less frequent peer support.
d. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more adequate peer support than for those who report less adequate peer support.
e. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more frequent professor/advisor/mentor/supervisor support than for those who report less frequent professor/advisor/mentor/supervisor support.
f. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more adequate professor/advisor/mentor/supervisor support than for those who report less adequate professor/advisor/mentor/supervisor support.
g. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report higher SOC than for those who report lower SOC.

Chapter 2

Literature Review

As described in Chapter One, the purpose of this study was to examine the relationship between perceived stress and life satisfaction among graduate counseling psychology students, and to identify whether social support and a psychological sense of community (SOC) in the doctoral program are protective factors of life satisfaction. Chapter Two provides a thorough examination of the conceptual foundations relevant to the proposed study. This review of the literature and research findings will cover the following areas: (a) stress operationalization and measurement; (b) stress and graduate students; (c) stress and psychology graduate students; (d) stress and mental health professionals; (e) life satisfaction; (f) stress and life satisfaction in higher education; (g) social support operationalization and measurement; (h) social support buffering model; (i) stress and social support, and; (j) psychological sense of community operationalization and measurement.

Stress Operationalization and Measurement

Although decades of medical, biological, and psychological research exists, no one operationalization and measurement of stress has been universally accepted. Stress has been described as a stimulus, a response, and a person-environment transaction, and the context of the research seems to drive how it is conceptualized. The following overview of stress literature provides an argument for the operationalization and measurement of stress used in this study.

In 1914 Cannon reported his observations of the phenomenon of stress, operationalizing it as the body's physiological response to a stimulus. When observing

animals that were physically fatigued, he noted they were able to perform longer due to an increase of adrenaline in the blood, leading to a conceptualization of stress as the body's ability to produce certain chemicals in response to a stressor. He continued to focus his research on studying how acute stressors can lead to the fight or flight reaction by measuring levels of adrenaline and blood sugar in the stressed individual.

Another early pioneer, Selye, also studied the fight or flight reaction and how the body adapts to the presence of stress. Seyle (1973) broadened the definition of stress to the nonspecific response of the body to any demand. He conceptualized stress as a process involving a stimulus, a demand for change, and a resulting attempt to regain homeostasis. The physiological arousal prepares the individual for action, with the goal of returning to the restorative functions of the parasympathetic nervous system (Seyle, 1973).

Physiological response-based conceptualizations of stress rely on biological measures of stress. Stress hormones, cardiac output, blood pressure, and immune response are just some of the indicators that have been used to measure stress in the biological tradition. Cause and effect relationships between environmental demands and physiological changes are evident in research, but problems exist in measurement of the activation of biological systems. Confounding individual differences in physiological responses may be overlooked when using biological indicators. Biological indicators of stress are often assessed at specific, isolated points in time, usually close to the stressful event, bringing into question their generalizability to the global experience of stress (Cohen, Kessler, & Gordon, 1997).

To remove variability associated with individual differences, some researchers propose that the confounding process of defining stress can be avoided by observing stress through objective environmental sources (Dohrenwend, et. al, 1984). An environmental operationalization of stress calls for a measurement that focuses on assessing the environmental demands and experiences associated with adaptive responses. These demands are usually quantified and stress is measured objectively, often by adding scores assigned to environmental triggers listed on an inventory. Measures include the Social Readjustment Rating Scale (Holmes & Rahe, 1967), the Review of Life Events (Hurst, Jenkins, & Rose, 1978), the Life Events Inventory (Cochrane & Robertson, 1973) and the Inventory of Small Life Events (Zautra, Guarnaccia, & Dohrenwend, 1986).

Although correlations between environmental stressors and distress or physiological and psychological disorders have been established in research, measuring the stress concept solely as a stimulus to which we respond poses some challenges for researchers. In the 1970's, several questions on life event stress measures were viewed by professionals as having environmental events that were commonly associated with psychological symptoms of various pathologies (Turner & Wheaton, 1995). If many events on checklists are symptoms or consequences of stress itself, the observed correlations between life event checklists and psychological and physiological health are inherently confounded (Schroeder & Costa, 1984; Thoits, 1981).

Another concern is that many checklists by nature contain only a sampling or subset of potentially stressful life events and are often culturally biased. In fact, Turner and Wheaten (1995) make a point to exclude minor events or hassles because they do not

fall into their prerequisites of being discrete, self-time limited, easily observable environmental and social changes, thus leaving out many potential chronic stressors. Environmental measures that do include daily stressors carry their own methodological difficulties. Eckenrode and Bolger (1997) identify a phenomenon they termed "reactivity", in which thinking about and documenting one's daily stressors impacts the stress behavior itself. Documenting daily events may influence cognitive appraisal of future stressors and subsequently impact future coping efforts, an unintended process of learning and modification that causes problems for researchers (Eckenrode & Bolger, 1977).

Different people, when confronted with similar stressors, may differ considerably in their emotional responses and adaptive consequences. The transactional model of stress, outlined by Lazarus and Folkman (1984) views stress not as a variable that exists solely in the individual or solely in the environment, but as an interaction between a person and the environment. Lazarus theorizes that the individual's perception of the stressor determines how stressful the event is, highlighting cognitive appraisal as an important component of the stress process. This perspective implies individuals will experience stress when a situation or event is appraised as challenging and they possess insufficient resources to effectively cope with the event, accounting for the individual variance in stress experience and response.

Criticisms of circularity in the transactional model stem from the view that stressors are that which the individual appraises as stressful; therefore stressors cannot be defined separately from their appraisal. Confounding arises in the potential overlap between the appraisal of stress and the measurement of the stress response. Monroe and

Kelley (1995) warn that “a problem with a singular focus on appraisal in the stress process is that one cannot tease apart the causal role of the determinants of appraisal from the causal role of appraisal alone” (p. 131). Lazarus et al. (1985) contend that stress is necessarily relational and exists only in the context of a person-environment relationship. They assert that no single variable is sufficient in defining stress, calling it a “complex rubric” containing many variables and cognitive processes.

For the purposes of this study, a global appraisal-based stress measure will be used for a more accurate and inclusive assessment of experienced stress. The Perceived Stress Scale (Cohen, et. al, 1983) was designed so as not to miss remotely experienced stress of close family and friends, future oriented stress, or events simply not listed on a stress event scale. By taking into account the interaction of individual perceptions of an event and perceived ability to cope, global appraisal-based measures result in a more inclusive definition of experienced stress. According to Cohen, Kessler, and Gordon (1997) the Perceived Stress Scale is the only established self-index available which measures general stress appraisal. The Perceived Stress Scale is described in detail in Chapter Three.

Stress and Graduate Students

For graduate students, stress may just seem like a way of life. It is so prevalent, in fact, that roughly one half of graduate students will drop out and many more will seriously contemplate leaving their schools before graduation (Gardner, 2009; Mallinckrodt, Leong, & Fretz, 1985). Historically, academic stress research focuses on either undergraduate students or medical students, as the rigor associated with medical programs is well documented. Existing studies on graduate students, however, illuminate

the vulnerabilities of the population, and identify multiple stressors faced over the course of a graduate student's tenure.

Research on stress and graduate students has traditionally focused on medical students, but investigators are recognizing the stressful conditions of other graduate programs as well. A study done in 1993 by Toews et al. assessed stress in 406 medical students, medical residents, and graduate science students. Although all groups experienced elevated levels of perceived stress, graduate science students reported higher levels of overall stress and higher presentation of mental health problems. The stressors identified by all groups were self-expectations, exams and evaluations, time available, and volume of work.

Overall stress level was also found to be similar in a comparison of 350 medical, law, chemistry, and psychology students in a study done by Heins, Fahey and Leiden (1984). The authors identified six areas of stress: academic stress; time stress; fear of failure stress; world stress; classroom stress; and economic stress. Time and economic pressures were endorsed as the primary cause of stress, followed by academic concerns. Interestingly, the researchers found that psychology graduate students reported significantly more economic stress and were three times as likely to seek help from professional therapists. Program-specific differences aside, the authors concluded that regardless of the program, graduate school is a strenuous and stress producing venture (Heins, Fahey, & Leiden, 1984).

The variety of stressors faced by those pursuing higher education are echoed by a survey of 166 graduate students conducted by Mallinckrodt, Leong, and Kraij (1989). Results revealed that the most commonly reported negative life events were job-related

and economic concerns as well as interpersonal stressors, but students reported stress from family life, employment situations, decisions about professional future, role conflicts, school stressors, personal illness and injury, and time conflicts of balancing academic and social pursuits. Female graduate students reported significantly more negative life changes than did the male graduate students, which was significantly related to psychological distress. For males, financial concerns were ranked relatively higher than for females, but the number of females endorsing financial concerns was higher. Mallinckrodt and his colleagues (1989) concluded that the stress encountered in graduate school creates a high risk environment for students to develop physical and psychological problems.

The title "graduate student" can be misleading when one considers the multiple roles they engage in on a daily basis, such as student, employee, spouse, parent, advisee, and peer. Sheer volume of academic coursework (Toews et. al, 1993; Whitman, Spendlove, & Clark, 1984) coupled with dissertation research is stressful enough without the myriad of potentially confusing social stressors faced by graduate students. Whitman et al. (1984) address this, identifying that graduate students are often treated like sub-adults, exploited by their professors and universities, dependent on their professors for their advancement and placed in ambivalent roles with professors as teaching or research colleagues. Time itself can be a stressor, as multiple demands take away time to develop and maintain social relationships that may help students to navigate their matriculation through graduate school. Whitman and colleagues also added to the laundry list of other stressors common to graduate students, naming: a sense of powerlessness, multiple life

changes, difficult academic and research demands, an impersonal atmosphere, financial constraints, a discouraging job market, and restrictions involved in specializing.

Stress and Psychology Graduate Students

Research specifically targeting psychology graduate students highlights not only potential demographic vulnerabilities and numerous potential stressors, but also the negative impacts of stress. In a survey of 22 graduate psychology students conducted by Groplerud (1980), 82% indicated high levels of anxiety, 50% symptoms of depression, 32% sleep difficulties, and 33% expressed physical complaints. Symptoms were shown to arise from three main areas: events unrelated to graduate life; events specifically related to school; and stress related to confidence/competence. Goplerud noted that 57% of all stressful events students reported as well as 59% of all events classified as intensely stressful were specifically associated with the graduate school experience.

Overall stress has been found to be a significant predictor of burnout in psychology graduate students. In a survey of 284 counseling psychology doctoral students Clark, Murdock, and Koetting (2008) found that the more stress students reported, the more likely they were to feel overwhelmed and experience symptoms of burnout. Similarly, McKinzie, Altamura, Burgoon, and Bishop (2006) noted that stress in psychology graduate students is associated with negative mood and fewer daily hours of sleep.

In an attempt to identify factors contributing to retention levels in psychology masters programs, Morton and Worthley (1995) surveyed students' experiences and demographic variables. Findings indicated that students who undertook more internship/externship hours experienced higher levels of stress and lower levels of

satisfaction with their programs. Morton and Worthley (1995) also found that the more positive the relationship with advisors and thesis chairs, the more likely students were to report overall satisfaction with their program, and in comparison to Anglo students; minority students more frequently reported very intense family responsibilities.

Using multivariate statistics, Cahir and Morris (1991) indentified seven factors affecting stress levels in graduate students: time constraints; feedback from specific faculty; financial constraints; lack of help from faculty; limited emotional support from friends; feedback with regard to status in the department; and administrative issues; all of which they used to develop the Psychology Student Stress Questionnaire. They found time constraints accounted for the greatest variance in student's stress ratings, and that overall women expressed significantly higher levels of stress than men.

Although other studies (Toews Lockyer, Dobson, & Brownell, 1993; Mallinckrodt, Leong, & Kraij, 1989, Nelson, Dell'Oliver, Koch, & Buckler, 2001) have also found gender to be a predictor of stress level, in a comparison of the PSSQ and demographic variables, Hudson and O'Reagan (1994) found no one factor to be an adequate predictor of stress levels in psychology graduate students, including gender. When two or more factors were analyzed, however, they found female students working full time who were not in a committed relationship indicated higher levels of stress than for all other students, which they attributed to work stresses compounded by lack of support from a significant other (Hudson and O'Reagan, 1994). A survey of 145 marriage and family therapy graduate students and their spouses also found no difference between males and females in reported levels of stress (Sori, Wetchler, Ray, & Neidner, 1996). It appears that regardless of your gender, stress is a part of the graduate school experience.

Stress and Mental Health Professionals

At the graduate level, psychology students are also involved in the rigors of clinical work. A variety of unique stressors associated with the human services profession have been identified that increase the vulnerability of practitioners to the negative effects of stress. Pines and Aroson (1988) identified three characteristics shared by people in the human service field that are precursors to stress: "1) they perform emotionally taxing work, 2) they share certain personality characteristics such as caring, giving, and helping that influence them to choose helping as a career, and 3) they share a client-centered orientation" (p.84).

In a book addressing experiences of various human services professionals, Greenberg and Valletutti (1980) note the depth to which they can become invested in the lives of others and exposed to the intimate details of peoples' mental, physical, and emotional struggles. The roles and relationships they engage in may also be ambiguous and demanding. In general, human services practitioners spend their working hours helping others, and often work long, irregular hours. Due to having a large portion of their lives devoted to meeting the needs of others both physically and mentally, practitioners may not have time to meet their own personal needs.

After surveying 60 psychotherapists, Farber and Heifetz (1981) conducted a factor analysis of 24 potential stressors, revealing three main stressors particular to psychotherapeutic work. The first relates to the overwhelming demands of the role, which often leave the psychotherapist vulnerable to physical and emotional depletion. The second factor concerns the strain of the therapeutic relationship itself, which requires

intimacy but also the maintenance of appropriate boundaries. The third factor addresses problematic working conditions, such as a heavy work load or organizational politics.

Farber and Heifetz (1981) also addressed an added layer of stress to the psychotherapists' work load: patient behaviors themselves. Many of the patients encountered in counseling experience some level of demoralization, and may overtly express aggression, hostility, or suicidal ideation, all of which can directly affect stress levels in a counselor. In addition to working conditions, dealing with resistant or particularly distressed clients can lead to therapist burnout. Overall, Farber and Heifetz (1981) found personal depletion was the only stressor significantly and negatively related to experience level, suggesting that these stressors are not simply due to therapist inexperience, and can affect psychotherapists throughout their careers.

In a study investigating the mental health of professional health care workers, Deutsch (1984) surveyed psychotherapists in regard to perceived personal problems and treatment seeking behaviors. Relationship difficulties were the most prevalent, reported by 82% of the 310 surveyed. More than half indicated experiencing depression, but only one fourth reported seeking therapy for their symptoms. No gender differences were found in the rate of occurrence for relationship problems or depression, but women were more likely than men to receive professional help. Fifty-four percent of both men and women surveyed reported having received some type of mental health services. This, however, may not be a good indicator of the overall percentage experiencing mental health problems, and those that did not seek help were at higher risk for physical health problems. Deutsch (1984) noted that many participants cited fear of professional censure, concern about confidentiality, and a lack of resources as barriers to seeking services, and

some felt their depression or anxiety was a personal flaw not permitted in psychotherapists.

The mental health of those in the helping profession has been investigated not only through self report but also by observation by colleagues. In Thoreson, Budd, and Krauskopf's (1986) study examining substance abuse and distressed psychologists, almost 70% were aware of at least one colleague with a mental health problem. Although eleven percent of Deutch's (1984) sample reported difficulties with substance abuse, 33% of Thoreson and colleague's reported knowing colleagues who seriously abused alcohol. Evidenced by impaired work performance and physical symptoms, substance abuse was recognized as having more potentially serious health, reputational, and work related consequences than mental health issues.

Researchers have also identified that working with clients that have experienced significant trauma can carry its own set of risks. McCann and Pearlman (1990) noted that such work can induce nightmares, intrusive thoughts, and feelings of anger and sadness related to the trauma clients explore in session. Practitioners may engage in defensive coping mechanisms including psychological numbing, denial, and distancing. The transformation that takes place in the therapist as a result of the empathic and therapeutic relationship is viewed as a nonpathological occupational hazard that McCann and Pearlman (1990) termed "vicarious traumatization."

A survey of 188 self-identified trauma therapists done by Pearlman and MacIan (1995) shows the difficulties faced by trauma therapists as well as some risk factors. Overall, therapists with a personal trauma history show more distress than those without one, but therapists without a trauma history who had been working longer experienced

more disconnection from their inner experiences as well as a loss of esteem for others. Therapists who were newer to the work experienced lower self-trust, self-intimacy, and self-esteem than more seasoned trauma therapists. Whether coping by detaching from the painful emotional work or questioning one's self schema, it seems vicarious traumatization can take its toll.

Unlike Pearlman and Mac Ian's study, Schauben and Frazier's (1995) assessment of the effects on counselors working with sexual violence survivors did not show significant differences in distress levels between counselors with and without a victimization history. They did, however, find that counselors with a higher percentage of survivors on their caseload were more likely to experience altered beliefs about themselves and others as well as more PTSD-related symptoms. The correlation of symptoms to percentage of sexual violence survivors in counselors' caseloads but not their own history of sexual victimization lends credence to the vicarious victimization theory.

Mental health professionals, specifically psychotherapists, experience many unique stressors and subsequent dysfunction. Figley (1995) identified that there are natural consequences for working with the emotional pain of others, and named it "compassion fatigue." These same stressors affect practicing psychology graduates students, and may even be heightened in that population. Kleepsies, Smith, and Becker's (1990) survey of 54 predoctoral psychology interns at the Boston VA found that one in six had a client commit suicide during their training. Not only did the interns report stress levels similar to patients who had experienced bereavement or personal injury, patient suicides had a more negative impact on the trainees than on professional clinicians with

similar experiences. Using a variety of mental health assessments including the Minnesota Multiphasic Personality Inventory and the Coping Resources Inventory for Stress, White and Franzoni's (1990) analysis of 180 masters level counseling graduate students found higher levels of psychological disturbance than were found in the general population. These findings highlight the importance of assessing well-being in psychology graduate students and providing support when needed.

Satisfaction with Life

According to Diener (2000), enhancing quality of life (QOL) is vital to preventing and cultivating health. QOL is typically measured by a variety of both objective measures, such as socioeconomic or environmental indicators, and subjective measures, which focus on individuals' internal judgment of the quality of their lives (Diener & Suh, 1997). This study examines a vital part of subjective quality of life: life satisfaction.

General life satisfaction has been operationalized as an individual's overall cognitive evaluation of his/her life. According to Diener et al. (2004) individuals deem their life as satisfactory based on a comparison between internally constructed standards and perceived life circumstances. Similarly, Shin and Johnson (1978) assert life satisfaction involves individuals measuring their quality of life against their own unique standards or criteria, and DeNeve and Cooper (1998) define it as individuals' cognitive evaluation of their total sum of experiences. Specific life domains, such as health, work, and social support are included in the appraisal of life satisfaction, but may not hold the same weight for every individual (Diener et al. 1985). An individual may also be satisfied with the various domains of his/her life, but dissatisfied overall because of one domain's impact. In focusing on specific domains of life satisfaction researchers also risk leaving

out aspects of an individual's life impacting general life satisfaction, making them appear more or less satisfied than they really are. Thus, it is important to obtain an overall evaluation of one's life satisfaction rather than simply sum across researcher specified domains of life satisfaction.

The Satisfaction with Life Scale (SWLS; Diener, et al., 1985) was developed to measure an individual's cognitive evaluation of global life satisfaction. The scale is based on Diener's (1984) argument that subjective well-being is a personal cognitive-judgmental process. The scale serves to avoid externally imposed values by researchers, such as specific factors that researchers may assume determine satisfaction, (i.e., health variables, socioeconomic factors, environmental variables). More information on the SWLS is provided in Chapter Three.

Satisfaction with Life and Stress in Higher Education

In examining satisfaction with life across the five domains (self, standard of living, health, leisure, and family life), Brown's (1988) survey of 2,059 American women found satisfaction to be related to perceived stress. More interestingly, Brown's research revealed that some domains were a stronger predictor of perceived stress than socio-demographic factors, underscoring the importance and influence that subjective assessments of quality of life have on overall well-being. Hamarat and colleagues (2001) found young adults experienced significantly greater levels of perceived stress than older adults, and that perceived stress is a better predictor of life satisfaction (2001).

It seems intuitive that high levels of stress would correlate with low levels of life satisfaction, and in fact researchers have found dissatisfaction with life to be a symptom of stress experienced by those in higher education. In a study done by Cohen, Kamarck,

and Mermelstein (1983), perceived stress was associated with lower life satisfaction as well as increased depressive and physical symptomology in college students. Matheny et al. (2002) and Chang (1998) found an inverse relationship between perceived stress and reported satisfaction with life among American and Turkish college students. In 1993 Kent, Gorenflo, Daniel, and Forney examined the relationship between perceived stress and life satisfaction found in second-year medical students. Data generated from 555 participants indicated that increased perceived stress was negatively associated with life satisfaction, showing that the same pattern in undergraduates exists for graduate students.

Social Support Operationalization and Measurement

Much like stress, social support is a complex theoretical construct without a universally agreed upon operationalization or measurement. Early on, researchers did not distinguish between existence of support networks and perceptions of availability or adequacy of support (Sarason, Sarason, & Pierce, 1990). Research focused on an objective conceptualization of social support, often examining networks or actual support given. Eckenrode and Gore (1981) operationalized social support as the number of friendships, relatives nearby, and organizational involvements. In defining social support as being married or having a confidant, Wilcox (1981) employed a unidemensional objective conceptualization of social support. Objective conceptualizations of social support lend themselves to quantitative measurements, such as the number of friends one can turn to in a crisis.

Winefield, Winefield, and Tiggemann (1992) point out that although strictly objective measurements are easily measured and reduce confounding variables such as individual differences, they may do so at the cost of validity (Ganster & Victor, 1988). To illustrate

this they use the example of Ratcliff and Bogdan's (1988) finding that networks of caring others were not experienced as supportive to unemployed women in search of work when these support sources expressed hostility towards female employment. After reviewing the social support literature, Liem and Liem (1978) observe that the environmental support resources actually available in one's social network are not necessarily the primary factor in the perception of being supported. The authors suggest that social support measures include subjective estimates (e.g. perception of social support adequacy) as well as environmental indices (e.g. network evaluations) of social support.

Social support is currently identified as a multidimensional construct, and researchers have attempted to differentiate various types of social support. For example, Schaefer, Coyne, and Lazarus (1981) specified three types of social support: emotional support, informational support, and tangible support. Cobb (1979) defined social support as information that results in the subject feeling either cared for, valued, or belonging to a network, with each type serving a distinct function. House (1981) identified emotional, appraisal, informational, and instrumental as distinct types of social support.

Cohen (2004) noted that three main types of support emerge: instrumental, informational, and emotional. Instrumental support, which has also been referred to as tangible or nonpsychological support, involves the provision of material aid, such as financial assistance. Informational support involves contributing information relevant to the individual's plight, as is the case with advice giving. Emotional support focuses on meeting social-emotional needs, often through expression of empathy, caring, or understanding. The type of support must match the perceived coping requirements of the recipient in order to be effective. Shinn, Lehmann, and Wong (1984) warned about the

potential detrimental effects when the type of support offered does not fit the circumstantial needs of the recipient. Dunkel-Schetter (1984) identified that even the most well-intentioned efforts of support can backfire if they do not fit the situation, suggesting the importance of identifying the effectiveness of different kinds of support for future intervention.

Researchers have also identified the importance of specifying sources of social support. Although it may be important to measure availability of a confidant, Cohen and McKay (1984) note it may be misleading to assume all support givers are equal. Evidence of the importance of including source as well as type of support is shown in Neuling and Winefield's (1988) findings that source of support is a better predictor of psychological well-being than type of support.

Regardless of how social support is conceptualized, research seems to indicate perceived availability, sufficiency of support, and who offers the support are important elements in determining effectiveness of social support for future interventions. After reviewing 23 measures of social support, Heitzmann and Kaplan (1998) recommended that measures assess both quantity and adequacy of support, as research has shown that it is the perception of social support and not the actual receipt that is important. The Multidimensional Support Scale (MDSS, Neuling & Winefield, 1988) was selected as it addresses both availability and adequacy of social support, as well as differentiates the source providing the support. Chapter Three includes a description of the MDSS measure.

Social Support Buffering Model

Cohen and Wills (1985) identified that social support promotes health both through an overall beneficial effect of support (main or direct effect model) and by a process of support serving as a protective factor against the adverse effects of stress (buffering model). Research in this area has shown inconsistent results; while some studies find social support to have a buffering effect on stress, others have only found direct effects of social support (Cohen & Wills, 1985). Reviews of studies have provided some evidence that the perception of support may be more important than support actually received due to more consistent correlations with positive outcome variables (Cohen & Wills 1985; Wethington & Kessler, 1986). Using the transactional model of stress, the social buffering model argues that the belief that others will provide necessary resources may increase the perceived ability to cope with demands, changing the appraisal of the situation and ultimately decreasing the effects of stress (Cohen, 2004; Cohen & Wills, 1985; Wethington & Kessler, 1986).

Cohen and Wills (1985) theorized that direct effects are found when global support measures are used. Buffering effects are better targeted by source-specific measures (such as friends, family, advisors) in which the type of support matches the demand of the stressor (Cohen, 2004). For example, lending money is a useful form of support if the stressor is financial, such as the loss of a job, but not if the stressor is emotional, such as the loss of a loved one. Therefore, as done in Clark, Murdock, and Koetting's 2009 study, sources of support for this study were selected to match the perceived needs elicited by stressors graduate students face, including peer, family, professor, and advisor support, as well as psychological SOC.

Social Support and Graduate Student Stress

Goplerud's (1980) research emphasizes the importance of social support right from the beginning of the graduate school experience. In his study of 22 first year graduate students, those who were more socially isolated reported significantly more overall stress, more physical and emotional problems, and more life changes with higher intensity ratings. The frequency of social contact with faculty was particularly influential, as those students who reported less contact with faculty reported a greater number of intense stressors, emotional problems, and physical problems than students with more contact.

In a study of role relations and graduate students, Baird's 1969 investigation of 680 graduate students produced similar results, indicating that unclear or conflicting demands from faculty caused students to experience more overall stress and to psychologically withdraw. Clark, Murdock, and Koetting (2008) also found support from advisors significantly predicted burnout in psychology graduate students; higher levels of support from advisors were significantly correlated with lower levels of burnout. In a qualitative study of 20 chemistry and history graduate students by Gardner (2007), many commented that not only was the amount and frequency of contact with faculty and advisors important, but that having a supportive advisor was more important than having someone who was a specialist in their area. It seems that advisor and faculty support is instrumental to graduate student success and overall satisfaction with the graduate school experience.

Studies also indicate the importance of peer support in graduate school success. Gardner (2007) found that the only factor graduate students cited as being more important in their graduate school success than faculty support was peer support. In fact,

many of the students attributed their survival at the beginning of the program to peer support. Likewise, another one of Baird's (1969) findings was that those who sought social support from their classmates were more likely to experience academic success and commitment to their field. Conversely, as competition among peers increased so did stress, with students reporting they always experienced stress when in competition with other students. Nelson, Dell'Oliver, Koch, and Buckler's (2001) survey of 53 psychology graduate students found those with increased interpersonal contact with peers experienced decreased psychological stress and also had increased academic success as evidenced by higher GPAs. In a study of 314 social work students, Wilks (2008) found that friend support significantly moderated the negative relationship between academic stress and resilience, suggesting that support from friends buffers the impact academic stress has on a graduate student's ability to be resilient in an academic environment.

Mallinckrodt and Leong's (1992) investigation of the relationship between social support and stress, depression, and anxiety in 166 graduate students indicated gender differences in the perception of social support. Females perceived themselves as supported by family but not in their academic environment, and familial support provided a buffering effect against perceived stress. Males, however, perceived themselves as supported by family as well as in their academic environment regardless of their perceived stress level. The authors hypothesize that gender differences stem from the greater impact maintaining multiple roles and subsequent role strain has on stress symptoms for females than it does for males.

Stecker's (2004) assessment of students at top ranking medical centers within the United States found symptoms of stress, such as depression, were associated with low

levels of social support. Based on these results they suggested treating symptoms of stress, such as depression, by encouraging group processing of shared experiences such as academic workload and personal difficulties as a way of increasing social support. Based on similar hypotheses, Byars (2005) conducted a study examining the effects of group counseling on graduate student stress. Byers found masters level counseling psychology graduate students engaged in group counseling had fewer symptoms of stress than those who received no group counseling, which was attributed in part to an increased sense of social support.

Psychological Sense of Community Operationalization and Measurement

In his book examining the high attrition rates in graduate school, Lovitts (2001) noted that research has not shown academic ability to be a predictor of success or attrition in graduate school. He asserted the importance of research going beyond student characteristics and instead focusing on the influence of the graduate school program's culture itself. Lovitts asserted that graduate school community has a significant influence on the graduate school experience, and that a sense of community membership provides students with resources needed to navigate a complex system. This fits with Sarason's (1974) assessment that sense of community is central to well being, although it is often overlooked in research.

The term "community" is most often associated with a particular geographic location, such as a neighborhood. Gusfield (1975) identified that conceptualization as the territorial view of community, noting it as a definition that is geographically bound. Gusfield also identified a second notion of community, relational, which is concerned with the nature of human relationships regardless of location. Researchers have

recognized that community can be developed and experienced by factors other than just geographical considerations (Lounsbury & DeNeui, 1996). The two are not mutually exclusive, but for operationalization and measurement the distinction is important.

The concept of "psychological sense of community" was first introduced by Sarason in 1974 and defined as "the sense that one belongs in and is meaningfully a part of a larger collectivity" (p 41). Although he identified it as the overarching concern of community psychology, his definition lacked a precise model or operationalization for the purpose of research. In 1986 McMillan and Chavis took those first steps, defining psychological sense of community as " . . . a feeling that members have of belonging, a feeling that members matter to the group, and a shared faith that members' needs will be met through their commitment together" (p 9).

The authors further broke down the concept into four elements: membership, influence, integration and fulfillment of needs, and shared education connection. Membership refers to the feeling of belonging, and influence takes into account the reciprocal impact members have with the group as a whole. The third element, also named reinforcement, is the reassurance that needs will be met through the group. The last element sums up the feeling of shared experience and emotional connection. This theory of psychological sense of community aims to transcend specific geographic boundaries and therefore be applicable to all communities.

In 1986, the Sense of Community Index (SCI; Chavis, Hogge, McMillan, & Wandersman) was designed to measure McMillan and Chavis' (1986) four elements of psychological sense of community. Consequently, the creators noted that the SCI was developed to better understand the components of a sense of community, and was not

designed as a measurement of sense of community. Although a 12 item short form was created, Pretty's 1990 initial investigation of psychological sense of community in higher education revealed high intercorrelations between the four elements, suggesting no further justification for a multidimensional construct and measure.

Importantly, Pretty's (1990) study also demonstrated psychological sense of community to be significantly positively related to characteristics of social climate. Research has shown social climate in collegiate settings, as measured by Moos's University Environmental Scale, to be correlated with students' physical health (Moos & Van Dort, 1979) as well as distress (Tracy & Sherry, 1984). In support of these findings, McCarthy, Pretty, and Catano's (1990) survey of 360 undergraduate students indicated an inverse relationship between psychological sense of community and students' experience of psychological distress and burnout. Clark, Murdock, and Koetting (2009) found the same inverse relationship in their investigation of psychological sense of community and burnout in counseling psychology graduate students. The authors also found stronger levels of psychological sense of community were associated with higher levels of career choice satisfaction, and suggested future research focus on examining the relationship of SOC with quality of life.

Clark, Murdock, and Koetting's (2009) study utilized the Collegiate Psychological Sense of Community Scale to measure psychological sense of community. Created by Lounsbury and Deneui (1996), this instrument is unique in having been designed specifically for use in institutions of higher education. As research utilizing the SCI failed to support SOC as a multidimensional construct, the Collegiate Psychological Sense of Community Scale was based on a unidimensional conceptualization of SOC and

created as a unifactorial measure of SOC. A detailed description of the Collegiate Psychological Sense of Community Scale is provided in Chapter Three.

Summary

A review of the literature provided ample evidence that perceived stress is inherent in the graduate school experience. If perceived stress increases the risk of physical and psychological symptoms, burnout, attrition, and dissatisfaction with life, it becomes important to identify factors that buffer students' perception of stress. This chapter identified social support as an important buffering factor in the experience of stress, as well as psychological sense of community. The present study, therefore, investigated if social support has a moderating influence on the perceived stress – life satisfaction relationship in graduate psychology students.

Chapter 3

Method

Chapter Three addresses the methods used to examine the potential moderating effect of social support on the relationship between perceived stress and life satisfaction. This chapter is divided into the following sections: the population from which the sample will be drawn, including the criteria for the participants in the study, instruments that will be utilized, data collection, and the research design and analysis. Ethical considerations are also included.

Participants

The sampling group for this study was comprised of counseling and clinical psychology doctoral students. Prior to analyses, the survey responses were reviewed to identify missing data. Ten respondents stopped after partially completing the survey, and were removed from the data set. A total of 119 completed cases were identified for data analysis.

The descriptive statistics of the participants are displayed in Table 1. Participants were between 22 and 60 years of age, with a mean age of 29.34 (*SD* = .976). Eighteen and a half percent of the respondents were male (*n* = 22), and 81.5% were female (*n* = 97). 73.1% of the participants were Caucasian (*n* = 87), 5.9 % were African America (*n* = 7), 5% were Asian American (*n* = 6), 5% were Latina (*n* = 6), 5% were International (*n* = 6), and 5% identified as “other” (*n* = 6). Nearly half were married (42%), 37.8% were single, 5.9% were divorced or separated, and 14.3% were living with a partner. The majority of participants did not have children (84%). Slightly over half of the respondents

reported an income under $25,000, 10.1% reported an income between $25,001-40,000, there were 12.6% participants in both the $40,001-60,000 and $60,001-80,000 income brackets, and 10.8% reported income over $80,001. The majority of participants were full-time students (80.7%, *n* = 96), 17.6% were on internship (n = 21), and only 1.7 % were part time students (*n* = 2). Nearly half of the students (42%) were in at least their fifth year of graduate school, and only 5% were in their first year. Academic related demographics (e.g., credit hours earned) are presented in Table 2.

The average time spent commuting weekly commute time reported by participants was 5.454 (*SD* = 5.331) hours, with a range between zero and twenty hours (see Table 3). Eighteen participants reported volunteering between two to forty hours weekly, with a mean of 9.19 hours (*SD* = 11.52). Thirty-one participants reported working off-campus between four to fifty hours weekly, with a mean of 23.84 hours (*SD* = 14.98). Eighty-one participants reported working on-campus between six and forty-five hours, with a mean of 21.2 hours (*SD* = 9.26). Sixty-four respondents indicated they were engaged in practicum between two and thirty-six hours, with the average weekly hours being 14.51 (*SD* = 6.74). All work related demographics (e.g., number of hours volunteering per week) are displayed in Table 4.

The question "what do you identify as your greatest current stressor" on the demographics questionnaire was coded into six categories: time management/balance; academic; financial; work; relationships; and health/well-being (see Table 5). The inter-rater reliability was kappa =.81, $p<.001$. According to the standard convention, a kappa of .81 or higher is considered almost perfect agreement (Viera & Garret, 2005). The highest percentage of students (37%) reported that time management and balance was

their greatest stressor, while 29.4 % of participants said relationships were their greatest current stressor. Almost nineteen percent named financial concerns as a significant current stressor, while less than ten percent of students said either academic, work, or health/well-being was their current greatest stressor.

Measures

Demographic questionnaire. A demographic questionnaire (see Appendix) was designed for this study to obtain pertinent information about the participant. The measure includes variables to determine the eligibility of a participant, such as enrollment in a counseling psychology doctoral program, and other descriptive information such as gender, age, ethnic group, marital status, number of children, employment, and income. This questionnaire was used to describe the sample for this research study.

Multidimensional Support Scale (MDSS). The MDSS (Neuling & Winefield, 1988) is a 16-item self-report scale designed to measure the availability and perceived adequacy of social support from confidants (family and closest friends), peers (those facing similar challenges), and "experts" (those with an official helping or supervisory role). In this study, these three primary sources of social support were labeled as: a) family and close friends, b) peers in graduate school, and c) professors, advisors, mentors and/or supervisors. Neuling and Winefield (1988) have found perceived adequacy, or satisfaction with the amount of social support, to be relatively independent of levels of availability and socially-supportive behaviors received.

Scoring the MDSS results in six subscales (availability and adequacy from each of the three sources). Alpha coefficients of internal reliability for the six subscales have characteristically found to be .75 and above (Neuling & Winefield, 1988; Winefield,

1993; Winefield, Winefield & Tiggermann, 1992). Cronbach's alpha for the six subscales in the current study were as follows: Friends/Family Social Support Frequency was .84; Friends/Family Social Support Adequacy was .71; Peer Social Support Frequency was .85; Peer Social Support Adequacy was .8; Professors, Advisors, Mentors, and/or Supervisors Social Support Frequency was .85; and Professors, Advisors, Mentors, and/or Supervisors Social Support Adequacy was .84. The scale has also shown predictive validity for measures of psychological well-being including self-esteem, depression, anxiety, and health (Neuling & Winefield, 1988; Winefield et al., 1992).

Sense of Community (SOC). A slightly modified version of the Collegiate Psychological Sense of Community scale (Lounsbury & DeNeui, 1996) was used to assess the psychological sense of program community experienced by respondents. The original instrument contains 14 items designed to measure psychological SOC at communities and universities. In this study it was modified to address psychology programs instead of colleges and universities, with items such as "I really do feel like I belong in this school/program." In addition, "My family likes this college/university" was changed to "People in my life like this school/program." Items are rated on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Factor analysis performed by Lounsbury and DeNeui (1996) produced one first-order factor, which reflected meanings traditionally associated with the Psychological Sense of Community scale (PSC), such as belongingness, commitment, fulfillment of needs, attachment, and overall SOC. Reported internal consistency estimates for the PSC have ranged from .88 to .92 with samples of college students (Lounsbury & DeNeui,1996). Cronbach's alpha coefficient in the current study was .92.

Perceived Stress Scale (PSS). The PSS (Cohen, Kamarck, & Mermelstein, 1983) is a 14 item assessment designed to measure nonspecific appraised stress. Using a 5-point Likert scale, participants are asked how often they feel or think a certain way, with responses ranging from 0 (never) to 4 (very often). This instrument has been significantly correlated with life events, depressive and physical symptoms, utilization of health services, social anxiety, and lower life satisfaction (Cohen et al., 1883; Sheets, Gorenflo, & Forney, 1993). It has been found to be an appropriate measure of global stress experience with all age groups (Chen, Kressler, & Gordon, 1995). Cohen, Kamarck, and Mermelstein (1983) found internal consistency reliability coefficients ranging from .84 to .86 and test-retest reliabilities of .85 on two samples of colleges students. Cronbach's alpha for the Perceived Stress Scale in the current study was .88.

Satisfaction With Life Scale (SWLS). Life satisfaction was measured using a 5-item scale, the Life Satisfaction Scale (Diener, Emmons, Larsen, & Griffin, 1985). Using a 7-point Likert scale, participants are asked to indicate their level of agreement with the satisfaction with life items. Responses range from 1 (strongly disagree) to 7 (strongly agree). Sample items include: "I am satisfied with my life in general" and "In most ways, my life is close to ideal". The Life Satisfaction Scale has favorable psychometric properties, including adequate internal consistency and high temporal reliability. Internal consistency is reported to be good (α = .78). Cronbach's alpha coefficient for the current study was .81. Scores on the SWLS correlate from moderately to highly with other measures of subjective well-being (e.g., Rosenberg Self-Esteem Scale, Marlowe-Crowne Social Desirability Scale).

Procedures

Students were accessed by contacting 276 training directors of doctoral programs from universities in the United States with counseling or clinical psychology doctoral programs. The consent letter, description of the study, and electronic survey was provided to the department chair, so that they could supply students with the information needed to decide if they wanted to participate (see Appendix). One training director indicated he/she was unwilling to forward the study to his/her students.

Participants were informed that the survey is voluntary, and that personal information would be treated confidentially and not included in the results of the study or shared with others. Contact information for the researcher was included so students could respond to the researcher with any questions or concerns.

Research Design and Analysis

Self-report questionnaires distributed to counseling psychology graduate students were used to conduct correlational analysis, in which a moderator is a third variable that affects the zero-order (bivariate) correlation between two other variables. Moderation analyses were conducted through performing a series of linear regressions (Baron & Kenny, 1986; Frazier, Tix, & Barron, 2004). A significant interaction between a primary independent variable and the proposed moderating variable on a dependent variable would suggest moderation effects (Baron & Kenny, 1986; Wang, Badley, & Gignac, 2006). Moderation observed through family and friend support, peer support, professor/advisor/mentor support, or SOC would offer evidence of social support as a protective factor of life satisfaction among counseling psychology graduate students.

Chapter 4

Results

The current study was designed to examine the relationship between perceived stress and life satisfaction, and to indentify if social support has a moderating influence on the perceived stress – life satisfaction relationship in graduate psychology students. This chapter reports the results of the statistical analyses conducted to investigate the proposed hypotheses.

Distribution of data

To check if the assumption of normal distribution was met, frequency analyses were run on all of the variables. Most variables showed normal distributions, as expected. Two of the items (questions three and four) on the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) were slightly positively skewed. Item 3, "I am satisfied with my life" (skew = -1.08) and item 4 "so far I have gotten the important things I want in life" (skew = -1.09) both had values just above the conventionally accepted boundary of 1.0. This mild positive skew indicates that, in general, participants responded as satisfied with their life and feel they have gotten the important things they want in life.

Question number 13 on the Collegiate Sense of Community measure, "if I am/were attending a psychology graduate program next year I would continue to go here," was negatively skewed (skew = -1.15), indicating most respondents would stay in their current program. Responses to how often professors, advisors, mentors, and/or supervisors were perceived as lending help in practical ways (i.e., item 27 on the Multidimensional Support Scale) were positively skewed (skew = 1.61). A similar trend

was seen in responses to how often academic peers were perceived as lending help in practical ways (skew = 1.17), item 17 on the same measure. As all the items described above were barely outside the standard boundaries, they were treated as normal for the rest of the analyses.

Correlation analyses

Table 6 displays the correlations, means, standard deviations, and reliability coefficients of the independent and dependent variables. The correlations in Table 6 were used to test the first and second hypotheses.

Hypothesis 1: There will be a significant negative correlation between level of perceived stress and global life satisfaction.

As hypothesized, there was a negative correlation between participants' score on the Perceived Stress Scale (PSS) and their score on the Satisfaction with Life Scale (SWLS). The correlation was statistically significant (r = -.55, p < .001). That is, participants satisfied with their lives tended to experience less perceived stress.

Hypothesis 2: Given that previous studies have found that social support is related to positive mental health outcomes:

a. There will be a significant positive correlation between frequency of family/friend support and global life satisfaction:

    As hypothesized, there was a positive correlation between participants' scores on the frequency of family/friend support scale of the MDSS and their scores on Satisfaction with Life Scale (SWLS). The correlation was statistically significant (r = .28, p < .002). Therefore, the more available participants' perceived family/friend support the more satisfied they were with their lives.

b. There will be a significant positive correlation between adequacy in family/friend support and global life satisfaction:

As hypothesized, there was a positive correlation between participants' score on the adequacy of family/friend support scale of the MDSS and their scores on the Satisfaction with Life Scale (SWLS). The correlation was statistically significant ($r = .30$, $p < .002$). In this sample, more adequate family/friend support was related to more life satisfaction.

c. There will be a significant positive correlation between frequency of peer support and global life satisfaction:

The correlation between participants' scores on the frequency of peer support scale of the MDSS and their scores on the Satisfaction with Life Scale (SWLS) was positive, yet small and not statistically significant ($r = .12$, $p < .18$). Therefore, Hypothesis 2c was rejected. According to these findings, there does not seem to be a relationship between frequency of peer support and life satisfaction.

d. There will be a significant positive correlation between adequacy of peer support and global life satisfaction:

The correlation between participants' scores on the adequacy of peer support scale of the MDSS and their scores on the Satisfaction with Life Scale (SWLS) was positive, yet small and not statistically significant ($r = .16$, $p < .09$). Therefore, Hypothesis 2d was rejected. Results from this study indicate graduate students who reported higher levels of adequacy of peer social support were not

more likely to report higher levels of life satisfaction than those who reported lower levels of adequacy of social support.

e. There will be a significant positive correlation between frequency of professor/advisor/mentor/supervisor support and global life satisfaction:

The correlation between participants' scores on the frequency of the professor/advisor/mentor/supervisor support scale of the MDSS and their scores on the Satisfaction with Life Scale (SWLS) was positive, but not statistically significant ($r = .17$, $p < .07$). Therefore, the hypothesis was rejected. Thus, participants reporting higher levels of availability of professor/advisor/mentor/supervisor were no more satisfied with life than those reporting lower levels of availability of professor/advisor/mentor/ supervisor.

f. There will be a significant positive correlation between adequacy of professor/advisor/mentor/supervisor support and global life satisfaction:

The correlation between participants' scores on the adequacy of professor/advisor/mentor/supervisor support scale of the MDSS and their scores on the Satisfaction With Life Scale (SWLS) was positive, but not statistically significant ($r = .17$, $p < .06$). This hypothesis was rejected. According to these findings, there does not seem to be a relationship between adequacy of professor/advisor/mentor/supervisor support and life satisfaction.

g. There will be a significant positive correlation between level of SOC and global life satisfaction:

As hypothesized, there was a positive correlation between participants' scores on the Collegiate Psychological Sense of Community Scale (SOC) and

their scores on the Satisfaction with Life Scale (SWLS). The correlation was statistically significant ($r = .30$, $p < .001$), supporting the hypothesis that a higher level of collegiate sense of community is associated with more life satisfaction.

Moderation analyses

Correlations were run between the demographic questions and the dependent variable (SWLS) to determine if any demographic variables needed to be controlled for in the moderation analyses. Table 7 presents the correlations and p-values. Age was statistically significantly negatively correlated to global satisfaction with life ($r = -.22$, $p < .02$). In this sample, therefore, older graduate students reported less satisfaction with life than younger graduate students. Age was controlled for by entering it as a covariate in the first step of all of the regression analyses. No other demographics variables were significantly correlated with global life satisfaction.

A series of linear regressions were performed for the moderation analyses that followed procedures outlined by Baron and Kenny (1986) and Frazier et al. (2004). Before creating any moderation terms, the moderators were standardized so they had a mean of 0 and a standard deviation of 1. An interaction term was then created between each moderator and the predicting variable, which was entered into the second step of the linear regression. Each moderation analysis performed for the third hypothesis is detailed below.

Hypothesis 3: Social support is expected to significantly moderate the relationship between perceived stress and life satisfaction. Given that social support has been established as a protective factor, it is proposed that social support will have a buffering effect on the relationship between perceived stress and global life satisfaction so that:

a. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more frequency of friend/family support than for those who report less frequency of friend/family support:

For this analysis stepwise hierarchical regression analysis was utilized. When SWLS was regressed onto PSS and friend/family support frequency in the first step, the regression was significant [$F(1, 116) = 28.21$, $p < .001$] and accounted for 32.7% of the variance in global life satisfaction. Independently, PSS ($B = -.52$, $t = -6.54$, $p < .001$) and friend/family support frequency ($B = .15$, $t = 1.88$, $p < .06$) were also both significant predictors of global life satisfaction. When the PSS x friend/family support frequency interaction term was entered in the second step ($B = .06$, $t = .77$, $p < .44$), the regression accounted for 33.1% of global life satisfaction but was not significant [$F(1, 115) = 18.94$, $p < .44$]. This indicates that family/friend support frequency does not moderate the relationship between perceived stress and global life satisfaction (see Table 8).

The moderation analyses was run a second time with age as a covariate in the first step ($B = -.23$, $t = -2.48$, $p < .02$), and PSS ($B = -.526$. $t = -6.86$, $p < .001$) and family/friend support frequency ($B = .11$, $t = 1.45$, $p < .02$) in the second step. When the PSS x friend/family support frequency interaction term ($B = .06$, $t = .84$, $p < .41$) was entered in the third step, the regression was still not significant [$F(1, 114) = 17.02$, $p < .41$]. This indicates that even when age

is held constant, friend/family support frequency does not moderate the relationship between perceived stress and global life satisfaction.

b. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more adequate friend/family support than for those who report less adequate friend/family support:

For this analysis stepwise hierarchical regression analysis was utilized. When SWLS was regressed onto PSS and friend/family support adequacy in the first step, the regression was significant [$F(1, 116) = 26.67$, $p < .001$] and accounted for 31.5% of the variance in global life satisfaction. Independently, PSS ($B = -.52$, $t = -6.46$, $p < .001$) was a significant predictor of global life satisfaction, but friend/family support adequacy ($B = -.1$, $t = -1.18$, $p < .24$) was not. When the PSS x friend/family support adequacy interaction term was entered in the second step ($B = -.016$, $t = -.21$, $p < .84$), the regression accounted for 31.5% of global life satisfaction but was not significant [$F(1, 115) = 17.65$, $p < .84$]. This indicates that friend/family support adequacy does not moderate the relationship between perceived stress and global life satisfaction (see Table 9).

The moderation analyses was run a second time with age as a covariate in the first step ($B = -.23$, $t = -2.48$, $p < .02$), and PSS ($B = -.54$, $t = -6.71$, $p < .001$) and friend/family support adequacy ($B = .04$, $t = .44$, $p < .67$) in the second step. When the PSS x friend/family support adequacy interaction term ($B = -.01$, $t = .09$, $p < .37$) was entered in the third step, the regression was still not significant [$F(1, 114) = 16.01$, $p < .93$]. This indicates that even when age

is held constant, friend/family support adequacy does not moderate the relationship between perceived stress and global life satisfaction.

c. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more frequent peer support than for those who report less frequent peer support:

For this analysis stepwise hierarchical regression analysis was used. When SWLS was regressed onto PSS and peer support frequency in the first step, the regression was significant [$F(1, 116) = 25.68$, $p < .001$] and accounted for 30.7% of the variance in global life satisfaction. Independently, PSS ($B = -.55$, $t = -6.98$, $p < .001$) significantly predicted global life satisfaction but peer support frequency ($B = .01$, $t = .07$, $p < .95$) did not. When the PSS x peer support frequency interaction term was entered in the second step ($B = .04$, $t = .56$, $p < .58$), the regression accounted for 30.9% of global life satisfaction but was not significant [$F(1, 115) = 17.12$, $p < .58$]. This indicates that peer support frequency does not moderate the relationship between perceived stress and global life satisfaction (see Table 10).

The moderation analyses was run a second time with age as a covariate in the first step ($B = -.23$, $t = -2.48$, $p < .02$), and PSS ($B = -.56$. $t = -7.26$, $p < .001$) and peer support frequency ($B = .001$, $t = .02$, $p < .99$) in the second step. When the PSS x peer support frequency interaction term ($B = .06$, $t = .74$, $p < .46$) was entered in the third step, the regression was still not significant [$F(1, 114) = 16.14$, $p < .46$]. This indicates that even when age is

held constant, peer support frequency does not moderate the relationship between perceived stress and global life satisfaction.

d. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more adequate peer support than for those who report less adequate peer support:

For this analysis stepwise hierarchical regression analysis was utilized. When SWLS was regressed onto PSS and peer support adequacy in the first step, the regression was significant [$F(1, 116) = 25.68$, $p < .001$] and accounted for 30.7% of the variance in global life satisfaction. Independently, PSS ($B = -.55$, $t = -6.86$, $p < .001$) was a significant predictor of global life satisfaction but peer support adequacy ($B = .-01$, $t = -.1$, $p < .92$) was not. When the PSS x peer support adequacy interaction term was entered in the second step ($B = -.05$, $t = -.69$, $p < .49$), the regression accounted for 31% of global life satisfaction but was not significant [$F(1, 115) = 17.38$, $p < .36$]. This indicates that peer support adequacy does not moderate the relationship between perceived stress and global life satisfaction (see Table 11).

The moderation analyses was run a second time with age as a covariate in the first step ($B = -.23$, $t = -2.48$, $p < .02$), and PSS ($B = -.56$. $t = -7.23$, $p < .001$) and peer support adequacy ($B = -.03$, $t = -.37$, p < .71) in the second step. When the PSS x peer support adequacy interaction term ($B = .06$, $t = .77$, $p < .44$) was entered in the third step, the regression was still not significant [$F(1, 114) = 16.21$, $p < .93$]. This indicates that even when age is held

constant, peer support adequacy does not moderate the relationship between perceived stress and global life satisfaction.

e. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more frequent professor/advisor/mentor/supervisor support than for those who report less frequent professor/advisor/mentor/supervisor support:

For this analysis stepwise hierarchical regression analysis was utilized. When SWLS was regressed onto PSS and professor/advisor/mentor/supervisor support frequency in the first step, the regression was significant [$F(1, 116) = 25.86$, $p < .001$] and accounted for 30.8% of the variance in global life satisfaction. Independently, PSS ($B = -.54$, $t = -6.85$, $p < .001$) was a significant predictor of global life satisfaction but professor/advisor/mentor/supervisor support frequency ($B = .04$, $t = .51$, $p < .61$) was not. When the PSS x professor/advisor/mentor/supervisor support frequency interaction term was entered in the second step ($B = -.05$, $t = -.59$, $p < .56$), the regression accounted for 31% of global life satisfaction but was not significant [$F(1, 115) = 17.26$, $p < .558$]. This indicates that professor/advisor/mentor/supervisor support frequency does not moderate the relationship between perceived stress and global life satisfaction (see Table 12).

The moderation analyses was run a second time with age as a covariate in the first step ($B = -.23$, $t = -2.48$, $p < .02$), and PSS ($B = -.55$. $t = -7.12$, $p < .001$) and professor/advisor/mentor/supervisor support frequency ($B = .04$, $t =$

.53, $p < .61$) in the second step. When the PSS x professor/advisor/mentor/supervisor support frequency interaction term ($B = -.004$, $t = -.06$, $p < .96$) was entered in the third step, the regression was still not significant [$F(1, 114) = 16.03$, $p < .96$]. This indicates that even when age is held constant, professor/advisor/mentor/supervisor support frequency does not moderate the relationship between perceived stress and global life satisfaction.

f. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more adequate professor/advisor/ mentor/supervisor support than for those who report less adequate professor/advisor/mentor/supervisor support:

For this analysis stepwise hierarchical regression analysis was utilized. When SWLS was regressed onto PSS and professor/advisor/mentor/supervisor support adequacy in the first step, the regression was significant [$F(1, 116) = 25.74$, $p < .001$] and accounted for 30.7% of the variance in global life satisfaction. Independently, PSS ($B = -.55$, $t = -6.8$, $p < .001$) was a significant predictor of global life satisfaction, but professor/advisor/mentor/supervisor support adequacy ($B = -.02$, $t = -.3$, $p < .77$) was not. When the PSS x professor/advisor/mentor/supervisor support adequacy interaction term was entered in the second step ($B = -.001$, $t = -.02$, $p < .99$), the regression accounted for 34% of global life satisfaction but was not significant [$F(1, 115) = 17.01$, $p < .99$]. This indicates that professor/advisor/mentor/supervisor support adequacy does not moderate the

relationship between perceived stress and global life satisfaction (see Table 13).

The moderation analyses was run a second time with age as a covariate in the first step (B = -.23, t = -.25, p < .02), and PSS (B = -.56, t = -7.11, p < .001) and professor/advisor/mentor/supervisor support adequacy (B = .004, t = .05, p < .96) in the second step. When the PSS x professor/advisor/mentor/supervisor support adequacy interaction term (B = .02, t = .3, p < .73) was entered in the third step, the regression was still not significant [$F(1, 114) = 15.97$, $p < .73$]. This indicates that even when age is held constant, professor/advisor/mentor/supervisor support adequacy does not moderate the relationship between perceived stress and global life satisfaction.

g. The relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report higher SOC than for those who report lower SOC:

For this analysis stepwise hierarchical regression analysis was utilized. When SWLS was regressed onto PSS and SOC in the first step, the regression was significant [$F(1, 116) = 29.24$, $p < .001$] and accounted for 33.5% of the variance in global life satisfaction. Independently, PSS (B = -.51, t = -6.57, p < .001) SOC (B = .17, t = 2.23, p < .03) were also both significant predictors of global life satisfaction. When the PSS x SOC interaction term was entered in the second step (B = -.07, t = -.91, p < .37), the regression accounted for 34% of global life satisfaction but was not significant [$F(1, 115) = 12.43$, $p <$

.37]. This indicates that SOC does not moderate the relationship between perceived stress and global life satisfaction (see Table 14).

The moderation analyses was run a second time with age as a covariate in the first step (B = -.23, t = -2.48, p < .02), and PSS (B = -.51. t = -6.83, p < .001) and SOC (B = .18, t = 2.35, p < .02) in the second step. When the PSS x SOC interaction term (B = -.07, t = -.898, p < .37) was entered in the third step, the regression was still not significant [$F(1, 114) = 18.39$, $p < .37$]. This indicates that even when age is held constant, SOC does not moderate the relationship between perceived stress and global life satisfaction.

Chapter 5

Discussion

The previous chapter conveyed the results of the statistical analyses conducted to investigate the proposed hypotheses of the current study. Chapter Five includes a comprehensive discussion of these research findings, and limitations of the investigation are addressed. Lastly, recommendations for future research and implications are addressed.

Summary of Findings

Research indicates that stress is inherent in the graduate school process, and that social support can be an important buffer to perceived stress. There is a lack of research, however, looking at social support as a buffer to perceived stress in psychology graduate students with well-being outcome measures such as global life satisfaction. The present study, therefore, examined the relationship between perceived stress and life satisfaction among graduate clinical and counseling psychology students, in an attempt to identify whether social support and a psychological sense of community (SOC) in the doctoral program are protective factors of life satisfaction.

As hypothesized, there was a large significant negative correlation between perceived stress and life satisfaction (r = -.55). These results are consistent with prior research findings that indicated a similar relationship between perceived stress and life satisfaction in students in higher education. Matheny and colleagues' (2002) study of American college students found a very similar negative correlation (r = -.57) using the Perceived Stress Scale and the Satisfaction with Life Scale. Using the same measures, Chang (1998) found perceived stress to be negatively correlated with life satisfaction (r =

-.53) in undergraduate college students as well. Also using the same measures, Hamarat and colleagues' (2001) study on adults over the age of 18 found perceived stress negatively correlated with life satisfaction (r = -.55) for adults age 18 and older, and an even higher correlation (r = -.60) for adults ages 18-40. The consistency of these findings implies that for the average graduate student, high levels of perceived stress are associated with lower levels of life satisfaction.

There was also a significant positive correlation between frequency of family/friend support and global life satisfaction, indicating that the more available participants' perceived family/friend support the more satisfied they were with their lives. The hypothesis that there would be a significant positive correlation between adequacy in family/friend support and global life satisfaction was also supported by this sample, suggesting more adequate family/friend support is related to more life satisfaction.

The present study was the first to examine the relationship between social support and well-being using the Multidimensional Support Scale and the Life Satisfaction scale. Previous studies documenting the relationship between social support and well-being support the results found. Using the Social Provisions Scale (SPS; Cutrona & Russell, 1987), Triestman's (2004) study on female graduate students found social support to be significantly positively correlated with the Satisfaction with Life Scale. Winefield, Winefield, and Tiggemann (1992) found a significant negative correlation between availability and frequency of family/friend support on the Multidimensional Support Scale and indicators of well-being (i.e. self-esteem, depression, and general health). In fact, the frequency of perceived family and friend social support was more strongly associated with well-being than any other source of social support on the MDSS. Echoing

previous research, the current findings suggest that graduate students with more available and adequate family and friend social support will experience higher levels of life satisfaction than students with less available and adequate family and friend social support.

Furthermore, there was a significant positive correlation between level of SOC and global life satisfaction, supporting the hypothesis that a higher level of collegiate sense of community is associated with more life satisfaction. Past research has indicated aspects of well-being to be related to psychological sense of community. In 1990, McCarthy, Pretty, and Catano found an inverse relationship between psychological sense of community (as measured by the short form of the SCI; Chavis, Florin, Rich, & Wandersman, 1987) and burnout, physical distress, and psychological distress in undergraduate college students.

Using the Collegiate Sense of Community (Lounsbury & DeNeui, 1996) measure, Clark, Murdock, and Koetting (2009) examined the relationship between psychological sense of community (SOC) and well-being in counseling psychology graduate students. Consistent with McCarthy and colleagues' (1990) study, they found SOC to be negatively related to burnout and stress. The present study is the first study to specifically examine SOC's relationship with life satisfaction in clinical and counseling psychology graduate students. The results are in support of prior research findings that SOC is positively related to well-being, or in this study global life satisfaction. Evidence suggests that social characteristics of a student's program or community warrant attention from those looking to improve the graduate school experience.

It was hypothesized that frequency and adequacy of peer support would be significantly positively related to global life satisfaction; however the correlations between the participants' scores on the scale of the MDSS and their scores on the SWLS were small and not statistically significant. Therefore, results from this study indicate graduate students who reported higher levels of availability and adequacy of peer social support were not more likely to report higher levels of life satisfaction than those who reported lower levels of availability and adequacy of social support.

Recent research offers some possible explanations for these findings. In 2000, Bolger, Zuckerman, and Kessler found that attempts to provide support that recipients were unaware of were more effective in reducing distress than those that were acknowledged. Possible reasons that invisible support is superior to visible support draw from the link between social support and social comparison; when social support is known, it may involve social comparison, especially when provided by peers. Visibly offered support could be perceived as implying ineffectiveness, inducing self-judgment that negatively affects self-esteem. In 2009, Bolger and Amarel found that visible support can be detrimental to adjustment, which is partly due to recipients' appraisal that supportive peers view them as incompetent.

Due to small cohorts and high stakes graduate school can often become a competitive environment, with students competing with each other for resources (e.g., practicum placements, teaching and research assistantships, and even prestige). Graduate students are also constantly evaluated, so it follows that social comparison would occur. According to Baird's (1969) research as competition among peers increased so did stress, with graduate students reporting they always experienced stress when in competition with

other students. The measure in the current study looked at perceived social support, which would be visible support. In this study, the feeling of inefficiency from social comparison induced by visible or perceived peer support may offset any benefit of the actual supportive behavior.

Similarly, results from the current study suggest that frequency and adequacy of professor/advisor/mentor/supervisor support was unrelated to global life satisfaction. Thus, participants reporting higher levels of availability and adequacy of professor/advisor/mentor/ supervisor support were no more satisfied with life than those reporting lower levels of availability and adequacy of professor/advisor/mentor/supervisor support. Although graduate students are most likely not in direct competition with professors, advisors, mentors, and supervisors, receiving visible social support from superiors may also have self-esteem costs. Often professors and advisors are in evaluating roles, and graduate students want to appear competent and effective while learning how to become a professional. Perceived or visible social support may be appraised as also communicating inadequacy, which could negate any positive effects of social support in this study. Receiving visible support from professors, advisors, mentors, or supervisors, although necessary, may evoke fear in graduate students that they are not living up to their expectations.

The demographic variable age was found to be significantly negatively correlated to global life satisfaction, meaning in this sample older graduate students reported less satisfaction with life than younger graduate students. This is contrary to Hamarat and colleagues' (2001) findings of a positive relationship between age and satisfaction with life, with oldest adults reporting the highest levels of life satisfaction. It is important to

note, however, that the sample in Hamarat et al.'s study were not graduate students, which may influence the experience of life satisfaction. It may be that older graduate students have more financial and family responsibilities, lowering their overall experience of satisfaction with life. Older students may be changing careers and dealing with the stress associated with significant transitions. If that transition is motivated out of not being satisfied with their previous careers, it could influence current levels of life satisfaction when reflecting upon achieving the things one wants in life. Older students may also feel out of sync with more socially accepted chronological roles, such as parent, co-worker, employee, and boss.

Several potential moderators of the relationship between perceived stress and global life satisfaction were tested, but none of them were supported by the current sample. The results did not support the hypotheses that the relationship between perceived stress and global life satisfaction will be significantly weaker for participants who report more availability and adequacy of the three sources of support (i.e.,. friend/family, peer, and professor/advisor/mentor/ supervisor) than for those who report less availability and adequacy of support from these sources. The hypothesis that SOC would moderate the relationship between perceived stress and global life satisfaction was also not supported by this sample.

This research seems to be the first to document the relationship between perceived stress and life satisfaction with the Multidimensional Support Scale as a potential moderating variable. The results found are inconsistent with recent research showing evidence for the moderating role of social support in the relationship between perceived stress and well-being in graduate students (Wilks, 2008). However, Wilks' study was

conducted on a different population (social work graduate students), and examined perceived academic stress as opposed to a global scale of perceived stress. Only family and friend social support was measured in Wilks' study via the Maton et al.'s (1996) shortened, 20-item version of the Perceived Social Support Scale (PSSS-20; Procidano & Heller, 1983), and the outcome variable was resilience, as measured by Resilience Scale (RS-15; Neill & Dias, 2001). Any one of these variables may have contributed to the difference in findings.

Clark, Murdock, and Koetting (2009) also found evidence for the buffering effects of social support (specifically SOC) on perceived stress in counseling psychology graduate students. Their study revealed that under low levels of perceived stress, higher levels of career choice satisfaction were associated with higher SOC. However, they observed no moderating effects under high levels of perceived stress, which they hypothesized was due to SOC not being powerful enough to buffer the effects of perceived stress on career satisfaction when stress is high. They also found that a traditional social support measure as well as SOC failed to moderate the effects of stress on burnout. As noted earlier, it may be that perceived social support, in any form, comes with negative consequences that negate possible buffering effects.

Overall, the pattern of findings via the correlational analyses suggests psychology graduate students experience higher degrees of satisfaction when they perceive themselves as having more available and adequate family and friend support. The findings also indicate that students who report a better global experience of program support, as measured by SOC, are more satisfied with their lives than students that report lower SOC. According to these results, however, a graduate student's level of life

satisfaction does not differ based on levels of individual academic support sources, such as mentors, advisors, supervisors, and academic peers. Graduate students with lower levels of perceived stress are more likely to be satisfied with their lives than those with higher levels of perceived stress, but none of the proposed social support sources moderated this relationship.

Limitations of the Study

There were methodological issues that may have been study limitations. First, the participants were primarily Caucasian females, thus making the sample fairly homogeneous. Generalizing these results to males and/or persons of color needs to be done with caution. Demographic breadth offered through increased heterogeneity in future samples would supply more information about perceived stress and the graduate school experience.

The timing of the survey may create a relevant limitation in the current study. June is atypical of the graduate school schedule; this is most likely a time of transition between the spring academic schedules and summer classes, as well as a shift in graduate teaching assistantships, graduate research assistantships, and practicum schedules or involvement. Looking at table 2, only a little over four percent of participants reported being in 9 credits, which is a traditionally accepted number to be enrolled full-time, and in fact, nearly thirty percent were currently not enrolled in any credits, although eighty percent described themselves as full-time students. Student response rate may have been lower as faculty members are more likely to vacation during such transition times, with fewer training directors forwarding the e-mail request to participate. Students themselves

may be more likely to be on vacation or not checking school related e-mail, possibly lowering the response rate.

Future Research Directions

Although retention rates are an issue for all graduate students, minority students face unique factors that may impact their graduate school experience and ultimately their attrition rates. Minority students are often underrepresented in graduate school programs, and have been found to perceive institutions as marginalizing, and feel discriminated against (Nettles, 1990). Nettles also found that black students received fewer teaching and research assistantships, a major source of funding for students. It seems that these and other potential differences might affect perceived stress as well as life satisfaction for students of color. Thus, future research would benefit from examining the relationship between perceived stress, life satisfaction, and social support for larger samples of students of color.

Furthermore, since it was identified that the timing of the survey may have affected the results, future research on the potential buffering effects of social support on the relationship between stress and life satisfaction should be done during the academic year. Graduate students' schedules typically vary significantly from the academic year to the summer, so surveys sent during either fall or spring semester may be more successful in response rates, and target a different or more inclusive set of relevant current stressors.

Although traditional social support sources, family and friends, were supported as being significant predictors of life satisfaction, the importance of SOC in the experience of satisfaction was also shown in this sample. As this was a preliminary study of the relationship between SOC and global life satisfaction, it would be important to see if

these results are replicated in future research. Training programs would benefit from further exploring this relationship as they can potentially influence students' experience of SOC, and possibly create a more positive graduate school experience. Future research could also focus on SOC's relationship with behavioral success markers of the graduate school experience, such as GPA, program dropout rates, and time to degree completion for individual students.

Although none of the hypothesized moderators were found to buffer the perceived stress and life satisfaction relationship, future research might continue to examine other potential moderators in the stress – life satisfaction relationship. It would be interesting to see if the type of social support given acts as a moderator. Future research could also explore visible support versus invisible support, and see if it impacts the potential buffering effects of social support on the relationship between stress and well-being in graduate students.

As the correlation between perceived stress and life satisfaction was strong, it may be important for future research to target reducing perceived stress in graduate students, as opposed to identifying potential buffers. In the current study, graduate students identified time management, balance, relationships, financial concerns, academics, work, and health/well-being as current relevant stressors. Future research might focus on identifying relevant stressors and ways to eliminate stressors or help to alleviate the stress associated with them. The most endorsed stressor in the current study was time management and balance, so future research could further explore what aspects or variables of a graduate student's life contribute to this self-identified stressor.

Additionally, research might focus on ways to increase life satisfaction, and see if any of these interventions impact perceived stress in graduate students.

Age, the only demographic variable significantly correlated with life satisfaction, would be another important variable to target in an exploration of its impact on the experience of graduate school. It would first be important to see if these same findings are replicated in future studies. Qualitative research has shown mature female graduate students experience stress related to role conflict, particularly students with children (Anderson & Miezitis, 1999). Research might continue to explore stressors unique to older graduate students, as well as ways programs can better accommodate them. Future research could also examine various behavioral outcomes in relationship to age, such as GPA, program dropout rates, and time to degree completion for individual students.

Implications

Results from this study, in accordance with previous research, found that students with higher levels of perceived stress experienced lower levels of life satisfaction than students with lower levels of perceived stress (Hamarat, et al., 2001; Matheny, et al., 2002; Chang, 1998). Given the consistency and strength of this relationship, it follows that academic programs would benefit from investing in stress reduction intervention methods for their graduate students. In the current study, graduate students identified time management, balance, relationships, financial concerns, academics, work, and health/well-being as current relevant stressors. Programs looking to lower stress in students might begin by surveying students to establish relevant stress concerns. They can then work toward establishing programs that address the most prevalent stressors in their graduate students' lives.

Graduate school programs might also implement more generalized stress reduction programs. Research done on undergraduate college students and nursing students has found that relaxation response and cognitive behavioral interventions reduced levels of psychological distress, anxiety, and perceived stress (Deckro et al., 2009; Heaman, 1995; Johansson, 1991). A recent study also found a mindfulness-based stress reduction (MBSR) program had positive implications for graduate counseling psychology student's mental health (Shapiro, Brown, & Biegel, 2007). Students participating in the program experienced lower levels of perceived stress, negative affect, and anxiety, as well as increases in positive affect and self-compassion. It seems the introduction of a mindfulness-based or mind-body intervention into graduate students' curriculum could result in a number of mental health benefits.

Other ways of reducing stress that have been highlighted in recent research are group counseling and exercise. Group counseling has been found to alleviate symptoms of stress, depression, and anxiety in counseling psychology graduate students (Byars, 2005). Programs could make connection with local counseling resources that are not associated with the program academically, and find places that will give students discounts to make these resources more accessible. Exercise has also been found to alleviate symptoms of stress, depression, and anxiety in counseling psychology graduate students (Byars, 2005). Exercise is a cost efficient option that programs can encourage their students to incorporate into their daily lives, either through university resources or fun intra-program competitions or work out related challenges. Such interventions may not only reduce stress but also promote life satisfaction, and positively impact the graduate school experience.

According to these findings, graduate school programs would benefit by having interventions to increase life satisfaction that focus not only on the individual student but also on the student's program/community. Higher levels of SOC were associated with higher levels of life satisfaction in this study, and previous studies have also found it to be inversely related to physical and psychological indicators of stress and burnout (McCarthy, Pretty, & Catano, 1990; Clark, Murdock, & Koetting, 2009). These findings suggest that attention to program dynamics or culture could improve graduate students' well-being.

To increase SOC, academic programs might start by surveying students on their current perceptions of the academic communities and ways in which they would like them to be improved upon (Clark, Murdock, & Koetting, 2009). Clark, Murdock, and Koetting also suggested interventions including informal department social gatherings, such as happy hours, academic gatherings, like research groups, or student-faculty meetings to touch base around happenings of the program. In general, academic programs would benefit from creating social and academic programming focused on getting students involved in the program, both ways of increasing psychological sense of community.

With the increasing use of technology in all forms of social connection, support, and networking, technology can also be utilized by programs to bolster SOC. Research by Kruger et al. (2001) has already identified that online groups can help participants develop a strong sense of SOC. Kruger et al.'s findings indicate it may even be possible for SOC to develop more rapidly online than in person, due to the potential for more frequent contact with members. Kruger and his colleagues outlined guidelines for

developing successful online communities based on their experience developing online discussion forums for school psychology professionals and students, which can be utilized by programs looking for alternative ways to increase SOC. In doing so, programs can not only potentially impact graduate students' experience of the program but also positively contribute to graduate students' overall well-being.

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APPENDIX A

Invitation to Facilitate Research Study

Dear Department Chair

I am pre-doctoral candidate at the University of Kansas, and am conducting a survey on stress and life satisfaction among counseling psychology graduate students. I am undertaking this research for my dissertation, which is supervised by Dr. Karen Multon. I have received ethical approval for my study from the University of Kansas of Human Subjects Committee. To gather my data I have constructed an online questionnaire, which I am hoping to distribute via email to PhD students in counseling psychology doctoral students. Their participation is voluntary and completely confidential.

The purpose of this email is to ask if you would be willing to forward this email (containing a link to the online questionnaire) to doctoral students in your department. Once the study has been completed and my dissertation is written, I would be very happy to distribute a summary of the findings to your department, for circulation to students.

I look forward to hearing from you very shortly. If you have any questions about the project, please don't hesitate to contact me at the email address or phone number listed below. If there is someone else I need to discuss this request with, please forward my email to that person or point me in the correct direction.

Thank you for considering my request, and I look forward to your response.

Sincerely,

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APPENDIX B

Information Statement

The Department of Psychology and Research in Education at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We are conducting this study to better understand the role social support plays in the relationship between stress and life satisfaction in counseling psychology graduate students. This will entail your completion of a questionnaire. The questionnaire packet is expected to take approximately 10-15 minutes to complete.

The content of the questionnaires should cause no more discomfort than you would experience in your everyday life. Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of the potential moderating role of social support on the relationship of perceived stress and life satisfaction of counseling psychology graduate students. Your participation is solicited, although strictly voluntary. Your name will not be associated in any way with the research findings. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response.

If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone or mail.

Completion of the survey indicates your willingness to participate in this project and that you are at least age eighteen. If you have any additional questions about your rights as a research participant, you may call (785) 864-7429, write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, or email mdenning@ku.edu.

Sincerely,

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APPENDIX C

Demographic Questionnaire

1. Age_____
2. Sex: Female_____ Male_____
3. Ethnicity:
_____ African American
_____Native American
_____Asian American
_____Latina
_____Caucasian
_____ International
_____Other (please specify) _____
5. Are you a _____ full-time student or _____ part-time student?
6. How many credits are you enrolled for this semester (Spring 2010)? _____
7. Marital status:
_____Single
_____Married
_____Separated
_____Divorced
_____Widowed
8. Do you have children?
_____Yes
_____No
If yes, how many children do you have? _____
If yes, what are the ages of all of your children? _____
If yes, what are the ages of the children who live with you at least half time?_____
9. Involvement in work-related roles (please check all that apply):
_____Paid worker in job on campus (how many hours per week_____)
_____Paid worker in job off campus (how many hours per week____)
_____Practicum student (how many hours per week_____)
_____Volunteer
10. Check the category that includes the total combined annual income of your financial support group:
_____Under $10,000
_____$10,001 - $15,000
_____$15,001 - $25,000
_____$25,001 - $40,000
_____$40,001 - $60,000
_____$60,001 - $80,000
_____$80,001 - $100,000
_____Over $100,000
11. What do you identify as your greatest current stressor?

APPENDIX D

Satisfaction With Life Scale

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

1 = strongly disagree
2 = disagree
3 = slightly disagree
4 = neither agree nor disagree
5 = slightly agree
6 = agree
7 = strongly agree

____ 1. In most ways my life is close to my ideal.

____ 2. The conditions of my life are excellent.

____ 3. I am satisfied with my life.

____ 4. So far I have the important things I want in life.

____ 5. If I could live my life over, I would change almost nothing.

APPENDIX E

Perceived Stress Scale

Directions: The questions in this scale ask you about your thoughts and feelings **during the last month**. In each case, you will be asked to indicate ***how often*** you felt or thought a
certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

____ never
____ almost never
____ sometimes
____ fairly often
____ very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

____ never
____ almost never
____ sometimes
____ fairly often
____ very often

3. In the last month how often have you felt nervous and “stressed”?

____ never
____ almost never
____ sometimes
____ fairly often
____ very often

4. In the last month how often have you felt confident about your ability to handle your personal problems?

____ never
____ almost never
____ sometimes
____ fairly often
____ very often

5. In the past month, how often have you felt things were going your way?

____ never
____ almost never
____ sometimes
____ fairly often
____ very often

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6. In the last month, how often have you found that you could not cope with all the things you had to do?

____ never
____ almost never

____ sometimes
____ fairly often
____ very often
7. In the last month, how often have you been able to control irritations in your life?
____ never
____ almost never
____ sometimes
____ fairly often
____ very often
8. In the last month, how often have you felt that you were on top of things?
____ never
____ almost never
____ sometimes
____ fairly often
____ very often
9. In the last month, how often have you been angered because things were outside of your control?
____ never
____ almost never
____ sometimes
____ fairly often
____ very often
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
____ never
____ almost never
____ sometimes
____ fairly often
____ very often

APPENDIX F

Permission from author to use Collegiate Psychological Sense of Community Scale

From: JLounsbury@aol.com [mailto:JLounsbury@aol.com]
Sent: Mon 2/22/2010 12:17 PM
To: Kapsner, Jan Cecilia
Subject: Re: Collegiate Sense of Community Measure

Hi Jan,
Nice to hear from you. Thanks for your interest in my work. Sure, you may use our PSC scale, and adapt it for psychology programs. Good idea. The PSC items are yellow-shaded on the attached. Feel free to use them or any other scales on that questionnaire. Also, please feel free to send me the emended scale and I will review it, offer comments, etc.

Best wishes,
John
John W. Lounsbury
Professor
Dept. of Psychology
University of Tennessee
Knoxville, TN 37996-0900

APPENDIX G

Collegiate Psychological Sense of Community Scale – Revised

Instructions: Please read each of the following statements below and write the number that corresponds to your response in the space to the left of the statement.
Please answer the following 14 questions regarding your doctoral program
1 = Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

1. ____I really feel like I belong in this school/program.
2. ____There is a sociable atmosphere in the school/program.
3. ____I wish I had gone to another school/program instead of this one.
4. ____Students feel they can get help if they are in trouble.
5. ____I would recommend this school/program.
6. ____People in my life like this school/program.
7. ____There is a strong feeling of togetherness in this school/program.
8. ____I someday plan to give alumni contributions to this school/program.
9. ____I really enjoy attending this school/program.
10. ____Students really care about what happens to this school/program.
11. ____I feel very attached to this school/program.
12. ____Student life in this school/program is very stimulating.
13. ____If I am/were attending a psychology graduate program next year I would continue to go here.
14. ____There is a real sense of community in this school/program.

APPENDIX H

Multi-Dimensional Support Scale

Below are some questions about the kind of help and support you have available to you in coping with your life at present. The questions refer to three different groups of people who might have been providing support to you IN THE LAST MONTH. For each item, please mark the alternatives which show your answer.

A. First, think of your family and close friends, especially the 2-3 that are the most important to you:

1. How often did they really listen to you when you talked about your concerns or problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

2. How often did you feel that they were really trying to understand your problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

3. How often did they really make you feel loved?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

4. How often did they help you in practical ways, like doing things for you or lending you money?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

5. How often did they answer your questions or give you advice about how to solve your problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

6. How often could you use them as examples of how to deal with your problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

B. Now, think of your peers in graduate school:

1. How often did they really listen to you when you talked about your concerns or problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:

____ More
____ Less
____ Just right

2. How often did you feel that they were really trying to understand your problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

3. How often did they help you in practical ways, like doing things for you or lending you money?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

4. How often did they answer your questions or give you advice about how to solve your problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

5. How often could you use them as examples of how to deal with your problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:

____ More
____ Less
____ Just right

C. Lastly, think about your professors, advisors, mentors, and/or supervisors:

1. How often did they really listen to you when you talked about your concerns or problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

2. How often did you feel that they were really trying to understand your problems?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

3. How often did they help you in practical ways, like doing things for you or lending you money?
   ____ never
   ____ sometimes
   ____ often
   ____ usually/always
   ____ very often
   Would you have liked it:
   ____ More
   ____ Less
   ____ Just right

4. How often did they answer your questions or give you advice about how to solve your problems?
   ____ never
   ____ sometimes
   ____ often

____ usually/always
____ very often
Would you have liked it:
____ More
____ Less
____ Just right

5. How often could you use them as examples of how to deal with your problems?
____ never
____ sometimes
____ often
____ usually/always
____ very often
Would you have liked it:
____ More
____ Less
____ Just right

APPENDIX I

Table 1

Demographic Information

Variable	*N*	*F*	*%*	*M*	*SD*
Age	119			29.34	6.99
Gender	119				
Male		22	18.5		
Female		97	81.5		
Race	119				
African American		7	5.9		
Asian American		6	5		
Latina		6	5		
Caucasian		87	73.1		
International		6	5		
Other		6	5		
Marital Status	119				
Single		45	37.8		
Married		50	42		
Separated		2	1.7		
Divorced		5	4.2		
Living with a partner		17	14.3		
Children	119				
Yes		19	16		
No		100	84		
Income	119				
Under 10,000		15	12.6		
10,001-15,000		21	17.6		
15,001-25,000		27	22.7		
25,001-40,000		12	10.1		
40,001-60,000		15	12.6		
60,001-80,000		15	12.6		
80,0001-10,000		7	5.9		
Over 100,000		7	5.9		

Table 2

Academic Related Demographics

Variable	*N*	*F*	*%*	*M*	*SD*
Student Status	119				
Full-time Student		96	80.7		
Part-time Student		2	1.7		
On Internship		21	17.6		
Year	119			3.26	1.29
1st Year		6	5		
2nd Year		24	20.2		
3rd Year		21	17.6		
4th Year		26	21.8		
5th or More Years		42	35.3		
Number of Credits	119			3.85	3.48
0 credits		34	28.6		
1 credits		12	10.1		
3 credits		15	12.6		
4 credits		7	5.9		
5 credits		1	.8		
6 credits		29	24.4		
7 credits		4	3.4		
8 credits		5	4.2		
9 credits		5	4.2		
9.5 credits		1	.8		
10 credits		1	.8		
12 credits		4	3.4		
13 credits		1	.8		

Table 3

Commuting Demographics

Variable	*N*	*F*	*%*	*M*	*SD*
Weekly Commute Hours	119			5.45	5.33
0 hours		3	2.5		
0.25 hours		1	.8		
0.5 hours		3	2.5		
1 hours		16	13.4		
1.5 hours		7	5.9		
2 hours		12	10.1		
2.5 hours		6	58		
3 hours		6	5		
4		8	6.7		
4.5 hours		1	.8		
4.75 hours		1	.8		
1.5 hours		7	5.9		
2 hours		12	10.1		
2.5 hours		6	5		
3 hours		6	5		
4 hours		8	6.7		
4.5 hours		1	.8		
4.75 hours		1	.8		
5 hours		17	14.3		
6 hours		8	6.7		
7 hours		3	2.5		
7.5 hours		2	1.7		
8 hours		4	3.4		
9 hours		1	.8		
10 hours		4	3.4		
11 hours		1	.8		
12 hours		2	1.7		
12.5 hours		1	.8		
15 hours		3	2.5		
20 hours		9	7.6		

Note. There were eight cases with very extreme values (30 – 200 hours), so they were Winsorized to the highest reasonable value of 20 hours in order to make the data interpretable (Howell, 2002).

Table 4

Work Related Demographics

Variable	*N*	*F*	*%*	*M*	*SD*
Volunteer Hours	18			9.19	11.52
0 hours		1	.8		
2 hours		1	.8		
3.5 hours		1	.8		
4 hours		3	2.5		
5 hours		6	5		
8 hours		1	.8		
10 hours		3	2.5		
40 hours		2	1.7		
Work Off Campus Hours	31			23.84	14.98
4 hours		1	.8		
5 hours		4	3.4		
8 hours		1	.8		
10 hours		5	4.2		
20 hours		6	5		
24 hours		1	.8		
25 hours		1	.8		
32 hours		1	.8		
36 hours		1	.8		
40 hours		7	5.9		
45 hours		2	1.7		
50 hours		1	.8		
Practicum Hours	64			14.51	6.74
2 hours		1	.8		
3 hours		1	.8		
5 hours		5	4.2		
6 hours		2	1.7		
8 hours		3	2.5		
10 hours		7	5.9		
12 hours		4	3.4		
14 hours		2	1.7		
15 hours		9	7.6		
16 hours		8	6.7		
16.5 hours		1	.8		
18 hours		2	1.7		
20 hours		13	10.9		
24 hours		1	.8		

Work Related Demographics, Cont.

Variable	*N*	*F*	*%*	*M*	*SD*
25 hours		1	.8		
26 hours		1	.8		
30 hours		1	.8		
36 hours		1	.8		
Work On Campus Hours	81			21.2	9.26
6 hours	1		.8		
8 hours	2		1.7		
10 hours	11		9.2		
12 hours	2		.8		
15 hours	4		3.4		
16 hours	3		2.5		
20 hours	40		33.6		
25 hours	5		4.2		
30 hours	2		1.7		
35 hours	1		.8		
40 hours	10		8.4		
45 hours	1		.8		

Table 5

Greatest Current Stressor

Stressor	*N*	*%*
Time Management/Balance	35	37
Academic	7	29.4
Financial	8	18.5
Work	22	6.7
Relationships	44	5.9
Health/Well-being	3	2.5

Table 6

Correlations, Means, Standard Deviations, and Reliability Coefficients of the Measured Variables

Variables	1	2	3	4	5	6	7	8	9
1. PSS	-								
2. SWLS	-.55**	-							
3. FSS_F	-.26**	.28**	-						
4. FSS_A	-.36**	.3**	.66**	-					
5. CSS_F	-.22*	.12	.51**	.34**	-				
6. CSS_A	-.3**	.16	.26**	.35**	.61**	-			
7. MSS_F	-.24*	.17	.27**	.22*	.17	.003	-		
8. MSS_A	-.29**	.17	.05	.22*	-.05	.13	-.57**	-	
9. SOC	-.24**	.3**	.003	.03	.05	.1	.4**	.32**	-
M	2.8	4.28	3.33	2.23	2.76	2.31	2.4	1.93	3.49
SD	.6	.96	.83	.56	.85	.71	.76	.77	.71
Alpha	.88	.81	.84	.61	.85	.8	.85	.84	.92

Note. PSS = Perceived Stress Scale; SWLS = Satisfaction With Life Scale; FSS_F = Friends/Family Support Frequency; FSS_A = Friends/Family Support Adequacy; CSS_F = Peer Support Frequency; CSS_A = Peer Support Adequacy; MSS_F = Professors, Advisors, Mentors, and/or Supervisors Support Frequency; MSS_A = Professors, Advisors, Mentors, and/or Supervisors Support Adequacy; SOC = Collegiate Psychological Sense of Community
*p< .05; **p< .01

Table 7

Correlations of the Demographic Questions with the Dependent Variable (Satisfaction With Life Scale)

Variables	Satisfaction With Life Scale
Age	-.22*
Sex	.05
Ethnicity	.03
Marital Status	.1
Year	-.001
Student Status	-.004
Number of Credits	.03
Children	.17
Children At Home	-.11
Work On Campus Hours	-.12
Work Off Campus Hours	-.14
Practicum Hours	-.2
Volunteer Hours	-.4
Commute Hours	.08
Income	.12

Note. *p< .05

Table 8

Regression Analysis of Frequency of Family/Friend Support on the Relationship between Perceived Stress and Global Life Satisfaction

Step and Predictor Variable	R^2	$R^2\ \Delta$	*sr*	β
Step 1	.33***	.33***		
Perceived Stress Scale			-.*50***	-.52***
Friend/Family Support Frequency			.14	.15
Step 2	.33***	.003		
Perceived Stress Scale			-.*49***	-.51***
Friend/Family Support Frequency			.14	.15
PSS x FSS_F			.06	.06

Note. PSS = Perceived Stress Scale; FFS_F = Family/Friend Support Frequency of MDSS
This moderation analysis was also run with age in the model, but the interaction term was still not significant.
**p<.01, ***p<.001.

Table 9

Regression Analysis of Adequacy of Family/Friend Support on the Relationship between Perceived Stress and Global Life Satisfaction

Step and Predictor Variable	R^2	R^2 Δ	*sr*	*β*
Step 1	.32***	.32***		
Perceived Stress Scale			-.*50***	-.52***
Friend/Family Support Adequacy			-.09	-.10
Step 2	.32***	.003		
Perceived Stress Scale			-.*49***	-.52***
Friend/Family Support Adequacy			-.09	-.09
PSS x FSS_A			-.02	-.02

Note. PSS = Perceived Stress Scale; FFS_A = Family/Friend Support Adequacy of MDSS. This moderation analysis was also run with age in the model, but the interaction term was still not significant.
**p<.01; ***p<.001.

Table 10

Regression Analysis of Frequency of Peer Support on the Relationship between Perceived Stress and Global Life Satisfaction

Step and Predictor Variable	R^2	R^2 Δ	*sr*	*β*
Step 1	.31***	.31***		
Perceived Stress Scale			-.54***	-.55***
Peer Support Frequency			.01	.01
Step 2	.31***	.002		
Perceived Stress Scale			-.54***	-.56***
Peer Support Frequency			.01	.01
PSS x CSS_F			.04	.04

Note. PSS = Perceived Stress Scale; CSS_F = Peer Support Frequency of MDSS. This moderation analysis was also run with age in the model, but the interaction term was still not significant.
**p<.01, ***p<.001.

Table 11

Regression Analysis of Adequacy of Peer Support on the Relationship between Perceived Stress and Global Life Satisfaction

Step and Predictor Variable	R^2	R^2 Δ	*sr*	*β*
Step 1	.31***	.31***		
Perceived Stress Scale			-.*53***	-.55***
Peer Support Adequacy			-.01	-.01
Step 2	.31***	.003		
Perceived Stress Scale			-.*54***	-.56***
Peer Support Adequacy			-.01	-.004
PSS x CSS_A			.07	-.05

Note. PSS = Perceived Stress Scale; CSS_A = Peer Support Adequacy of MDSS. This moderation analysis was also run with age in the model, but the interaction term was still not significant.
**p<.01; ***p<.001.

Table 12

Regression Analysis of Frequency of Professors, Advisors, Mentors, and/or Supervisors Support on the Relationship between Perceived Stress and Global Life Satisfaction

Step and Predictor Variable	R^2	R^2 Δ	*Sr*	*β*
Step 1	.31***	.31***		
Perceived Stress Scale			-.*53***	-.54***
Professors, Advisors, Mentors, and/or Supervisors Support Frequency			.04	.04
Step 2	.31***	.002		
Perceived Stress Scale			-.*53***	-.54***
Professors, Advisors, Mentors, and/or Supervisors Support Frequency			.04	.04
PSS x MSS_F			-.05	.05

Note. PSS = Perceived Stress Scale; MSS_F = Professors, Advisors, Mentors, and/or Supervisors Support Frequency of MDSS. This moderation analysis was also run with age in the model, but the interaction term was still not significant.
**p<.01; ***p<.001.

Table 13

Regression Analysis of Adequacy of Professors, Advisors, Mentors, and/or Supervisors Support on the Relationship between Perceived Stress and Global Life Satisfaction

Step and Predictor Variable	R^2	$R^2\ \Delta$	*Sr*	β
Step 1	.31***	.31***		
Perceived Stress Scale			-.53***	-.55***
Professors, Advisors, Mentors, and/or Supervisors Support Adequacy			-.03	-.02
Step 2	.31***	.001		
Perceived Stress Scale			-.53***	-.55**
Professors, Advisors, Mentors, and/or Supervisors Support Adequacy			-.03	-.02
PSS x MSS_A			.001	-.001

Note. PSS = Perceived Stress Scale; MSS_A = Professors, Advisors, Mentors, and/or Supervisors Support Adequacy of MDSS. This moderation analysis was also run with age in the model, but the interaction term was still not significant.
**p<.01; ***p<.001.

Table 14

Regression Analysis of the Moderating Effects of Collegiate Psychological Sense of Community on the Relationship between Perceived Stress and Global Life Satisfaction

Step and Predictor Variable	R^2	$R^2 \Delta$	*Sr*	β
Step 1	.34***	.34***		
Perceived Stress Scale			-.50***	-.51***
Collegiate Psychological Sense of Community			.17	.20*
Step 2	.34***	.01		
Perceived Stress Scale			-.50***	-.50***
Collegiate Psychological Sense of Community			.18	.20*
PSS x SOC			.07	-.10

Note. PSS = Perceived Stress Scale; SOC = Collegiate Psychological Sense of Community. This moderation analysis was also run with age in the model, but the interaction term was still not significant.
*p<.05; ***p<.001.