ABSTRACT

Title of Thesis: MOVING FORWARD: ADDRESSING STRESS, POSITIVE

RESOURCES, AND GENDER

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This study examined a comprehensive stress-buffering model in a sample of 200 college students. Specifically, this study looked at social support and optimism as moderators between different types of stress and psychological health while controlling for gender given prior research that has demonstrated gender differences among the study constructs. Hierarchical regression analyses found that social support, but not optimism, worked as a significant moderator between different stressors, developmental challenge stress, time pressure stress, and social mistreatment stress, and psychological health. Supplemental analyses found in an independent samples t-test analysis that female college students had higher mean levels of time pressure stress than male college students. An extensive literature review of the study constructs including conceptual and methodological information and areas of improvement are delineated. Limitations of this study as well as future directions in research and clinical practice are also included.

MOVING FORWARD: ADDRESSING STRESS, POSITIVE RESOURCES, AND

GENDER

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1. Introduction to the Problem

The goal of this study was to advance prior literature by looking at multiple variables associated with stress and psychological health. This thesis examined (a) the negative effects of stress on psychological health, (b) social support and optimism as stress-buffers, and (c) the role of gender in a comprehensive model.

Stress refers to the experience individuals have while undergoing events during life that specifically result in psychological distress and perturbs individuals' psychological functioning (Aldwin, 1994; Lazarus, 1966). Past literature has recognized stress as a product of environmental and individual interactions that tends to increase negative distress, anxiety, depression, and mood disorders (Kim, Miklowitz, Biuckians, & Mullen, 2007; Lazarus & Folkman, 1984; Monroe & Harkness, 2005; Tate et al., 2008). Stress has been found to be prevalent throughout various life stages and in a variety of populations such as adolescents, college students, adults, and older adults (Kim et al., 2007; McCarthy, Fouladi, Juncker, & Matheny, 2006; Von Ah, Kang, & Carpenter, 2007).

Among these populations, scholars have noted the importance of studying college students due to their unique stage of development, different from adolescents and adults, and recommended conceptualizing their process as an *emerging adulthood* (Arnett, 2000). Moreover, specific to this population, different types of stressors seem to be prevalent due to the nature of events that occur during this stage of life such as stressful experiences related to academics and interpersonal relationships (Ross, Niebling, & Heckert, 1999; Towbes & Cohen, 1995).

Researchers have identified the high, consistent rates of stress and depression as major concerns among college students (Dixon & Kurpius, 2008). For example, stress has been linked to increased levels of suicidal ideation, lower levels of self-esteem, and higher levels of anxiety and depression among college students (Dixon & Kurpius, 2008). In order to address these concerns, scholars have identified several ways to reduce the negative impact of stress on psychological health, such as through seeking social support and having optimistic views (Chang & Sanna, 2003; Cohen & Wills, 1985; Ensel & Lin, 1991). Additionally, researchers have investigated the role of gender in multiple ways in the stress and coping literature, and have found that mean levels of stress, social support, and psychological health differ depending on gender (Ashton & Fuehrer, 1993; Dixon & Kurpius, 2008). Researchers have explained that these mean score differences may be due to how females and males are taught to think and behave in certain, designated ways in society and have discussed the importance of exploring the role of gender in the stress and coping model (Barbee et al., 1993; Day & Livingstone, 2003).

This thesis, thus, (a) reviewed conceptual and methodological issues related to the study of stress, social support, optimism, and gender (b) investigated social support and optimism as two protective factors against the negative impact stress has on psychological health, (c) looked at the stress-buffering relationships between different types of stressors and psychological health, and (d) investigated the study relationships after controlling for the effects of gender in a comprehensive model.

Stress, Psychological Health, and Coping

Stress refers to "the relationship between the person and the environment" that the person evaluates in regards to the availability of resources and the relationship's

influence on well-being (Lazarus & Folkman, 1984, p. 19). There have been several ways of conceptualizing stress such as understanding it as (a) a stimulus that imposes on individuals' functioning, (b) a daily and/or major struggle, (c) a mechanism that has different time periods (acute and chronic stressors), and (d) a response and situation that happens in reaction to different stressful experiences (Lazarus & Folkman, 1984). Stress has received much attention in the psychological literature due to the detrimental effects it has on psychological health. Increased levels of stress are known to be related to less satisfaction with life and social support, an increase in symptoms of depression and anxiety, higher likelihood of relapse into comorbid major depressive disorder and substance dependence, and less improvement in mood symptoms among bipolar adolescents (Kim et al., 2007; Monroe & Harkness, 2005; Tate et al., 2008).

Prior literature has found that higher levels of college student stress were related to increased suicidal ideation, lower levels of self-esteem, and elevated levels of anxiety and depression (Asberg, Bowers, Renk, & McKinney, 2008; Dixon & Kurpius, 2008; Felsten, 1998; Hirsch & Ellis, 1996; Hudd et al., 2000). In addition, the Spring 2010 Reference Group Executive Summary (American College Health Association, 2010) found that college students reported feeling overwhelming levels of depression (30.7%) and anxiety (48.4%) and that students felt more than average stress (41.1%) and tremendous levels of stress (0.6%) over a span of 12 months ($N = 95,172$).

Due to the strong link between stress and psychological health, researchers have (a) investigated coping resources specific to dealing with stress, (b) examined the measures used to assess stress and coping resources, (c) considered ways to implement information about the stress and coping process to clinical practice, and (d) looked at how

stress operates across a variety of populations (Cranford, 2004; Cropley & Steptoe, 2005; Lazarus, 2000; Wong & Wong, 2006).

Studies like those mentioned above on college student stress have conceptualized stress in accordance with life domains that occur during this stage of life, such as stress related to academic concerns as well as relationships with professors and peers (Towbes & Cohen, 1996). However, other studies have focused on the levels of depression and anxiety that occur and not on different types of stressors and common stressors that students may undergo (Frazier & Schauben, 1994). In addition, few studies have examined the role of different stressors on psychological health (Frazier & Schauben, 1994) and no studies, to my knowledge, have studied which positive resources work as stress-buffers for each stressor and psychological health. Hence, this study aimed to provide a novel contribution to the literature by (a) looking at different types of stressors by domain and their individual relationships with psychological health and (b) by investigating social and personal resources – social support and optimism as coping strategies - that can reduce the negative impact of stressors on psychological health.

Social Support

Social support, defined as "the existence or availability of people on whom we can rely, people who let us know that they care about, value, and love us," includes dimensions such as types of social support, types of social support providers, and the perception or reception of social support (Procidano & Heller, 1983; Sarason, Levine, Basham, & Sarason, 1983, p.127). For example, Taylor et al.'s (2004) taxonomy of social support includes *information support*, when one assists another to understand the stress and coping process, *instrumental support*, when one provides tangible aid to another, and

emotional support, when one gives affection to another and communicates the worthiness of the person in need of help.

Past research has illustrated that higher levels of social support are associated with positive outcomes such as increased psychological and physical health, and higher levels of coping with various personal and interpersonal issues (Newcomb & Chou, 1989; Sarason et al., 1991; Uchino, Cacioppo, & Kiecolt-Glaser, 1996; Taylor et al., 2004). In addition, social support has been found to buffer the negative effects of stress on psychological health (Cobb, 1976; Cohen & Wills, 1985). The social support stress-buffering hypothesis states that stress influences psychological distress when one does not have enough resources (Cohen & Wills, 1985); that social support moderates the relationship between stress and psychological health. Hence, this thesis provided a conceptual and methodological review of studies done on exploring social support and further explored the role of social support amidst the stressful experiences college students have.

Optimism

Prior literature has also identified several personality dispositions that influence the coping process (Folkman & Moskowitz, 2000). Personality has been defined as "those thoughts, feelings, desires, intentions, and action tendencies that contribute to important aspects of individuality" (Brody & Ehrlichman, 1998, p. 3). Researchers have noted that personality is part of (1) basic human nature and (2) that there are individual differences on personality traits and dispositions. Personality traits continue to develop during the human life span but tend to stay stable over time such that certain traits remain but may be expressed differently (Donnellan & Robins, 2009). Personality traits such as

extraversion, conscientiousness, neuroticism, and optimism have been identified as individual traits that can assist in individuals' response to psychological distress and the coping process (Carver & Connor-Smith, 2010).

Optimism is an indicator of a positive thinking process about consequences when in the midst of dealing with stress and adversities (Karademas, 2006; Scheier & Carver, 1985). Optimism, an individual trait that contains motivational, cognitive, and emotional components, has been known to conceptually overlap with self-efficacy in that individuals' self-efficacy could determine the positive outcomes individuals have (Scheier & Carver, 2003; Seligman & Csikszentmihalyi, 2000). Nonetheless, optimism contains broader meanings as it concentrates on the *process* of the outcome rather than what initially caused the outcome; optimists believe that there will be positive consequences while actively being in the process of trying to accomplish a positive result (Scheier & Carver, 2003). For example, a person may be optimistic in his recovery from a heart surgery because he has been persistently taking good care of himself, but also because he believes that everything will work out and that he will get better soon.

Higher levels of optimism have been linked to higher levels of well-being (Karademas, 2006), higher levels of knowledge about the risks associated to heart attacks (Radcliffe & Klein, 2002), and higher levels of exercise and lower levels of body fat and coronary risk (Sheppard, Maroto, & Pbert, 1996). Similar to social support, optimism has been conceptualized as a moderator of the stress – psychological health relationship. Chang's (1998) study illustrated that dispositional optimism was a significant moderator in the stress and psychological well-being relationship ($N = 400$). At a high level of optimism there was a weaker relationship between stress and psychological well-being

compared to when there was a low level of optimism. Therefore, optimism was included as a moderator between different types of stressors and psychological health and was investigated in-depth along with social support as a positive resource.

Gender

Gender has rarely been studied in-depth as a construct that directly relates to psychological health constructs. Although many studies have focused on understanding the history of the construction of gender and the influence it has on individual development (Hare-Mustin & Marecek, 1988), and how gender plays a role in stress and coping. Scholars have attempted to address the social meanings of the mean differences between males and females across constructs in a theoretical manner. For example, research has found that females tend to have higher levels of stress and social support than males and scholars have suggested that this may occur as a result of the gendered culture that entails gender stereotypes and discrimination (Barbee et al., 1993; Day & Livingstone, 2003). For example, Ashton and Fuehrer (1993)'s study found that males sought emotional support significantly lower than females and that more masculine males sought emotional support significantly less than androgynous males and females, and more feminine females. The authors explained that males and more masculine males may not accept social support even if it is available because of "the broader relational and social situation" in which it is deemed inappropriate to utilize emotional support (p. 473). Hence, this study also considered the role of gender in the stress-buffering model.

Therefore, this study conducted a comprehensive examination of the stress and coping processes by investigating (a) the relation between different stressors, social support, optimism, and psychological health, (b) social support and optimism as stress-

buffers between different stressors and psychological health, (c) and how this stress-

buffering relationship occurs after controlling for gender in a comprehensive model.

Chapter 2. Review of the Literature

Stress, experiences individuals have that results in feeling pain and psychological distress, has been found to frequently occur throughout all life stages. Amongst various populations, college students have also been found to have high rates of stress and that these stressful experiences have deteriorated students' psychological health levels. Therefore, prior research has investigated resources, such as various coping mechanisms, that could help protect college students' psychological health against the harmful effects of stress. This thesis looked at social support and optimism as stress-buffers – resources – that moderate the relationship between different stressors and psychological health, and thus, improve individuals' levels of psychological health.

Additionally, this study considered the role of gender in the stress-buffering model. Prior studies have operationalized gender as a categorical variable and have examined mean differences between males and females. Studies have found that females tend to seek more social support and experience more stress than males (Ashton & Fuehrer, 1993; Dixon & Kurpius, 2008). Scholars such as Barbee et al. (1993) and Dedovic, Wadiwalla, Engert, and Pruessner (2009) have explained that these mean differences may be due to the socialization of gender and how females and males are expected to think and behave in certain ways due to ascribed gender roles. These findings suggested that gender plays an important role in how stress and positive resources are experienced and that this needs to be considered in stress-buffering models.

College Student Population

The college student population in the U.S. has been studied extensively in psychological literature (Sherman, Buddie, Dragan, End, & Finney, 1999). To date,

studies have highlighted the importance of conceptualizing the college student population as emerging adults and of understanding that these groups of students face different adjustment processes than adolescents and adults (Arnett, 2000; Asberg et al., 2008). For example, Arnett (2000) proposed a theory of development for *emerging adulthood*, and argued that this period of time (18-25 years) is not only "theoretically and empirically distinct," but also, that it "is distinguished by relative independence from social roles and from normative expectations" (p. 469).

Arnett outlined various aspects of how *emerging adulthood* is distinct by having various demographic characteristics, ambiguity of their current social statuses, and ambiguity of their identity development. He explained that these young adults are in the process of moving away from the dependence on others they had in adolescence, but have not yet begun the independence apparent in adulthood in which there are opportunities to explore career and relationship options. Asberg et al. (2008) also noted that studying different variables among this population can help us gain a broader sense of college student experiences. Hence, recent literature has emphasized the importance of specifying the developmental trajectory of college students and investigating the difficulties, such as stress, they undergo due to the unique experiences they have in comparison to different life stages.

Theoretical Understanding of Stress

Stress has been conceptualized as the "negative and harmful interaction that occurs between individuals and the environment and impacts individuals' well-being" (Lazarus & Folkman, 1984, p. 19). Prior literature has investigated stress on a theoretical and empirical level and has attempted to get a clear understanding of how individuals

undergo this process (Aldwin, 1994; Cranford, 2004; Cropley & Steptoe, 2005; Lazarus, 2000; Wong & Wong, 2006). Past research has examined multiple aspects of stress and how they influence functioning across many life domains. Lazarus (1966) explains stress as "interdisciplinary" and "as a universal human and animal phenomenon, [it] results in intense and distressing experience and appears to be of tremendous influence in behavior" (p. 2). Stress has been described as a stimulus-response process; that is, stress is a stimulus that affects a person and these include "major changes" that can affect one person or a larger population and "daily hassles" (Lazarus & Folkman, 1984, p. 12). As a result, the response refers to the "state of a stress, an organism reacting with stress, being under stress" and more (p. 14).

Scholars have also emphasized that psychological stress consists of reactions from both the individual and the environment which are associated with each other (Lazarus 1966; Lazarus & Folkman, 1984). The stress stimulus-response theory by Lazarus and Folkman (1984) illustrated that in the midst of the person-environment interaction, (1) cognitive appraisal, in which the person evaluates whether an interaction between the person and environment is going to be stressful, and (2) activation of different coping methods, in which the person finds ways to deal with the stress after the interaction between the person and environment has been appraised as stressful, occurs. Hence, scholars established the need to look at various processes that take place when stressful events occur and influence individuals.

Prior studies have also identified specific stressful events that occur for college students. Crandall, Preisler, and Aussprung (1992) explained that coming up with accurate life events that occur for young adult, college students is crucial in developing

their Undergraduate Stress Questionnaire. In addition, Ross et al. (1999) included interpersonal, intrapersonal, academic, and environmental stressors and conceptualized stress in accordance with life domains that happen in the college setting in the development of their Student Stress Survey. Hence, this study looked at various subscales of college student stressors and investigated their individual relationships with positive resources and psychological health in a comprehensive model.

Stress and Psychological Health

Psychological health has been conceptualized primarily as symptoms such as anxiety and depression and also psychological well-being, such as life satisfaction (Veit & Ware, 1983). According to Drum and Baron (1998), anxiety and depression were ranked the first and third as presenting issues among college students seeking help from the counseling center (cited in McCarthy et al., 2006). The Spring 2010 Reference Group Executive Summary described that in a sample of 95,172 college students, 30.7% reported feeling overwhelmingly depressed and 48.4% reported feeling overwhelmingly anxious anytime within the past 12 months (American College Health Association, 2010). This report found that 41.1% of students felt more than average stress and 9.6 % of students felt tremendous stress within the last 12 months. Benton, Robertson, Tseng, Newton, & Benton (2003) also found that in their study of looking at changes across clients' problems in university counseling centers over the span of 13 years, the number of students who had depression multiplied two times more and that stress/anxiety increased between time period 1 and time period 2 although it became stable towards the end ($N = 13,257$).

Hence, due to the frequency of depressive and anxiety to stressors among college students, this study only focused on depression and anxiety symptoms as aspects of psychological health. Depression has been referred to as the state of feeling sad, moody, and downhearted (Veit & Ware, 1983) and anxiety has been known as the "physiological, behavioral, and psychological reaction" that results in rapid heartbeats, muscle tension, sweating and leads to becoming fearful and feeling uneasy (Bourne, 2000, p. 3). Although considered to be separate constructs in which individuals experience a different set of symptoms, anxiety and depression have been found to have high correlations with one another and have frequently been looked at together as demonstrating aspects of individuals' psychological health (Asberg et al., 2008; Crockett et al., 2007). For example, Veit and Ware (1983) reported a correlation of .75 between anxiety and depression in their study (p. 738). Hence, both constructs were considered to measure psychological health in this study.

Empirical studies have found several negative relationships between stress and psychological health in the college student population with higher levels of stress being associated with higher levels of suicidal ideation, anxiety, and depression, and lower levels of self-esteem (Asberg et al., 2008; Dixon & Kurpius, 2008; Felsten, 1998; Hudd et al., 2000). For example, Dixon and Kurpius (2008) found that higher levels of stress significantly predicted higher levels of depression in a sample of college students. In addition, Bovier, Chamot, and Perneger (2004) found in a sample of 1,257 university students that stress was a risk factor for reduced levels of psychological health and that it was the strongest correlate with taking up almost half of the total variance of psychological distress ($R^2 = .47$).

Measurements of Stress

In order to further understand stress and the multiple processes that occur while a stressful event occurs, various measures have been developed to assess the level of stress such as the Life Experiences Survey (LES; Sarason, Johnson, & Siegel, 1978), the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983), and the Inventory of College Students' Recent Life Experiences (ICSRLE; Kohn, Lafreniere, & Gurevich, 1990).

The Life Experiences Survey is a 57-item measure of life stress in which participants are asked to indicate which of 47 listed events they experienced. The 47 events consist of those that could have elicited life changes and generally occur among people. The LES also consists of another section with the remainder 10 items, developed primarily for students in which the life event changes were related to academics. The LES was developed on the basis that events could be stressful regardless of whether the events individuals experience are desirable (positive) or undesirable (negative) and that these may have different effects. The authors highlighted the importance of measuring stress in light of undesirable events that have a negative impact on individuals and vice versa and separated the theoretical aspects of stress as the nature of the event (desirable or undesirable) and the impact of the event (positive or negative).

However, the LES asks individuals to rate the influence the event had on individuals, ranging from extremely negative to extremely positive, and is scored by adding scores that had negative impacts into a categorization of negative events, and those that had positive impacts into a categorization of positive events. Hence, the two separate concepts of nature of event and impact of event were aggregated into one

category, going against the original conceptual stress framework. In addition, the scores

of the scale show how impactful the event was on the individual, but don't cover the

stressful experiences such as how it felt to undergo them. The measure was found to have

a reliability coefficient rate of the total score of .63 for the first sample and .64 for the

second sample, primarily due to the small number of subjects ($n =$ 34; $n =$ 58), and

considered the scale to be a moderately reliable measure (Sarason et al., 1978). In

addition, the scale was found to be correlated with depression, locus of control, and

personal maladjustment indicating validity evidence. Overall, the methodology of the

LES proved to be inconsistent with theory indicating a possible lack of construct validity

as well as a low score reliability suggesting strong limitations to the usage of this

measure.

The Perceived Stress Scale (PSS; Cohen et al., 1983) did not provide specific

types of events that could have elicited stress for individuals, but focused on looking at

the in-depth experiences that occurred during stressful times. The PSS was developed to

measure "the degree to which situations in one's life are appraised as stressful" (p. 385).

The original authors indicated that the PSS is an objective measure of stress. For example,

the scale asks participants to rate how often they felt or thought about stress through

items such as, "In the last month, how often have you been upset because of something

that happened unexpectedly?", "In the last month, how often have you dealt successfully

with irritating life hassles?", and lets participants consider more detailed aspects of their

experiences of life stress. It also provides a simple way of looking at whether individuals

had stressful reactions in the past 6 months (or 1 month) without them having to indicate

which specific event was stressful for them, and decreases the chance of individual biases in participants' observations of events.

However, because the PSS assesses the general level of stress it has been used for a variety of populations and has not focused on specific stressors that may be relevant for the college student population. Moreover, the items that represent stress seem to be very similar to the items listed in the Mental Health Inventory (MHI; Veit & Ware, 1983) for anxiety and depression which was selected to measure psychological distress in this study. These items include those such as " In the last month, how often have you felt nervous and 'stressed'?" "In the last month, how often have you felt that you were unable to control the important things in your life?" which are similar to the MHI items such as "During the past 6 months, how often have you felt nervous?" "During the past 6 months, how often have you been in firm control of your behavior, thoughts, emotions, feelings?"

Therefore, in order to have a stress measure that would be able to delineate specific stressful events students undergo and not confound with the MHI, The Inventory of College Students' Recent Life Experiences (ICSRLE; Kohn et al., 1990) was used in this study. The ICSRLE was created to measure college students' stressful experiences in reference to the particular events they undergo during their college years. It was constructed based on another stress scale, the Hassles Scale (Kanner, Coyne, Schaefer, & Lazarus, 1981), which also included items that tapped into one's level of physical and mental health in reaction to stress. Kohn et al. described that participants' "responses to the Hassles Scale could, therefore, *reflect* the very disturbances in physical and mental health that they are intended to *predict*" (p. 620). Hence, the items of ICSRLE's are tailored specifically toward college students' experiences and allow participants to think

of these experiences that may feel stressful, whereas the items of PSS asked participants to think of stressful experiences more focused on the psychological distress they undergo.

In addition, the item-selection analysis was conducted to make sure that the ICSRLE items were highly and significantly related to the PSS. Hence, although there were no shared items, the ICSRLE would reflect "an indirect relationship to the stress-appraisal process" that was emphasized by Lazarus and his colleagues and has been addressed in this thesis as a way of understanding stressful experiences (p. 621). In the ICSRLE, participants are asked to report the intensity of the experience over the past month for items such as "Conflict with professor(s)," "Social rejection," "Lower grades than you hoped for," "Heavy demands from extracurricular activities."

Most importantly, the ICSRLE captures a wide range of stressful experiences specific to college students. Although determined as a hassles scale, Kohn and colleagues defined hassles as including minor stressors as well as major issues that arise, and thus the ICSRLE looked at different types of stressors and the degree of stress experienced. In the original article, Kohn et al. (1990) conducted a principal axis factoring with oblimin rotation and found a seven factor, 37 item structure of the ICSRLE. The seven factors consisted of developmental challenge, time pressure, academic alienation, romantic problems, assorted annoyances, general social mistreatment, and friendship problems. Although the authors maintained the one factor, 49 item structure as the ICSRLE, they found low correlations among the seven subscales which indicated that they measured different aspects of stress.

Additionally, Osman, Barriois, Longnecker, and Osman (1994) conducted a confirmatory factor analysis of the one-factor and seven-factor ICSRLE. They found that

the one-factor model had adequate fit indices (GFI = .89, AGFI = .88, and RMR = .09)

and that the seven-factor ICSRLE had acceptable fit indices (GFI = .94, AGFI = .93, and

RMR = .07). The ICSRLE not only represented the daily hassles and negative

interactions that students may have, but also looked at a variety of stressors that can

capture an accurate and more holistic portrayal of college students' stressful experiences;

thus, was utilized in this study.

Measurements of Psychological Health

Consistent with previous studies, depression and anxiety were selected to

represent psychological health (Asberg et al. 2008; Crockett et al., 2007). Both constructs

have been studied with a variety of measurements such as the Beck Depression

Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) and the Beck Anxiety Inventory (BAI;

Beck, Epstein, Brown, & Steer, 1988). The BDI-II was a revised version of the original

Beck Depression Inventory (BDI) created to test the levels of depression in a psychiatric

population of adults and adolescents in accordance with DSM-IV criteria. The 21-item

scale includes both mental and physical reactions such as self-dislike, suicidal thoughts or

wishes, changes in appetite, and tiredness or fatigue. Similarly, the BAI is a 21 item

inventory that assesses the severity of anxiety levels and was developed based off a

sample of psychiatric populations. In accordance with the focus of evaluating physical

symptoms that can demonstrate depression in the BDI-II, the BAI includes various items

that address the physical reactions that individuals may experience while undergoing

anxious processes.

Additionally, the Mental Health Inventory (MHI; Veit & Ware, 1983) has been

utilized as a measure that assesses individuals' levels of psychological distress and well-

being and includes factors such as anxiety, depression, loss of behavioral/emotional control, general positive affect, and emotional ties. This 38 item scale has been utilized in various studies (Manne & Schnoll, 2001) and many scholars have used subscales of the overarching scale, such as looking at depression and anxiety. The MHI has contributed to psychological research in assessing psychological health due to the conceptual and empirical differentiation it makes between psychological distress, which represents negative aspects of psychological health, and well-being, which represents positive aspects of psychological health; constructs often confused and used interchangeably in literature. In addition, it was originally developed based on a general sample population instead of from a psychiatric population and thus, has been comfortably used with both populations.

Most importantly, the MHI focuses more on the mental states of individuals rather than assessing more severe and physical symptoms as done in the BDI-II and BAI. Thus, it provides a generic psychological and emotional understanding of psychological health. For example, items in the depression and anxiety scales, each consisting of 4 and 9 items, include those such as, " was moody, brooded about things," "was anxious and worried," "felt downhearted and blue," and "was tense or high-strung." Hence, this study utilized the depression and anxiety subscales of the MHI to measure the psychological health statuses of college students.

Areas of Improvement in Studying Stress

Although there have been numerous studies that have investigated the stress process, scholars have struggled with defining and conceptualizing stress. For example, although researchers have identified two primary types of stress - daily hassles and major

life stressors (McIntyre, Korn, & Matsuo, 2008; Rowlison & Felner, 1988) – there has been considerable difficulty coming to a consensus on how they are defined or how they are measured (Hahn & Smith, 1999). Rowlison and Felner (1988) mentioned that their methodological and conceptual study of a major life event scale and a daily hassles scale showed that "daily hassles and major life events represent conceptually distinct sources of life stress, each of which can make an independent contribution to the individual's overall level of functioning" (p. 441). On the other hand, Hahn and Smith (1999) provided an overview of the conceptual confusion amongst scholars on stress such as using daily hassles, chronic stressors, major life events, daily hassles and chronic stressors and the lack of adequate measurement development. In their study, the authors found some overlap between the two definitions and that this may contribute to measurement errors as well as why their participants were not able to clearly differentiate between the two stressors.

Despite these differences, researchers have noted the importance of acknowledging both major chronic life events and minor daily hassles as part of individuals' overall stress processes (Crandall et al., 1992; Rowlison & Felner, 1988). For example, Crandall and colleagues (1992) developed their Undergraduate Stress Questionnaire by including a list of major stressors and daily hassles and looking at them together. The authors found that there was a high correlation between the two types of stressors. They suggested that "the distinction between major and minor life events may be relatively arbitrary" and that "major and minor life events in the USQ behave in the same manner statistically and contribute equivalently to overall stress scores" (p. 642). Hence, as mentioned above, this thesis utilized a college student hassles scale that

included both major and minor stressors. We also conceptualized stress as including any negative event, major or minor, that happens in the individual-environment interaction and influences one's psychological functioning.

Another area of improvement in the stress literature concerns the breakdown of different types of stressors referring to the nature of the events and how these relate to each other and people's level of psychological distress. For example, Ross et al. (1999) created a Student Stress Survey based on other scales which consisted of 4 categories of stress: interpersonal, intrapersonal, academic, and environmental. Ross and colleagues found that intrapersonal stressors were considered most frequent by participants. Although they did not study the impact of these stressors on other constructs such as psychological health, the authors emphasized the need to further explore the sources of stress and which have severe negative effects as well as positive effects. In addition, few studies have looked at different stressors separately from one another (Frazier & Schauben, 1994) and no studies, to my knowledge, have looked at each stressor's individual relation to psychological health. Hence, there is a lack of research conducted on different domains of stress and their relationships with other study variables; an aspect this thesis investigated.

Stress and Coping Models

Due to previous findings that illustrated the harmful impact of stress on psychological health and well-being of individuals, several researchers have explored conceptual models to identify variables that serve as protective factors. Coping has been defined as "constantly changing cognitive and behavioral efforts to manage specific

external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p.141).

Scholars have introduced *problem-focused coping*, which refers to taking active steps to avoid or solve the problem, *emotion-focused coping*, a coping style known to ease emotional distress, *avoidance coping*, which refers to finding means to distract oneself from the problem at hand, and *seeking social support*, which includes various types of social support such as instrumental or emotional support as major coping styles in past literature (Lazarus & Folkman, 1984; Carver, Scheier, & Weintraub,1989). Several of these coping styles have been found to work in relation with stress and psychological distress. For example, Dyson and Renk (2006) found that avoidant coping strongly predicted depressive symptoms in a sample of college students ($N = 74$). Additionally, Crockett et al. (2007) found that active coping served as a significant buffer for Mexican American college students who had high levels of acculturative stress on anxiety and depressive symptoms ($N = 148$).

Similar to the stress and coping model, Ensel and Lin (1991) provided an extensive outline of various stress models (see Figure 1) and explored the manner of how stress, resources, and distress are related. They categorized stress models largely into deterring and coping models. Deterring models included (1) the independent model in which resources protect against psychological distress even when stress is existent or not (see Figure 1.1) (2) the stress-suppressing model in which the existence of resources helps reduce the levels of stressful experiences, and then also reduces distress (see Figure 1.2), and (3) the stress-conditioning model in which low level or resources along with occurrence of stress leads to high distress levels (see Figure 1.3) which focus on

resources restraining the occurrence of distress. The coping models included (4) the

deterioration model in which resources mediate the relationship between stressors and

distress (see Figure 1.4), (5) the counteractive model in which higher levels of stressors

bring about higher levels of resources which lead to lower levels of distress (see Figure

1.5), and (6) the stress-buffering model in which occurrence of stressors only result in

elevated levels of distress when resources are lacking (see Figure 1.6) which focus on

using resources to cope against stressors.

Figure 1. Six conceptual stress models divided into deterrent (1.1, 1.2, & 1.3) and coping (1.4, 1.5, 1.6) models (Ensel & Lin, 1991). Adapted from "The Life Stress Paradigm and Psychological Distress," by W. M. Ensel, N. Lin, 1991, *Journal of Health and Social Behavior, 32*, p. 324. Copyright 1991 by the American Sociological Association.

Although many theoretical models were introduced in the past, the stress-buffering model became prevalent in psychological literature along with the development of stress and coping studies introduced earlier (Cohen & Wills, 1985; Mueller, 2006; Thoits, 1995; Von Ah et al., 2007). The cognitive appraisal process of stress suggests that individuals experience stress but are able to take action in order to deal with the stressful effects and that various resources can alleviate the damaging effects on their psychological health (Lazarus & Folkman, 1984). Hence, this hypothesis coincides with the stress-buffering model (see Figure 2) which proposed that stressors will impact psychological health only when psychological and social resources to cope with are lacking (Cohen & Wills, 1985; Ensel & Lin, 1991).

Cohen and Wills (1985) illustrated the steps of a stressful event-reaction: (1) a potential stressful event occurs, (2) the event is evaluated and appraisal process begins, (3) the event is identified as stressful, (4) emotional, physical, behavioral responses to stress arise, (5) and a mental illness develops when a stressful event occurs. This model highlights how support could engage in between the stressful event and a reaction by inhibiting stress appraisal responses such as feelings of helplessness and low self-esteem. Support could also help the individual to reappraise the event, restrain negative responses, or find ways to cope. Therefore, this model acknowledged the multiple processes that can occur while individuals experience stress and indicated how individuals are able to seek ways to relieve the effects while also recognizing the impact these negative experiences have on them.

Figure 2. Conceptual stress-buffering model with social support as the stress-buffer (Cohen & Wills, 1985). Adapted from "Stress, Social Support, and the Buffering Hypothesis," by S. Cohen and T. A. Wills, 1985, *Psychological Bulletin, 98*, p. 313. Copyright 1985 by the American Psychological Association.

Theoretical Understanding of Social Support

Social support, "the existence or availability of people on whom we can rely,
people who let us know that they care about, value, and love us," has been a widely
studied construct of study in psychological literature (Sarason, et al., 1983, p. 127;
Winemiller, Mitchell, Sutliff, & Cline, 1993). Research has found social support to be a
positive construct in which it can improve individuals' psychological well-being and can
operate as a coping mechanism to help deal with stress, reduce drug problems, emotional
distress, relationship issues, health issues, family issues, and has a positive influence on
physiological health (Lin & Ensel, 1989; Newcomb & Chou, 1989; Sarason et al., 1991;
Taylor et al., 2004; Uchino et al., 1996; Young, Berenson, Cohen, & Garcia, 2005).

Social support has been conceptualized as a multidimensional construct which
includes aspects such as the perception of or reception of levels of social support, types of
social support, and whom individuals receive social support from (Procidano & Heller,
1983; Sarason et al., 1983). For example, Tardy (1985) proposed a multidimensional
interdependent model of social support including *direction* (given or received),
disposition (availability or enactment), *description or evaluation* (explanation or
satisfaction), *content* (emotional, instrumental, informational, and appraisal), and *network*
(existence of network or characteristics of people in network) aspects that need to be
addressed when studying social support.

The perception versus reception aspect of social support has been widely studied
in psychological literature. For example, perception of social support has been a common
approach to studying social support. It refers to being aware of how much individuals can
obtain their needs for support, information, and feedback (Procidano & Heller, 1983). On

the other hand, receiving support from others denotes the action of actually receiving

social support from others (Maisel & Gable, 2009). Several researchers have noted that

the perception of and reception of social support may differ in how they function. For

example, Cohen & Wills (1985) identified that the buffering model was statistically

significant only when social support measures assess the perception of availability of

social support. Prati and Pietrantoni (2010), in their meta-analytic review of studies done

on looking at perceived and received levels of social support as protective buffers for

traumatic events among a first responder sample, found that the effect size of the

perception of social support ($r = .31$) was significantly higher than reception of social

support ($r = .22$). Hence, these findings suggest the importance of looking at individuals'

views of their support levels, especially when applying this to the stress-buffering model.

Scholars have also found that there are a number of different types of social

support that have different functions. Cobb (1976) in his presidential address for the

American Psychosomatic Society attended to social support as "information leading the

subject to believe that he is cared for and loved" which he refers to as *emotional support*,

"esteemed and valued" referred to as *esteem support,* and "that he belongs to a network

of communication and mutual obligation," also known as a *sense of belonging* (p. 300).

Cohen, Mermelstein, Kamarck, and Hoberman (1985) addressed four types of social

support such as (a) *tangible support*, the perception of material support available to one,

(b) *appraisal support*, the perception of whether there is someone available to talk to

about one's presenting concerns, (c) *self-esteem support*, the perception of whether one

can positively compare oneself to others, and (d) *belonging support*, the perception of

whether one has people available to engage in activities with. In addition, Israel, Farquhar,

Schulz, James, and Parker (2002) found that in their model of understanding the

psychological distress of 679 African American female participants, instrumental support

was a stronger predictor than emotional support of depressive symptoms and general

health and suggested that the two types of social support are distinctive constructs.

Since social support relies on receiving it from others, scholars have indicated the

importance of looking at the sources of social support such as from parents, family,

friends, and significant others (Procidano & Heller, 1983). Agneessens, Waege, &

Lievens (2006) studied different dimensions of social support participants received from

others such as their partners, parents, relatives, friends, and colleagues. The authors found

that participants, who consisted of 134 older adults, expected emotional support from

immediate kin (e.g., parents and siblings) and companionship from friends. In another

study, Crockett and colleagues (2007) found that parental support and peer support

functioned differently in relation to acculturative stress and depression and anxiety

symptoms among a sample of 148 Mexican American college students. First, only peer

support was positively and significantly correlated with anxiety. Second, peer support

served as a moderator between acculturative stress and anxiety symptoms, whereas

parental support buffered the effects of high acculturative stress on depressive symptoms.

Stress-buffering model of social support. Social support has been identified as a

stress-buffer in which it can protect against the effects of stress on a variety of negative

events, including psychological health (Cobb, 1976; Cohen & Wills, 1985; Sarason et al.,

1983). In their stress-buffering model, Cohen and Wills (1985) proposed that stressors

will impact psychological health when resources, such as social support, are lacking. The

authors illustrated that stress has a weaker effect on psychological health among individuals who receive high levels of social support.

Scholars have found mixed evidence for using social support as a stress-buffer. For example, in Cohen and Hoberman (1983)'s study with a college student sample of 70 participants, the authors developed a measure of perceived availability of social support and found that it was a significant stress-buffer between stress and depression. Wonderlich-Tierney and Vander Wal (2010)'s study showed that social support functioned as a significant moderator between social anxiety and eating disorders among 169 first year female undergraduate students. For participants who had high levels of social support, higher levels of anxiety were associated with lower levels of eating disorders. Additionally, Pengilly and Dowd (2000) found in a sample of 105 college students that social support worked as a moderator between stress and depression. For example, they found that individuals who had high stress levels and low social support levels had high levels of depression.

Cranford (2004), on the other hand, found in a sample of married couples ($N =$ 181) that there was no stress-buffering effect of social support. These mixed findings may be due to the variety of social support conceptualizations and measurements. For example, Cranford assessed social support by looking at the levels of received support from spouses. This study went against Cohen and Wills (1985) suggestion for assessing social support as a stress-buffer; to assess perceived social support instead of reception of social support. Cranford also looked at social support from spouses, which may undergo a different working process than family and peer support that has been studied more in the social support literature. Thus, this thesis followed the suggested guidelines for

researching social support and how it relates to stress and psychological health as a stress-buffer.

Measurements of Social Support

Scholars have contributed to the advancement of social support research through the development of theory-derived measures. Procidano and Heller (1983) developed and validated the Perceived Social Support from Friends and from Family Scales (PSS-Fr and PSS-Fa). The scale assesses the perception of social support which refers to how much individuals obtain their needs for "support, information, and feedback" and from whom individuals receive support from (p. 2). The scale consists of 20 items for perceived social support from family and 20 items from friends, resulting in a total of 40 items. Procidano and Heller indicated that individuals may receive different degrees of support from family members and friends depending on the situation they are in and due to different life events.

The PSS-Fr and PSS-Fa primarily included emotional features of social support in which it asked participants whether they had support providers who could offer self-worth, commonalities, and emotional reliance. Sample items included those such as, "My friends give me the moral support I need," "I rely on my friends for emotional support," and "My family and I are very open about what we think about things." Thus, although this scale emphasizes the need to look at the perceived levels of emotional support from family and friends, it lacks the variability in type of social support and from whom individuals could receive social support from by designating the support providers as family and friends. In addition, the scale asked individuals to answer yes, no, or I don't know to the items. Although it attempted to get an accurate estimation of the social

support individuals perceived to receive, it limited individuals from providing a variety of responses.

Cohen et al. (1985)'s Interpersonal Support Evaluation List (ISEL) looked at the perception of how much social support is available and diverse types of social support. They primarily focused on different categories of social support and how these operate. The authors included tangible support, appraisal support, self-esteem support, and belonging support. This scale consists of 40 statements such as "There is at least one person I know whose advice I really trust," "There are several different people with whom I enjoy spending time," "If I got stranded 10 miles out of town, there is someone I could call to come get me," and "I have someone who takes pride in my accomplishments" and participants are asked to rate whether these statements are true or false. Hence, these items give a wide range of variability in the types of social support individuals may receive, especially due to the high amount of items per type of social support (e.g., 10). However, it is difficult to distinguish whom individuals receive social support from. Also, the scale lacks information on the content of social support that family and friends provide and how individuals feel towards the social support they receive.

On the other hand, Sarason, et al. (1983)'s Social Support Questionnaire (SSQ) addressed multiple aspects of social support that the PSS-Fr and PSS-Fa and the ISEL lacked. Sarason and colleagues defined social support as "the existence or availability of people on whom we can rely, people who let us know that they care about, value, and love us" (p. 127) in their study. The authors constructed the 27-item SSQ based on two aspects: (1) the perception of having an ample amount of others available to receive support from and (2) the satisfaction level of the support available to individuals. The

scale was devised to let participants indicate who they received support from so that one

could see how many support providers there were for each social support item. Sample

items include those such as "Whom can you really count on to help you feel better when

you are feeling generally down-in-the-dumps?" "Whom do you feel truly loves you

deeply?" and "Whom can you really count on to give you suggestions that help you to

avoid making mistakes?" The scale also asked participants to rate their level of

satisfaction with their perceived levels of social support for each item on a 6-point scale

(1 = *very dissatisfied*; 6 = *very satisfied*).

According to Lozano, Garcia-Cueto, and Muniz (2008)'s study, the optimum

number of scaling points ranged from 4 to 7 points. The authors found that the reliability

and validity of 30 items improved depending on the higher number of response options

the scale had. They explained that the psychometrics decreased below 4 scaling points

and that it barely increased after 7 scaling points. Consequently, the SSQ's 6 scaling

points also provide assistance to establishing high reliability and validity of the items.

Moreover, the SSQ primarily included looking at emotional features of support by asking

whether support providers show concern, care, positive affection, and self-worth, which

was demonstrated in their conceptual definition of social support; thus, provided evidence

for construct validity. The SSQ well-represents social support by addressing many

dimensions of social support and signified the ability to get a holistic understanding of

the construct. Hence, it was used to measure perceived levels of social support in this

study.

Areas of Improvement in Studying Social Support

Despite the plethora of social support studies, scholars have noted the difficulty of coming to a consensus on defining and measuring social support as a construct and that the construct has been "plagued by conceptual vagueness" (Procidano & Heller, 1983, p. 2; Sarason & Sarason, 2007; Sandler & Barrera, 1984; Winemiller et al., 1993). Scholars (a) have not clearly described their theoretical understanding of social support, (b) have offered multiple definitions, and (c) have had difficulty creating and utilizing measures that can explicate the multidimensional aspects of the construct.

Tardy (1985) commented that authors do not clearly articulate the specific aspects of social support they are focusing on resulting in ambiguity in the social support literature (p. 190). For example, Wonderlich-Tierney and Vanderwal (2010) merely explicated the relationship between social support and the study variables, social anxiety and eating disorder symptomatology, and did not provide a conceptual framework for their understanding of social support. Additionally, several definitions of social support have been offered. Sarason et al. (1983) referred to social support as the "existence or availability of people on whom we can rely, people who let us know that they care about, value, and love us" (p. 127). Procidano and Heller (1983) defined social support as "the extent to which an individual believes that his/her needs for support, information, and feedback are fulfilled" (p. 3). Thus, we can see that scholars have tapped into similar areas of social support in that it refers to individuals receiving positive affect and comfort from others, but that they also emphasize different aspects of social support. In the aforementioned definitions we see that Sarason et al. highlighted the importance of those who provide social support to individuals while Procidano and Heller highlighted individuals' satisfaction of the social support they receive.

Furthermore, scholars have had difficulty operationalizing the complex meanings of social support into accurate measurements of social support due to the multidimensional nature of the construct (Winemiller et al., 1993). For example, Del Valle, Bravo, and Lopez (2010) provided an overview of the literature on social support and explained that they will study the type of social support provider, the social support network, and two dimensions of social support, instrumental and emotional. However, the authors only measured instrumental and emotional support each with one item which posits a serious concern to whether these two items were able to represent the overall meanings of the proposed two dimensions of social support. Asberg and colleagues (2008) described three aspects of social support: quantity of social relationships, quality of social relationships, and the reception of social support. The authors explained that the perception of social support has been found to be a significant predictor of psychological distress than received support and that they chose to look at the perception of social support. However, they failed to mention their reasons for choosing the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) and how this measure represented their conceptual view on social support. Therefore, this study provided conceptual clarity *and* appropriate measurement in order to advance knowledge on the study of social support and how it might function as a moderator of the stress and psychological distress relationship.

Theoretical Understanding of Optimism

In addition to the study of social support as a significant social resource to buffer stress, researchers have found that personality dispositions influence the coping process (Folkman & Moskowitz, 2000). Personality has been defined as "dynamic organization

within the person of the psychological and physical systems that underlie that person's patterns of actions, thoughts, and feelings" (Carver & Connor-Smith, 2010, p. 680). Personality factors such as optimism, neuroticism, conscientiousness, agreeableness, extraversion, and openness have been studied as individual traits that can help deal with psychological health as people manage goal oriented events that take on various forms during their lives (Carver & Connor-Smith, 2010).

Of these personality dimensions, optimism has been known as a positive belief system about events that occur (Karademas, 2006; Scheier & Carver, 1985). Over the past several years, dispositional and explanatory lines of optimism research have emerged. Dispositional optimism considers optimism to be on a continuum with pessimism at the opposite end; those who aren't positive about results of events are instead expecting negative outcomes to occur, and refers to the general level of positive expectations individuals have about the world (Gillham, Shatte, Reivich, & Seligman, 2001). It has been defined as a personal trait which contains cognitive, emotional, and motivational aspects about the future and illustrates the stable, pervasive nature of the construct (Seligman & Csikszentmihalyi, 2000). On the other hand, the explanatory style of optimism is known as positively explaining certain negative outcomes for a short period of time instead of having prevailing positive anticipations about future events (Seligman et al., 1988). The explanatory style also includes looking at how individuals have optimistic views while trying to understand the reasons for why events happened (Abramson, Dykman, & Needles, 1991).

Explanatory and dispositional optimism both have been found to be related to reduced levels of depression and increased levels of physical health, psychological well-

being, and recovery from illnesses. Scholars have described optimism as a construct that at times overlap with self-efficacy and control in a way that one's self skills (e.g., personal efficacy) can determine the positive outcomes one has (Gilham et al., 2001; Scheier & Carver, 2003). Hence, Scheier and Carver (2003) illustrated that measures of optimism have positively, moderately correlated with measures of control and self-efficacy. Optimism is considered to be a future outcome expectancy and personality trait in which the focus on the construct is on believing in and looking forward to good outcomes separately from one's active efforts in making positive outcomes happen (Lent, 2004). For example, self-efficacy refers to individuals believing in their abilities and skills to act in a certain way (e.g., what one can do and perform) for specific domains and differs from having a general belief that good outcomes will occur (e.g., positive beliefs about outcomes) (Lent, 2004). Optimism on the other hand is not domain specific and is a more general construct. For example, a student may have an optimistic point of view when she believes that she will do well on a test because she has studied well, but also because she is confident that things will work out and she will pass the class.

Stress-buffering model of optimism. Optimism has been studied most commonly in relation to its direct effects on stress and psychological health, but only a few studies have investigated it as a stress-buffer for psychological health. For example, Brissette, Scheier, and Carver (2002) found that more levels of optimism was associated with less increase in stress and depression over a semester among a sample of 89 college students. Creswell et al. (2005) also found that dispositional optimism along with trait self-esteem served as significant moderators between value affirmation and psychological responses to stress in a sample of 85 undergraduate students. The authors found that

individuals who had high levels of dispositional self-resources had higher levels of affirmed personal values and lower levels of stress and those that had lower levels of dispositional self-resources had high levels of stress. This finding showed the significant association between dispositional optimism and stress, but didn't test optimism as a moderator between stress and depression.

There have been mixed findings on the significance of optimism as a moderator between stress and psychological health symptoms. Grote, Bledsoe, Larkin, Lemay Jr., and Brown (2007) found that acute stressors and chronic stressors predicted depression severity at low levels of dispositional optimism but not at high levels of optimism in a sample of 205 females. This study included females recruited from an obstetrics/gynecological outpatient clinic in a hospital and looked at acute and chronic stressors specific to low income women's experiences. Makikangas and Kinnunen (2003) also found that optimism moderated the relationship between psychosocial work stressors and well-being in a sample of 457 Finnish employees.

On the other hand, Utsey, Giesbrecht, Hook, and Stanard (2008) found that optimism, considered as a psychological resource, was not a significant buffer for general life stress and race-related stress as independent variables and psychological distress as the dependent variable. The researchers found that family adaptability was the only significant moderator. The aforementioned studies cover a wide spectrum of different domains of stress as well as diverse populations. It may be that optimism may work to reduce certain types of stress and its relation with psychological health. Hence, optimism was tested along with social support as a moderator between stressful experiences tailored to college students and psychological health in order to better understand

optimism as a coping mechanism and its relation to individuals' stress, depression, and anxiety levels.

Measurements of Optimism

Due to the relatively recent emergence of the construct, few optimism measures have been developed. Of these measures, Rasmussen, Scheier, and Greenhouse (2009) conducted a meta-analysis of the relationships between optimism and physical health and found that of the 145 studies investigated, majority of the studies operationalized optimism using the Life Orientation Test (LOT; Scheier & Carver, 1985) and the Life Orientation Test-Revised (LOT-R; Scheier, Carver, & Bridges, 1994), each 89 studies (61%) and 39 studies (27%) respectively. In addition to the original LOT, Scheier, Carver, and Bridges (1994) reexamined the LOT and found that it is a psychometrically sound instrument of assessing optimism but also found limitations to the scale. Although the LOT attempted to assess individuals' *expectations* about outcomes that were both positive and negative, items in the scales referred to how individuals directly *react* in the face of positive and negative events.

Hence, the authors considered that the original scale could cover mediators (i.e., positive reinterpretation and growth) of optimism instead of a clear and distinct measure of optimism and took out two items that depicted coping mechanisms. As a result, the scale only included two items that were worded in a positive manner, which the authors reconsidered to be problematic. Hence, the development of the LOT-R was conducted with one additional positively worded item and a scale with a total of 10 items was created. Therefore, this conceptually improved measure will be utilized in this study to capture students' levels of optimism. Additionally, this thesis framed optimism as

dispositional which is in accordance with the conceptual framework for the LOT-R in order to demonstrate strong construct validity.

Areas of Improvement in Studying Optimism

Similarly to social support, scholars have had difficulty agreeing on the conceptualization of optimism, as well as clearly differentiating it from other similar constructs. In addition, the field of study on optimism is still in its early stages and need ample amount of future research in order to get a better understanding of how it plays a role in individuals' lives. The two perspectives of understanding optimism, dispositional and explanatory, have contributed to psychological literature by advancing our knowledge about theoretically as well as empirically understanding and applying this construct. However, many studies have not clarified the theoretical approach they are taking to understand optimism and have not been able to come to a consensus on comprehending the construct; making it difficult to compare and contrast findings with each other (Chang, 2001).

Both the explanatory style of optimism and dispositional optimism refer to the positive system of thinking and beliefs individuals have about life events. However, scholars have looked at them separately in relation to other study variables. For example, several studies have found that both dispositional and explanatory optimism leads to improved, positive outcomes. Brissette and colleagues (2002) found dispositional optimism to be related to higher levels of social support and lower levels of stress and depression over the course of a semester for 89 undergraduate first year students. Peterson and De Avila (1995) also found that explanatory optimism leads to lower levels of risk in health problems in a sample of 86 adults. However, both studies did not

illustrate their conceptual understanding of optimism and failed to include a definition and description of the construct. Few studies have attempted to explore the role explanatory optimism and dispositional optimism play in relation to psychological distress. For example, Hirsch and Conner (2006) found that, among a sample of 284 undergraduate students, explanatory optimism was a significant moderator between hopelessness and suicide ideation although dispositional optimism was not a significant moderator. The results showed that students who had high levels of explanatory optimism had a weaker relationship between hopelessness and suicide ideation than those who had low levels of explanatory optimism.

Additionally, mixed findings have emerged from research on how significant both types of optimism are in relation to other constructs. For example, Issacowitz (2005) found that dispositional optimism and dispositional pessimism more strongly predicted well-being than explanatory optimism in a sample of 280 adults. Tomakowsky, Lumley, Markowitz, and Frank (2000) on the other hand found that explanatory optimism significantly, negatively predicted HIV symptoms whereas dispositional optimism was not in a hierarchical regression model based on a sample of 78 male participants. Hence, these findings showed the uniqueness of both explanatory optimism and dispositional optimism and how both constructs need to be understood independently of each other. Isaacowitz (2004) also highlighted the importance of differentiating between the domain-specific explanatory optimism and dispositional optimism in order to better understand individuals' personality and socioemotional development. This thesis understood optimism as a stable trait that persists throughout situations, dispositional optimism, in

order to compare the findings with previous studies that have primarily looked at dispositional optimism in relation to stress and psychological distress as a stress-buffer.

In addition, scholars have examined optimism in relation to pessimism and whether they are opposing constructs that must exist with one another or separate constructs that have unique features has been a persisting question in need of study (Gillham et al., 2001). Over the years, instead of viewing optimism-pessimism as a unidimensional construct, scholars have found a two-factor structure such that optimism and pessimism are related, but different constructs that each have a range of levels by conducting a factor analysis of major measures of optimism such as the Life Orientation Test (LOT; Scheier & Carver, 1985) and the Optimism Pessimism Scale (OPS; Dember, Martin, Hummer, Howe, & Melton, 1989) (Chang, D'Zurrila, & Maydeu-Olivares, 1994).

More recently, Herzberg, Glaesmer and Hoyer (2006) also reported a bidimensional structure for the Revised Life Orientation Test (LOT-R) that existed for both males and females and across a variety of ages. For example, an individual could have high levels of dispositional optimism and high levels of dispositional pessimism in that one has high expectations of events to have positive and negative outcomes, suggesting the complicated and bidimensional aspects of one's personality. Therefore, this study will view optimism as a related construct to pessimism but as a stable, individual construct that can have unique influences on and variances from variables. Optimism will be defined as a predominantly stable state of having positive beliefs about future outcomes which dynamically prevails in various experiences.

Theoretical Understanding of Gender

In empirical research, many scholars have examined the role of gender in individuals' experiences of stress, social support, optimism, and psychological health. Many stress and psychological health studies have found that females tend to have higher levels of stress and psychological health symptoms than males. For example, Cohen and Janicki-Deverts (2010) indicated that women had higher levels of stress than men in their sample of surveys collected from 1983, 2006, and 2009. Asberg et al. (2008) also found that in their sample of undergraduate males had lower levels of stress, anxiety, and depression than undergraduate females ($N = 239$). Asberg and colleagues suggested that stress and negative emotions may be more readily acceptable for females than for males. In addition, scholars have suggested that the gender socialization process of encouraging males to be more independent and responsible and females to be more dependent on others could influence how males and females respond to stressful events (Dedovic et al., 2009).

Lavoie and Douglas (2012) conducted a metric and scalar invariance across gender in both community and psychiatric samples. They explained that prior literature has found females to have higher mean scores than males, but that in their study the stress measure operated in an equivalent manner across males and females. Thus, they mentioned that gender differences on mean scores are not explained by measurement bias but more due to "true gender differences arising from alternate social, biological, or psychological influences" (p. 56) and demonstrate the role gender plays in individuals' experiences of stress.

Past research has found that social support mean scores differ for males and females. For example, Malecki and Demaray (2003) conducted a study on investigating

different types of social support and social support providers in a sample of 263 adolescents. The authors found that girls had higher perceived levels of emotional social support, information support, and appraisal support from classmates than boys. Allen and Stoltenberg (1995) also found in their study of college students that women had significantly higher mean scores of kin and non kin supports as well as satisfaction with supports than men ($N = 182$). Barbee et al. (1993) described that gender roles ascribed to females, such as providing nurturance and expressing emotions openly, may allow them to seek and obtain social support more than males who are encouraged to be autonomous and in control of emotions.

Different from the literature on stress, psychological health, and social support, the field of optimism is fairly recent and has rarely looked into understanding gender as a construct. Due to the relatively new emergence of the study of optimism most studies have not included gender as a study variable and looked at mean differences between males and females, and especially not in the college student population. For example, Brissette et al., (2002) studied optimism and its relation to depression, social support, and psychological health among college students but did not investigate the role of gender and only reported the number of males and females that completed their study. Furthermore, Chang, Sanna, and Yang (2003) also only reported the sample size of males and females in their study and did not conceptualize or empirically test how individuals' gender may play out in the experience of optimism, pessimism, positive and negative affect, and psychological adjustment.

Only a few studies have tested levels of optimism across gender and there have been mixed results. Coll and Draves (2008)'s study, the only study that looked at

optimism across gender for college students, found no significant differences between male and female college students on optimism ($N = 163$). In a sample of rural adolescents ($N = 193$), Puskar et al. (2010) discovered that males had significantly higher mean scores than females. Although emerging research has examining the role of gender in this, it is still unclear how gender and optimism collectively relate to the stress-psychological health relationship. Very few studies have conducted research in this area and thus, it is difficult to conceptualize the process of optimism among college student males and females.

Past literature has shown the need for future research to incorporate a holistic and detailed understanding of the stress and coping process among female and male college students on a conceptual and empirical level. This study thus, included gender as a control variable in the stress-buffering models in order to account for its unique effect on psychological health. This also helped to test for the impact of different stressors, social support, and optimism above and beyond the influence of gender on psychological health.

Chapter 3. Statement of the Problem

This study investigated the negative impact of stress on psychological health and how social support and optimism function as moderators of this relationship. In addition, the stress-buffering (moderation) model of social support and optimism were examined for different types of stressors and psychological health with gender entered as the control variable. Direct effects and moderated effects were tested.

Hypothesis 1: Stress, social support, and optimism will relate to psychological health.

Hypothesis 1 (a): Stress will exhibit a large, positive relationship to psychological health (Asberg et al., 2008; Dixon & Kurpius, 2008). Higher levels of stress will relate to higher levels of psychological health symptoms.

Hypothesis 1 (b): Social support (Crockett et al., 2007; Sarason et al., 1991) and optimism (Brissette et al., 2002) will exhibit large, negative relationships with psychological health. Higher levels of social support and optimism will relate to lower levels of psychological health symptoms.

Hypothesis 2: Social support and optimism will both moderate the relationship between stress and psychological health when examined together after controlling for gender (Figure 3).

Hypothesis 2 (a): Social support will moderate the relationship between stress and psychological health (Pengilly & Dowd, 2000; Wonderlich-Tierney &Vander Wal, 2010). At different levels of social support the relationship between stress and psychological health will change; the relationship between stress and psychological health will be lower in magnitude for people with high

levels of social support and higher in magnitude for people with low levels of social support.

Hypothesis 2 (b): Optimism will moderate the relationship between stress and psychological health (Grote et al., 2007; Makikangas & Knnunen, 2003). At different levels of optimism the relationship between stress and psychological health will change; the relationship between stress and psychological health will be lower in magnitude for people with high levels of optimism and higher in magnitude for people with low levels of optimism.

Figure 3. Conceptual stress-buffering model with social support and optimism as moderators between stress and psychological health.

Chapter 4. Methods

A. Design Statement:

This study was a quantitative, descriptive, cross-sectional study that was

conducted with a college student sample. This study looked at the effects of different

types of stress on psychological health and the process of stress-buffers, social support

and optimism, and how they moderate these relationships.

B. Participants:

A total of 408 college students participated in this study. After excluding missing

data based on cases which had more than 10% of missing data and participants who did

not meet the criteria of being a college student and over 18 years old, a total of 200 cases

were retained for this study (136 female, 63 male, 1 missing). The age of the participants

ranged from 18 to 42 years old ($M = 20.12$, $SD = 2.45$). One hundred and eighteen

students self-identified as White (59.0%), 42 Asian American/Pacific Islander (21.0%), 9

Latino/Hispanic American (4.5%), 8 African American (4.0%), 4 Biracial (2.0%), and 3

Multiracial (1.5%), 1 Middle Eastern (0.5%), 14 indicated more than one category such

as White and Latino (7%), and 1 was missing data (0.5%). Of these participants, 36 were

first years (18%), 58 were second years (29%), 44 were third years (22%), 60 were fourth

years (30%) in their undergraduate programs, and 2 were missing information. In

addition, 123 were full-time students (61.5%), 74 were full-time students and working

part-time (37.0%), 1 was a full-time student and self-employed (0.5%), 1 was a part-time

student and working full-time (.5%), and 1 was missing information (0.5%). Students'

majors consisted of a wide variety including those such as criminal justice, biology,

economics, government and politics, history, mechanical engineering, international business, elementary education, psychology, and undecided.

Given the medium effect obtained in a somewhat similar study (Wei, Heppner, Ku, & Liao, 2010), I anticipated a medium effect size in the population. An a priori power analysis using G*Power (Erdfelder, Faul, & Buchner, 1996) was conducted. The analysis showed that with a power equal to 0.80 and alpha of .05, a sample size of 98 was needed to detect a medium effect size ($f^2 = 0.15$; Cohen, 1988). Hence, our sample size of 200 was yielded sufficent power to detect a medium effect size. A post-hoc power analysis showed that a sample size of 200, alpha level of .05, and effect size of 0.15 yielded a power coefficient of .99.

C. Procedures:

Approval from the Institutional Review Board (IRB) was obtained. Student organizations from the University of Maryland, College Park were contacted to participate in the study. Snowball methods (i.e., asking colleagues and peers to forward our study announcement to appropriate individuals) and advertising the study on Facebook were also utilized. Afterwards, a generated list of 1,200 randomly selected students (800 male and 400 female) was obtained from the registrar. Through these various sources students were contacted using a recruitment e-mail (Appendix B) to participate in the study online at surveymonkey.com. Participants were asked to fill out the consent form online (Appendix A) and then proceeded to fill out surveys in the order listed as follows: a demographics questionnaire (Appendix C), the Inventory of College Recent Life Events Scale (Appendix D), the Social Support Questionnaire (Appendix E),

the Life Orientation Test-Revised (Appendix F), and the depression and anxiety subscales of the Mental Health Inventory (Appendix G).

Participants were asked to fill out the aforementioned scales while thinking of the past 6 months in order to measure the most recent and consistent effects of constructs. The study had minimal risks in that participants may feel distress by addressing stressful occurrences in their lives as part of the study. Students were notified that they are free to not participate in the study at any time without penalty by exiting the survey online. The consent form also indicated that participants' names and contact information will not be linked to the responses they give for confidentiality. To increase the likelihood of subject response rate, a raffle for three $40 gift cards was advertised. At the end of the survey, subjects had the option to provide their first name and email address in order to receive compensation (one of three $40 gift cards) for their participation in the study.

D. Measures:

Demographics. The demographic measure included general information about each student. Their age, ethnicity, gender, parents' education status and income status (to determine social status), class year, and academic major were asked.

Stress. The Inventory of College Students' Recent Life Experiences (ICSRLE; Kohn et al., 1990) assessed life stress specific to college students. The scale consisted of 49 items measured on a six-point scale (0 = *Does not apply*; 5 = *Extremely stressful*). This scale was adapted from the original five-point scale of rating the extent of how each stressful experience was part of one's life. Example items included, "Heavy demands from extracurricular activities," "Financial conflicts with family members" and "Struggling to meet your own academic standards" The original authors reported a

coefficient alpha reliability of .89 in the original item-selection sample and .88 from the cross-replicated subsample. The ICSRLE correlated with the Perceived Stress Scale with .59 ($p < .0005$). In addition, a principal-axis factoring with oblimin rotation discovered a seven-factor model of a total of 37 items which was used in this study along with the total score. Osman, Barrios, Longnecker, Osman (1994) conducted a validation of the ICSRLE among 216 undergraduates and found an alpha of .92 for the total scale. The authors also found concurrent validity for the ICSRLE which significantly correlated with the Perceived Stress Scale and Daily Hassles Scale-Revised.

Perceived Social Support. The Social Support Questionnaire was used to assess participant's levels of perceived social support (Sarason et al., 1983). The measure consisted of 27 items and asked participants to indicate whom they receive social support from for each item by listing the supporter's initials and relationship with the supporter as well as their satisfaction level with their perceived social support. The measure captured whether participants have a sufficient number of supportive people and have satisfactory perceived social support on a six-point scale (1 = *Very dissatisfied*; 6 = *Very satisfied*). A Social Support Questionnaire Number Score (SSQN) which indicated the number of people individuals perceived to receive support from and the Social Support Questionnaire Satisfaction Score (SSQS) which measured their satisfaction levels were both included. The SSQS score was primarily used as the total score for assessing social support. Examples of SSQ items included "Who will comfort you when you need it by holding you in their arms?" and "Whom can you really count on to give you useful suggestions that help you to avoid making mistakes?" The original authors reported an alpha coefficient of .97 and for the SSQN and .94 for the SSQS. Friedman et al. (2006)

also found criterion-related validity when social support was evaluated with family/social well-being. Anderson, Winett, and Wojcik (2007) also found criterion-related validity for social support with self-regulation, self-efficacy, and negative outcome expectations.

Optimism. The Life Orientation Test-R (LOT-R) assessed individuals' general tendencies to anticipate favorable consequences (Scheier, Carver, & Bridges, 1994). The scale consisted of a total of 10 items of which 4 are filler items. The LOT-R consisted of items such as, "In uncertain times, I usually expect the best" and "Overall, I expect more good things to happen to me than bad" which are rated on a five-point scale (1 = *I agree a lot*; 5 = *I disagree a lot*). Examples of these filler items included, "I enjoy my friends a lot and "I don't get upset too easily." Higher total scores refer to greater levels of optimism. The LOT-R was found to have adequate internal consistency with a Cronbach's alpha of .78 and the test-retest reliability was .68 over the span of 4 months in a sample of undergraduate students. Makikangas and Kinnunen (2003) also reported alphas of .73 for men and .72 for women in their study. The original authors, Scheier, Carver, and Bridges (1994) reported that the LOT-R scores had criterion-related validity and were significantly correlated with self-esteem, self-mastery, trait anxiety, and neuroticism.

Psychological Health. The depression and anxiety subscales of the Mental Health Inventory were used to measure psychological distress symptoms (Veit & Ware, 1983). The original authors reported a hierarchical factor model in which anxiety, depression, and loss of behavior/emotional control were nested in psychological health and general positive affect and emotional ties were nested in psychological well-being. The depression and anxiety subscales, which each consist of 4 and 9 items, were used for this

study to assess participants' levels of psychological health. The depression subscale

included examples such as "How much of the time, during the past month, have you felt

downhearted and blue?", and the anxiety subscale consisted of items such as "How much

time, during the past month, have you been a very nervous person?" Items were rated on

a seven-point scale (1 = *all of the time*; 6 = *none of the time*). The original authors

reported Cronbach alpha's that ranged from .83 to .91 for scales based on the five second

order factors and .96 for the total score, respectively. Manne and Schnoll (2001) reported

convergent validity with the MHI having positive relations with measures such as the

Positive and Negative Affect Schedule and the Dyadic Adjustment Scale in a sample of

433 cancer patients. Besharat (2010) also found that the Sports Stress Coping Scale was

related to the MHI and established criterion-related validity in a sample of Iranian

athletes.

Chapter 5. Results

Descriptives and Correlational Analyses

Table 1 and Table 2 include descriptive statistics such as the mean, SD, and

minimum and maximum scores for each variable as well as bivariate correlations among

variables. As seen in Table 2, different types of stressors were broken apart from the

ICSRLE for further analyses and were utilized in the final regression model. Internal

consistency estimates for scale scores were also included and all were acceptable (α

$> .70$).

In Table 1, all mean scores of the measures were near the midpoint item range

except for the SSQ which had a mean of 5.17 (1.15-6.00) and the MHI which had a mean

of 39.71 (13.00-76.00). The SSQ also had a high, positive value of Skewness, -1.69 (*SE*

$= .17$), and a high, positive value of Kurtosis, 3.83 (*SE* $= .34$). In Table 2, the means for

developmental stress (*M* $= 26.15$; 1.00-48.00) and time pressure stress (*M* $= 19.70$; 0.00-

35.00) were over the midpoint item range. Academic alienation stress (*M* $= 5.93$; 0.00-

15.00), romantic problems stress (*M* $= 5.03$; 0.00-15.00), assorted annoyances stress (*M* $=$

7.37; 0.00-21.00), general social mistreatment stress (*M* $= 11.62$; 0.00-30.00), and

friendship stress (*M* $= 5.93$; 0.00-15.00) all had means lower than the midpoint item

range.

Hypothesis 1 (a): Stress will exhibit a large, positive relationship to psychological

distress.

As shown in Table 1, the findings partially supported Hypothesis 1. The total

score of stress was significantly, positively and moderately related to psychological

health (*r* $= .48$; *p* $< .01$). This indicated that higher levels of stress were related to worse

psychological health outcomes. In addition, as shown in Table 2, correlations between different types of stress and psychological health also presented similar relationships as discussed in hypothesis 1(a). Developmental challenge stress was significantly and positively related to psychological health ($r = .37$; $p < .01$). Time pressure stress was significantly, positively related to psychological health ($r = .32$; $p < .01$). Academic alienation stress was significantly, positively related to psychological health ($r = .24$; $p < .01$). Romantic problems stress was significantly, positively related to psychological health ($r = .37$; $p < .01$). Assorted annoyances stress was significantly, positively related to psychological health ($r = .33$; $p < .01$). General social mistreatment stress was significantly, positively related to psychological health ($r = .51$; $p < .01$). Friendship problem stress was also significantly, positively related to psychological health ($r = .352$; $p < .01$). Hence, higher levels of all seven types of stressors each led to higher levels of psychological health with low to moderate levels of correlations.

Hypothesis 1 (b): Social support and optimism will exhibit large, negative relationships with psychological distress.

Similar to what was hypothesized, social support ($r = -.37$; $p < .01$) and optimism ($r = -.42$; $p < .01$) each were moderately and negatively related to psychological health (Table 1). This showed that higher levels of social support were related to lower levels of psychological health. Higher levels of optimism were associated with lower levels of psychological health.

Table 1

Descriptive Statistics among Study Variables I

Variable	1	2	3	4	α	M (SD)	Range	Possible Range
1. ICSRLE	--				.95	101.44 (38.78)	6.00 – 212.00	0.00-235.00
2. SSQ	-.29**	--			.96	5.17 (.86)	1.15 – 6.00	1.00-6.00
3. LOT-R	-.28**	.43**	--		.79	20.67 (4.67)	8.00 – 30.00	6.00-30.00
4. MHI	.48**	-.37**	-.42**	--	.94	39.71 (12.48)	13.00 – 76.00	13.00-78.00

Note. ICSRLE = Inventory of College Student Recent Life Experiences; SSQ = Social Support Questionnaire; LOT-R = Life Orientation Test – Revised; MHI = Mental Health Inventory. $*p < .05, **p < .01$.

Table 2

Descriptive Statistics among 7 Stressors, Social Support, Optimism, and Psychological Distress

Variable	1	2	3	4	5	6	7	8	9	10	α	M (SD)	Observed Range	Possible Range
1.DEVST	--										.85	26.15 (9.92)	1.00 – 48.00	0.00-50.00
2.TIMST	.67**	--									.87	19.70 (7.64)	0.00 – 35.00	0.00-35.00
3.ACAST	.59**	.44**	--								.81	5.93 (3.77)	0.00 – 15.00	0.00-15.00
4.ROMST	.42**	.40**	.32**	--							.71	5.03 (4.09)	0.00 – 15.00	0.00-15.00
5.ASSST	.47**	.48**	.49**	.42**	--						.70	7.37 (4.59)	0.00 – 21.00	0.00-25.00
6.SOCST	.58**	.49**	.46**	.33**	.58**	--					.84	11.62 (6.67)	0.00 – 30.00	0.00-30.00
7.FRIST	.48**	.44**	.37**	.42**	.60**	.63**	--				.82	5.93 (3.65)	0.00-15.00	0.00-15.00
8.SSQ	-.17*	-.117	-.24**	-.10	-.22**	-.43**	-.26**	--			.96	5.17 (.86)	1.15-6.00	1.00-6.00
9.LOT-R	-.30**	-.09	-.27**	-.06	-.15*	-.29**	-.11	.43*	--		.79	20.67 (4.67)	8.00 – 30.00	6.00-30.00
10.MHI	.37**	.32**	.24**	.37**	.33**	.51**	.35**	-.37**	-.42**	--	.94	39.71 (12.48)	13.00 – 76.00	13.00-78.00

Note. DEVST = ICSRLE-Developmental Challenge; TIMST = ICSRLE-Time Pressure; ACAST = ICSRLE-Academic Alienation; ROMST = ICSRLE-Romantic Problems; ASSST = ICSRLE-Assorted Annoyances; SOCST = ICSRLE-General Social Mistreatment; FRIST = ICSRLE-Friendship Problems; SSQ = Social Support Questionnaire; LOT-R = Life Orientation Test – Revised; MHI = Mental Health Inventory. *p < .05, **p < .01.

Regression Analyses

Hierarchical regression analyses were conducted to test the hypothesized models. A hierarchical regression analysis is beneficial in its ability for the researcher to assume causal priority based on theory, to remove possible confounding relationships, and to determine variance portioning (Cohen, Cohen, West, & Aiken, 2003; Petrocelli, 2003). More specifically, it allows one to look at "the influence of several predictor variables in a sequential way, such that the relative importance of a predictor may be judged on the basis of how much it adds to the prediction of a criterion, over and above that which can be accounted for by other important predictors" (Petrocelli, 2003, p. 11).

I first divided the ICSRLE, measure of college student stress, into subgroups according to the factor analysis done by original authors and other scholars in order to gain more knowledge about whether different stressors, depending on their content, may have diverse relationships with psychological health (Kohn et al., 1990; Osman et al., 1994). Bivariate correlations also showed low to moderate correlations between the seven different stressors and suggested that each stressor was unique and should be looked at separately from one another (see Table 2). Hence, instead of using the ICSRLE total score, I used the seven subscale scores of ICSRLE as different stressor types for data analysis.

A linear regression was first conducted of the seven stressors on psychological health to investigate the possible differences in the magnitude and strength of the relationships. All of the independent variables were centered to address collinearity between the main effects and interaction effects before entered into the regression models. The results showed that romantic problems stress and general social mistreatment stress

were significantly, negatively related to psychological health whereas the five other

stressors were non-significant (Table 3).

Table 3

Linear Regression Analyses of Stressors Predicting Psychological Health

Variable	B	SE	β	p	R^2
Step 1					.31
Developmental Challenge	.10	.12	.08	.42	
Time Pressure	.002	.14	.001	.99	
Academic Alienation	-.20	.26	-.06	.44	
Romantic Problems	.70	.22	.23	.00**	
Assorted Annoyances	-.02	.231	-.01	.94	
General Social Mistreatment	.83	.17	.44	.00**	
Friendship Problems	-.14	.29	-.04	.63	

Note. $*p < .05, **p < .01.$

Hypothesis 2: Social support and optimism will both moderate the relationship between stress and psychological health when examined together (Figure 3).

In order to reduce problems associated with multicollinearity when including multiple related independent variables, seven separate hierarchical regression models were run for each specific stressor. In each model, gender was entered in step 1 in order to account for its effect on psychological health based on previous literature that has demonstrated the significant role of gender in the stress and coping processes. In step 2 a stressor, social support, and optimism were entered. In accordance with step 2 of the stress-response theory (Lazarus &Folkman, 1984), that while interacting with the environment individuals activate different coping methods, both social support and optimism were included together in step 2 of the regression models. The interaction effects were entered in step 3 of the models.

The first regression model included developmental challenge stress, social support, and optimism together in step 1 and then the interaction effects in step 2 to predict psychological health (Table 4). After controlling for gender, developmental challenge stress ($\beta = .25$, $t = 3.91$, $p < .01$), social support ($\beta = -.23$, $t = -3.32$, $p < .01$), and optimism ($\beta = -.25$, $t = -3.50$, $p < .01$) significantly predicted psychological health. The three variables explained significant unique variance ($\Delta R^2 = .28$, $p < .01$). The interaction terms were partially supportive of hypotheses in that developmental challenge stress*social support ($\beta = .16$, $t = 2.28$, $p < .01$), but not developmental challenge stress*optimism ($\beta = -.06$, $t = -.89$, $p = .38$), significantly predicted psychological health. The interaction terms did not account for significant, unique variance in psychological health ($\Delta R^2 = .28$, $p = .08$). Together, all of the study variables counted for 30.1% of the

variance of psychological health. Hence, social support (Hypothesis 2a) but not optimism (Hypothesis 2b) was a significant moderator between developmental challenge stress and psychological health.

Table 4

Hierarchical Regression Analyses with Social Support and Optimism as Moderators between Developmental Challenge Stress and Psychological Health

Variable	B	SE	β	p	R^2	ΔR^2
Step 1					.00	
Gender	.73	1.88	.03	.70		
Step 2					.28	.27
Developmental ChallengeStress	.32	.08	.25	.00**		
Social Support	-3.24	.98	-.23	.00**		
Optimism	-.65	.18	-.25	.00**		
Step 3					.30	.28
Developmental Challenge Stress *Social Support	.26	.11	.16	.02*		
Developmental Challenge Stress *Optimism	-.02	.02	-.06	.38		

Note. $* p \leq .05$; $** p \leq .01$

The second regression model included time pressure stress, social support, and optimism together in step 1 and then the interaction effects in step 2 to predict psychological health (Table 5). After controlling for gender, time pressure stress ($\beta = .26$, $t = 4.10$, $p < .01$), social support ($\beta = -.21$, $t = -3.08$, $p < .01$), and optimism ($\beta = -.30$, $t = -4.49$, $p < .01$) significantly predicted psychological health. The three variables explained significant unique variance ($\Delta R^2 = .29$, $p < .01$). Contrary to hypotheses, both time pressure stress*social support ($\beta = .72$, $t = 1.57$, $p = .12$) and time pressure stress*optimism ($\beta = .00$, $t = .00$, $p = 1.00$) were not significant predictors of psychological health. The interaction terms did not account for significant, unique variance in psychological health ($\Delta R^2 = .28$, $p = .21$). Together, all of the study variables counted for 29.8% of the variance of psychological health. Hence, both social support (Hypothesis 2a) and optimism (Hypothesis 2b) were not significant moderators between time pressure stress and psychological health.

Table 5

Hierarchical Regression Analyses with Social Support and Optimism as Moderators between Time Pressure Stress and Psychological Health

Variable	B	SE	β	p	R^2	ΔR^2
Step 1					.00	
Gender	.73	1.88	.03	.70		
Step 2					.28	.27
Time Pressure Stress	.32	.08	.25	.00**		
Social Support	-3.24	.98	-.23	.00**		
Optimism	-.65	.18	-.25	.00**		
Step 3					.30	.28
Time Pressure Stress *Social Support	.26	.11	.16	.02*		
Time Pressure Stress *Optimism	-.02	.02	-.06	.38		

Note. $* p \le .05$; $** p \le .01$

The third regression model included academic alienation stress, social support, and optimism together in step 1 and then the interaction effects in step 2 to predict psychological health (Table 6). After controlling for gender, both social support ($\beta = -.23$, $t = -3.25$, $p < .01$) and optimism ($\beta = -.30$, $t = -4.15$, $p < .01$) significantly predicted psychological health. Academic alienation stress did not significantly predict psychological health ($\beta = .09$, $t = 1.39$, $p = .17$), however, and with social support and optimism, the three study factors explained significant unique variance ($\Delta R^2 = .23$, $p < .01$). Contrary to the hypotheses, both interaction terms, academic alienation stress*social support ($\beta = .12$, $t = 1.40$, $p > .01$) and academic alienation stress*optimism ($\beta = -.05$, $t = -.62$, $p > .01$) were not significant predictors of psychological health and did not account for significant, unique variance in psychological health ($\Delta R^2 = .22$, $p > .01$). Together, all of the study variables counted for 24% of the variance of psychological health. Hence, social support (Hypothesis 2a) and optimism (Hypothesis 2b) were not significant moderators between academic alienation stress and psychological health.

Table 6

Hierarchical Regression Analyses with Social Support and Optimism as Moderators
between Academic Alienation Stress and Psychological Health

Variable	B	SE	β	p	R^2	ΔR^2
Step 1					.00	
Gender	.73	1.88	.03	.70		
Step 2					.23	.22
Academic Alienation Stress	.30	.22	.09	.17		
Social Support	-3.30	1.02	-.23	.00**		
Optimism	-.78	.19	-.30	.00**		
Step 3					.24	.22
Academic Alienation Stress *Social Support	-.16	.23	-.05	.51		
Academic Alienation Stress *Optimism	.05	.04	.08	.24		

Note. * $p \leq$ .05; ** $p \leq$ .01

The fourth regression model included romantic problems stress, social support, and optimism together in step 1 and then the interaction effects in step 2 to predict psychological health (Table 7). After controlling for gender, romantic problems stress (β = .32, t = 5.41, p < .01), social support (β = -.21, t = -3.22, p < .01), and optimism (β = -.31, t = -4.69, p < .01) significantly predicted psychological health. The three study factors explained significant unique variance (ΔR^2 = .31, p < .01). Contrary to the hypotheses, both interaction terms, romantic problems stress*social support (β = .02, t = .31, p = .76) and romantic problems stress*optimism (β = .09, t = 1.22, p = .23) were not significant predictors of psychological health and did not account for significant, unique variance in psychological health (ΔR^2 = .34, p = .26). Together, all of the study variables counted for 33.6% of the variance of psychological health. Hence, social support (Hypothesis 2a) and optimism (Hypothesis 2b) were not significant moderators between romantic problems stress and psychological health.

Table 7

Hierarchical Regression Analyses with Social Support and Optimism as Moderators between Romantic Problems Stress and Psychological Health

Variable	B	SE	β	p	R^2	ΔR^2
					.00	
Step 1						
Gender	.73	1.88	.03	.70		
					.33	.31
Step 2						
Romantic Problems Stress	.97	.18	.32	.00**		
Social Support	-3.05	.95	-.21	.00**		
Optimism	-.81	.17	-.31	.00**		
					.34	.32
Step 3						
Romantic Problems Stress *Social Support	.07	.24	.02	.76		
Romantic Problems Stress *Optimism	.05	.04	.09	.23		

Note. * $p \leq .05$; ** $p \leq .01$

The fifth regression model included assorted annoyances stress, social support, and optimism together in step 1 and then the interaction effects in step 2 to predict psychological health (Table 8). After controlling for gender, assorted annoyances stress (β =.70, t = 4.14, p < .01), social support (β = -.20, t = -2.87, p < .01), and optimism (β = -.29, t = -4.36, p < .01) significantly predicted psychological health. The three study factors explained significant unique variance (ΔR^2 = .27, p < .01). Contrary to the hypotheses, both interaction terms, assorted annoyances stress*social support (β = .16, t = 1.09, p = .28) and assorted annoyances stress*optimism (β = -.07, t = -.24, p = .81) were not significant predictors of psychological health and did not account for significant, unique variance in psychological health (ΔR^2 = .27, p = .55). Together, all of the study variables counted for 29.2% of the variance of psychological health. Hence, social support (Hypothesis 2a) and optimism (Hypothesis 2b) were not significant moderators between assorted annoyances stress and psychological health.

Table 8

Hierarchical Regression Analyses with Social Support and Optimism as Moderators

between Assorted Annoyances Stress and Psychological Health

Variable	B	SE	β	p	R^2	ΔR^2
					.00	
Step 1						
Gender	.73	1.88	.03	.70		
					.29	.27
Step 2						
Assorted Annoyances Stress	.70	.17	.26	.00**		
Social Support	-2.81	.98	-.20	.00**		
Optimism	-.78	.18	-.29	.00**		
					.29	.27
Step 3						
Assorted Annoyances Stress *Social Support	.25	.23	.16	.28		
Assorted Annoyances Stress *Optimism	-.01	.04	-.07	.81		

Note. * $p \leq$ .05; ** $p \leq$ .01

The sixth regression model included general social mistreatment stress, social support, and optimism together in step 1 and then the interaction effects in step 2 to predict psychological health (Table 9). After controlling for gender, general social mistreatment stress (β = .42, t = 6.45, $p < .01$) and optimism (β = -.26, t = -4.03, $p < .01$), but not social support (β = -.08, t = -1.18, p = .24), significantly predicted psychological health. The three study factors explained significant unique variance (ΔR^2 = .35, $p < .01$). Partially supportive to the hypotheses, general social mistreatment stress *social support (β = .16, t = 2.01, $p < .05$), but not general social mistreatment stress *optimism (β = .02, t = .22, p = .83). Both interaction terms did not account for significant, unique variance in psychological health (ΔR^2 = .36, p = .06). Together, all of the study variables counted for 38.0% of the variance of psychological health. Hence, social support (Hypothesis 2a), but not optimism (Hypothesis 2b), was a significant moderator between general social mistreatment stress stress and psychological health.

Table 9

Hierarchical Regression Analyses with Social Support and Optimism as Moderators between General Social Mistreatment Stress and Psychological Health

Variable	B	SE	β	p	R^2	ΔR^2
					.00	
Step 1						
Gender	.73	1.88	.03	.70		
					.36	.35
Step 2						
General Social Mistreatment Stress	.77	.12	.42	.00**		
Social Support	-1.17	.99	-.08	.24		
Optimism	-.68	.17	-.26	.00**		
					.38	.36
Step 3						
General Social Mistreatment Stress *Social Support	.25	.12	.16	.05*		
General Social Mistreatment Stress *Optimism	.01	.03	.02	.83		

Note. $* p \leq .05$; $** p \leq .01$

The seventh regression model included friendship problems stress, social support, and optimism together in step 1 and then the interaction effects in step 2 to predict psychological health (Table 9). After controlling for gender, friendship problems stress (β = .28, t = 4.47, p < .01), social support (β = -.17, t = -2.39, p = .24), and optimism (β = --.31, t = -4.70, p < .01) significantly predicted psychological health. The three study factors explained significant unique variance (ΔR^2 = .30, p < .01). Both friendship problems stress *social support (β = .18, t = 1.24, p = .22) and friendship problems stress *optimism (β = .53, t = 1.72, p = .09) were not significant predictors of psychological health. The interaction terms did account for significant, unique variance in psychological health (ΔR^2 = .31, p < .05). Together, all of the study variables counted for 32.6% of the variance of psychological health. Hence, social support (Hypothesis 2a) and optimism (Hypothesis 2b) were both not significant moderators between friendship problems stress and psychological health.

Table 10

Hierarchical Regression Analyses with Social Support and Optimism as Moderators

between Friendship Problems Stress and Psychological Health

Variable	B	SE	β	p	R^2	ΔR^2
					.00	
Step 1						
Gender	.73	1.88	.03	.70		
					.36	.35
Step 2						
Friendship Problems Stress	.95	.21	.28	.00**		
Social Support	-2.38	1.00	-.17	.02*		
Optimism	-.83	.18	-.31	.00**		
					.38	.36
Step 3						
Friendship Problems Stress *Social Support	.32	.26	.18	.22		
Friendship Problems Stress *Optimism	.08	.05	.53	.09		

Note. * $p \leq .05$; ** $p \leq .01$

Supplemental Analyses

Hypotheses were not originally made about the possible mean differences between males and females. However, given the wealth of information from past literature about significant mean differences on various study variables, an additional independent samples t-test was conducted to across study variables between male ($N = 63$) and female ($N = 136$) college students. Female college students reported significantly higher levels of time pressure stress t (197) = 3.14, $p < .01$, $d = .48$ than male college students. There were no significant mean differences between male and female students on developmental challenge stress, academic alienation stress, romantic problems stress, assorted annoyances stress, general social mistreatment stress, friendship problems stress, social support, optimism, and psychological health.

Table 11

Independent Samples t-Test Across Gender

Variable	Male (N = 63) M (SD)	Female (N = 136) M (SD)	p^a
Developmental Challenge Stress	23.95 (8.89)	27.06 (10.20)	.04
Time Pressure Stress	17.20 (7.14)	20.77 (7.60)	.002**
Academic Alienation Stress	5.84 (4.14)	5.92 (3.58)	.89
Romantic Problems Stress	4.78 (3.96)	5.12 (4.15)	.58
Assorted Annoyances Stress	6.94 (4.12)	7.61 (4.79)	.34
General Social Mistreatment Stress	10.91 (6.52)	11.99 (6.74)	.29
Friendship Problems Stress	5.37 (3.54)	6.20 (3.69)	.14
Social Support	5.00 (.90)	5.24 (.07)	.06
Optimism	20.38 (4.70)	20.80 (4.68)	.56
Psychological Health	40.07 (12.18)	39.33 (12.45)	.70

Note. * $p \le .05$; ** $p \le .01$

Chapter 6. Discussion

The results from this study offer information about college student stress and its relation to psychological health as well as the usage of social support and optimism. More specifically, we expected a positive relationship between stress and psychological health and a negative relationship each for social support-psychological health and optimism-psychological health. Additionally, we hypothesized that social support and optimism would serve as stress-buffers to psychological health.

The findings above show partial support for study proposed hypotheses. Of the seven different identifed stressors, romantic problems stress and general social mistreatment stress positively, significantly predicted psychological health. Social support and optimism each separately, significantly predicted psychological health. Only social support was a significant stress-buffer between three stressors, developmental challenge stress, time pressure stress, and general social mistreatment stress, and psychological health.

Correlational Analyses

Our correlational analyses partially supported the hypotheses of stress having a moderately positive, significant relationship with psychological health and social support and optimsim each having a moderately negative, significant relationship with psychological health (Hypothesis 1). In addition, Table 2 also demonstrated that all seven stressors were significantly, positively associated with psychological health. These results were consistent with theory and suggested that higher levels of stress are related to worse outcomes of psychological health (Chang & Sanna, 2003; Dixon & Kurpius, 2008). Also, higher levels of social support (Crockett et al., 2007; Young et al., 2005) and

optimism (Brissette et al., 2002; Grote et al., 2007) each were associated with lower levels of psychological health and were consistent with previous research.

Regression Analyses

Multiple regression models showed partial evidence for hypothesized main effects (Hypothesis 1). An interesting finding of this study was that out of the seven identified stressors, only two significantly predicted psychological health. This indicated that higher levels of romantic problems stress and general social mistreatment stress led to higher levels of psychological health. This finding suggests that the developmental stage college students are in as emerging adults may bring about stress associated with romantic relationships and social adjustment that also influences their levels of anxiety and depression. Scholars have noted that college years entail consuming a new role of adulthood in which students become more independent and explore relationships (Arnett, 2000). In addition, college students tend to move away from their permanent home into college dormitories or apartments near schools, and are expected to develop new relationships other than that of their family members and high school friends and partners (Lee & Robbins, 2000). Hence, they are put in a situation in which social relationships are a primary factor in adjusting to their new environment. This may influence students to seek romantic relationships in which they can find comfort, care, and affection, but when these relationships become stressful, may increase anxiety and depression levels.

Moreover, due to an increase in population of colleges compared to high schools with students from various geographical locations and cultures, students are able to meet those different from them but also experience a sense of fear or social rejection by strangers they may have never gone through before. Hence, when feeling mistreated and

let down by others, they may have a harder time dealing with depression and anxiety. This finding is a significant contribution to psychological literature given that several scholars have not utilized specific measures of college student stress and /or not have not looked at the multiple domains of college student stress in an empirical manner (Asberg et al., 2008; Dixon & Kurpius, 2008). The study findings show the importance of looking at these several domains separately in independent models in order to gain a better understanding of the content of stressful experiences students go through as well as to see their individual relation to overall psychological health. In addition, it is critical to help students understand that going through these experiences are part of their journey as emerging adults but that they can also have a strong association with increasing anxiety and depression symptoms.

The hierarchical regression analysis showed that social support worked as a significant moderator between three different stressors and psychological health: developmental challenge stress, time pressure stress, and general social mistreatment stress. This significant finding demonstrated how students' perceived levels of social support from close ones can help relieve the negative impact of the aforementioned three stressors on their levels of anxiety and depression. This also alluded to the importance of looking at multiple domains of stress as their relations with social support and psychological health together seem to differ.

It is interesting to note that social support did not buffer for other stressors including those related to close people such as romantic and friend relationships. When students are in conflict and have problems specifically with their loved ones and friends, they may not be able to receive comfort and care from them and thus social support may

not function as a buffer in those instances. Instead, when students have inner struggles such as not being satisfied with their academic abilities and achievements (e.g., developmental challenge stress) and being overwhelmed with many responsibilities (e.g., time pressure stress), they may be able to receive affection, warmth, and care from romantic partners and friends that reduces the impact of these stressors on psychological health. In addition, even when stressed out due to other people by feeling isolated and taken advantage of (e.g., general social mistreatment stress), which may or may not include people students feel close with, having someone you can count on for emotional and instrumental support also seems to aid this process in its association with psychological health. It is important to note that for other types of stressors such as friendship problems stress and romantic problems stress, different coping strategies (e.g., counseling and exercise) that do not include significant others and friends may help.

On the other hand, optimism did not function as a significant buffer. Few prior studies have found optimism as a significant moderator for stress and psychological health (Grote et al., 2007; Makikangas & Kinnunen, 2003). Furthermore, they have investigated general levels of stress and not those specific to college student experiences when examining optimism as a stress-buffer on depression and anxiety. In addition, these studies included a wider age range and older aged participants. Given more life experiences, older individuals may be able to incorporate and utilize optimistic beliefs in a different way from college aged students. College students may need more external resources to navigate a way to deal with stressors such as through social suport, and thus may not be able to yet strongly utilize an internal belief system such as optimism to help cope with stress .

Supplemental Analyses

The independent samples *t*-test provided results partially consistent with previous research. Female college students had higher mean levels of time pressure stress than males. Current trends indicate a gender gap in postsecondary educaation in which females have higher numbers of graduating diplomas and grade point averages than males and that the frequencies for males has decreased over the past few decades (Conger & Long, 2010; Kahn, Brett & Holmes, 2011; Khwaileh & Zaza, 2011). Conger and Long (2010) discovered that female students had higher mean scores of credits earned and gpa than males over a period of 3 years at a Florida state university ($N = 18,364$). This may be due to the increase in the number of females in the work force and higher education; an increase in the acception of women and their abilities.

Therefore, with more opportunities to succeed in academics and future success, females may be experiencing higher levels of stress related to meeting obligations and responsibilities compared to males. Also, due to the gendered social norms that still persist throughout our world-wide culture today, females may feel pressure and work hard to prove to society that they are capable of success as much as or more than males have credited to be. As a result, females may receive more stress about their levels of satisfaction with their achievements and struggling to do several things at once with limited time.

Contrary to prior studies, there were no signficant differences between males and females on levels of social support, optimism,and psychological health. This may be due to the small sample size of males compared to females in this study and limited power by dividing the sample into two groups. As mentioned above, participants in this study

tended to have high levels of social support; thus, the study may have composed of participants who seek out and regularly get high levels of social support and may have influenced gender differences that occur in the general college student population. Optimism mean scores were also not significantly different for males and females. Optimism is a personality trait which remains stable over time; students' levels of optimism may not be influenced by societal expectationis on gender roles and gender stereotypes. More research needs to be done on examining the role of gender in these study variables and to obtain a broader understanding of what environmental and biological aspects of gender influence the stress and coping process.

Limitations and Future Directions

This study has several limitations that need to be considered. First, it is difficult to generalize our findings to the college student population in the U.S. as our data only represented one portion of the larger population. Our sample consisted of primarily female participants and was collected from primarily one geographical location; thus, limited external validity. Participants were primarily recruited through word of mouth or by contacting student organizations. An attempt to get a random sample was made but there was a very small return rate; An approxmiate number of 200 students responded to the e-mail recruitment sent out to 1200 students that were randomly selected from the school's registrar's office (16.67%). Self-selection bias may have occurred such that students who were particulary interested in the study topic as well as those motivated to participate and complete a study may have participated in this study rather than different types of people with a variety of intentions. Hence, this significantly limits the ability to generalize this study's findings to the general college student population.

Second, as mentioned above, scores for variables such as social support and psychological health were highly skewed to one side and did not have normal distributions. Hence, replication of this study's hypothesized model in other college student populations and to consider populations that have experienced a variety of levels of social support and psychological health is important. Moreover, due to including several variables and conducting multiple statistical tests there may be a high possibility of Type 1 error (Cohen, Cohen, West, & Aiken, 2003; Frazier et al., 2004).

Third, as a descriptive cross-sectional study the findings can provide information about relationships but not causality between variables and has limited internal validity. Experimental studies that can present causal relationships as well as qualitative designs that can give us detailed information about what students are undergoing can aid us in future research. Furthermore, looking at the development and possible changes in students' experiences of stress, social support, optimism, and psychological health in longitudinal studies would help to discover whether similar results found in this study occur over time and throughout students' college years.

Another limitation refers to measurement issues and construct validity. Although the literature review provided an extensive overview of the various domains that exist within social support, the measure utilized was not representative of the multidimensional aspects of social support proposed in previous studies (Procidano & Heller, 1983; Sarason et al., 1983; Tardy, 1985) and was generated to measure mostly emotional support. The inclusion of various social support type measures as well as other coping strategies would help to expand our understanding of how college students deal with their minor and major stressors.

Participants were also asked to complete their perceptions about stress, social support, optimism, depression, and anxiety over a 6 month period. This may have been a long time period for students to recall specific stressful events and support they received and the results may have been contaminated by heuristic problems. Also, the timeline for when this study was conducted included summer vacation in which most students may have left campus and have had a variety of different experiences. Moreover, although conceptualized as a stable trait, the optimism measure asked students to rate their levels of optimism over the past 6 months in order to be consistent with the timeline presented for other measures. Hence, this may have unintentionally inferred a change in beliefs and way of thinking; optimism was measured as a dynamic construct and may have limited construct validity.

A number of research ideas can continue to be explored as a result of this study. Although the stress and coping literature has flourished over the years, exploring positive constructs that college students find most helpful and effective in reducing stress and its negative impact on anxiety and depression levels is an area in developmental need. Other resources such as having high levels of self-esteem, confidence, emotional intelligence, athletic abilities, social connectedness, exercise, and more could be included in quantitative research to undercover their roles in the stress-psychological health process.

Most importantly, based on our findings it is crucial to look at different domains of stress and their individual relations with coping mechanisms in separate models (e.g., looking at social support as a stress-buffer between each stressors and psychological health independently of one another). This will aid researchers in conceptualizing college student stress and understanding how students are struggling with multiple areas.

Furthermore, this will help educators and clinicians explore venues to help students on particular difficulties and inform educational policies. Scholars should also take this into account when looking for positive resources that can help protect against the negative impact of stress on psychological health by studying the nature of the type of stress and which resource can be most helpful and effective. For example, this study found that social support was a signficant buffer for developmental challenge stress, time pressure stress, and general social mistreatment stress on psychological health but not for romantic problems stress and friendship problems stress. I explained that when students have problems with their romantic partner or friends, getting help from counseling or exercising may be more helpful rather than trying to get support from the person or similar social networks they are having trouble with.

Advancing research on various cultural constructsand how these influence college students' stress and coping resources is also essential. This study considered gender as part of the stress and coping model to promote the need for investigating other variables that are an integral part of who individuals are and how they function. A next step could be testing the stress-buffering models across male and female samples separately to see if the model worked differently for each gender. Additionally, studying the meaning of gender more in detail such as including variables such as gender identity and gender role stereotypes can also tell us more about what aspects of gender play out in the stress and coping process. Investigating other variables that demonstrate aspects of individuals' cultural and family backgrounds such as ethnicity, social class, disability, sexual orientation, and more are also crucial in moving towards a step closer at looking at multiple events and life experiences individuals go through.

Educational and Clinical Implications

Our findings suggest that college students' stressful experiences with romantic relationships and social mistreatment have a strong, negative impact on their levels of psychological health, and thus, show the need for faculty members and clinicians to pay particular attention to these events. On the educational level, administration, faculty, and staff can help explore the venues in which students feel socially rejected and mistreated and whether certain campus events and school/classroom atmosphere may influence these negative experiences to arise. In addition, residential life staff and academic advisers can work to have more conversations with students in order to make sure that students can be referred to the professional help if needed, such as to the counseling center.

The usage of college counseling and awareness of the resources at the university counseling and health centers is also a source of resource that can be further explored. Despite the high need for counseling at universities in which the mental health services tend to be overworked, it may be that majority of the college students are unaware of what the counseling and health centers can offer. For example, stigma against counseling may still persist and students who only feel a severe level of dysfunction may actively seek psychological help. This has been found to also be different depending on one's ethnic membership in that Asian students have found to be less seeking of professional psychological help due to cultural values that emphasize the need to keep one's struggles within the self (David, 2010). Hence, universities can work to help raise awareness to normalize the usage of these professional services and can serve as a stronger resource for students to utilize.

Clinicians and counselors can pay more attention to identifying specific stressors that result in the college campus setting and to help students delineate and process what these stressful experiences compose of. This will help to inform educators on what policies need to be updated and reformed to take care of students' needs. Furthermore, carefully examining these stressors in detail with students will help to see how social support can be incorporated to help them cope with particular stressors. For example, seeking more social support when students are pressured to meet high expectations and responsibilities may help significantly rather than when having conflicts with friends as suggested by our findings. In addition, making sure that students are talking to counselors and people other than romantic partners and friends when stressed out due to friendship and romantic relationship issues is critical in helping students navigate and cultivate a healthy way to cope with stress. A client could be trying to get support from a friend she recently had a argument with because that friend is usually someone she can rely on and get reassurance from. However, our study suggests that getting support from this friend may not help reduce the experience of stress on anxiety and depressive symptoms.

Appendix A

Consent Form

Project Title	College Student Experiences
Purpose of the Study	*This research is being conducted by **Minji Yang** under the supervision of Matthew J. Miller, Ph.D., at the University of Maryland, College Park. We are inviting you to participate in this research project because you are a college student that is at least 18 year old. The purpose of this research project is to better understand the experiences college students undergo.*
Procedures	*The procedures involve filling out an online survey that will take approximately 15 to 20 minutes.*
Potential Risks and Discomforts	*There may be some risks for participating in this research such as experiencing distress but there are no known risks associated with participating in this study.*
Potential Benefits	*Although there is no explicit personal benefit from filling out the questionnaire, the results of the study may help the investigators understand more about the personal and social factors that college students undergo. Through improved understanding of these factors, we hope to inform practitioners and educators in developing interventions that would benefit college students.*
Confidentiality	*Any potential loss of confidentiality will be minimized by storing data in a secure location such as a locked office in a password protected computer.* *If we write a report or article about this research project, your identity will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.*

Right to Withdraw and Questions	*Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator, **Minji Yang** at: **3214 Benjamin Building, CAPS Department, University of Maryland, College Park, MD 20742, mjyang@umd.edu.***
Participant Rights	*If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:* **University of Maryland College Park** **Institutional Review Board Office** **1204 Marie Mount** **College Park, Maryland, 20742** **E-mail: irb@umd.edu** **Telephone: 301-405-0678** *This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.*
Statement of Consent (ONLINE)	*Clicking on the "CONTINUE" button below indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You may print a copy of this signed consent form.* *If you agree to participate, please click the button below.*

Appendix B

Recruitment E-Mail

Dear students,

Would you like to share your experiences at University of Maryland by completing a brief online survey (only 15-20 minutes of your time)? Your participation in this survey will help researchers and administrators learn more about experiences college students undergo in order to help students better adjust to their college environments. To thank you for your participation in the study you will be entered into a RAFFLE to win ONE of THREE $40 GIFT CARDS.

Your participation is important to us and we highly value your feedback. Please click on the link below and follow the instructions:

www.surveymonkey.com/s/collegestudentexperiences

This study is being conducted by Minji Yang, a graduate student in counseling psychology, under the supervision of Dr. Matthew J. Miller, at the University of Maryland, College Park. This project has been approved by the University of Maryland, College Park Institutional Review Board (IRB Approval #11-0480). If have any questions about this study, please feel free to contact **Minji Yang (mjyang@umd.edu)**.

Appendix C

Demographic Questionnaire

1. Sex (female = 1; male = 2; other = 3 – specify)

2. Age

3. Please indicate your ethnic group:

   1. White

   2. European American

   3. Latino/Hispanic American

   4. Asian American/Pacific Islander

   5. African American

   6. Biracial

   7. Multiracial

   8. Other (specify): _____

4. Please indicate your college year:

   a. Freshman

   b. Sophomore

   c. Junior

   d. Senior

   e. Other (specify):

5. Please indicate your current status:

   a. Full time student

   b. Full time student and working part-time

   c. Part time student and working full-time

   d. working part time

   e. working full time

   f. seeking employment

   g. not currently employed and not seeking employment

   h. self-employed

   i. Other (specify):

6. Please indicate your major (specify):

7. Please state where you live (or country/province if not in the United States):

RAFFLE REGISTRATION

8. First name (please DO NOT provide your last name):

9. Email address (NOTE: we also need this to enter you in the raffle for your chance to win one of three $40 gift cards; we will not share this information – as indicated in the consent form, we will do our best to keep your personal information confidential by replacing your name with a generic study ID and reporting results for the group –so that no one will know the identity of any one person)

10. Confirm email address

Appendix D

Inventory of College Students' Recent Life Experiences

Following is a list of experiences which many students have some time or other. Please indicate the intensity of each event you have experienced the past 6 months.

0	1	2	3	4	5
Does not					Extremely
apply					stressful

1. Conflicts with boyfriend's/girlfriend's/spouse's family   0   1   2   3   4   5

2. Being let down or disappointed by friends   0   1   2   3   4   5

3. Conflict with professor(s)   0   1   2   3   4   5

4. Social rejection   0   1   2   3   4   5

5. Too many things to do at once   0   1   2   3   4   5

6. Being taken for granted   0   1   2   3   4   5

7. Financial conflicts with family members   0   1   2   3   4   5

8. Having your trust betrayed by a friend   0   1   2   3   4   5

9. Separation from people you care about   0   1   2   3   4   5

10. Having your contributions overlooked   0   1   2   3   4   5

11. Struggling to meet your own academic standards   0   1   2   3   4   5

12. Being taken advantage of   0   1   2   3   4   5

13. Not enough leisure time   0   1   2   3   4   5

14. Struggling to meet the academic standards of others   0   1   2   3   4   5

15. A lot of responsibilities   0   1   2   3   4   5

16. Dissatisfaction with school   0   1   2   3   4   5

17. Decisions about intimate relationship(s)   0   1   2   3   4   5

18. Not enough time to meet your obligations   0   1   2   3   4   5

19. Dissatisfaction with your mathematical ability   0   1   2   3   4   5

20. Important decisions about your future career   0   1   2   3   4   5

21. Financial burdens   0   1   2   3   4   5

22. Dissatisfaction with your reading ability   0   1   2   3   4   5

23. Important decisions about your education   0   1   2   3   4   5

24. Loneliness	0	1	2	3	4	5
25. Lower grades than you hoped for	0	1	2	3	4	5
26. Conflict with teaching assistant(s)	0	1	2	3	4	5
27. Not enough time for sleep	0	1	2	3	4	5
28. Conflicts with your family	0	1	2	3	4	5
29. Heavy demands from extracurricular activities	0	1	2	3	4	5
30. Finding courses too demanding	0	1	2	3	4	5
31. Conflicts with friends	0	1	2	3	4	5
32. Hard effort to get ahead	0	1	2	3	4	5
33. Poor health of a friend	0	1	2	3	4	5
34. Disliking your studies	0	1	2	3	4	5
35. Getting "ripped off" or cheated in the purchase of services	0	1	2	3	4	5
36. Disliking fellow student(s)	0	1	2	3	4	5
37. Conflicts with boyfriend/girlfriend/spouse	0	1	2	3	4	5
38. Dissatisfaction with your ability at written expression	0	1	2	3	4	5
39. Interruptions of your school work	0	1	2	3	4	5
40. Social isolation	0	1	2	3	4	5
41. Long waits to get service (e.g., at banks, stores, etc.)	0	1	2	3	4	5
42. Being ignored	0	1	2	3	4	5
43. Dissatisfaction with your physical appearance	0	1	2	3	4	5
44. Finding course(s) uninteresting	0	1	2	3	4	5
45. Gossip concerning someone you care about	0	1	2	3	4	5
46. Failing to get expected job	0	1	2	3	4	5
47. Dissatisfaction with your athletic skills	0	1	2	3	4	5

Appendix E

Social Support Questionnaire

The following questions ask about people in your environment who provide you with help or support. Each question has two parts. For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Give the person's initials and their relationship to you (see example). Do not list more than one person next to each of the letters beneath the question.

For the second part, circle how satisfied you are with the overall support you have had in the past 6 months. If you have no support for a question, check the words "No one," but still rate your level of satisfaction. Do not list more than nine persons per question. Please answer all questions as best as you can. All your responses will be kept confidential.

Example:

Who do you know whom you can trust with information that could get you in trouble?
No one 1) T.N. (brother)   4) T.N. (father)   7)
    2) L.M. (friend)   5) L.M. (employer)   8)
    3) R.S. (friend)   6)   9)

How satisfied?

1	2	3	4	5	6
Very satisfied	Fairly satisfied	A little satisfied	A little dissatisfied	Fairly dissatisfied	Very dissatisfied

1. Whom can you really count on to listen to you when you need to talk?
No one 1)   4)   7)
    2)   5)   8)
    3)   6)   9)

How satisfied?   1   2   3   4   5   6

2. Whom could you really count on to help you if a person whom you thought was a good friend insulted you and told you that he/she didn't want to see you again?

No one 1)   4)   7)
    2)   5)   8)
    3)   6)   9)

How satisfied?   1   2   3   4   5   6

3. Whose lives do you feel that you are an important part of?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

4. Whom do you feel would help you if you were married and had just separated from your spouse?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

5. Whom could you really count on to help you out in a crisis situation, even though they would have to go out of their way to do so?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

6. Whom can you talk with frankly, without having to watch what you say?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

7. Who helps you feel that you truly have something positive to contribute to others?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

8. Whom can you really count on to distract you from your worries when you feel under stress?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

9. Whom can you really count on to be dependable when you need help?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

10. Whom could you really count on to help you out if you had just been fired from your job or expelled from school?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

11. With whom can you totally be yourself?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

12. Whom do you feel really appreciates you as a person?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

13. Whom can you really count on to give you useful suggestions that help you to avoid making mistakes?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

14. Whom can you count on to listen openly and uncritically to your innermost feelings?

No one 1)	4)	7)
2)	5)	8)
3)	6)	9)

How satisfied?   1   2   3   4   5   6

15. Who will comfort you when you need it by holding you in their arms?

No one 1)   4)   7)
       2)   5)   8)
       3)   6)   9)

How satisfied?   1   2   3   4   5   6

16. Whom do you feel would help if a good friend of yours has been in a car accident and was hospitalized in serious condition?

No one 1)   4)   7)
       2)   5)   8)
       3)   6)   9)

How satisfied?   1   2   3   4   5   6

17. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?

No one 1)   4)   7)
       2)   5)   8)
       3)   6)   9)

How satisfied?   1   2   3   4   5   6

18. Whom do you feel would help if a family member very close to you died?

No one 1)   4)   7)
       2)   5)   8)
       3)   6)   9)

How satisfied?   1   2   3   4   5   6

19. Who accepts you totally, including both your worst and your best points?

No one 1)   4)   7)
       2)   5)   8)
       3)   6)   9)

How satisfied?   1   2   3   4   5   6

20. Whom can you really count on to care about you, regardless of what is happening to you

No one 1)   4)   7)
       2)   5)   8)
       3)   6)   9)

How satisfied?   1   2   3   4   5   6

21. Whom can you really count on to listen to you when you are very angry at someone else?

No one 1)   4)   7)
   2)   5)   8)
   3)   6)   9)

How satisfied?   1 2 3 4 5 6

22. Whom can you really count on to tell you, in a thoughtful manner, when you need to improve in some way?

No one 1)   4)   7)
   2)   5)   8)
   3)   6)   9)

How satisfied?   1 2 3 4 5 6

23. Whom can you really count on to help you feel better when you are feeling generally down-in-the-dumps?

No one 1)   4)   7)
   2)   5)   8)
   3)   6)   9)

How satisfied?   1 2 3 4 5 6

24. Whom do you feel truly loves you deeply?

No one 1)   4)   7)
   2)   5)   8)
   3)   6)   9)

How satisfied?   1 2 3 4 5 6

25. Whom can you count on to console you when you are very upset?

No one 1)   4)   7)
   2)   5)   8)
   3)   6)   9)

How satisfied?   1 2 3 4 5 6

26. Whom can you really count on to support you in major decisions you make?

No one 1)   4)   7)
   2)   5)   8)
   3)   6)   9)

How satisfied?   1 2 3 4 5 6

27. Whom can you really count on to help you feel better when you are irritable, ready to get angry at almost anything?

No one 1)   4)   7)
        2)   5)   8)
        3)   6)   9)

How satisfied?   1   2   3   4   5   6

Appendix F

Life Orientation Test – Revised

Please be as honest and accurate as you can throughout the questionnaire. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings in the past 6 months, rather than how you think "most people" would answer.

1 = I agree a lot

2 = I agree a little

3 = I neither agree nor disagree

4 = I disagree a little

5 = I disagree a lot

1. In uncertain times, I usually expect the best.   1   2   3   4   5

2. It's easy for me to relax.   1   2   3   4   5

3. If something can go wrong for me, it will.   1   2   3   4   5

4. I'm always optimistic about my future.   1   2   3   4   5

5. I enjoy my friends a lot.   1   2   3   4   5

6. It's important for me to keep busy.   1   2   3   4   5

7. I hardly ever expect things to go my way.   1   2   3   4   5

8. I don't get upset too easily.   1   2   3   4   5

9. I rarely count on good things happening to me.   1   2   3   4   5

10. Overall, I expect more good things to happen to me than bad. 1   2   3   4   5

Appendix G

Mental Health Inventory – Anxiety & Depression

Please rate your responses by circling the number that best fits your answer about yourself in the past 6 months.

1	2	3	4	5	6
All of the time	Most of the time	A good bit of the time	Some of the time	A little bit of the time	None of the time

1. How often did you become nervous or jumpy when faced with excitement or unexpected situations during the past 6 months?
    1   2   3   4   5   6

2. Did you feel depressed during the past 6 months?
    1   2   3   4   5   6

3. How much of the time, during the past 6 months, have you been a very nervous person?
    1   2   3   4   5   6

4. During the past 6 months, how much of the time have you felt tense or "high-strung"?
    1   2   3   4   5   6

5. During the past 6 months, how often did your hands shake when you tried to do something?
    1   2   3   4   5   6

6. How much of the time, during the past 6 months, have you felt downhearted and blue?
    1   2   3   4   5   6

7. How much have you been bothered by nervousness, or your "nerves", during the past 6 months?
    1   2   3   4   5   6

8. During the past 6 months, how much of the time have you felt restless, fidgety, or impatient?
    1   2   3   4   5   6

9. During the past 6 months, how much of the time have you been moody or brooded about things?
    1   2   3   4   5   6

10. During the past 6 months, how often did you get rattled, upset or flustered?
    1   2   3   4   5   6

11. During the past 6 months, have you been anxious or worried?
    1   2   3   4   5   6

12. How often during the past 6 months did you find yourself trying to calm down?

    1   2   3   4   5   6

13. During the past 6 months, how much of the time have you been in low or very low spirits?

    1   2   3   4   5   6

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