UNDERSTANDING THE RELATIONSHIP BETWEEN STRESS AND HEALTH RISK FOR WOMEN ADMINISTRATORS IN HIGHER EDUCATION

BY

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DISSERTATION

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ABSTRACT

For years researchers have studied the impact of stress on health (McEwen, 2008; DeLongis, Folkman and Lazarus, 1988). Some have found that stress can be a precursor to a number of psychological and physiological health conditions (Osipow, Doty and Spokane, 1985; Wamala, et. al, 2000; Kivimaki, et. al, 2013; Virtanen, et. al, 2000; Choi, et. al, 2011; Winefield, et. al, 2002; DeLongis, Folkman and Lazarus, 1988). For women, biological factors like estrogen levels provide protection against the harmful impacts of stress. As women age however the body’s protection mechanism becomes compromised and the ability to fight off the physiological and physiological effects of stress may also become compromised (Theede, et. al, 2007; Saleh and Connell, 2003; Cohen and Janicki-Deverts, 2012). These findings suggest that how women manage stress has important implications for long term health (Bureau of Labor Statistics, 2012; Sorenson and Verbrugge, 1987; Curtis, 2011; Barnett, 1982). Higher education institutions provide a unique laboratory for exploring stress as women make-up just over half of those in administrative and executive level positions (NCES, 2010). This study explored the relationship between stress and health risk for women in administrative roles in higher education. Information was collected from 192 participants via a survey, as well as through open-ended response questions. Results showed a significant relationship between stress and mental health outcomes and suggest that coping is moderately responsible for the variance between the two. Further results suggest that women tend to employ ineffective coping strategies when dealing with stress over a period of time whereas results from open-ended response questions suggest that participants utilized effective strategies when dealing with daily stressors at work.
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CHAPTER ONE: INTRODUCTION

Women and Health

Concerns about women’s health in the United States did not increase in importance until the 1970’s with the victory of Roe v. Wade. Although primarily focused on reproductive rights, this victory signified the need for the United States to become more aware of the unique health-related issues facing women. The new awareness prompted legal and practical changes that encouraged the inclusion and consideration of women’s health in the broader discussion. The Revitalization Act of 1993 required the National Institutes of Health to finally include women in clinical trials. In the 20 years that have followed, researchers have learned that understanding the unique issues associated with women’s overall health and well-being is critical to understanding the broader social, cultural and environmental risk factors that lead to long-term chronic illness. In the ongoing discussion around health equity and health disparities, women have been identified as a priority population (AHRQ, 2012). This increased interest promotes a number of important questions related to women’s health and well-being which will be explored in this text.

Previously, the discussion around women’s health was considered to be a private and uncomfortable public discourse topic (Nichols, 2000). For example, although women have had menstrual cycles from the beginning of time, a much needed feminine hygiene product, the maxi
pad, did not come out publicly until the early twentieth century with the introduction of the Kotex pad. Although Johnson and Johnson had an earlier product that worked, the concern about public marketing of this product doomed it to fail (Delaney, 1988). Six decades later, the federal government finally began to organize robust initiatives focused on women’s health including the NIH’s Office of Women’s Health Research and the CDC’s Office of Women’s Health. These federally funded and supported sub-groups have been at the forefront of women’s health issues since the 1980s exploring issues from cardiovascular disease to sexual and reproductive health (Nichols, 2000).

Since then, researchers have made significant progress in understanding the unique health issues facing women. Although diseases like cardiovascular disease and stroke are among the leading causes of death for both men and women, notable disparities exist (Centers for Disease Control and Prevention-CDC, 2009). Several recent studies have identified the hormone, estrogen, as a leading reason for these disparities, particularly as women age (Saleh and Connell, 2007; Teede, 2007). Estrogen is a critical hormone in both men and women, but is secreted at much higher rates in women as it is responsible for the development of a number of female body characteristics (i.e. breasts, vaginal secretions, etc.). As women enter menopause, estrogen levels decrease which, in turn, increases women’s risk for physiological and psychological issues (Saleh and Connell, 2007). The results can suggest more serious outcomes for women including the increased likelihood of dying from cardiovascular disease or enduring severe effects from stroke (Saleh and Connell, 2007; Teede, 2007).

Biophysiologica factors are important considerations when trying to better understand health disparities. Other critical factors, however, must not be ignored. Factors like environmental and psychosocial conditions can have interaction effects that increase prevalence
and severity of chronic disease (Brofenbrenner & Morris, 2006; Clark, et. al, 1999). In order to fully appreciate the risks associated with disease for women, understanding the full context of their experiences is critical. Phillips (2011) notes that

*although risk-factor approaches may identify associations between individual independent variables and the likelihood of disease, only an exploration of the context in which those risk factors operate will explain why they activate disease processes in some circumstances and not in others* (p. 17).

The earlier information provided a historical context for why women’s health is and should be a concern for today’s researchers. Further discussion will explore health outcomes relative to stress, particularly for women.

According to the CDC (2010), women between the ages of 15 and 44 (reproductive years) must be aware of particular chronic disease risk behaviors. Specifically, insufficient physical activity and smoking may increase long-term risk for chronic disease as well as other risk factors like high-cholesterol, obesity and stress (CDC, 2009). Further, estrogen levels, predisposition to chronic disease and environmental context are important considerations when attempting to understand the health outcomes particularly salient for women (Bonafe’, et. al, 2001; Clark, et. al, 1999; Saleh & Connell, 2007). Research suggests that experiences with chronic stress have been loosely associated with the incidence of chronic disease in women, particularly as they age (Saleh and Connell, 2007). Specifically, stress has been said to impact long term risk for heart disease, stroke and cancer, the top three leading causes of death among women, and stress levels, combined with co-morbidities, increase women’s risk of dying from chronic illnesses (Haynes, et. al, 2013).

Daily stressors like role overload and challenges balancing family and work responsibilities have been cited as factors that impact women’s stress levels and in turn, have been associated with physiological and psychological functioning (D’Souza, et. al, 2003;
Further exploration is needed to understand how perceptions of these stressors impact long term health risk for women and what strategies women can and do employ to decrease the impacts.

**Personal Significance of this Research**

As a researcher, I recognize that my interest in this topic is fueled by my own personal experience both as a woman, an African American, and as an administrator in higher education, a role that comes with a significant level of daily stress. In a recent blog on the experiences of women in the academy, I found evidence through the blogger’s voices, of a deeply concerning experience within the brick and mortar (Cox, Simmons and Lomax, 2012). Although the blog was primarily written by African American scholars, the message of normalized expectations of self-sacrifice, ambiguity and role overload, discriminatory practices and the strong assertion regarding the impacts of these chronic stressors on both psychological and physical health for the women were deeply concerning. The embattled voices spoke of pain and turmoil not unlike that which was highlighted in Terrie William’s book, *“Black Pain: It Just Looks Like We’re Not Hurting.”* William’s book stresses that Black women, in particular, embrace self-destructive behaviors and continue to break the personal promises to engage in self-care and individual grace. I recognize that this is not just a Black woman’s issue, but is evident among women of all backgrounds within the academy.

As an adult, with children and a family of my own, I find myself challenged to be able to maintain a level of professional success while managing a stressful work environment and a multitude of personal responsibilities. I now realize that I can easily succumb to my own self-sacrifice and one day find myself among the myriad of women who are suffering from chronic illness, depression or obesity. I question whether we, as women, have to sacrifice ourselves in order to be successful in the workplace and at home. *Lean In,* a recent best-seller by Sheryl
Sandberg, COO of Facebook, provides insight into a number of issues in the workplace for women. Although the popular text provides a road map for how women can ensure success in the workplace, there are a number of self-silencing assertions that indicate that success can only be achieved by remaining narrowly focused on engaging in the workplace without concern for the integration of personal goals with professional goals. I question the long term impact of this lack of successful integration for the average woman not flanked with resources that support in-home childcare and other useful lifelines that allow for this disconnected existence (Sandberg, 2013). At what point, if you are a woman with a family, a social life and career aspirations, is it okay to lean out without being cast as unambitious and unmotivated to go above and beyond the call of duty? When is it okay to care for self and give voice to the importance of doing so for long term health? How is stress being internalized and are we, as women, able to effectively cope with this stress?

This inquiry has cultivated a scholarly lens through which I wished to explore how women in the academy perceive stress and what coping styles are most effective. My particular interest was in women in administrative and executive level positions. I was immensely curious about the relationship between stress and health risk for these women given that universities have historically been considered a less bureaucratic and less stressful work environment (Anderson, Guido-Dibrito and Morrell, 2000). The dynamic nature of higher education has led to changing expectations and women have increasingly been among those affected by these changes (Elwood, 2013).

A number of researchers have found associations between stress and the incidence of chronic disease (Clays, et. al, 2011, Din-Dzietham, et. al, 2004, D’Souza, et. al, 2003, Ferrie, et. al, 2013, Ganster & Rosen, 2013). Vocational research suggests that more women are entering
the workplace and women are more likely to report higher stress levels than men, particularly those at higher administrative levels (Lundberg & Frankenhaeuser, 1999; May, 2009). The outcomes associated with women’s increasing presence in the workforce have resulted in an increase in responsibilities both at work and at home (Lundberg & Frankenhaeuser, 1999).

Several researchers who have explored occupational stressors, particularly for women in higher education administrative roles, have found that work-life balance; role strain; discrimination and marginalization; role insufficiency (i.e., the disconnect between skill/training and the job duties and is inclusive of role ambiguity and sense of control); and role overload are among a few of the stressors cited (Anderson, Guido-Dibrito & Morell, 2000; Brown, et. al, 1983; Hughes & Howard-Hamilton, 2003; Lloyd-Jones, 2009; Patitu & Hutton, 2003; Wood & Budden, 2006). Long work hours, lack of pay, role conflict (a conflict between home and work roles), role control (the sense of control over work responsibilities), level of education, and number of years employed in a role have been shown to have significant effects on job satisfaction for women administrators and most have been associated with occupational stress (Anderson, Guido-Dibrito & Morrell, 2000). These findings suggest that there are a number of workplace factors that have the potential to effect women’s experiences in the higher education work environment. More importantly, a number of these factors contribute to daily and ongoing stress for this population and have the potential to influence long term health outcomes.

Anderson, Guido-Dibrito and Morrell (2000) noted that higher education institutions have been touted as desirable places to work, but challenging economics and a competitive marketplace have resulted in universities running more like the business industry. As a result, workplace dynamics have changed and overall expectations have shifted. Consumerism has influenced the expectations and behavior of students on university campuses and has adjusted the
expectation of availability for staff, faculty and administrators (Gillespie, et. al, 2001). For women, particularly those who are also managing multiple roles, these increased demands have the potential to have negative long-term effects if not managed properly. More research is needed to better understand the experiences of women in higher education administration, particularly as it relates to their management of stress. The paucity of research on this topic provides a unique opportunity to fill a gap within the literature.

**Significance of Research**

Women have increasingly entered both faculty and administrative roles in higher education and have made significant contributions to the field (Curtis, 2011; NCES, 2010; Schwartz, 2013). According to the National Council on Educational Statistics (2010), the percentage of women managers and executives at U.S. colleges and universities is higher than the national average. Research suggests that positions with increased responsibility like management or executive level roles also come with an increase in potential stressors (Osipow, Doty & Spokane, 1985; Tiedje, et. al, 1990; Westerlund, et. al, 2010). The increased stress is concerning as studies have shown that increased stress can have deleterious long term health outcomes (Lundberg & Frankenhaeuser, 1999).

Health risk is an issue of concern for women in both faculty and administrative roles. However, the unique qualities of management and administrative work including potential supervisory roles, engagement in bureaucratic decision-making and other role-related ambiguities encourages questions about stress, strain and coping for women in administrative roles in higher education. Given the paucity of research on both stress and health outcomes for administrators in higher education, further study is needed to adequately understand the experiences of women in these roles and to inform higher education institutions of a potentially growing need to address issues of health among this population.
The purpose of this study was to examine the relationship between stress and health risk among women in administrative roles in higher education with a particular focus on coping strategies as moderators for health risk. Analysis of this relationship provided important insight into whether stress levels may increase the long-term risk of chronic disease for women administrators and provided recommendations that universities can utilize to develop potential interventions.

**Theoretical Framework**

A number of researchers have sought to understand and define stress (Lazarus, 1966; McEwen, 2002; Selye, 1983). In general, experiences or perceptions often lead to increased load, which refers to the impacts, both psychologically and physiologically, of being in a constant state of stress. The amount of load and an individual’s personal resources (developed coping strategies) determine how the body will respond in order to achieve a sense of balance (homeostasis). The theoretical premise of this study assumed that how individuals cope with stress impacted their physical and psychological well-being and influenced their long-term and short-term risk of illness. Also important to the discussion about stress was the notion that individuals have different perceptions of stressful circumstances or events. Given the diversity of perceptions, this study assumed that how stress was perceived and therefore appraised determined what personal resources were employed.

There are a number of models that have been developed in order to better understand stress (Cohen, Kamarck & Mermelstein, 1983; Lazarus, 1966; McEwen, 2002; NIOSH, 1999; Selye, 1983; Osipow & Spokane, 1983). Cohen (1988) explored how experiences that occur in an individual’s life are appraised. He affirmed the notion that high stress can lead to health-related issues, however, he suggested that it is not the event or the circumstance that is the deciding factor for whether stress will lead to illness (Cohen & Janicki-Deverts, 2012). Cohen
posited that two criteria must be met in order to determine what the outcome of the stress will be. First, how an individual appraises a stressor determines whether they consider a stressor to be a threat or a challenge. Second, an individual will employ a coping strategy based on the personal resources that they have available to them and that strategy will be associated with how the stressor was appraised. The result of this transactional approach will determine how a stressor impacts an individual over time (Cohen, Kamarck & Mermelstein, 1983).

Cohen (1988) suggested that coping strategies moderate the negative influence of stress. Given Cohen’s theoretical framework, this study assumed that (1) stress and coping are transactional processes; (2) how an individual assesses a stressor impacts what coping strategies are employed and (3) coping strategies have the ability to influence health outcomes.

**Research Questions**

The research questions that guided this study included:

1. Is there a relationship between stress and health risk for women administrators in higher education?
2. Controlling for demographic variables, do active coping and social support moderate the relationship between stress and health risk for women administrators in higher education?
3. What suggestions will participants provide as recommendations for how institutions can effectively reduce stress for women administrators?

**Hypotheses**

I hypothesized that:

1. There will be a relationship between stress and health risk.
2. Coping styles will moderate the relationship between stress and health risk.
3. Participant suggestions will include a focus on flexible work schedules and an incorporation of stress reduction activities into daily work experiences.
CHAPTER TWO: LITERATURE REVIEW

Introduction

Research suggests that university employees are increasingly experiencing unprecedented levels of stress (Gillespie, et. al, 2001; Winefield, et. al, 2002). Workplace factors such as work overload, role insufficiency, work-life balance issues, role ambiguity and lack of job control have been cited as causes of this increased stress (Gillespie, et. al, 2001; Winefield, et. al, 2002). Chronic work stress, which occurs when workplace factors lead to consistently high stress that taxes coping resources, can lead to chronic illness and other health-related issues (Hakanen, Schaufeli & Ahola, 2008; Karasek, et. al, 2010; Kivimaki, et. al, 2002;). Effective coping strategies are imperative, particularly for women, as chronic stress has been identified as a risk factor for cardiovascular disease, cancer and stroke, the three leading causes of death for women in the United States (Carson, et. al, 2009; Saleh & Connell, 2007; World Health Organization-WHO, 1992).

Studies have shown that women’s health issues due to work-related stressors are greatly concerning and occupational stress levels are highest for women during child-bearing years (Lundberg, Mardberg & Frankenhaueser, 1994). If stress is not managed properly, by the time women have matured in how they cope with stress, there may already be significant psychological and physiological damage (Teede, 2007). This study sought to explore the relationship between stress and health risk for women in university administration. Further, this
study explored the moderating effect of coping and provided practical recommendations for institutions and national organizations that support the development of university professionals.

**Women’s Health**

Over the last four to five decades there has been an increase in the attention paid to issues affecting women’s health. The formative work, *Our Bodies, Ourselves*, signified the need to give voice to the “real” and “lived” health-related experiences of women from diverse backgrounds (Norsigian, 2011). Since then, the discussion and the study of women’s health has provided crucial evidence of unique differences in the physiological and psychological manifestation of disease for women (Lisabeth & Bushnell, 2012; Saleh & Connell, 2007; Sapolsky, 2004). Evidence now shows that women are more likely to die of cardiovascular disease than men, are more likely to experience psychological distress or strain, are increasingly becoming more obese and are acquiring diseases like cancer and diabetes at alarming rates (American Heart Association, 2013; CDC, 2009; National Association on Mental Illness-NAMI, 2009; WHO, 1992). Stress complicates the potential for disease as prolonged exposure can lower the body’s ability to respond and fight off disease and can lead to reduced parasympathic activity which is necessary for daily functioning (CDC, 2009; Clays, et al., 2011; McEwen, 2002; Sorensen & Verbrugge, 1987; Webb & Beckstead, 2002).

**Stress-Health Pathways: How Does Stress Get Under Your Skin?**

Early researchers suggest that the human body employs a number of physiological processes in order to manage stress (McEwen, 1998; Selye, 1980). Krohne (1993) notes that stress has its beginnings in physics where the term referred to the amount of pressure applied to an object. In this context, increasing amounts of chronic or continuous stress caused an internal reaction (referred to as strain) that resulted in a weakening of the object. Similarly, the human body responds to continuous stress by engaging in a process of balancing, and if it is unable to
come into physiological balance (homeostasis), it is effectively weakened as a result (Selye, 1980). For example, if an organism is exposed to certain stimuli long enough, a stress response is elicited that results in an increase in adrenal hormones (stress hormones). The endocrine system kicks in and engages in a process of regulation in order to bring the body back into balance. This response results in the initiation of a number of physiological phases and if balance is not achieved and stressful stimuli become chronic it will eventually lead to exhaustion. The state of exhaustion can lead to long-term illness as the body’s ability to readjust is compromised and irreparable damage can occur. Psychological research suggest that effectively, “coping,” may influence this process and asserts that there may be psychological moderators that affect whether an individual will deplete physiological resources (Lazarus, 1966).

The etiology of stress is difficult to confirm as some researchers focus on physiological factors (McEwen, 2008; Selye, 1980, 1983), while others have traced stress etiology to more psychosocial factors like environment and daily experiences (French, 1973; Karasek, 1979; Osipow, 1991). Nonetheless, stress has consistently been associated with health outcomes and understanding how individuals can best manage stress is important to preventing and decreasing long-term health impacts.

**Stress and the Physiological Impact on Women**

Prolonged exposure to stress can result in a number of concerning health outcomes. Depression and psychological distress, and reduced parasympathetic activity have been cited in the literature (CDC, 2009; Clays, et al., 2011; McEwen, 2002; Sorensen & Verbrugge, 1987; Webb & Beckstead, 2002). The aforementioned physiological and psychological responses to stress are also risk factors for heart disease, cancer and stroke. Additionally, at work, the behavioral impacts of stress can lead to a lack of productivity, burnout, increased absenteeism
and increased anxiety levels (Alarcon, 2011; D’Souza, et. al, 2003; National Institute for Occupational Safety and Health, 1999).

For women, being “stressed out” can mean more than simply feeling overwhelmed and exhausted. Biomedical research suggests that estrogen plays a key role in protecting younger women from the immediate impact of stress because of its tendency to serve as a buffer from physiological damage (Clays, et. al, 2011; Din-Dzietham, et. al, 2004; D’Souza, et. al, 2003; Ferrie, et. al, 2013; Ganster, et. al, 2013; Teede, 2007), yet as women age the estrogen levels decrease which can lead to the manifestation of stress through chronic disease or even death (Teede, 2007).

Although there are a myriad of studies on the issue of health and stress, the results are conflicting as some studies show strong associations between stress and illness while others are less affirmative (Carson, et. al, 2009; Kobasa, Maddi & Kahn, 1982). Several key studies have examined the impacts of work-related stress on cardiovascular health (Karasek, et. al, 2010; Teede, 2007). For example, researchers from the Women’s Health Study, a longitudinal study at Harvard Medical School, discovered that work-stress was positively associated with cardiovascular disease, finding a 40% higher risk in women who reported highly stressful work experiences. A Denmark study also found an association between ischemic heart disease (IHD) and workplace stress. Researchers discovered that women who reported high pressure at work were also at increased risk for IHD (Allesoe, et. al, 2010). This evidence suggests that stress cannot be ruled out as a harmful risk factor potentially predictive of long term negative health outcomes for women.

**Cognitive Appraisal and Psychological Stress**

Cognitive researchers assert that how individuals assess stress is important to understanding the psychological impacts (Lazarus, 1966). For example, if stressors are
appraised as threatening, anxiety or anger may result. If an individual’s personal resources (coping resources) are not adequate, this will impact how effectively they are able to cope with future stressors (Vagg & Spielberger, 1998). Employees who appraise workplace stressors as threats tend to experience higher levels of neuroticism (negative affectivity), engage in ruminating or venting behaviors and are more likely to experience performance-related issues (Bacchus, 2008; Brown, Westbrook & Challagalla, 2005; D’Souza, et. al, 2003). Cohen and Janicki-Deverts (2012) confirm that, for women, psychological impacts of stress lead to greater health-risk and that stress appraisal leads to the employment of particular coping styles that can positively and negatively impact health outcomes.

The National Institute for Occupational Health and Safety (1999) suggests that work-related psychological stress has the potential to impact worker engagement and commitment to the workplace. The impacts are of particular importance for individuals in managerial and executive-level roles which often involve supervisory responsibilities. This suggests that the influence of stressful work experiences become more apparent as worker responsibilities increase and that the impacts may influence psychological functioning.

Other research suggests that psychological stress is exacerbated by high job demands and low social support (Choi, et. al, 2011). This informs that workers’ perception of their environment is crucial and may be predictive of the impacts of occupational stress on worker health outcomes. In fact several studies have provided evidence that employee perceptions of the workplace and the stress experienced as a result has led to parasympathic, psychological and cardiovascular distress (Clays, et. al, 2011; Karasek, et. al, 1988; Schwartz, Pieper and Karasek, 1988). The potential outcomes confirm the assertion that how individuals perceive stressors in the workplace
and how they, in turn, utilize their personal resources (i.e., how they cope), will influence personal and health-related outcomes (Osipow, 1991).

**Converse Relationship among Stress and Health**

One difficulty in determining the impacts of stress is determining whether stress leads to poor health or whether poor health leads to increased stress. Some researchers note that poor health can also be linked to increased stress suggesting a reciprocal relationship (Kivimaki, et. al, 2012). This argument increases the difficulty in determining the true impact of stress as it suggests that it is possible that stress levels increase due to poor health conditions therefore changing the independent variable in the equation. For example, a meta-analysis on job strain (a correlate of occupational stress), noted that associations between job strain and coronary heart disease may be inversely related (Kivimaki, et. al, 2012). Researchers posited that participants who were healthy in the first phase of the study but developed coronary heart disease during the second phase of the study may actually have had increased stress due to the incidence of coronary heart disease rather than developing coronary heart disease as a result of stress. Similarly, another study found that for physicians, there was a reciprocal relationship between physical symptomology often linked to job burnout (i.e., exhaustion) and stress (McManus, Winder & Gordon, 2002). The researchers found that increased exhaustion led to increased stress and increased stress also led to increased exhaustion. Even though researchers have come to no definitive conclusions about the direction of the relationship it is clear that stress and health are associated. Knowledge of this association encourages questions about how individuals manage stressors particularly in work environments. The discussion that follows will explore this strand of inquiry in more detail.
**Occupational Stress**

Occupational stress is defined as “the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker (NIOSH, 1999).” The National Institute for Occupational Safety and Health (1999) developed a job stress model indicating that individuals’ daily work experiences affect their level of stress. Those who are constantly challenged by stressful work conditions, without effective moderation by individual and/or situational factors, are more likely to have a higher risk of injury and illness. Primarily stressors tend to be related to workload, discriminatory practices and policies, a lack of resources, isolation and a lack of work-life balance (Anderson, Guido-DiBrito & Morrell, 2000; Edwards, et. al, 2011; Gardner, 2012; Marshall, Michaels & Mulki, 2007). More specifically, research on women indicates similar trends in addition to a false sense of control and experiences with gender and other forms of discrimination as workplace stressors (Ballenger, 2007; Din-Dzietham, et. al, 2004; Everett, Hall & Hamilton-Mason, 2011; Lloyd-Jones, 2009). It is important to note that individuals experience workplace stress differently and some suggest that how this stress is appraised, which also leads to how they will cope, determines the severity of physiological and psychological outcomes (Cohen, 1988). This again, affirms the potential moderating effect of coping.

The American Psychological Association, APA, (2011) notes that more than two-thirds of employees indicate that their jobs are responsible for a significant amount of their stress. Additionally, a 2006 survey showed that over half of employees in the study had high levels of stress with extreme fatigue or feelings of being out of control (CompPsych, 2006). Survey results also showed that the top reasons for workplace stress were workload, interpersonal issues, work-life balance and job security.
The APA (2012), through a compilation of studies and statistical data, found that workplace stress contributes to poor health outcomes. In the 2012 report on “The Impact of Stress,” the APA found that work was the second highest reason for increased stress in the United States. Of the 2,020 respondents in the study, 64% felt that managing stress was extremely important or very important yet only 37% believed they were able to achieve healthy stress management (APA, 2012). Further data from the APA suggests that work and family conflicts caused increased stress levels; healthcare costs and workmen’s compensation due to stress related illnesses were alarmingly high; and increasingly U.S. employees were working longer hours (APA Fact Sheet). Conversely, the APA (2012) study also confirms that a number of employees are actively engaged in behaviors that are intended to reduce stress. For example, over half of the employees surveyed state that they are taking advantage of professional development and training opportunities, while just over forty percent of workers indicate that they regularly take advantage of flexible work opportunities. This suggests that some employees are actively engaging in activities that promote job fulfillment and support stress management or reduction.

In addition to perceptions and employee impacts, workplace stress can affect an organization’s budget. In fact, workplace stressors and pressures account for nearly $300 billion annually associated with absenteeism, workman’s compensation and turnover (diminished productivity) (Murphy & Schoenborn, 1987). Australian researchers found that university employees who reported high levels of stress were also more likely to report higher levels of psychological strain. Further, individuals with higher stress were more likely to indicate frequent migraines, hypertension and coronary heart disease (Winefield, et. al, 2002). Similarly, Barkhuizen and Rothmann (2001) found that academic staff in South Africa recognized
universities as “stress factories”. They noted that women reported poorer health outcomes than men. These outcomes were found to be associated primarily with role overload and work-life balance (Barkhuizen & Rothmann, 2001).

Much of the literature on occupational stress has been conducted within business and manufacturing organizations and little research has been directed toward understanding the stress experienced by professionals at universities (Chandola, et. al, 2004; Ferrie, et. al, 2013; Nabi, et. al, 2013, Kuper, et. al, 2006; Wamala, et. al, 2000). Given the paucity of research on this population, particularly in the U.S., and the personal interest of the researcher, this study provided a unique perspective.

**Workplace Factors Associated with Stress**

The American Institute of Stress suggests that workers across the United States report that 66% of their stress related to work is due to workload and work-life balance issues. The impending result of stressful daily work experiences and poor job satisfaction is often the decision to leave the workplace. A recent meta-analysis found that role ambiguity, lack of control and autonomy and role strain lead to burnout, cynicism and exhaustion (Alarcon, 2011). Other studies have shown that often employee’s decision to leave a position is associated with work overload, poor fit with the work environment, institutional reputation, inter and intra departmental relationships and incongruence between work demands and personal demands all of which are associated with stress (Doyle & Hind, 1998; Rosser & Javinar, 2003).

Particularly for women at universities, incongruence between personal expectations and departmental expectations can lead to increased occupational stress and the potential for job burnout (Doyle & Hind, 1998; Fernet, Guay & Senecal, 2004). Individuals experience burnout when they lack the emotional resources to maintain effectiveness, they begin to detach from work experiences and responsibilities and they begin to feel less competent and committed to
their work roles (Fernet, Guay & Senecal, 2004; Maslach, 1982). Workplace factors and individual perceptions of these factors are important to explore as the affiliated outcomes can be problematic for both the worker and the organization. The next section provides more details on workload and job demands which, if not managed well, can lead to burnout, low morale and increased stress.

**Workload and Job Demands**

Increased job demands or work overload has been cited in a number of studies as a factor often associated with stress among employees (Choi, et. al, 2009; Gillespie, et. al, 2001; Winefield, et. al, 2002). Workload concerns are defined as the inability to do one task well due to other competing tasks (Gillespie, et. al, 2001). Others use the term job demands to describe workload. In essence, high job demand and low work control is equal to an increased workload and can also be expressed as “job strain” (D’Souza, et. al, 2003).

For many university employees the by-product of increased efforts to boost enrollment and to develop innovative programs has led to amplified workload expectations and little indication that there will be additional staff or resources available to assist with the increased demand (Gillespie, et. al, 2001). Consumerism, which has evolved as an institutional strategy, has influenced the expectations and behaviors of students on university campuses and has added to the increased workload demands on employees (Gillespie, et. al, 2001; Volkwein & Parmley, 2000). Further, the expectations of availability by staff, particularly those in programs that serve as support units for student academic and personal issues, have normalized quick responses to email and phone calls no matter what hour. These shifts have led to higher levels of occupational stress among university employees related to work overload (Gillespie, et. al, 2001).
In general, work overload can lead to poor health outcomes and increased job strain (D’Souza, et. al, 2000; Osipow, Doty & Spokane, 1985). One study found that over one quarter of the participants experienced some degree of job strain. Researchers discovered that individuals, who worked full-time, were in management or supervisory roles and those who were in larger organizations experienced much higher levels of job strain (D’Souza, et. al, 2003). The research on workload and job demands suggests that the requirements in the workplace can have damaging impacts. When considering other responsibilities, particularly those at home, questions arise about how employees manage both workplace demands and personal demands. This is of particular importance for women given that they have traditionally had primary responsibility for the home (May, 2009). Further, questions arise about how women effectively manage the potential stress that results from competing priorities at work and at home. The next section provides an overview of the literature on work-family balance and role management.

Role Management

Although early studies did not find there to be a strong relationship between work and family conflict or role overload (Gross, Mason & McEachern, 1958; Khan, et. al, 1964), recent research has provided evidence of a potential shift (Bellini, et. al, 2001; Jacobs & Winslow, 2004). Work-family conflict and family-work conflict have been correlated with role overload and role strain (Bellini, et. al, 2001; Jacobs & Winslow, 2004). Work-family conflict is described as the tendency for work responsibilities to bleed into family time. Family-work conflict conversely describes the tendency for family responsibilities to bleed into work time. The work-family combination has most often been cited as an issue for workers (Baruch, Biener & Barnett, 1987; Netemeyer, Boles & McMurrian, 1996). Although there is no agreement as to what degree of impact these stressors may have, the research suggests that there are both physiological and psychological health risks that result from an imbalance between the two
Women have traditionally managed the household and ensured that the family’s needs are being met. As women have entered the workforce and have advanced in their careers, balancing multiple roles has been noted as both a hindrance and a motivation. Verbrugge (1983) defines multiple roles as having both job and family roles. The family role may be marriage, parenthood or both. Although women have taken on more responsibility in the workplace, family roles have not lessened (Khan, 1991). In fact, in many cases women have seen little to no change in the expectations at home. The combination of workplace stress and stressors that occur due to home life expectations can cause increased role strain and can affect women’s overall health status. In fact, one study found that women in managerial roles had higher stress hormone levels after work than men indicating that men tend to “wind down” as women tend to “wind up” after work (Lundberg & Frankenhaeuser, 1999). This suggests the potential for chronic and continuous stress at higher levels which Selye (1980) would indicate can lead to exhaustion and resource depletion.

Women’s multiple role accumulation suggests an overload that creates a variety of disadvantages; however, several researchers suggest that multiple role accumulation has both psychological and social benefits (Barnett, 1982; Barnett, 2004; Khan, 1991; Seiber, 1974). Role accumulation theory, first coined by Sam Seiber in 1974, suggests that multiple role accumulation can be psychologically gratifying particularly if the roles are fulfilling, provide personal and professional benefits and are roles that an individual chooses. One study found that having multiple family roles (i.e., being a wife and a mother) actually served as a moderator for health outcomes in that the more roles individuals had, the better their long-term health outcomes
(Verbrugge, 1983). Women in this same study, however, did appear to have frequent issues with short-term health problems (Verbrugge, 1983). It is important to note that although role accumulation may have benefits, there is a noticeable distinction between accepted roles and those that are added without full knowledge or consent of the individual (Sieber, 1974). Sieber (1974) suggests that psychological strain is a variable that should be considered separately as it may produce contradictory results to the claims of role accumulation theory. In general, this assertion suggests that women who find their work rewarding, who are in roles willingly that they find appropriate and who feel a personal sense of gratification will have positive health outcomes.

Baruch, Biener and Barnett (1987) found that, for women, managing multiple roles did not necessarily produce positive health outcomes. They note that westernized women are socialized in ways that encourage the successful management of multiple roles which at times contributes to internalized pressures to perform. Women’s ability to control their environment and to limit the intrusion of one role, like work-life, on another role, like home-life, is critical to reducing stress. “Bleeding” increases negative health outcomes and occurs when work-life bleeds into home-life (Baruch, Biener & Barnett, 1987). An example of bleeding may be when the completion of a work task requires an employee to take work home therefore impacting the time that generally is reserved to connect with children or a spouse or reserved for personal self-care practices. Prolonged exposure to this unwanted intrusion can increase overall stress levels and can, in turn, be harmful to women’s health (Baruch, Biener & Barnett, 1987).

Stress Management and Coping

Individuals manage stressors in a variety of ways. Coping is defined as “the cognitions and behaviors, adopted by an individual following the recognition of a stressful encounter, that are in some way designed to deal with that encounter or its consequences,” (Dewe, Cox &
Ferguson, 1993, p. 7). Dewe, Cox and Ferguson (1993) suggested that coping occurs in a work context with workplace experiences extend beyond the abilities of the worker or when resources are limited. Coping responses are often characterized as an individual’s personal resources or what an individual has been equipped with to manage stressful events. Alarcon (2011) notes that "the fewer resources an individual has at his or her disposal and the higher demands placed on the individual, the more maladaptive coping will be performed. This maladaptive coping leads to increased burnout and a reduction in organizational attitudes such as job satisfaction (p. 550)."

Those who respond to stress inappropriately employ ineffective strategies like overeating, engaging in less physical activity, rumination and denial (Black & Peacock, 2011; Carver, Sheier & Weintraub, 1989; Mark & Smith, 2012). Women who employ these strategies are susceptible to poor health outcomes (Beauboef-Lafontant, 2009; Black & Peacock, 2011; Warren-Findlow & Issel, 2010; Woods-Giscombe’ & Black, 2010). Folkman and Lazarus (1988) note that ineffective coping strategies can provide temporary relief from the stressor, but may have a long term association with poor health outcomes.

What coping strategy is employed is determined by how an individual appraises a stressor (Lazarus, 1966). Reframing stressors, defined as “psychological thriving,” results when a stressor is appraised as a challenge rather than a threat. Psychological thriving often leads to increased self-esteem and a sense of empowerment and a commitment to personal health and success (Epel, Ickovics & McEwen, 1998). Hardiness, another result of stress being appraised as a challenge, is a dispositional concept introduced by Kobasa, Maddi and Kahn (1982). Hardiness refers to a personal resilience resource. Hardiness is an example of an adaptive coping strategy that inherently employs reframing (Lazarus, 1966) and psychological thriving (Epel, Ickovics & McEwen, 1998). Both strategies represent dispositional approaches to stress.
management and have been associated with enhanced health (Epel, Ickovics & McEwen, 1998). Both responses are also classified as active coping strategies which are indicative of an individual actively attempting to minimize the effect of stress (Carver, Sheier & Weintraub, 1989).

For women, “learned resourcefulness” (Rosenbaum and Jaffe, 1983), is another active strategy that has been used to reframe and manage stress. Employees who utilize learned resourcefulness have developed a set of behaviors that allow them to self-regulate their response to workplace stressors. Researchers suggest that although women’s stress levels at work have increased, particularly for women in managerial positions, learned resourcefulness has allowed them to more effectively manage workplace stress (Rosenbaum & Jaffe, 1983). Some also suggest that women tend to respond better to stress at work than their male counterparts (Lundberg & Frankenhaueser, 1999).

Researchers note that for women, social support is also an important coping strategy (Cohen & Wills, 1985). Cohen and Wills (1985) note that social support serves as a potential buffer between stress and health outcomes for women. They suggest that how women utilize social support is an important determinant for whether such support will be health-promoting or health defeating. In the case where women utilize such support to vent and ruminate on stressful issues, it is likely that social support will be health-defeating. However, if women utilize social support for encouragement and mentorship then it can be health promoting. Other studies support the benefits of social support, particularly for women, confirming the potential buffering effect (Broadhead, et. al, 1983; House, Landis & Umberson, 1988; Thoits, 1986).

Occupational studies show that women in higher level management positions have more well-defined and seasoned coping strategies than those who are earlier in their careers (Osipow,
Doty & Spokane, 1985; Wortman, et. al, 1991; Westerlund, et. al, 2010). This is in part, due to the maturity of women later in their careers as well as the increased sense of control over their work and workplace experiences. Although women appear to be better able to manage workplace stressors later in their careers, prior experiences with chronic stress may impact long-term health, particularly if the body’s resources become depleted. Therefore personal coping resources serve as important moderators between stress and health outcomes.

Coping as a Moderator

Susan Folkman and Richard Lazarus’ (1988) research on stress and coping provides a unique viewpoint on how coping can effectively moderate the impacts of stress. They define coping as the engagement of a cognitive appraisal process. This process allows an individual to assess whether something is a threat or a challenge. They define coping as "cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of a person," (Folkman & Lazarus, 1988, p.310). Individuals will appraise a situation and respond with either problem-focused coping which occurs when an individual chooses to make changes to the circumstance causing the stress (e.g., changing jobs) or emotion-focused coping which occurs when an individual chooses to make changes to their perceptions of the circumstance.

Folkman and Lazarus (1988) go on to identify this appraisal process in two ways. First, an individual may experience primary appraisal in which case they are focused on determining what is at stake for them personally as a result of the circumstance. In the case of an administrator, an example would be determining whether a change in leadership will impact their ability to be autonomous in their role. Secondly, an individual may experience secondary appraisal in which case they may be determining what they are able to do to resolve the situation or bring it back into balance. An example for an administrator might include dealing with the
impacts of a disgruntled employee. In this case, the administrator may determine that they are unable to change the individual's attitude, but can make other changes in order to limit the impact.

Folkman and Lazarus (1988) further suggest that the person-environment connection is important and that coping, according to their definition, is more process-orientated in that an individual may change how he/she deals with stressors from situation to situation. This is different than other coping research that suggests that coping dispositions are the more relevant consideration (Osipow, Doty & Spokane, 1985). Others see the value in both situational and dispositional approaches to coping (Carver, Sheier & Weintraub, 1989). Carver, Sheier and Weintraub (1989) suggest that both are relevant. In general, individuals tend to subscribe to a particular coping style. That style provides insight into a coping disposition or the most common way that an individual responds to stress (Carver, Sheier & Weintraub, 1989). They note that there are multiple ways that people can and will respond to stress and they assert that these strategies can be considered adaptive or maladaptive, dispositional or situational. Active coping, for example, is when an individual is positively and actively engaged in the coping process. Its tenants are extremely similar to those considered in problem-focused coping. The active engagement in a solution is considered adaptive although Carver, Sheier and Weintraub (1989) suggest that their framework is not intended to dichotomize coping into maladaptive and adaptive categories. In general, the strength of the Carver, Sheier and Weintraub (1989) approach to coping is co-consideration of both situational and dispositional responses creating a more thorough picture of coping responses.

**Criticisms of Coping Research**

A number of criticisms have surfaced around coping research. Similar to concerns about how stress is defined, some suggest that how coping is defined is an issue, particularly as it
relates to the classification of coping strategies (Dewe, Cox & Ferguson, 1993). Further criticisms have been noted about how coping is measured as well as how it is classified (Cox & Ferguson, 1991). One example is related to Folkman and Lazarus’ (1988) classification of coping as problem-focused or emotion-focused. Questions have arisen about whether this classification adequately captures the complexity of coping (Cox & Ferguson, 1991). Such criticisms, however, do not negate the popularity and usability of this model.

**Stress and Women in the Academy**

As women’s roles have evolved so too have opportunities for advancement. As of 2012, women comprised 49% of those employed in the U.S. (Bureau of Labor Statistics, 2012). Today, women make up 52% of those in managerial and executive positions across the U.S. (Bureau of Labor Statistics, 2012). Women from diverse backgrounds have made significant strides although many familiar barriers continue to exist including gaps in pay and experiences with discriminatory policies and behaviors (Hegewisch, Deitch & Murphy, 2010; Wright, 1991).

Universities have seen similar trends. A growing number of women are pursuing administrative roles in higher education settings. Sixty four percent of those in educational administration in the U.S. are women and among universities, women make up 54% of those in administrative/managerial/executive positions (NCES, 2010). The increasing presence of women in these roles demonstrates the continued growth in opportunity in the field. Status quo policies and systems, shifting role expectations and economic and market driven strategies are sure to have the potential to increase stress and role expectations. Additionally, as women seek to balance their roles both in the workplace and at home, the potential for increased stress is an important consideration.

In the early twentieth century, higher education institutions began to see shifting trends in enrollment as well as in faculty and administrative staff demographics (Schwartz, 2013).
of Women positions became popular among many American universities in an effort to meet the growing needs of college women (Schwartz, 2013). Many early Deans of Women were also considered faculty. Although men had always been in administrative roles at universities, a movement to add Dean of Men positions began to arise which gave way to a number of questions about the economic benefit of having two administrative roles that had similar duties. The dual roles often increased inefficiency and error (Schwartz, 2013). As a result, many Deans of Women and Men positions began to disappear in lieu of hybrid positions that were responsible for both men and women. Unfortunately, this shift was also aligned with historical patterns of gender inequities which resulted in the hybrid positions being filled primarily by men. Over time, hiring patterns have shifted as women have increasingly entered both faculty and administrative roles in higher education and made significant contributions in higher education (Curtis, 2011; Graham, 1978; NCES, 2010).

According to the National Council on Educational Statistics (2010), the percentage of women managers and executives at U.S. colleges and universities is higher than the national average. Research suggests that positions with increased responsibility like management or executive level roles also come with an increase in potential stressors (Osipow, Doty & Spokane, 1985; Westerlund, et. al, 2010; Wortman, et. al, 1991). Long term health risk is an issue of concern for women in both faculty and administrative roles. The unique qualities of management and administrative work including potential supervisory roles, engagement in bureaucratic decision-making and other role-related ambiguities, however, encourages questions about occupational stress, strain and coping for women in administrative roles in higher education. To begin to fully understand the experiences of women in administration, given the paucity of research, a critical review of the experiences of women faculty are in order.
Women on the Faculty

Research suggests that faculty roles actually induce stress due to a variety of psychological and environmental factors including (1) the tenure process (Bozman & Gaughan, 2011); (2) “bleeding” (the tendency for work to extend into home-life) (Wortman, et. al, 1991), (3) the negotiation of time spent on teaching, service and research (Bozman & Gaughan, 2011; Chambers, 2012); (4) interpersonal relationships (Bozman & Gaughan, 2011); and (5) pay (Bozman & Gaughan, 2011). Conversely, other research has shown that there aren’t significant differences in occupational stressors between men and women faculty, but role overload factors remained an issue for women (Lease, 1999).

When considering race/ethnicity and gender, additional factors emerge including the (1) sense of isolation; (2) discrimination (i.e., specific to race, gender and the intersection of both); and (3) marginalization (i.e., specific to race) (Chambers, 2011; Pittman, 2012); and (4) academic bullying (Frazier, 2011). For example, a blog analysis by Chambers (2011) found that African American women faculty primarily cited issues related to microaggressions present in personnel matters, course evaluations and personality issues that unfairly surfaced in the tenure review process. Another study confirms that marginalization in the academy is a reflection of the same experience that Black women often have outside of the academy (Generett & Cozart, 2011 & 2012).¹

Academic rank has also been cited as an issue for women in the academy (Croom & Patton, 2011, Richard & Krieshock, 1989). Full professor rank was associated with changes in the level of influence and authority, increases in potential earning power and decreases in incongruence between research, teaching and service. This supports the notion that women tend

¹ Generett and Cozart note that outside of the academy Black women are constantly managing race and gender related issues including justifying the right to freely express opinions without judgment or persecution.
to adapt and learn resourcefulness over time which can therefore influence their perceptions of workplace stressors.

For women faculty, regardless of race, attrition rates prior to tenure and after tenure continue to be an issue (Gardner, 2012). Gardner (2012) suggests that institutional culture and climate as well as other institutional characteristics may help better understand departure patterns. Women’s roles (both personal and professional) often change multiple times over the course of academic pursuits which may be correlated with the decision to depart the role of faculty. In a study, which explored reasons for departure from the academy for women faculty at land-grant institutions, Gardner (2012) found that women were less satisfied than their male counterparts with “the hiring process; the tenure and promotion process; departmental resources to support research; relationships with colleagues; work-life balance; feelings of isolation; emotional well-being; and overall career progression,” (p. 82). Another study on clinical and non-clinical medical faculty found several significant challenges for women not identified by men. The challenges included balancing family or home and work responsibilities; time pressures; difficult promotion criteria; inadequate time for academic pursuits; feeling stressed beyond a comfortable level; and feeling isolated at work (Bellini, et. al, 2001). The outcomes of these studies are supported by a host of other studies that note similar findings (Hagedorn, 1996; Linn, et al., 1985; Marshall, Michaels & Muki, 2007).

When comparing the experiences of women faculty with women’s experiences in other professions, unique differences emerge. One study compared business and faculty women work experiences and found that academics experienced a higher degree of role strain (Tiedje, et. al, 1990). The researchers found that although women faculty had more flexibility and worked fewer hours than businesswomen, the tendency for work to spill over was greater for faculty.
Women who were highly committed to their marriage and family had higher stress due to spillover and the unbounded nature of their work. The researchers found, however, that the women faculty utilized “learned resourcefulness”, defined as a set of skills that an individual develops over time to assist with the regulation of stress (Rosenbaum & Jaffe, 1983).

**Women Administrators**

In a recent article in *Inside Higher Education*, Dr. Eric Robinson, Associate Professor of Educational Psychology at Baylor University notes:

*As a tenured member of the faculty at Baylor, my sphere of influence is focused. Teaching, research and service are the main priorities, with hours that can run long but are ultimately under my control. Beyond class schedules, I can work at home, at a coffee shop or in my office. I can choose to work all day on Saturday and not work the following Tuesday. Contrast that with my life for 12 months, on leave from Baylor as an executive administrator at Iona, when organizational and enterprise issues ruled the day. I was at work by 7:45 am (and the last one in the office) and leaving at 10:00 p.m. on most days (11:00 p.m. on others). Saturdays often started around 8:30 a.m. and ended at 6:00 p.m. unless there was a special event. While certainly invigorating, the experience was exhausting (np).*

Dr. Robinson’s story highlights the uniquely different role of university administrators providing particular consideration for the blatantly different expectations of time and attention to bigger picture issues. His epiphany also highlights the exhaustive nature of administrative work, albeit, energizing, highly recognized and “invigorating”. Although it is not given from the perspective

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2 Read more: http://www.insidehighered.com/advice/2014/01/17/professors-new-appreciation-how-tough-administrators-have-it-essay#ixzz2qrK99UHO
of a woman, which likely includes several other role-related challenges, it engages the questions about the workplace experiences of those in administrative roles.

The research on women faculty provides insight into the experience of university scholars whose primary role involves research, teaching and service. Less is known, however, about the experiences of women in higher education administration, particularly those who don’t also have teaching responsibilities. Several researchers who have looked at occupational stressors for women in administrative roles have found similar factors to those that plague faculty including work-life balance (Anderson, Guido-DiBrito & Morell, 2001; Hughes & Howard-Hamilton, 2003;), discrimination and marginalization (Lloyd-Jones, 2009; Patitu & Hutton, 2003) and role overload (Wood & Budden, 2006). Research suggests there are additional factors that plague administrators including role insufficiency and sense of control (i.e., the disconnect between skill/training and the job duties) (Brown, et. al, 1983). One study comparing faculty experiences to the experiences of student affairs administrators found that the time of the academic year influenced stress levels. Additionally, researchers found that occupational stress for faculty was more often associated with role overload while occupational stress for administrators was more often associated with role insufficiency (inclusive of role ambiguity and sense of control). A number of studies, however, note that workload is a major factor related to occupational stress among university administrators (Blix & Lee, 2013; Hughes & Howard-Hamilton, 2003; Rosser & Javinar, 2003).

Although there is a paucity of research on university administrators, a small body of research exists on women of color in administrative roles, particularly African American women (Hughes & Howard-Hamilton, 2003; Lloyd-Jones, 2009; Patitu & Hinton, 2003). The results of this work have demonstrated that African American women are challenged by institutionalized
racism and gender discrimination; overburdened by perceived and real expectations related to performance compared to their White and/or male colleagues; feel a sense of obligation to extend themselves to provide support for students and colleagues in ways that are similar to the extension of themselves with their families; and often feel invisible, marginalized and disempowered (Hughes & Howard-Hamilton, 2003; Lloyd-Jones, 2009; Patitu & Hinton, 2003). Particular emphasis should be given to the psychological and physiological toll that can occur as a result of dealing with gender and race discrimination challenges on a daily basis. Further, researchers highlight the need for institutional emphasis on the recruitment, retention and support of African American females in administration (Hughes & Howard-Hamilton, 2003).

Other research on occupational stress and job satisfaction for higher education administrators can be found in the student affairs literature. For example, one study found that for women in particular, long work hours; lack of pay; role conflict; role control; level of education; and number of years employed in a role had significant effects on job satisfaction which is associated with occupational stress (Anderson, Guido-DiBrito & Morrell, 2000). The researchers note that higher education institutions have often been seen differently in relation to desirability of the work environment, but that challenging economics and a competitive marketplace have resulted in universities running more like the business industry. As with the business industry, it is necessary then for universities to consider how employee health can influence productivity and overall institutional morale. Anderson, Guido-DiBrito and Morrell (2000) provided evidence that the costs associated with poor employee health particularly for women can have significant impacts on institutions in relation to both, morale and economics.

A number of studies on occupational stress for university employees have been conducted among researchers in Australia (Gilespie, et. al, 2001; Winefield, et. al, 2002). In
fact, a national study was conducted with both faculty and administrative staff participation. They discovered that occupational stressors can have a significant impact on a university’s budget. The study also suggests a tiered responsibility for impacting occupational stress including individual, workplace and institutional responsibility.

Cuts to government spending and other federal and institutional challenges also impact the workload and job structure of faculty and administrators at universities (Biron, Brun & Ivers, 2008; Gillespie, et. al, 2001). Given the differences in role expectations, educational background requirements and career ladder experiences, questions remain about how these impacts will affect university administrators over time. Longitudinal data on the experiences of Australian administrators confirm differing levels of job satisfaction, work-life balance and negative affectivity (negative mood disposition) for administrators (Winefield, et. al, 2002). To date, no similar longitudinal studies have been done for universities in the U.S.

Conclusion

For faculty, typically the first 4-6 years are spent navigating a demanding and stressful tenure process, while an administrator’s journey can vary depending upon the nature of the role (e.g., academic administration with a faculty line, academic administration no faculty line, student affairs administrator, etc.). For women, these increased demands have the potential to have negative long-term effects if not managed properly. Given the number of potential stressors that women experience, how stress is appraised and in turn, how women cope becomes even more important. More research is needed to better understand the stress experienced by women in higher education administration, how women cope and the health impacts that may result. The lack of research provided a unique opportunity to fill a gap within the literature. Important consideration must be given to the fact that the same stressful circumstance can occur for different individuals with differing results in response (Carver, Sheier & Weintraub, 1989;
Cohen, 1988). The outcomes of this study provide insight into perceptions of stress for women administrators, coping styles and provides important suggestions for institutions and national organizations regarding stress impacts and management for this population.
CHAPTER THREE: METHODOLOGY

High levels of perceived stress have been associated with a number of health related issues including increased susceptibility to disease (Burns, et. al, 2002; Cohen, Doyle & Skonner, 1999; Cohen, Tyrrell, & Smith, 1993). Several researchers have found that coping strategies are critical moderators between stress and health outcomes (Carver, Sheier & Weintraub, 1989; Lazarus, 1966; Osipow, 1991). Cohen’s theoretical framework for perceived stress, which suggests that stressful circumstances are appraised by an individual as a threat or a challenge and that appraisal will determine the coping strategy employed, provided the theoretical basis for the current study which assumed that (1) stress and coping are transactional processes; (2) how an individual assesses a stressor impacts what coping strategies were employed; and (3) coping strategies have the ability to influence health outcomes (see Figure 1). The research questions that guided the study were:

1. Is there a relationship between stress and health risk for women administrators in higher education?

2. Controlling for demographic variables, do use of instrumental and emotional support and active coping moderate the relationship between stress and health risk for women administrators in higher education?
3. What suggestions will participants provide as recommendations for how institutions can effectively reduce stress for women administrators?

I hypothesized that:

1. There will be a relationship between stress and health risk.
2. Coping styles will serve as moderators between stress and health risk.
3. Participant suggestions will include a focus on flexible work schedules and an incorporation of stress reduction activities into daily work experiences.

A mixed method research approach was used for this study. Mixed methods approaches have evolved over the last five and a half decades. Many scholars agree that mixed methods allow for triangulation of quantitative data, qualitative data and other important explanatory information (Creswell, 2007, Hanson, et. al, 2005). Further, mixed methods approaches provide a unique paradigm that gives voice to the experiences of marginalized or underrepresented populations which is why this was an important methodology for this study. The outcomes often provide in-depth explanations for issues identified by quantitative data (Hanson, et. al, 2005).

Further, Kettles, Creswell and Zhang (2011) note that mixed methods approaches can be used in studies that have a correlational analysis in order to serve as a secondary source of information. They note that the information provided can be used as enhancements to the quantitative data.

Researchers suggest that quantitative survey data alone does not always provide the most robust information, particularly when considering institutional or professional practice changes (Scott, Grebinnikov & Shah, 2008). Further, qualitative data collected as part of quantitative surveys can provide important information about particular patterns or themes which can be useful as fodder for institutional improvements (Scott, Grebinnokov & Shah, 2008).
qualitative data collected for this study was, therefore, collected concurrently along with the quantitative survey data.

**Participants**

After conducting an a priori power analysis with an effect size of .15 and power of .8, it was determined that a sample size of between 82 and 130 participants was needed (Cohen, 1992). Although the highest estimate would have provided the greatest degree of power for the analysis, acceptable power could have been achieved as long as the sample was between 82 and 130 women administrators at institutions of higher education.

This convenience sample included women who have been in administrative roles for 0-5 years, 6-10 years and 11 or more years who hold positions noted by the following NCES identified roles (NCES, 2010): top executives; chief executives; postsecondary education administrators such as: presidents; vice presidents (including assistants and associates); deans (including assistants and associates) if their principal activity is administrative and not primarily instruction, research or public service; directors (including assistants and associates); department heads (including assistants and associates) if their principal activity is administrative and not primarily instruction, research or public service.

Because of the complex nature of accessing women from diverse institutions, the convenience sample included women who could be accessed through the membership list of the National Association for Student Personnel Administrators as well as women who could be accessed via the researchers’ professional network. Requests were also made for those who receive the survey to pass it along to other colleagues in the field via professional listserves and email.
Procedures

Once IRB approval was granted by the University of Illinois, permission was acquired from the National Association for Student Personnel Administrators (NASPA) to send the survey to women on the general NASPA membership list. NASPA required all requests for membership information for the use of research to be approved through the submission of an online request form. Along with the form, an approved IRB was attached. The form also required brief details about the research study and the researcher’s contact information. Lastly, the form required the researcher to ensure that he/she used the information only for research and publication purposes and ensured member confidentiality.

The identified surveys for this study included the Perceived Stress Scale (Cohen, 1988), the COPE Survey (Carver, Sheier and Weintraub, 1989) and the Short Form Health Survey-12 (Ware, Kosinski and Keller, 1996). For the purpose of this study, the survey instruments were collated into an online format using survey monkey. Survey submissions were anonymous and no personally identifiable information was collected. According to Eysenbach and Wyatt (2002), web-based surveys are convenient both for participants and researchers, allow for quick access to data for analysis and are an effective tool to use if cost of research is an issue. In the case of the current study, cost was, in fact, an issue therefore the use of a web-based survey provided an economically prudent data collection method. The survey, along with a letter of consent and a confidentiality agreement were sent to the aforementioned email addresses. Participants were only allowed to take the survey once.

The Short Form Health Survey-12 required permission for use from the supporting agency. The Short Form Health Survey-12 is controlled by QualMetrics, which allows for incorporation of the instrument into a researchers online instrument as well. The researcher was granted free access to this instrument as long as it was deemed to be used for academic research
purposes. In order to ensure this, the researcher submitted the advisor verification form that required the primary advisor’s signature confirming the use of this instrument for doctoral research purposes.

**Instruments**

Occupational stress was measured using the Perceived Stress Scale (Cohen, 1988). A psychological stress score can be deducted from this instrument based on an individual’s responses to 10 questions that measure perceptions of stress. The COPE survey was used to assess how women cope with stressful events (Carver, Scheier & Weintraub, 1989). This survey was utilized to measure coping styles. The Short Form Health Survey (SF-12) (Ware, et. al, 1996) was used to measure health risk.

**Perceived Stress Scale (Cohen, 1988)**

The Perceived Stress Scale (PSS) (Cohen, 1988) was developed with the assumption that how stress is appraised has direct associations with individual health outcomes. The PSS is a general scale which ensures its broad use. The authors note that this survey can be used in studies where "the primary issue under study is the role of appraised stress, as opposed to objective stress level (p.32)." The scale has been used in a number of health-related studies (Cohen, Janicki-Deverts & Miller, 2007; Feldman, et. al, 2004). The authors note that one limitation of the scale is a lack of sensitivity for specific events that are not included on the scale; however, it was determined to be an appropriate and easily accessible instrument for the purpose of the current study.

The authors further note that although there have been criticisms regarding the use of a global stress measure, it is more common for stress to be attributed to global issues rather than just one specific event. Given this, the use in the current study was justified. Further benefits of
using this scale include the short length of the instrument and the economic cost (i.e., the instrument is free for use).

Validity tests on the PSS found scores to be moderately correlated with other measures of appraised stress (which included a life-events scale, several stress related questions like “Have you ever personally experienced stress?” and “Are there things going on in your life now that you find very upsetting or bothersome?”) and a number of work-related stressor questions including questions related to frequency of overtime and workload (Cohen & Williamson, 1988). Cohen and Janicki-Deverts (2012) found that the PSS proved to be a better predictor of health outcomes than life event scales. Cohen and Williamson (1988) also found that the PSS scores were inversely correlated with health outcomes which suggest that increases in PSS scores were associated with poorer health scores.

According to previous research, the alpha coefficient for the 10-item version of the scale is .85. Cohen and his colleagues developed three versions of the scale (i.e., 4-item, 10-item and 14-item) and after further research determined that the 10-item scale has a “tighter factor structure” and better internal validity than the 14-item scale. They note that the 4-item scale is useful however there is a loss of reliability and is better used when looking for a brief understanding of perceived stress.

Cohen and Janicki-Deverts (2012) note that perceived stress should be inclusive of objective stress levels. They also found a small to moderate association between PSS scores and life event scores which measure stress more objectively. Further, they suggest that perceived stress should effectively be associated with psychological and physical symptomology scales. They successfully confirmed this relationship noting that an increase in PSS scores was associated with an increase in both physical and psychological (depressive) symptoms.
Additionally, they found a positive correlation with social anxiety levels suggesting that higher PSS scores correlated with higher social anxiety levels and they in turn found that PSS scores are predictive of social anxiety levels.

**COPE Survey (Carver, Sheier & Weintraub, 1989)**

The COPE Survey was developed based on theoretical underpinnings as well as results from the extensive body of research that has been conducted on coping measures and fifteen scales were developed. In general, Carver, Sheier and Weintraub (1989) based the development of the COPE instrument on the works of Richard Lazarus who identified three key components of coping: primary appraisal, secondary appraisal and coping. Lazarus (1966) suggests that when an individual encounters a stressful event, they must first determine whether the event is a threat or a challenge (primary appraisal). Once the nature of the stressor is determined, the individual must begin to decide what the response to that stressful event should be (secondary appraisal). The outcome of secondary appraisal is the employment of a coping strategy which Lazarus (1966) suggests can be emotional (which involves managing emotions connected to the stressor) or problem-focused (which involves solving the issue or removing the stressor).

Carver, Sheier and Weintraub (1989) in turn, developed an instrument that is intended to measure the latter, coping, based not merely on how an individual copes with one stressful event, but how they cope with stress over the course of a month. The COPE scale includes *active coping, planning, suppression of competing activities, restraint coping, acceptance, positive reinterpretation and growth, seeking social support for instrumental reasons, seeking social support for emotional reasons, denial, behavioral disengagement, mental disengagement, alcohol-drug disengagement, turning to religion and focusing on venting emotions.* Active coping and seeking social support for emotional and instrumental reasons were explored in an
effort to answer the second question in the current study however the outcomes for the remaining coping styles were also addressed to ensure a thorough exploration of coping effects.

*Active coping* represents the specific and direct actions an individual may take to manage a stressor. For example, an active coping strategy may be that after assessing a stressor, an individual decides to focus on circumstances under his or her control rather than trying to change events that are out of the individual’s control. *Seeking social support for instrumental reasons* refers to an individual's decision to seek out assistance or support from friends, family, etc. for the specific purpose of getting advice. *Seeking social support for emotional reasons* refers to an individual's need to engage with others in order to be comforted. The researchers suggest that seeking social support has both positive and negative outcomes depending upon whether an individual moves from seeking support to developing solutions or whether the support is just a means for venting which can lead to more maladaptive responses.

The COPE survey measures coping styles. The primary outcome suggests that individuals employ particular styles when dealing with stressors. The breadth of this instrument is important as there are other instruments that could be used, but are primarily focused on situational coping (see Lazarus and Folkman's Ways of Coping instrument) and may not allow for broad understanding of how an individual might handle stress in diverse situations. Scores on the COPE survey are gathered using a 4-point likert scale with choices ranging from "I usually don't do this at all" to "I usually do this a lot". Scores are summed based on the questions that represent each coping style. Previous research shows that the Chronbach’s alpha for the active coping subscale is .62. The Chronbach’s alphas for seeking social support instrumental and emotional are .75 and .85 respectively. The survey developers found that the effective coping scales and the ineffective coping scales correlated strongly with a number of associated
personality traits which is indicative of the validity of the COPE instrument (note, however, that the instrument is not intended to be used to dichotomize coping as adaptive or maladaptive). For example, active coping and planning showed a positive correlation with optimism yet there was an inverse correlation with trait anxiety. This suggests that these concepts are accurately measuring the appropriate concepts. The author also suggested that other inverse relationships were as expected and found that the social support scale effectively straddled both categories (effective vs. ineffective) which supports research that suggests that the effectiveness of social supports is dependent upon how one engages socially.

**Short-Form Health Survey (SF-12) (Ware, et.al, 1996)**

The twelve-item Short-Form Health Survey (SF-12) was used to measure health risk (Ware, et.al, 1996). The SF-12 measures physical health (PCS-12) and mental health (MCS-12). The higher the score on each measure (physical health-PCS and mental health-MCS), the better the health status. A total score is also available.

The SF-12 was derived from the Short Form-36 survey which was part of the Medical Outcomes Study; a longitudinal study that examined variations in patient outcomes and is intended for use as a general health questionnaire (Tarlov, et. al, 1989). The SF-36 has been used in a number of studies (Brazier & Deveril, 2002; Anderson, et. al, 1998; Ngo-Metzger, et. al, 2008). Ware, et. al (1996) sought to develop a shorter version of the SF-36. They noted that the proven reliability of the SF-36 as an instrument used to detect overall health-risk proved that a decrease in the number of questions should not mean a significant loss of useful information. Validity was determined by using known groups validation. The authors identified 10 categories for comparison which included patients that differed in areas like seriousness of physical condition and cross-sectional and longitudinal comparisons of age effects among the most well group of comparisons. The resulting multiple $R^2$ were 0.911 for predicting PCS-36 and 0.918 for
predicting MCS-36. Using a secondary scoring method, the authors found the resulting $R^2$ to be .842 to .911 for PCS-12 ($P > .01$) and .846 to .918 for MCS-12 ($P < .01$). The independence of the two measures (MCS-12 and PCS-12) were also consistent with independence findings in the PCS-36 and MCS-36. Previous research notes Chronbach’s alpha coefficients of 0.890 for the PCS and 0.760 for the MCS scores (Ware, et. al, 1996).

In general, the authors found that the SF-12 was comparable to the SF-36, especially for use in studies where length of time to complete the instrument or scale are factors. The confirmed ease and appropriateness of the SF-12 was also noted by other researchers (Franks, et. al, 2004). For the current study, length of the instrument was a strong consideration given that the women being recruited were in high-workload positions and the survey had to consider the time needed to break from these duties in order to complete it.

SF-12 scores must be input into a software program provided by Qualmetrics, Incorporated. According to Qualmetrics, Incorporated, scoring of the SF-12 involves “(a) recoding item response values, (b) summing recoded response values for all items in a given scale to obtain the scale raw score, (c) transforming the scale raw score to a 0–100 score, (d) transforming the 0–100 score to a z score, and (e) transforming the scale z score to a T score (mean = 50, standard deviation = 10)” (p. 3).” PCS scores are computed by: “(a) multiplying each health domain z score by a scale-specific physical factor score coefficient, (b) summing the resulting products, and (c) converting the product total to a T score. The MCS score is computed in the same manner, instead using scale-specific mental factor score coefficients (p. 3).” Once the scores were computed, a graphic representation of the overall scores was created by the Qualmetrics software to provide an overview of the health of the study participants (Figure 2).
Participants were also asked several open-ended questions in order to collect participant suggestions for how universities and national organizations dedicated to the professional development of higher education administrators can best support the health of women in administrative roles as well as additional information on workplace factors that lead to stress and coping strategies employed. Fowler (2009) suggests that open ended questions “permit the researcher to obtain answers that were unanticipated (p. 101),” provides important information about the “real” reasoning behind participants’ answers and broadens the possible answers able to be provided. In order to ensure that the open-ended question were viable questions, the researcher asked several women in administrative roles to review the questions and provide insights on the readability and consistency in how the question were understood. Doing so, confirmed the appropriateness of the questions posed. The open ended questions addressed in this study included:

Survey Question 1: Describe a troublesome event, issue, or problem that you experienced in the work environment within the past week.

Survey Question 2: Did you consider the troublesome event, issue or problem to be stressful or not-stressful?

Survey Question 3: How did you choose to respond to the troublesome event, issue or problem?

Survey Question 4: Please provide your suggestions for ways that higher education institutions can help reduce stress for university administrators?

The last component of this survey included demographic information. Demographic categories included questions about institutional type, age, family status, administrative division, administrative role, years of service at current institution, years of service in the profession and race/ethnicity. The full survey and demographic questionnaire is included in the Appendix E.
Preliminary Analysis

Once the survey data was collected, it was reviewed and cleaned in order to ensure the use of only entries with completed surveys and to ensure all identified titles are in line with NCES (2010) titles as indicated earlier in this paper. Once data was cleaned, answers were coded based on the coding scales provided for each instrument, prior research and by using an inductive and deductive qualitative review approach. Two participants were removed because their titles did not match the necessary titles for the study. The remaining 89 participants were removed due to incomplete responses on the survey. Further, demographic data was coded and a codebook was developed by the researcher for later data verification. SF-12 scores were aggregated using the Qualmetrics, Incorporated software required to use in order to aggregate data. The output provided the individual and collective scores for the sample. The software also provided a graphic representation of SF-12 scores. The SF-12 scores were then included in the master spreadsheet and the entire spreadsheet was be input into SPSS for further analysis.

Prior to analysis in SPSS, assumptions were considered to determine the most appropriate correlation analysis (i.e., the assumption of continuous variables, a monotonic relationship between variables and paired observations). For the multiple linear regression assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were considered. Descriptive statistics were also collected.

Proposed Analysis

_Hypothesis 1: There will be a relationship between stress and health risk._

A correlation analysis was used to determine whether there is a relationship between stress and health risk. The correlational analysis was run using SPSS. The perceived stress scores for each participant were correlated with the subscores for the mental health component
(MCS) and the physical health component (PCS) from the SF-12 instrument. Coping styles (using the COPE scores) were also correlated with the SF-12 scores.

**Hypothesis 2: Coping Styles will moderate the relationship between stress and health risk.**

A multiple linear regression analysis was used to determine how much of the variation in health risk, was attributed to coping. Both PSS scores and COPE scores for each subscale were regressed against the PCS and MCS separately. Variation percentages were used to determine the moderating effect of coping.

**Qualitative Phase**

The qualitative approach that was used to analyze the open-ended questions was the “framework approach” or the “directed approach” (Hsieh & Shannon, 2005; Pope, Zeibland & Mays, 2000). This approach uses a deductive process for classifying qualitative data based on themes established in advance possibly as a result of available theory or research on the topic. This approach is often used when qualitative data is being collected to connect with quantitative findings (Pope, Zeibland & Mays, 2000). The researcher allowed for additional codes to develop inductively as well.

The researcher manually categorized the participant responses into the pre-set categories. Pre-set categories for coping styles (responses for question 3) using the coping styles already predefined by the COPE instrument. Another category called workplace factors classified responses to question 1 referring to participant’s recount of a troublesome work event. These categories were developed using both an inductive and deductive approach. The deductive categories included discrimination, role ambiguity, work overload, difficulty with relationships (non-management), difficulty with management, lack of resources (financial), lack of resources (people), work-life balance, role insecurity, issues with supervisees and general work concerns. The inductive approach led to the emergence of ambiguous policies and practices, issues with
technology and student issues. To address question 4 regarding participant suggestions for institutions, both an inductive and deductive approach was used as well. The deductive categories included flexible hours, stress reduction programs/initiatives, professional development, policy and procedural change, increases in resources (people), increases in resources (financial), support systems, childcare resources, consideration of issues related to diversity and equity and recognition, acknowledgement and reward. The inductive approach led to the emergence of providing better leadership and changing social norms around vacation and time-off.

An additional rater was asked to review the responses using the defined categories and making note of additional categories to be considered. Researchers suggest that multiple reviewers are used in qualitative research as a means of ensuring the validity of the categorization with the aim of minimizing researcher bias (Creswell & Miller, 2000; Creswell, 2007, Hsieh & Shannon, 2005; Pope, Ziebland & Mays, 2000). After at least 70% inter-rater agreement was reached on at least 82 of the responses, indicating a validated categorization process, the final data was included in the results section of the study.
CHAPTER FOUR: RESULTS

The purpose of this study was to examine the relationship between stress and health risk among women in administrative roles in higher education with a particular focus on coping strategies as moderators for health risk. This study sought to answer the following questions: (1) Is there a relationship between stress and health risk for women administrators in higher education? (2) Controlling for demographic variables, do active coping and social support moderate the relationship between stress and health risk for women administrators in higher education?; and (3) What suggestions will participants provide as recommendations for how institutions can effectively reduce stress for women administrators?

The following hypotheses were generated from the research questions provided above: (1) There will be a relationship between stress and health risk. (2) Coping styles will serve as moderators between stress and health risk; and (3) Participant suggestions will include a focus on flexible work schedules and an incorporation of stress reduction activities into daily work experiences.

A survey that included the COPE instrument, the Perceived Stress Scale, the Short Form Health Survey-12, demographic questions and several open ended questions was sent to the researcher’s professional contacts and directly to a random selection of administrators who were members of the National Association for Personnel Administrators (NASPA). The survey, distributed using Survey Monkey, was open for two weeks and closed after 283 individuals...
completed the survey. After cleaning up the data and eliminating incomplete surveys (89 incomplete) and positions that were outside of the scope of this study (2 positions), the total number of study participants was 192. The questionnaire also included questions concerning demographic information such as race, institution type and size, marital status and number of dependents; age; years in higher education and at current institution, and general stress levels.

The Perceived Stress Scale was incorporated into the survey and utilized to operationalize stress. The COPE scale was used to assess coping styles and included questions pertaining to fifteen coping styles. These styles included mental disengagement; behavioral disengagement; denial; active coping; instrumental use of social support; emotional use of social support; substance use; focus on and venting of emotions; humor; religious coping; acceptance; restraint; suppression of competing activities; planning; and positive reinterpretation and growth. The Short Form Health Survey-12 was included in the questionnaire and was used to assess both physical and mental health risk.

An open response section was also included in the questionnaire. The purpose of this section was multifold. First, participants were asked to identify a troublesome work event. Then participants were asked to indicate whether they perceived that event as stressful or not stressful. The questions that followed asked participants to discuss how they coped with the event and whether they felt that their coping strategy was effective. The final questions in this section asked participants to provide suggestions for how higher education institutions can help reduce stress for women administrators. The surveys included in the questionnaire were set to be randomized to ensure that each participant would receive the sections in a random order (e.g., one participant may have answered the questions on coping first while others may have answered questions about perceived stress first).
Descriptive Statistics

There were a total of 192 participants in this study. As stated earlier, 283 participants attempted the survey. Two participants were removed because their positions were Academic Advisor, which is not a level measured in the current study. All other entries were removed due to non-completion of the necessary components of the survey (the COPE, the PSS and the SF-12 sections). All participants were women administrators with the highest percentage of women in Student Affairs-Assistant or Associate Director (16%), Student Affairs-Director or Manager (17%), Academic-Assistant or Associate Dean (10%) or Academic-Program Coordinator or Director (10%) roles. The full list of roles can be found in the appendix (Table 1). Participants were mostly White or Caucasian (73%), between the ages of 35 and 44 (30%) and married (60%) with between 0 to 1 child (74%). Most of the participants have been in higher education for more than 11 years (59%) and have completed at least a Master’s degree (67%). The majority of participants were from 4-year public institutions (53%) and research institutions with very high research activity (44%). Institution sizes ranged with the highest percentage of participants coming from institutions with greater than or equal to 20,000 students (36%). Most of the participants have supervisory responsibilities (89%) and most indicated that they feel stressed at work about half the time (43%) (Table 1).

Brief Overview and Connection to Theoretical Framework

Cohen (1988) suggests that how individuals appraise stressors and whether they believe they have adequate coping resources determines the impact on an individual’s health. In the current study, the majority of participants identified that an event that occurred in the last week was stressful (83%) and most employed active coping strategies which suggests that the stressors were perceived as manageable. Cohen (1988) indicates that coping strategies are employed based on the resources an individual has available to them. For women in this study, many
turned to colleagues for support or addressed the circumstances by identifying what they had control over and dealing with those issues directly. Quantitative results (i.e., outcomes from analysis of the PSS, COPE and SF-12 data), however, suggest that the resulting coping response to stressors that occurred over the course of a month were less effective and there is a possibility that either the participants perceived these stressors to be less within their control, less manageable or more severe. The resulting data suggests that coping resources were, in fact, deficient and resulted in the employment of ineffective coping styles. More specific details of these outcomes will be addressed in the following sections.

*Question 1: Is there a relationship between stress and health risk for women administrators in higher education?*

Initial SF-12 scores were calculated using the software provided by Qualmetrics, Incorporated. The software aggregated data from individual scores for both MCS and PCS (prior to Spearman’s correlation and the multiple linear regression analysis). The aggregate health outcomes data showed important differences in the physical and mental health scores for the participants which will be further discussed in the next section.

The health outcomes data showed that women administrators in this study have physical health scores that are slightly higher than the national average (54.9 compared to 50), while mental health scores were below the national average (45.9 compared to 50). Note, however, that population norm comparisons include both men and women. Further analysis of the data showed that 31% of women in the study are currently at-risk for developing mental health issues with 42% of the sample falling below the population norms for mental health outcomes. This number is compared to only 8% falling below the norms for physical health outcomes (Figure 2). The aggregate PCS and MCS scores suggest that mental health outcomes are of a much greater
concern for women administrators than are physical health outcomes. Other studies have provided evidence that mental health issues are of great concern for working women particularly when job strain is high (D’Souza, et. al, 2003). In one study examining stress and Canadian university staff, researchers found that employees with high psychological distress had a higher level of emotional exhaustion, higher psychosomatic symptoms, less job satisfaction and were more likely to intend to leave within the next 12 months (Biron, Brun & Ivers, 2008). Other studies confirm that mental health concerns are associated with occupational stress and for women, are further impacted by work-family conflict, workload and control in the work environment (Winefield, et. al, 2002). In the following section, correlational data will provide further evidence supporting the concerns for mental health outcomes.

A set of assumptions were considered when determining which correlational analysis to use for this study. It was determined that the Spearman’s Correlation was the most appropriate analysis because three assumptions were met. The assumptions met were that (1) the variables in the study were continuous variables that utilized a numeric scale to determine participant scores; (2) the variables represented paired observations which suggests that each participant score for perceived stress was correlated against health risk scores and (3) there was a monotonic relationship between the variables suggesting that as one variable increases, the other variable also increases or decreases. Categorical data (e.g., demographic data) was converted to numeric codes for the purpose of analysis.

Degree ($r=.229, p<.01$), Carnegie classification ($r=.228, p<.01$) and typical stress ($r=-.397, p<.01$) were significantly associated with mental health outcomes. Participants’ responses to the question about whether their typical workday is stressful or not stressful were significantly and positively associated with perceived stress scores (PSS) ($r=.399, p<.01$) (Table 9). These
findings are not surprising as studies show that individuals who are managing multiple occupational stressors tend to experience higher levels of personal and psychological stress (APA, 2012; Winefield, et. al, 2002). Contrary to previous research on women administrators in higher education, level of education and number of years employed did not prove to be significant (Anderson, Guido-Dibrito & Morrell, 2000).

The Spearman’s correlation was run for perceived stress (PSS) and physical health (PCS) and mental health (MCS) respectively. The results suggest that there was not a significant correlation between PSS and PCS, \( r_s(192)=-.016, p<.05 \) (Table 3). However, further results showed a strong inverse correlation between PSS and MCS, \( r_s(192)=-.290, p<.01 \) (Table 3) scores. The scores suggest that as stress increases (as indicated by higher PSS scores) mental health issues also increase (as indicated by lower MCS scores). This finding supports hypothesis 1 which states that there will be a relationship between stress and health risk. The findings are also supported by a number of research studies (DeLongis, Folkman & Lazarus, 1988; Holmes, et. al, 2006; Kivimacki, et. al, 2002; Winefield, et. al, 2002) and confirm Cohen’s (1988) assertion that increased stress is associated with poor psychological health and can lead to depression and a greater risk of mental illness.

A Spearman’s correlation was then run to assess the relationship between stress and each coping style for women administrators in higher education. The results suggested that two coping styles, behavioral disengagement \( r_s(192)=.187, p<.01 \) and focus on and venting of emotions \( r_s(192)=.242, p<.01 \), were positively and significantly associated with stress (Table 5). This suggests that an increase in stress is associated with an increase in participant’s tendency to focus on and vent emotions and to withdraw or become more isolated. McEwen (1998) confirms this in his research where he suggests an association between stress in the work
environment and a sense of isolation among workers. Studies on women of color in academia suggest an ongoing sense of isolation as a way for women to escape daily pressures and experiences with gender and racial discrimination in the workplace (Bacchus, 2008; Hall, Everett & Hamilton-Mason, 2012). Spearman’s correlations also showed that focusing on and venting of emotions was positively and significantly associated with mental disengagement \( (r_s=.248, p<.01) \), use of instrumental support \( (r_s=.267, p<.01) \), behavioral disengagement \( (r_s=.281, p<.01) \), use of emotional support \( (r_s=.479, p<.01) \), substance use \( (r_s=.154, p<.05) \); and negatively and significantly associated with planning \( (r_s=-.144, p<.05) \), and positive reinterpretation and growth \( (r_s=-.152, p<.05) \). Spearman’s correlation analysis also showed that behavioral disengagement was found to be positively and significantly associated with mental disengagement \( (r_s=.207, p<.01) \), focus on and venting of emotions \( (r_s=.281, p<.01) \) and denial \( (r_s=.411, p<.01) \); and negatively and significantly associated with planning \( (r_s=-.316, p<.01) \), positive reinterpretation and growth \( (r_s=-.264, p<.01) \), use of instrumental support \( (r_s=-.182, p<.05) \) and active coping \( (r_s=-.183, p<.05) \) (Table 4). Sheier, Scheier, Carver and Bridges (1998) found similar results in their study which correlated the COPE styles with optimism, self-mastery, trait anxiety, self-esteem and neuroticism. They found that coping styles like denial, mental disengagement and focusing on and venting of emotions, which can be considered ineffective or maladaptive, were negatively associated with more positive personality characteristics like optimism and self-mastery. These same styles were positively associated with characteristics like neuroticism. As noted earlier, some researchers suggest that some employees, particularly those with higher levels of neuroticism, engage in venting behaviors that lead to performance related issues and low job satisfaction (Bacchus, 2008; Brown, Westbrook & Challagalla, 2005; D’Souza, et al, 2003).
Because active coping and use of instrumental and emotional support are part of question 2 where the researcher suggests that these three styles may moderate the relationship between stress and health risk, the following information shows the Spearman correlations for these three coping styles. The results showed that active coping was significantly and positively associated with acceptance ($r_s = .252, p < .01$), planning ($r_s = .643, p < .01$), positive reinterpretation and growth ($r_s = .297, p < .01$), use of instrumental support ($r_s = .225, P < .01$), humor ($r_s = .193, p < .01$), restraint ($r_s = .193, p < .01$) and suppression of competing activities ($r_s = .452, p < .01$) and was significantly and negatively associated with behavioral disengagement ($r_s = -.183, p < .01$). The use of instrumental support showed significant and positive associations with acceptance ($r_s = .157, p < .01$), planning ($r_s = .250, p < .01$), positive reinterpretation and growth ($r_s = .328, p < .01$), focusing on and venting of emotions ($r_s = .267, p < .01$), active coping ($r_s = .225, p < .01$), use of emotional support ($r_s = .563, p < .01$), acceptance ($r_s = .157, p < .01$) and suppression of competing activities ($r_s = .225, p < .01$) and significant and negative associations with denial ($r_s = -.192, p < .01$) and behavioral disengagement ($r_s = -.182, p < .01$). The use of emotional support showed significant and positive associations with focusing on and venting of emotions ($r_s = .479, p < .01$) and the use of instrumental support ($r_s = .563, p < .01$) (for the full list of Spearman’s correlations see Table 4). Similar to Sheier, Carver and Bridges (1994), these styles tended to be associated in ways that suggest that they are adaptive in nature and promote positive personal outcomes.

The correlational analysis for the coping styles suggests that employing more effective coping styles like planning and positive reinterpretation and growth is associated with decreases in less effective coping styles. Carver and Connor-Smith (2010) note that coping can be employed both effectively and ineffectively. Coping styles like behavioral disengagement, mental disengagement and denial fall into the “disengagement” category or are considered more
ineffective approaches to dealing with stress. Other styles like focusing on and venting of emotions and use of emotional and instrumental support can be categorized as both engaging and disengaging or effective and ineffective depending upon how these styles are used. For example, if focusing on and venting of emotions leads to rumination on negative thoughts, this strategy can become ineffective. In some cases, venting has been found to be a maladaptive coping strategy that also negatively impacts employee performance and overall job satisfaction (Brown, Westbrook & Challagalla, 2005). Carver and Connor-Smith (2010) suggest that disengagement coping (ineffective) allows individuals to escape the stressor temporarily, but does not eliminate the impact in the long term. The aforementioned correlations suggest that as the more effective coping styles increase, the ineffective styles decrease.

**Question 2: Do active coping, use of instrumental support and use of emotional support moderate the relationship between stress and health risk?**

A multiple linear regression was used to determine whether active coping, use of instrumental support and use of emotional support moderate the relationship between stress and health risk. In order to run a multiple linear regression, the Durbin-Watson score had to be determined and a number of assumptions had to be met. The Durbin-Watson score is used to ensure that the model is relevant for this study. Durbin-Watson scores range between 0 and 4. A score close to 2 indicates a good model fit. The initial analysis for the 15 coping styles and mental health component scores showed a Durbin-Watson score of 2.101 (Table 8). Similarly, analysis of coping styles and physical health component scores showed a Durbin-Watson score of 1.802 (Table 8a). Once the model fit was established the assumptions of linearity (i.e., linear relationship between independent and dependent variables), independence of errors (i.e., no highly correlated independent variables), homoscedasticity (i.e., data points are similarly spread
when graphed), unusual points (i.e., no significant outliers) and normality of residuals (i.e., normal distribution of residuals) were met.

The results show that coping represents 19% ($R^2 = .19$, $F(15, 176)=3.968$, $p<.001$) (Table 8) of the variance between stress and mental health outcomes and 5% ($R^2=.05$, $F(15, 176)=1.728$, $p=.049$) (Table 8a) of the variance between stress and physical health outcomes. Only focusing on and venting of emotions ($t=-4.178$; $p<.05$) was statistically significant. The adjusted $R$ showed that coping is moderately responsible for the variance between the relationship of stress and mental health and minimally responsible for the variance between stress and physical health (MCS, $R^2=.19$; PCS, $R^2=.05$).

T-values and p-values (see Table 7) indicate that as mental health scores increase (signifying better mental health), suppression of competing activities, planning, substance use, behavioral disengagement, denial, focusing on and venting of emotions and mental disengagement decrease. Additionally, as mental health scores increase active coping, positive reinterpretation and growth, restraint, acceptance, use of emotional support, religious coping, humor and use of instrumental support also increase. This suggests the possibility that active coping, positive reinterpretation and growth, restraint, acceptance, use of emotional support, religious coping, humor and use of instrumental support are coping styles that more positively influence women administrator’s daily management of stress and can, in turn, lead to better mental health outcomes. Other research supports the use of religion and social support as effective coping strategies (Bacchus, 2008) as well as reinterpretation of stressors, active coping and acceptance (DeLongis, Folkman & Lazarus, 1988).

Results for physical health scores showed no significant moderating results. However, the data does show that better physical health outcomes are associated with less employment of
denial, mental disengagement and restraint (Table 4). DeLongis, Folkman and Lazarus (1988) confirm that when individuals employ emotion-focused coping or as Carver and Connor-Smith (2012) suggest, effective coping, this is associated with better physical health outcomes. For example, individuals who employ more effective coping strategies may be more likely to engage in self-care and physical activity as a way to reduce the impact of stress. These strategies also lead to decreased employment of ineffective coping strategies like mental disengagement.

Further, studies suggest that physical health outcomes are not as pressing for employees as mental health outcomes in that individuals who have high job strain, but also feel secure in their jobs, are still prone to poor mental health, yet saw less of an impact on physical health (D'Souza, et. al, 2003; Kivimaki, et. al, 2002).

Question 3: What suggestions will participants provide as recommendations for how institutions can effectively reduce stress for women administrators?

Participants were asked to provide recommendations for how higher education institutions can help reduce stress for women administrators. Although all 192 participant comments were reviewed, inter-rater review was done for 82 of the responses as indicated in the methodology section. To restate the original analysis, 70% inter-rater agreements was needed for at least 82 of the responses. The researcher determined that 82 participant responses were adequate for comparison given that 82 participants were minimally needed to ensure adequate power for the quantitative portion of this study. After careful analysis of the data and after achieving 90% inter-rater reliability, the following themes were developed: flexible hours; professional development; stress reduction programs/initiatives; policy/procedural change; increase in resources (people); increase in resources (financial); support systems; changing social norms regarding rest and time off; childcare resources; consideration of issues related to
diversity and equity; recognition, acknowledgement and reward; and provide better leadership. After further discussion, the researcher and the other rater agreed that communication should be included as part of the “provide better leadership” category given that many of the issues with leadership were related to communication concerns. Additionally, “changing social norms regarding rest and time off” also emerged as a result of the joint review of the data.

The original hypothesis of the study suggested that participants would indicate flexible hours and the addition of stress reduction programs as possible solutions. This was supported by the data as flexible hours and stress reduction programs/initiatives were among the top five recommendations provided with flexible hours being the fourth most popular suggestion among participants. Providing better leadership, changing social norms regarding rest and time off and stress reduction programs/initiatives were among the top three respectively and increase in resources-people was the fifth.

**Qualitative Analysis: Workplace Factors and Coping Styles**

Several additional open-ended questions were added to the questionnaire in order to collect qualitative responses on workplace factors and coping strategies. The following section will provide an analysis of the responses.

*Survey Question 1: Describe a troublesome event, issue, or problem that you experienced in the work environment within the past week.*

Respondents listed a range of environmental experiences that they identified as troublesome. In general respondents confirmed earlier research regarding issues cited by women administrators particularly related to work-life balance issues, indicators of role strain and role overload. After achieving 80% inter-rater reliability, the following themes were agreed upon related to workplace factors that participants found to be troublesome (note that “student issues and “issues with technology” emerged as new categories resulting from combined review):
(1) difficulty with management;
(2) student issues
(3) work overload;
(4) difficult work relationships (non-management);
(5) issues with supervises;
(6) ambiguous policies;
(7) general work concerns;
(8) lack of resources (people);
(9) lack of resources (financial);
(10) discrimination;
(11) issues with technology;
(12) work-life balance;
(13) role ambiguity;
(14) role insecurity; (percentages can be found in Table 2).

The evidence suggests that of these themes work-overload (14%), student issues (14%), and difficulty with management (17%) were cited most often as troublesome.

**Work-Overload**

Research suggests that work-overload can lead to increased job stress and strain (Osipow, 1991; Winefield, et. al, 2002); psychological distress (Winefield, et. al, 2002; Demerouti, et. al, 2001; Hakanen, Schaufeli & Ahola, 2008); burnout (Alarcon, 2011; Demerouti, et. al, 2001); and job dissatisfaction (Lacy, Fiona & Sheehan, 1997; Volkwein, Fredericks & Parmley, 2000). One participant identified as a Student Affairs Director/Manager or equivalent noted that there was “too much to do, not enough time to do it.” She further notes that the amount of work led to taking work home in the evening or doing work on the weekends. She stated, “I go in early, and
I stay late. I work through lunch (I forgot to eat lunch today). I don't get some things done.”

Although she used active coping to deal with her concerns, she also accepted this as a challenging part of the job. She shared, “it causes more stress, at work and at home, but I don't feel like I have an option at this point in time.”

In addition to work bleeding into home-life, participants noted that they often took on tasks because they were the only one to do it or because of “staffing turnover”. One Student Affairs Associate/Assistant Director whose been in her position for more than 11 years noted that she was “asked to chair a committee because no one else wanted to do it” while another participant in a Student Affairs Dean or above role shared that “a request was made of me to do something beyond the scope of my responsibilities.” Another participant in an Academic Affairs Program Coordinator role expressed concerned with “7 day weeks for months on end...” and also noted that she copes by continuing to “swim” in an effort to keep up. Further frustration was noted by last minute requests or incessant interruptions and having little time to meet impending deadlines. A single, participant in a position equivalent to a Student Affairs Program Coordinator shared, “there have been multiple times where my supervisor would call mid-day and expect me to drop my current work-load to pay attention to her conversation.” While an Academic Head of a Department shared similar concerns noting frustration with “unplanned projects being placed on my plate.” Another participant in a similar academic role experienced similar frustration with unplanned work. She explained that “we were heading into a board meeting and a lot of last minute preparations were being placed on my plate. Many of the reports and presentations required were assigned within a few days of the board meeting that was also coupled with other activities that were to be held on the same day. With little preparation time and regular work activities continuing it was a very stressful and challenging week.”
One hundred percent of the women who indicated possible work-overload issues felt that the experience was stressful and most employed active coping strategies as a result. One seasoned Student Affairs Director/Manager shared that in dealing with multiple tasks she “analyzed situation, gathered information, looked at options, developed plan, and implemented action.” Another respondent, who indicated that she was asked to do work outside of her responsibilities admitted that she was first frustrated, but chose to address the individual whose job it was to get the work done. Yet another respondent chose acceptance and active coping as strategies when managing her work overload. This Student Affairs Assistant/Associate Director indicated that “no one else was able to handle the situation so it was essentially still on my plate. I decided to complete the task on a Sunday at home where I knew I would not have any interruptions or interfere with my work priorities.”

**Student Issues**

Working with students is the nature of the work in higher education. Most participants who indicated student issues as stressful were dealing with very serious and difficult circumstances. Participants noted the death of a student, suicide attempts, a successful suicide, dealing with a student with an eating disorder and a number of mental health or psychiatric issues. In 2012, the National Survey of College Counseling Directors provided evidence of a number of concerning trends in higher education. Gallagher (2012) found that 24.4% of the students coming to college are already on psychiatric medications. Further, counseling directors (69% of which were women) noted increases in the following issues among students entering college:

1. 73% crises requiring immediate response;
2. 67% psychiatric medication issues;
3. 59% learning disabilities;
(4) 48% illicit drug use (Other than alcohol);

(5) 40% self-injury issues (e.g. Cutting to relieve anxiety);

(6) 36% alcohol abuse;

(7) 30% problems related to earlier sexual abuse;

(8) 32% sexual assault concerns (On campus);

(9) 26% eating disorders; and

(10) 22% career planning issues.

Student affairs administrators particularly, are investing a considerable amount of time and resources into dealing with student issues like suicide, eating disorders, academic issues and a number of other mental health issues (Kitzow, 2003).

“Death of a recent alum that impacted current students.”

“Student who is struggling academically, received an academic warning.”

“Had a student have a psychotic break--dealing with getting him help, communication of what we could communicate with other students, etc.”

“Having a student make threatening remarks on twitter regarding using guns and bombs.”

Only half of the women indicating student issues as their troublesome event considered this event to be stressful and most employed active coping strategies because they were in a position where a quick response was necessary. One participant explained “whenever we lose a student I always try to do all I can to assist the family. So managing the student's accounts/affairs on campus so the family doesn't have to. But it is probably my least favorite aspect of my job.” Another participant shared nonchalantly, “I manage it and move on to the next one.” In general respondents suggested that this was a “normal” part of the job.
Difficulty with Management

Campus leaders are in a unique position. Northouse (2013) suggests important distinctions between the roles and responsibilities of managers and of leaders. He suggests that managers tend to focus primarily on organizational tasks and outcomes ensuring the workers are equipped and engaged in achieving organizational goals. Leaders, although they may also serve as managers, are also responsible for understanding the bigger picture and using their influence to help others work to achieve common organizational goals. Although it is unlikely that campus leaders and managers will execute their roles to perfection, ineffective leadership or management can lead to reduced productivity and morale among employees (Northouse, 2013).

Concerns among participants in the current study around ineffective management primarily alluded to issues with communication. One participant in a general administrative position shared that the top leaders, the Provost and President exhibited a “lack of the appropriate communication to solve a major issue caused a communication issue.” Another participant in a Student Affairs Dean position indicated issues with multiple levels of communication suggesting that she was frustrated by “triangulation in communication between supervisor, supervisee and me.”

Challenges with work styles were also cited as an issue. One participant in a general administrative position said “I've been having ongoing work style issues with my supervisor and this past week we tried a new method of organizing our weekly meetings with items to discuss and added action items and follow throughs that are required from his part,” while a Student Affairs Director/Manager said, “I have a passive aggressive boss who is hard to work for. He wrote me an email to address an issue but didn't tell me exactly what he meant by his comment. It was frustrating and left me to guess what he really meant to say.” One hundred percent of those that indicated issues with management indicated that this experience was stressful and
most employed active coping strategies. For example, one participant took matters into her own hands and indicated that she “made the decision” on her own. Another participant in a general administrative position challenged the process and took her concerns to a higher level. She shared “I had to go to the extreme and go to mediation with an Ombuds person.” Not all of the women used active coping strategies, however. One Student Affairs Associate/Assistant Director used instrumental and emotional support, behavioral disengagement and denial as strategies. She commented that her coping process looks more like this: “cry; vent/process whether I'm overreacting with colleagues/family outside work; sought support/explanation from direct supervisor with limited to no success; question my competence/confidence; isolation; focus on other projects on my to do list; "fake it to you make it" attitude (smile through frustration and stress).”

Survey Question 3: How did you choose to respond to the troublesome event, issue or problem?

Contrary to the quantitative results, qualitative results suggest that active coping was most often used by participants when responding to daily stressors. The collaborative review resulted in an 83% interrater agreement on coping responses to the question, “Describe a troublesome event, issue, or problem that you experienced in the work environment within the past week.” Interrater disagreement suggested that active coping and acceptance could be identified as a response for several cases in that a participant may have actively responded to the stressor and then accepted this event as part of the job. In this case, the reviewers agreed that given the nature of the stressor, active coping was a sufficient strategy that captured the participant’s full response. For some participants, the best path to overcoming work stressors was to act quickly. One Student Affairs administrator stated that she chose to “strategize with my team and put together a plan to move forward.” A Student Affairs Program Coordinator dealing with stressful staff issues noted that she focused on trying to interpret what was going on so that
she could resolve the issue and move on although noting the toll that the action took on her. She shared, “I was actually rather proud of myself for being able to interpret; however, it was very draining.”

Overall, 83% of the selected sample indicated that the event they identified was stressful and 46% of the participants employed an active coping strategy when managing a troublesome and stressful experience at work which suggests that this coping style was a preferable and effective style. Carver, Sheier and Weintraub (1989) note that active coping strategies are indicative of an individual actively responding in ways that reduce or eliminate the effects of the stressor. They also note that this strategy is often used when an individual does not have a choice but to respond quickly to an environmental experience. The workplace events identified by many of the women in the current study did, in fact, require immediate action. Only 14% of the participants reported employing the coping style use of instrumental support and 3% of the respondents reported employing the use of emotional support. Those who reported employing the use of instrument support were often doing so in an effort to consult with an appropriate authority regarding particular policies or with colleagues or mentors. The outcomes from the qualitative data suggest that women’s responses to daily stressors may, in fact, be different than how they tend to respond to stress over time or to stress in general as measured by the quantitative data. This may indicate differences in their dispositional coping style versus their situational coping style.

A number of other coping styles were useful for the study participants including acceptance (16%); planning (4%); and positive reinterpretation and growth (7%). The qualitative data suggest that more often, those who found workplace experiences to be stressful utilized active coping strategies and acceptance. These outcomes support research on women in
work that suggests that active coping strategies are often used by women when dealing with workplace stress and acknowledge that often workplace circumstances are not within an individual’s control (Carver, Sheier & Weintraub, 1989; Tamres, Janicki and Helgeson, 2002). The third most often used style, use of instrumental support, is also supported by research in that collegial support often leads women to appraise workplace stressors as less stressful (Fondacaro & Moos, 1987).

**Conclusion**

In general the results support the notion that stress is associated with mental health outcomes and effective coping strategies reduce the risk of negative mental health outcomes. Although there was not a significant association between stress and physical health outcomes research suggests that it is important to understand the mind-body connection (McEwen, 2008; Selye, 1980). The mind-body connection implies that poor mental health can eventually lead to poor physical health outcomes as researchers suggest that chronic stress can lead to severe psychological distress which in turn has been associated with increased risk for chronic diseases like heart disease and stroke (CDC, 2010; McEwen, 2008; Selye, 1980). The outcomes of this study suggest that women administrators tend to use more positive coping strategies when dealing with daily stressors however when dealing with chronic stressors women may be employing more negative coping strategies suggestive of coping disposition. Negative coping strategies were associated with negative mental health outcomes for the women in this study therefore, how women choose to cope and how institutions choose to acknowledge and support stress reduction appears to be of critical importance.
CHAPTER FIVE: DISCUSSION

According to a recent report by the White House, “when we look at where women stand in the leadership ranks of academia, so much more is at stake than the mere numbers of women who have reached the top. The presence — or absence — of female academic leaders can have far-reaching influences not only on the institutions themselves, but beyond that, on the scope of research and knowledge that affects us all (The White House Project, 2009, p. 16).” Women’s leadership in higher education matters. Ensuring that women leaders are healthy and successful at managing the impacts of stress is important. This study sought to better understand the relationship between stress and health risk for women administrators in higher education with a particular focus on coping as a potential moderator. The outcome of the study provides evidence that across a diverse set of institutions, stress has become a universal experience, not unlike previous research suggestive of higher education institutions beginning to run more like “stress factories” (Barkhuizen & Rothmann, 2001). Given the increased workload and challenges related to leadership and communication cited in this study, higher education institutions will benefit from better understanding how stress is affecting women leaders and how they can offer solutions that may decrease health risks for this population.
Hypothesis 1: There will be a Relationship between Stress and Health Risk

The first hypothesis explored whether there was a relationship between stress and health risk among women administrators in higher education administration. Contrary to the literature on stress and physiological health, the data showed no significant relationship between stress and physical health for women in this study. Although focusing on and venting of emotions was not found to have a significant moderating effect, it was a coping style that had a significant relationship with stress. One theory may be that how focusing on and venting of emotions was employed may actually be impacting physical health outcomes. Pennebaker and Beall (1986) note that when individuals have an opportunity to vent frustrations that are harmful or potentially damaging, this may actually lead to better physical health outcomes. They suggest that the cathartic act of writing or discussing concerns reduces the number of and need for visits to health care providers. The data in the current study provide evidence that physical health outcomes were not an immediate concern for women administrators and that focusing on and venting of emotions was in fact, a statistically significant coping response. It is important to note however that this coping style appeared to have an inverse relationship with more positive coping strategies. Therefore, it can be deduced that if focusing on and venting of emotions is used appropriately and if this release of emotion does not evolve into rumination, which Lazarus (1966) suggests is maladaptive, then this style may reduce the risk for negative physical health outcomes. It may also be appropriate to consider that if focusing on emotions (which could lead to rumination a negative coping strategy) and venting of emotions (which could lead to finding cathartic ways to express emotions like writing or talking with a therapist) were measured as separate coping styles it may be that one is more effective than the other.

Qualitative results suggest that when faced with daily stressful experiences, women administrators are employing active coping strategies more often and immediately removing or
redirecting potential work stressors. This may point to the need to consider the nature of the stressor (i.e., a stressful situation versus a chronic stressor). If the nature of the stressor more often incites employing positive coping strategies it is likely that physiological outcomes will be better. Conversely, research suggests that the mind and body are connected and what is not resolved psychologically has the potential to manifest itself physiologically over the long term (DeLongis, Folkman & Lazarus, 1988; Selye, 1980). What this suggests is that careful monitoring of physiological outcomes is important. Although research has shown a number of correlations between stress and physical health, there is much more research that is needed for this population.

Psychological health has been associated with stress in several studies (Cohen, Janicki-Deverts & Miller, 2007; DeLongis, Folkman & Lazarus, 1988). The current study supports the notion that increased stress is associated with an increase in poor mental health outcomes. Health data from the SF-12 showed that 31% of the women in the current study are potentially at risk for developing poor mental health outcomes. This suggests that even though qualitative data showed that when dealing with daily work stressors, women are employing coping strategies that are intended to reduce the impacts of stress, the accumulation of stressful events over time may be leading the women to cope in more ineffective ways. Research suggests that ineffective coping increases risk for poor mental health outcomes like depression (Cohen, Janicki-Deverts and Miller, 2007; DeLongis, Folkman & Lazarus, 1988).

Triangulating and expanding the qualitative and quantitative data provides a picture of both how women cope with daily stressors and how women cope with stress over the course of a month. In this case, qualitative data shows us that women are employing effective coping strategies when dealing with daily stressors at work, whereas, the strategies used over the course
of a month appear to be less effective particularly as an effective buffer for psychological health. The outcomes may suggest that management of chronic stress should be a key focal area for this population. Another poignant consideration is that work stress cannot be considered without also considering personal stressors. Given that “changing social norms related to time off” was one of the suggestions provided by participants, it is clear that there are important considerations that need to made regarding personal life and work life integration (Lundberg & Frankenhaueser, 1999).

Hypothesis 2: Coping styles will moderate the relationship between stress and health risk

The data support the notion that increasing effective coping styles like planning, active coping and positive reinterpretation and growth, are associated with decreases in negative coping strategies like behavioral disengagement and denial. Cohen, Janicki-Deverts and Miller (2007) suggest that when individuals decrease positive and health promoting coping responses, there tends to be a decline in health outcomes. Because focusing on and venting of emotions and use of instrumental and emotional support are styles that can be both effective and ineffective it is possible that the women in this study are utilizing these strategies ineffectively in some cases particularly when dealing with non-work related stressors which may explain the poor psychological health outcomes. For example, several participants indicated that they talked with friends about their concerns. If such social support leads to participant’s inability to stop focusing on the issues or if advice provided by friends increases the tendency to ruminate on the issue or leaves the issue unresolved, this can lead to increased stress and increased risk for poor health outcomes (Cohen, Janicki-Deverts & Miller, 2007; Thoits, 1995). Further, Thoits (1995) suggests that “unresolved” issues that extend out over the long term can lead to negative health impacts.
Cohen and Cohen (1983) suggest that an $R^2$ of 13% is suggestive of a moderate effect. In the current study, 19% of the variance between stress and mental health was attributed to coping compared to 5% of the variance being attributed to physical health. This suggests that collectively, coping just slightly more than moderately explains the variation between stress and mental health risk. However, the findings do not support the same assumption for the effects of coping on physical health outcomes. In essence, coping is an important factor to consider when managing stress for women in administrative roles in higher education. Research suggests that coping with work-related stressors has a significant impact on workers (Brown, Westbrook & Challagalla, 2005). In the current study, focusing on and venting of emotions was the only coping style found to significantly influence mental health outcomes and in this case, the influence was negative. This finding is consistent with other findings indicating that venting in work-related situations can lead to negative performance and health outcomes (Brown, Westbrook & Challagalla, 2005; Carver, Sheier & Weintraub, 2001) and supports the notion that coping can be effective and ineffective (Lazarus, 1966).

The quantitative data did not provide evidence for a significant moderating effect by active coping and use of instrumental and emotional support, however, the correlation analyses did show that increases in these coping styles were associated with decreases in more negative coping styles which suggests that for participants in this study the use of active coping and use of instrumental and emotional support as a coping style can potentially lead to decreased use of coping styles that are less effective (e.g., behavioral disengagement and denial).

The qualitative data support the notion that active coping is a primary coping strategy that women administrators employ when dealing with daily work stressors. Delongis, Folkman and Lazarus (1988) confirm that individuals may employ diverse coping strategies depending upon
the situation. In other words, how individuals deal with daily life situations in the moment may not be reflective of their overall disposition to dealing with stress over time. In fact, Delongis, Folkman and Lazarus (1988) note that if situational stress responses are assessed over time, it is possible that coping strategies may change and/or that negative coping strategies may persist which then sets an individual up for long term negative health outcomes. This notion also provides a potential explanation for why the women in the current study were more likely to employ active coping when dealing with daily stressors versus the use of focus on and venting of emotions over the course of a month (DeLongis, Folkman & Lazarus, 1988).

**Hypothesis 3:** Participant suggestions will include a focus on flexible work schedules and an incorporation of stress reduction activities into daily work experiences.

The final hypothesis stated that women would likely provide recommendations that included flexible work schedules and the development of stress reduction programs as solutions for higher education institutions for supporting women in administrative roles. The findings supported this hypothesis in that the participants in the current study indicated that encouraging flexible hours and developing stress reduction programs were important steps for institutions. However, providing better leadership was cited most often by participants as a solution to reducing stress. In general, most comments by participants on leadership indicated a need for better communication, more clarity in expectations, sensitivity to workload issues and engaging in more transparent and consistent leadership. Ganster, et. al (1989) confirmed that leader disposition can impact the amount of stress and strain perceived by employees. Further, the reference to consideration about workload supports the assertion in the literature that workload is one of the number one concerns among workers, including those employed at universities and colleges (Doyle & Hind, 1998; NIOSH, 1999; Winefield, et. al, 2002). Given that 60% of the
women in the current study were also married and many also had children, workload issues suggest the potential for work issues to bleed into home-life which research suggests negatively impacts both stress levels and health outcomes for women (Anderson, Guido-DiBrito & Morrell, 2000; Rosser & Javinar, 2003). Further, clarity of role expectations is similar to role ambiguity which research suggests can lead to increased stress for employees (Lease, 1999; Osipow & Davis, 1988; Winefield, et. al, 2002). Studies have also shown that women who experience high job demand and low control (which is associated with role ambiguity) are likely to experience poorer psychological health outcomes (D’Souza, et. al, 2003).

Survey question 4 (Please provide your suggestions for ways that higher education institutions can help reduce stress for university administrators?) was developed to address gather participant suggestions. Participants provided the following solutions:

(1) provide better leadership (21%);
(2) stress reduction programs/initiatives (16%);
(3) changing social norms regarding rest and time off (16%);
(4) flexible hours (9%);
(5) increase in resources (people) (8%);
(6) support systems (7%);
(7) increase in resources (financial) (4%);
(8) professional development (4%);
(9) policy/procedural change (4%);
(10) childcare resources (1%);
(11) consideration of issues related to diversity and equity (1%); and
(12) recognition, acknowledgement and reward (1%) (Table 2).
It was hypothesized that flexible hours and stress reduction programs would be included in the suggestions provided by the participants, which was confirmed by the data. However, providing better leadership was cited most often by participants as a solution to reducing stress. In general, most participant comments on leadership indicated a need for better communication, more clarity in expectations, sensitivity to workload issues and engaging in more transparent and consistent leadership. One seasoned Student Affairs Director/Manager responded by indicating a need for consistency. She explained, “if administrators could count on how decisions will be made (management, financial, leadership, etc.) then a lot of stress and strain would be taken off of administrators.” One participant in an Academic-Executive Level role said, “Make job roles and responsibilities clear; provide mentors when needed or desired; promote ways to make the work place a healthy place to work.” Others noted communication as an issue. One Academic-Executive Level participant suggested a need for, “Increased transparency and communication practices-Equitable workload distribution between genders-Equitable pay-Actionable improvements to chilly cultural climates for women.”

Another important finding was the need to change social norms regarding rest and time off. Anne-Marie Slaughter, public policy expert, asserts that “the measure of equality between men and women is not how many women are in leadership roles, but what the narrative about choices for men and women is for individuals and for our organizations (Slaughter, 2012).” She goes on to suggest that “real equality, full equality, does not just mean valuing women on male terms, it means creating a much wider range of equally respected choices for women and for men and to get there we have to change our workplaces, our policies and our culture (Slaughter, 2012).” What Anne-Marie is suggesting gets at the need for cultural shifts in the norms that have been established around work and could also include flexible work hours. She suggests that both
men and women deserve the opportunity to be considered when organizations are thinking about policies and practices that promote worker productivity. An Academic-Executive Level participant urged institutions to “encourage the use of vacation days and have a ban on email during Christmas holiday, spring break, etc.” A Student Affairs Administrator expressed that “supervisors should communicate that taking leave is not only ok- but healthy. My current supervisor (VP) makes passive aggressive jokes when staff take off - thus creating an unhealthy feeling of taking leave that has been earned.”

Others encourage more consideration of work-life integration. One Student Affairs-Assistant/Associate Director suggests that institutions “provide a reasonable expectation for work life balance. It shouldn't be a theoretical framework, but rather a practical application. Employees are often expected to work 60-80 hour work weeks and even beyond that I often feel as though my employer owns me. I have been told countless times or had it suggested that I can do meetings late into the evening or on a weekend as a rule, not an exception.” Another Student Affairs-Assistant/Associate Director states while some universities already do this, I think it would be good for others to rethink their priorities about work for the employees. Oftentimes, higher education views the work as most important and that everything should be worked around that and expect many late nights and weekend work. I'm not saying the work isn't important, because it most definitely is and that's why I love the field, but I think it's not necessarily more important than other things in our lives. A vice president at another institution tells people in the interview stage and after being hired that he views priorities as: first, your friends and family, second, your education, and third, your work. This clearly states the value of personal connections and education because work is the one in that list that
could fluctuate the most. I think I've struggled at times where I'm at because it seems to be work first and everything else after that. And as a single parent living away from any family support, that's difficult to balance at times.

Other participants suggest that institutions consider more outside-of-the-box strategies like “staff sabbaticals”.

**Limitations**

There were several limitations to note in this study. The Perceived Stress Scale was used to assess stress for participants. Although this instrument has been used in a number of studies and has been noted as an effective instrument for use in a study of this type, it is limited in its scope in that it only provides evidence of perceived stress over the last four weeks and it does not measure the frequency for which certain events are measured as stressful. Given the nature of this study, the aforementioned data would be more suitably collected over time to better assess coping disposition and to provide a more thorough picture of what may be occurring for participants. Some also suggest that longitudinal studies allow researchers to better identify other possible confounding variables as well as to further explore reverse causation within the data (McManus, Winder & Gordan, 2002; Zapf, Dormann & Frese, 1996).

Some suggest that given the general nature of the perceived stress scale, it limits the narrowing of stress resulting specifically from work-related events. Cohen (1995) however suggests that the use of a general scale more appropriately measures stress given that an individual’s stress is often not easily limited to one particular setting or experience. A general measure, Cohen suggests, provides a more accurate measurement.

The data from the current study show unique differences between coping styles that were significant according to the quantitative analysis of the COPE results and the qualitative analysis of the questions asked of participants. The difference suggests that how women handle work
stress may in fact be different than how they tend to cope with general or personal stress. The evidence supports the need to potentially include a measure for coping that distinguishes between work related coping and coping when dealing with personal circumstances whereby the individual may have less control over the outcomes. It also may be beneficial to include a measure specifically designed to measure coping disposition. Further, the ability to separate out focusing on emotions and venting of emotions may lead to a different outcome depending upon how each style is subjectively identified by participants.

Another limitation noted by one of the study participants was the use of the word troublesome in the open response question. It was suggested that the term was not well-defined and may have affected how individuals chose to respond to this question. Although most responses did in fact, respond according to the intended meaning of the word, there was evidence that some participants may have been confused by this wording. Time of the year may also be an important consideration given the nature of many roles within higher education. The first survey was sent on March 19, 2014, which for many institutions is mid-spring semester. One participant sent an email jokingly suggesting that she completed the survey yet the time of the semester may not be a good indication of her “real” stress level. She noted that she was in the midst of what she perceived as a very stressful time-period.

One goal of the researcher was to try and ensure that the survey was short enough to allow for easy completion however the questionnaire completion time was between 15 and 25 minutes. Given the number of incomplete surveys, it is possible that the survey length was still too long for many women in these roles which suggests the possible need to use a shorter instrument in the future.
Although qualitative data collected through the survey was sufficient for the outcomes of the current study, the most robust qualitative data would likely include data from focus groups and/or individual interviews. This methodological approach will likely provide more in depth understanding of the issues facing women daily and those that tend to build over time.

**Future Research**

The goal of the current study was to explore the relationship between stress and health risk for women administrators in higher education and to better understand how coping may moderate this relationship. The outcomes of the study provided information on women more generally and did not go into depth regarding differences that may have been evidenced based on race, age, marital status, education or other demographic categories. Future research should explore these differences. Further, future research should more deeply explore differences by position type and role responsibility. The current study included position type, however, what is involved in each position may vary by institution and in order to get at the core of the differences one would need to request job descriptions and categorize positions by role responsibilities rather than divisions or units.

Further research should also be done on when and why women utilize the coping strategies that they use. As previously mentioned, how individuals respond to stressful situations versus how individuals respond over time may be different and whether a coping style will be employed negatively or positively may depend on the situation and the context. Future studies should look to more deeply explore the context influencing the choice of coping strategy. The qualitative data provided evidence that stress reduction programs would be important for universities to consider developing. Future research on the development of evidence based stress reduction programs for women administrators in higher education may be useful in developing a collective of best practices or an effective model that can be used across a number of institutions.
to develop or implement stress reduction programs. Lastly, further exploration of the role of leadership and the impact of effective or ineffective leadership on women administrators is needed as both issues with management and providing better leadership came up as themes within the qualitative data. How leaders lead, is important for organizational effectiveness and climate and the impacts of poor leadership can negatively impact not just individuals but the organization as a whole.

**From Theory to Practice**

The outcomes of this study provide important suggestions for consideration by higher education leaders. The data suggest that stress is, in fact, an important concern for women administrators. It also suggests that higher education institutions may need to consider how leaders are trained and developed to ensure that they are thoughtful not only about the job to be done, but also about the needs of administrators across campus working to achieve and exceed institutional goals. There are a number of suggestions that can be gleaned from the study outcomes including the need for higher education institutions to consider policy and practice that may be outdated and/or ineffective at ensuring a healthy workplace. Institutions should consider what practices and policies serve as barriers to achieving a healthy workplace and should involve diverse constituents across campus in the process of updating and changing these policies and practices for the benefit of the institutional workforce. Further, a number of higher education institutions have sought to develop stress reduction or health and wellness initiatives for faculty and staff that provide benefits incentives and programmatic opportunities for employees to take advantage of. More institutions should consider how health and wellness initiatives may benefit the workforce and may promote more positive long term health outcomes as well as long term institutional savings. Lastly, the issues identified related to leadership speak to disconnects within the institutional hierarchy. This is an issue that cannot easily be addressed, however,
institutions should use this outcome as impetus for assessing campus climate around leadership and determining what strategies need to be put into place to ensure that campus leaders are effective and that communication barriers do not cause more harm than good.

**Conclusion**

In conclusion the evidence of this study supports the notion that stress has the potential to negatively impact health outcomes for women. As leaders in higher education, women administrators are faced with a number of unique challenges from integrating work-life and home-life, changing demographics, shifting expectations and dealing with challenging workplace dynamics (Winefield, et. al, 2002). The outcomes of the current study indicate concerns with leadership and communication patterns particularly related to the consideration of workload issues and role ambiguity. Further, the outcomes suggest that women administrators tend to employ effective coping strategies when faced with daily work experiences that require immediate attention. However, women administrators are likely to employ less effective strategies when dealing with stress over time.

The SF-12 aggregate data provided another important finding in this study. From the MCS data, we saw that 31% of the participants are potentially at risk for poor mental health outcomes in the long term. This suggests that stress and stress perceptions are resulting in what may be a chronic stress pattern which research indicates can increase long term risk for chronic disease (Lloyd-Jones, et. al, 2007; Selye, 1980).

Finally, the participants in this study suggest that institutions begin changing social norms around leave and time off, providing more opportunities for flexible work schedules and developing stress reduction programs to better support women administrators. Implementing policies and practices like these will, in effect, not only assist with the reduction of stress for women, but for men as well. In general, an institution’s ability to respond to the needs of their
employees can lead to more productive and healthier workers and research suggests can also lead to a happier workforce (Grawitch, Trares & Kohler, 2007). The establishment of a “healthy workplace” has by-products that benefit both organizational bottom lines and mental and physical health outcomes for employees (Grawitch, Trares & Kohler, 2007). Research suggests that employee involvement in policies and procedure development, opportunities for growth and development of employees, recognition, work-life balance or integration and practices that promote health (e.g., health screenings, wellness programs, etc.) are indicative of institutions that are deeply concerned about ensuring a “healthy workplace” (Grawitch, Trares & Kohler, 2007). These factors align with the suggestions made by the women in the current study and suggest that higher education institutions are currently not making adequate progress in this area.
REFERENCES


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APPENDIX A: STUDY CONFIDENTIALITY AGREEMENT

UNIVERSITY OF ILLINOIS
CONSENT TO PARTICIPATE IN RESEARCH

PROJECT TITLE: Understanding the Relationship between Stress and Health Risk for Women Administrators in Higher Education

You are being invited to take part in a research project conducted by Renique Kersh from the Department of Kinesiology and Community Health at the University of Illinois at Urbana Champaign. This project is part of the requirements for completion of doctoral studies and is conducted under the supervision of Dr. Reginald Alston, Professor and Vice Chancellor at the University of Illinois at Urbana Champaign.

NON-PARTICIPATION STATEMENT

Taking part in the research project is voluntary and you may refuse to take part or withdraw at any time without penalty or loss of benefits to which you are otherwise entitled. You may also refuse to answer any research-related questions that make you uncomfortable.

PURPOSE OF THE STUDY

The purpose of this study is to examine the relationship between occupational stress and health risk among women administrators in higher education with a particular focus on the moderating effects of coping. Analysis of this relationship will provide important insight into whether stress levels may increase the long-term risk of chronic disease. More specifically, this study will look to identify whether there are significant differences in occupational stress levels for women based on race/ethnicity, age, administrative division (academic affairs, student affairs or other), administrative level and family roles. Further, the study will examine whether coping strategies serve as moderators between occupational stress and health-risk for women administrators at institutions of higher education.

PROCEDURES

You will be one of approximately 200 subjects invited to take part in this project. Upon completion of this form, you will be directed to the survey which should take you approximately 25 minutes to complete in full. You will only be allowed to take the survey one time and your no personally identifiable information will be requested. Given the hope for the researcher to reach as many study participants as possible, you are free to share the survey link with other women in university administrative roles. The first section of the survey will include demographic questions followed by a section with approximately 10 questions on work-life/family-life duties. The next two sections will include questions about workplace factors and general health (both physical and mental health). The latter part of the survey will include several open ended
questions on coping as well as a request for your suggestions for institutions and professional organizations within the field.

CONFIDENTIALITY

If confidential: Every effort will be made to maintain the confidentiality of your participation in this project. At no point, will you be asked for any personally identifiable information such as your name or the name of your institution.

RISKS/DISCOMFORTS

There is no foreseeable risk involved in completion of this survey.

BENEFITS

While you will not directly benefit from participation, your participation may help investigators better understand occupational stressors that influence the lives of women in administration in higher education as well as hope women cope with these stressors. The outcomes of this research will provide institutional and professional organization recommendations for how to best support women administrators in the field.

ALTERNATIVES

Participation in this project is voluntary and the only alternative to this project is non-participation.

PUBLICATION STATEMENT

The results of this study may be published in scientific journals, professional publications, or educational presentations; however, no individual subject will be identified.

SUBJECT RIGHTS

1. I understand that informed consent is required of all persons participating in this project.

2. I have been told that I may refuse to participate or to stop my participation in this project at any time before or during the project. I may also refuse to answer any question.

3. Any risks and/or discomforts have been explained to me, as have any potential benefits.

4. I understand the protections in place to safeguard any personally identifiable information related to my participation.

5. I understand that, if I have any questions, I may contact Renique Kersh at rtkersh@illinois.edu. I may also contact Dr. Reginald Alston, faculty sponsor, at alston@illinois.edu.

By checking this box, you are agreeing to participate in the College and University Occupational Stress and Health Study. Checking the box serves as my signature. □

Date:
APPENDIX B: COPE SURVEY

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel, when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress.

Then respond to each of the following items by blackening one number on your answer sheet for each, using the response choices listed just below. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for YOU--not what you think "most people" would say or do. Indicate what YOU usually do when YOU experience a stressful event.

1 = I usually don't do this at all
2 = I usually do this a little bit
3 = I usually do this a medium amount
4 = I usually do this a lot

1. I try to grow as a person as a result of the experience.
2. I turn to work or other substitute activities to take my mind off things.
3. I get upset and let my emotions out.
4. I try to get advice from someone about what to do.
5. I concentrate my efforts on doing something about it.
6. I say to myself "this isn't real."
7. I put my trust in God.
8. I laugh about the situation.
9. I admit to myself that I can't deal with it, and quit trying.
10. I restrain myself from doing anything too quickly.
11. I discuss my feelings with someone.
12. I use alcohol or drugs to make myself feel better.
13. I get used to the idea that it happened.
14. I talk to someone to find out more about the situation.
15. I keep myself from getting distracted by other thoughts or activities.
16. I daydream about things other than this.
17. I get upset, and am really aware of it.
18. I seek God's help.
19. I make a plan of action.
20. I make jokes about it.
21. I accept that this has happened and that it can't be changed.
22. I hold off doing anything about it until the situation permits.
23. I try to get emotional support from friends or relatives.
24. I just give up trying to reach my goal.
25. I take additional action to try to get rid of the problem.
26. I try to lose myself for a while by drinking alcohol or taking drugs.
27. I refuse to believe that it has happened.
28. I let my feelings out.
29. I try to see it in a different light, to make it seem more positive.
30. I talk to someone who could do something concrete about the problem.
31. I sleep more than usual.
32. I try to come up with a strategy about what to do.
33. I focus on dealing with this problem, and if necessary let other things slide a little.
34. I get sympathy and understanding from someone.
35. I drink alcohol or take drugs, in order to think about it less.
36. I kid around about it.
37. I give up the attempt to get what I want.
38. I look for something good in what is happening.
39. I think about how I might best handle the problem.
40. I pretend that it hasn't really happened.
41. I make sure not to make matters worse by acting too soon.
42. I try hard to prevent other things from interfering with my efforts at dealing with this.
43. I go to movies or watch TV, to think about it less.
44. I accept the reality of the fact that it happened.
45. I ask people who have had similar experiences what they did.
46. I feel a lot of emotional distress and I find myself expressing those feelings a lot.
47. I take direct action to get around the problem.
48. I try to find comfort in my religion.
49. I force myself to wait for the right time to do something.
50. I make fun of the situation.
51. I reduce the amount of effort I'm putting into solving the problem.
52. I talk to someone about how I feel.
53. I use alcohol or drugs to help me get through it.
54. I learn to live with it.
55. I put aside other activities in order to concentrate on this.
56. I think hard about what steps to take.
57. I act as though it hasn't even happened.
58. I do what has to be done, one step at a time.
59. I learn something from the experience.
60. I pray more than usual.

Scales (sum items listed, with no reversals of coding):

Positive reinterpretation and growth: 1, 29, 38, 59
Mental disengagement: 2, 16, 31, 43

Focus on and venting of emotions: 3, 17, 28, 46

Use of instrumental social support: 4, 14, 30, 45

Active coping: 5, 25, 47, 58

Denial: 6, 27, 40, 57

Religious coping: 7, 18, 48, 60

Humor: 8, 20, 36, 50

Behavioral disengagement: 9, 24, 37, 51

Restraint: 10, 22, 41, 49

Use of emotional social support: 11, 23, 34, 52

Substance use: 12, 26, 35, 53

Acceptance: 13, 21, 44, 54

Suppression of competing activities: 15, 33, 42, 55

Planning: 19, 32, 39, 56
## APPENDIX B continued

### Coping Styles and Associated Questions

<table>
<thead>
<tr>
<th>Positive reinterpretation and growth</th>
<th>Mental Disengagement</th>
<th>Focus on and venting of emotions</th>
<th>Use of instrumental social support</th>
<th>Active coping</th>
<th>Denial</th>
<th>Religious coping</th>
<th>Humor</th>
<th>Behavior disengagement</th>
<th>Restraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>I try to grow as a person as a result of the experience (1)</td>
<td>I turn to work or other substitute activities to take my mind off things (2)</td>
<td>I get upset and let my emotions out (3)</td>
<td>I try to get advice from someone about what to do (4)</td>
<td>I concentrate my efforts on doing something about it (5)</td>
<td>I say to myself “this isn’t real.” (6)</td>
<td>I put my trust in God (7)</td>
<td>I laugh about the situation (8)</td>
<td>I admit to myself that I can’t deal with it, and quit trying (9)</td>
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<td>I seek God’s help (18)</td>
<td>I make jokes about it (20)</td>
<td>I just give up trying to reach my goal (24)</td>
<td>I hold off doing anything about it until the situation permits (22)</td>
</tr>
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<td>I sleep more than usual (31)</td>
<td>I let my feelings out (28)</td>
<td>I talk to someone who could do something concrete about the problem (30)</td>
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<td>I ask people who have had similar experiences what they did (45)</td>
<td>I do what has to be done, one step at a time (58)</td>
<td>I act as though it hasn’t even happened (57)</td>
<td>I pray more than usual (60)</td>
<td>I make fun of the situation (50)</td>
<td>I reduce the amount of effort I’m putting into solving the problem (51)</td>
<td>I force myself to wait for the right time to do something (49)</td>
</tr>
</tbody>
</table>
## APPENDIX B continued

<table>
<thead>
<tr>
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<th>Substance use</th>
<th>Acceptance</th>
<th>Suppression of competing activities</th>
<th>Planning</th>
</tr>
</thead>
<tbody>
<tr>
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<td>I use alcohol or drugs to make myself feel better (12)</td>
<td>I get used to the idea that it happened (13)</td>
<td>I keep myself from getting distracted by other thoughts or activities (15)</td>
<td>I make a plan of action (19)</td>
</tr>
<tr>
<td>I try to get emotional support from friends or relatives (23)</td>
<td>I try to lose myself for a while by drinking alcohol or taking drugs (35)</td>
<td>I accept that this has happened and that it can't be changed (21)</td>
<td>I focus on dealing with this problem, and if necessary let other things slide a little (33)</td>
<td>I try to come up with a strategy about what to do (32)</td>
</tr>
<tr>
<td>I get sympathy and understanding from someone (34)</td>
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<td>I put aside other activities in order to concentrate on this (55)</td>
<td>I think hard about what steps to take (56)</td>
</tr>
</tbody>
</table>
APPENDIX C: PERCEIVED STRESS SCALE

Perceived Stress Scale

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

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

In the last month, how often have you been upset because of something that happened unexpectedly? .............................................. 0 1 2 3 4

In the last month, how often have you felt that you were unable to control the important things in your life? ...................................................... 0 1 2 3 4

In the last month, how often have you felt nervous and “stressed”? ........... 0 1 2 3 4

In the last month, how often have you felt confident about your ability to handle your personal problems? ................................................................. 0 1 2 3 4

In the last month, how often have you felt that things were going your way? ................................................................. 0 1 2 3 4

In the last month, how often have you found that you could not cope with all the things that you had to do? ................................................................. 0 1 2 3 4

In the last month, how often have you been able to control irritations in your life? ................................................................. 0 1 2 3 4

In the last month, how often have you felt that you were on top of things?..... 0 1 2 3 4

In the last month, how often have you been angered because of things that were outside of your control? ................................................................. 0 1 2 3 4

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? ................................................................. 0 1 2 3 4
APPENDIX D: SF-12 SURVEY

Your Health and Well-Being

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Thank you for completing this survey!

For each of the following questions, please mark an ☐ in the one box that best describes your answer.

1. In general, would you say your health is:

<table>
<thead>
<tr>
<th>Excellent</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   □ 1 □ 2 □ 3 □ 4 □ 5

2. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

   🔄 Yes, limited a lot 🔄 Yes, limited a little 🔄 No, not limited at all

   🔄 Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf………………………………………□ 1 ........ □ 2 ........ □ 3

   🔄 Climbing several flights of stairs …………………………………………□ 1 ........ □ 2 ........ □ 3

SF-12® Health Survey © 1994, 2002 Medical Outcomes Trust and QualityMetric Incorporated. All rights reserved.
SF-12® is a registered trademark of Medical Outcomes Trust.
(SF-12v2® Health Survey Standard, United States (English))
3. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

<table>
<thead>
<tr>
<th></th>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accomplished less than you would like..........................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Were limited in the kind of work or other activities...........</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

4. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

<table>
<thead>
<tr>
<th></th>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
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</thead>
<tbody>
<tr>
<td>Accomplished less than you would like..........................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Did work or other activities less carefully than usual........</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

5. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
6. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
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</tr>
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<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

1. Have you felt calm and peaceful?
   □ 1 □ 2 □ 3 □ 4 □ 5

2. Did you have a lot of energy?
   □ 1 □ 2 □ 3 □ 4 □ 5

3. Have you felt downhearted and depressed?
   □ 1 □ 2 □ 3 □ 4 □ 5

7. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
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</tr>
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<tr>
<td>▼</td>
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</tr>
<tr>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
</tbody>
</table>

Thank you for completing these questions!
APPENDIX E: FULL SURVEY

UNIVERSITY OF ILLINOIS AT URBANA CHAMPAIGN CONSENT TO PARTICIPATE IN RESEARCH

PROJECT TITLE: Understanding the Relationship between Stress and Health Risk for Women Administrators in Higher Education.

You are being invited to take part in a research project conducted by Renique Kersh from the Department of Kinesiology and Community Health at the University of Illinois at Urbana Champaign. This project is part of the requirements for completion of doctoral studies and is conducted under the supervision of Dr. Reginald Alston, Professor and Vice Chancellor at the University of Illinois at Urbana Champaign. NON-PARTICIPATION STATEMENT

Taking part in the research project is voluntary and you may refuse to take part or withdraw at any time without penalty or loss of benefits to which you are otherwise entitled. You may also refuse to answer any research-related questions that make you uncomfortable.

PURPOSE OF THE STUDY

The purpose of this study is to examine the relationship between stress and health risk among women administrators in higher education with a particular focus on the moderating effects of coping. Analysis of this relationship will provide important insight into whether stress levels may increase the long-term risk of chronic disease. More specifically, this study will look to identify whether there are significant differences in stress levels for women based on race/ethnicity, age, administrative division (academic affairs, student affairs or other), administrative level and family roles. Further, the study will examine whether coping strategies serve as moderators between stress and health-risk for women administrators at institutions of higher education.

PROCEDURES

You will be one of approximately 200 subjects invited to take part in this project. Upon completion of this form, you will be directed to the survey which should take you approximately 20-25 minutes to complete in full. You will only be allowed to take the survey one time and no personally identifiable information will be requested. Given the hope for the researcher to reach as many study participants as possible, you are free to share the survey link with other women in university administrative roles.

CONFIDENTIALITY

Every effort will be made to maintain the confidentiality of your participation in this project. At no point, will you be asked for any personally identifiable information such as your name or the name of your institution.

RISKS/DISCOMFORTS

There is no foreseeable risk involved in completion of this survey. BENEFITS
Your participation may help investigators better understand how stress influences the lives of women in administration in higher education as well as how women cope with stress. The outcomes of this research will provide institutional and professional organization recommendations for how to best support women administrators in the field.

ALTERNATIVES

Participation in this project is voluntary and the only alternative to this project is non-participation.

PUBLICATION STATEMENT

The results of this study may be published in scientific journals, professional publications, or educational presentations; however, no individual subject will be identified.

Note the survey will close after April 2, 2014.

*1. SUBJECT RIGHTS

I understand that informed consent is required of all persons participating in this project.

I have been told that I may refuse to participate or to stop my participation in this project at any time before or during the project. I may also refuse to answer any question.

Any risks and/or discomforts have been explained to me, as have any potential benefits.

I understand the protections in place to safeguard any personally identifiable information related to my participation.

I understand that, if I have any questions, I may contact Renique Kersh at rtkersh@illinois.edu. I may also contact Dr. Reginald Alston, faculty sponsor, at alston@illinois.edu.

By checking this box, you are agreeing to participate in the College and University Stress and Health Study. Checking the box serves as my signature.

I confirm that I have read and understand this agreement and that by checking this box I am signing this form and providing my consent to participate.

*2. Please include today's date.

Demographic Information

The following demographic questions do not include any personally identifiable information.

*3. What is your age?

18 to 24  
25 to 34  
35 to 44
45 to 54
55 to 64
65 to 74
75 or older

*4. What is your race? (Please select all that apply.)

American Indian or Alaskan Native
Asian or Pacific Islander
Black or African American
Hispanic or Latino
White / Caucasian
Prefer not to answer

*5. Which of the following best describes your current relationship status?

Married
Widowed
Divorced
Separated
In a domestic partnership or civil union
Single, but cohabiting with a significant other
Single, never married

*6. How many dependents do you currently have that are financially dependent on you?

0 to 1
2-4
5-7
8-10

*7. What is your employment status?

Full-Time
Part-Time
Contractual

*8. How long have you worked for your current institution uninterrupted?

0-5 years
6-10 years
> = 11 years

*9. How long have you worked in higher education?

0-5 years
6-10 years
>=11 years

*10. What is the highest level of school you have completed or the highest degree you have received?

Less than high school degree
High school degree or equivalent (e.g., GED)
Some college but no degree
Associate degree
Bachelor degree
Masters degree
Doctorate
Juris Doctorate
Other

*11. Nature of your work

Academic-Head of Department (or equivalent)
Academic-Assistant or Associate Dean
Academic-Dean or Above
Academic-Executive Level
Academic-Program Coordinator/Director (or equivalent)
Academic-Assistant or Associate Director
Student Affairs-Administration
Student Affairs-Director/Manager (or equivalent)
Student Affairs-Assistant or Associate Director (or equivalent)
Student Affairs-Assistant or Associate Dean
Student Affairs-Dean or above
Student Affairs-Program Coordinator (or equivalent)
General-Administrative
General-Executive
Other (please specify)

*12. What best describes your institution? Check all that apply.

2-year private
2-year public
4-year private
4-year public
Research University (very high research activity)
Research University (high research activity)
Doctoral/Research University
Baccalaureate Colleges Arts and Science (liberal arts)
University Masters-Large
University Masters-Medium
University Masters-Small

*13. What best describes the size of your institution?
0-1000
1001-3000
3001-5000
5001-7000
7001-9000
9001-11000
11001-15000
15001-20000
>=20000

*14. In a typical week, how often do you feel stressed at work?

Always
Most of the time
About half of the time
Once in a while
Never

*15. Do you have supervisory responsibilities in your role?

Yes
No

*16. Were you ever a participant at the Women's Leadership Institute, hosted by the National Association for Student Personnel Administrators?

Yes
No

This section of the survey is intended to measure how you perceive stress.

*17. For each question, indicate your feelings and thoughts over the last month by selecting how often you felt or thought a certain way.

In the last month, how often have you been upset because of something that happened unexpectedly?
In the last month, how often have you felt that you were unable to control the important things in your life?
In the last month, how often have you felt nervous and "stressed"?
In the last month, how often have you felt confident about your ability to handle your personal problems?
In the last month, how often have you felt that things were going your way?
In the last month, how often have you found that you could not cope with all the things that you had to do?
In the last month, how often have you been able to control irritations in your life?
In the last month, how often have you felt that you were on top of things?
In the last month, how often have you been angered because of things that were outside of your control?
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
*18. Describe a troublesome event, issue, or problem that you experienced in the work environment within the past week.

*19. Did you consider the troublesome event, issue or problem to be (check one):

Stressful
Not Stressful
Other (please specify)

*20. How did you choose to respond to the troublesome event, issue or problem?

21. Briefly discuss whether you felt that the strategy you used to respond to the event, issue or problem was effective or ineffective at reducing your stress. If you did not feel that the event, issue or problem was stressful, please continue to the next section.

*22. The researcher is interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel, when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress.

Respond to each of the following items by selecting one of the response choices listed. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for YOU—not what you think "most people" would say or do. Indicate what YOU usually do when YOU experience a stressful event.

I try to grow as a person as a result of the experience.
I turn to work or other substitute activities to take my mind off things.
I get upset and let my emotions out.
I try to get advice from someone about what to do.
I concentrate my efforts on doing something about it.
I say to myself "this isn't real."
I put my trust in God.
I laugh about the situation.
I admit to myself that I can't deal with it, and quit trying.
I restrain myself from doing anything too quickly.
I discuss my feelings with someone.
I use alcohol or drugs to make myself feel better.
I get used to the idea that it happened.
I talk to someone to find out more about the situation.
I keep myself from getting distracted by other thoughts or activities.
I daydream about things other than this.
I get upset, and am really aware of it.
I seek God's help.
I make a plan of action.
I make jokes about it.
I accept that this has happened and that it can't be changed.
I hold off doing anything about it until the situation permits.
I try to get emotional support from friends or relatives.
I just give up trying to reach my goal.
I take additional action to try to get rid of the problem.
I try to lose myself for a while by drinking alcohol or taking drugs.
I refuse to believe that it has happened.
I let my feelings out.
I try to see it in a different light, to make it seem more positive.
I talk to someone who could do something concrete about the problem.
I sleep more than usual.
I try to come up with a strategy about what to do.
I focus on dealing with this problem, and if necessary let other things slide a little.
I get sympathy and understanding from someone.
I drink alcohol or take drugs, in order to think about it less.
I kid around about it.
I give up the attempt to get what I want.
I look for something good in what is happening.
I think about how I might best handle the problem.
I pretend that it hasn't really happened.
I make sure not to make matters worse by acting too soon.
I try hard to prevent other things from interfering with my efforts at dealing with this.
I go to movies or watch TV, to think about it less.
I accept the reality of the fact that it happened.
I ask people who have had similar experiences what they did.
I feel a lot of emotional distress and I find myself expressing those feelings a lot.
I take direct action to get around the problem.
I try to find comfort in my religion.
I force myself to wait for the right time to do something.
I make fun of the situation.
I reduce the amount of effort I'm putting into solving the problem.
I talk to someone about how I feel.
I use alcohol or drugs to help me get through it.
I learn to live with it.
I put aside other activities in order to concentrate on this.
I think hard about what steps to take.
I act as though it hasn't even happened.
I do what has to be done, one step at a time
I learn something from the experience.
I pray more than usual.
This section asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities.

For each of the following questions, please mark box that best describes your answer.

*23. In general, would you say your health is:

Excellent  Very Good  Good  Fair  Poor

*24. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

Yes, limited a lot  Yes, limited a little  No, not limited at all

Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf. Climbing several flights of stairs.

*25. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

All of the time  Most of the time  Some of the time  A little of the time  None of the time

Accomplished less than you would like.
Were limited in the kind of work or other activities.

*26. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

All of the time  Most of the time  Some of the time  A little of the time  None of the time

Accomplished less than you would like.
Did work or other activities less carefully than usual.

*27. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all  A little bit  Moderately  Quite a bit  Extremely
*28. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks

<table>
<thead>
<tr>
<th></th>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
</table>

Have you felt calm and peaceful?
Did you have a lot of energy?
Have you felt downhearted and depressed?

*29. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

<table>
<thead>
<tr>
<th></th>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
</table>

**Work-Family Roles**

This section will ask several questions regarding your experiences with work and homelife roles.

30. Please indicate your agreement with the following questions regarding your work and family life.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

The demands of my work interfere with my home and family life.
The amount of time my job takes up makes it difficult to fulfill family responsibilities.
Things I want to do at home do not get done because of the demands my job puts on me.
My job produces strain that makes it difficult to fulfill family duties.
Due to work-related duties, I have to make changes to my plans for family activities.

31. Please indicate your agreement with the following questions regarding your family and work life.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

The demands of my family or spouse/partner interfere with work-related activities.
I have to put off doing things at work because of demands on my time at home.
Things I want to do at work don't get done because of the demands of my family or spouse/partner.
My home life interferes with my responsibilities at work such as getting to work on time, accomplishing daily tasks, and working overtime.
Family-related strain interferes with my ability to perform job-related duties.

Please include your personalized comments on the remaining question. Your candid and honest response is important.
*32. Please provide your suggestions for ways that higher education institutions can help reduce stress for university administrators?
# Table 1: Demographic Data

<table>
<thead>
<tr>
<th>Age</th>
<th>N (192)</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>18-24</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>25-34</td>
<td>56</td>
<td>29%</td>
</tr>
<tr>
<td>35-44</td>
<td>57</td>
<td>30%</td>
</tr>
<tr>
<td>45-54</td>
<td>39</td>
<td>20%</td>
</tr>
<tr>
<td>55-64</td>
<td>37</td>
<td>19%</td>
</tr>
<tr>
<td>65-74</td>
<td>2</td>
<td>1%</td>
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<table>
<thead>
<tr>
<th>Race</th>
<th>N (192)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian/Pacific Islander</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>Bi-Racial</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>African American</td>
<td>32</td>
<td>17%</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>140</td>
<td>73%</td>
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<table>
<thead>
<tr>
<th>Marital Status</th>
<th>N (192)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>116</td>
<td>60%</td>
</tr>
<tr>
<td>Divorced</td>
<td>17</td>
<td>9%</td>
</tr>
<tr>
<td>Domestic Partnership</td>
<td>3</td>
<td>2%</td>
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<tr>
<td>Single, but cohabitating</td>
<td>19</td>
<td>10%</td>
</tr>
<tr>
<td>Single, never married</td>
<td>34</td>
<td>18%</td>
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<tr>
<td>Widowed</td>
<td>3</td>
<td>2%</td>
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<table>
<thead>
<tr>
<th>Number of Children</th>
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<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 1</td>
<td>142</td>
<td>74%</td>
</tr>
<tr>
<td>2 to 4</td>
<td>50</td>
<td>26%</td>
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<table>
<thead>
<tr>
<th>Length of Time at Current Institution</th>
<th>N (192)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 5 years</td>
<td>80</td>
<td>42%</td>
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<tr>
<td>6-10 years</td>
<td>52</td>
<td>27%</td>
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<tr>
<td>&gt;11 years</td>
<td>60</td>
<td>31%</td>
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<table>
<thead>
<tr>
<th>Length of Time in Higher Education</th>
<th>N (192)</th>
<th>Percentage</th>
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</thead>
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<tr>
<td>0 to 5 years</td>
<td>23</td>
<td>12%</td>
</tr>
<tr>
<td>Timeframe</td>
<td>N</td>
<td>Percentage</td>
</tr>
<tr>
<td>-----------------</td>
<td>----</td>
<td>------------</td>
</tr>
<tr>
<td>6 to 10 years</td>
<td>55</td>
<td>29%</td>
</tr>
<tr>
<td>&gt;11 years</td>
<td>114</td>
<td>59%</td>
</tr>
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<table>
<thead>
<tr>
<th>Degree</th>
<th>N (192)</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Bachelors</td>
<td>4</td>
<td>2%</td>
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<tr>
<td>Masters</td>
<td>129</td>
<td>67%</td>
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<tr>
<td>Doctorate</td>
<td>58</td>
<td>30%</td>
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<tr>
<td>Some College</td>
<td>1</td>
<td>1%</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Position</th>
<th>N (192)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic-Assistant or Associate Dean</td>
<td>20</td>
<td>10%</td>
</tr>
<tr>
<td>Academic-Assistant or Associate Director</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Academic-Dean or Above</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Academic-Executive</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>Academic-Head of Department or Equivalent</td>
<td>8</td>
<td>4%</td>
</tr>
<tr>
<td>Academic-Program Coordinator/Director</td>
<td>19</td>
<td>10%</td>
</tr>
<tr>
<td>General-Administrative</td>
<td>14</td>
<td>7%</td>
</tr>
<tr>
<td>General-Executive</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Other (Advancement)</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Student Affairs-Administrative</td>
<td>16</td>
<td>8%</td>
</tr>
<tr>
<td>Student Affairs-Assistant or Associate Dean</td>
<td>7</td>
<td>4%</td>
</tr>
<tr>
<td>Student Affairs-Assistant or Associate Director</td>
<td>30</td>
<td>16%</td>
</tr>
<tr>
<td>Student Affairs-Dean or Above</td>
<td>13</td>
<td>7%</td>
</tr>
<tr>
<td>Student Affairs-Director or Manager</td>
<td>32</td>
<td>17%</td>
</tr>
<tr>
<td>Student Affairs-Program Coordinator or Equivalent</td>
<td>10</td>
<td>5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of Institution</th>
<th>N (192)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 1000</td>
<td>9</td>
<td>5%</td>
</tr>
<tr>
<td>1001 to 3000</td>
<td>26</td>
<td>14%</td>
</tr>
<tr>
<td>3001 to 5000</td>
<td>21</td>
<td>11%</td>
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<tr>
<td>5001 to 7000</td>
<td>21</td>
<td>11%</td>
</tr>
<tr>
<td>7001 to 9000</td>
<td>11</td>
<td>6%</td>
</tr>
<tr>
<td>9001 to 11000</td>
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<td>4%</td>
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<td>11001 to 15000</td>
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<tr>
<td>Enrollment Size</td>
<td>Count</td>
<td>Percentage</td>
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<td>-----------------</td>
<td>-------</td>
<td>------------</td>
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<tr>
<td>15001 to 20000</td>
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<td>&gt;=20000</td>
<td>70</td>
<td>36%</td>
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<table>
<thead>
<tr>
<th>Carnegie Classification</th>
<th>N (112)</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Baccalaureate Institution</td>
<td>12</td>
<td>11%</td>
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<tr>
<td>Doctoral/Research</td>
<td>18</td>
<td>16%</td>
</tr>
<tr>
<td>Research-Heavy Activity</td>
<td>14</td>
<td>13%</td>
</tr>
<tr>
<td>Research- Very Heavy Activity</td>
<td>49</td>
<td>44%</td>
</tr>
<tr>
<td>University Masters-Large</td>
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<td>4%</td>
</tr>
<tr>
<td>University Masters-Medium</td>
<td>8</td>
<td>7%</td>
</tr>
<tr>
<td>University Masters-Small</td>
<td>7</td>
<td>6%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>N (160)</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>2-year public</td>
<td>7</td>
<td>4%</td>
</tr>
<tr>
<td>4-year private</td>
<td>68</td>
<td>43%</td>
</tr>
<tr>
<td>4-year public</td>
<td>85</td>
<td>53%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supervision</th>
<th>N (192)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>170</td>
<td>89%</td>
</tr>
<tr>
<td>No</td>
<td>22</td>
<td>11%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Typical Stress</th>
<th>N (192)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once in a While</td>
<td>43</td>
<td>22%</td>
</tr>
<tr>
<td>About Half the Time</td>
<td>82</td>
<td>43%</td>
</tr>
<tr>
<td>Most of the Time</td>
<td>59</td>
<td>31%</td>
</tr>
<tr>
<td>Always</td>
<td>8</td>
<td>4%</td>
</tr>
<tr>
<td>Coping Style</td>
<td>Percentage</td>
<td>N=192</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>------------</td>
<td>-------</td>
</tr>
<tr>
<td>Active Coping</td>
<td>46%</td>
<td></td>
</tr>
<tr>
<td>Behavioral Disengagement</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Mental Disengagement</td>
<td>&lt;1%</td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Restraint</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Planning</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Positive Reinterpretation and Growth</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Denial</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Use of Instrumental Support</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Use of Emotional Support</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Substance Use</td>
<td>&lt;1%</td>
<td></td>
</tr>
<tr>
<td>Focusing on and Venting of Emotions</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Religious Coping</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Humor</td>
<td>&lt;1%</td>
<td></td>
</tr>
<tr>
<td>Suppression of Competing Activities</td>
<td>&lt;1%</td>
<td></td>
</tr>
<tr>
<td><strong>Workplace Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discrimination</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Work Overload</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Difficulty work Relationships (non-management)</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Difficulty with Management</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Lack of Resources (financial)</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Lack of Resources (people)</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Work-Life Balance</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Role Insecurity</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Ambiguous or ineffective policies/practices</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Issues with Technology</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Student Issues</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>General work concerns</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Issues with Supervisees</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td><strong>Suggested Action</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible Hours</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Professional Development</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Stress Reduction Programs/Initiatives</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Policy/Procedural Change</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Increase in Resources (people)</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Increase in Resources (financial)</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Support Systems</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Changing Social Norms regarding Rest and Time Off</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Childcare Resources</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Consideration of Issues Related to Diversity and Equity</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Recognition, Acknowledgement and Reward</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Provide Better Leadership</td>
<td>21%</td>
<td></td>
</tr>
</tbody>
</table>
Table 3: Spearman’s Correlation Coefficients: PSS, MCS and PCS

<table>
<thead>
<tr>
<th>Perceived Stress</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Health</td>
<td>-.016</td>
</tr>
<tr>
<td>Mental Health</td>
<td>-.290**</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the p< 0.01 level (2-tailed).
### Table 4: Spearman’s Correlation Coefficients: Coping Styles and Perceived Stress

<table>
<thead>
<tr>
<th>Coping Strategies</th>
<th>Perceived Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>.009</td>
</tr>
<tr>
<td>Positive Reinforcement and Growth</td>
<td>-.012</td>
</tr>
<tr>
<td>Mental Disengagement</td>
<td>.044</td>
</tr>
<tr>
<td>Focusing on and Venting of Emotions</td>
<td>.242**</td>
</tr>
<tr>
<td>Use of Instrument Support</td>
<td>.037</td>
</tr>
<tr>
<td>Active Coping</td>
<td>.039</td>
</tr>
<tr>
<td>Denial</td>
<td>.087</td>
</tr>
<tr>
<td>Religious Coping</td>
<td>.120</td>
</tr>
<tr>
<td>Humor</td>
<td>-.007</td>
</tr>
<tr>
<td>Behavioral Disengagement</td>
<td>.187**</td>
</tr>
<tr>
<td>Restraint</td>
<td>.047</td>
</tr>
<tr>
<td>Use of Emotional Support</td>
<td>.076</td>
</tr>
<tr>
<td>Substance Use</td>
<td>.049</td>
</tr>
<tr>
<td>Acceptance</td>
<td>.019</td>
</tr>
<tr>
<td>Suppression of Competing Activities</td>
<td>.127</td>
</tr>
</tbody>
</table>

**Correlation significant \( p < .01 \)
Table 5: Significant Correlations with Focusing on and Venting of Emotions and Behavioral Disengagement

<table>
<thead>
<tr>
<th></th>
<th>Focusing on and Venting of Emotions</th>
<th>Behavioral Disengagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>-.144*</td>
<td>-.316**</td>
</tr>
<tr>
<td>Positive Reinterpretation and Growth</td>
<td>-.152*</td>
<td>-.264**</td>
</tr>
<tr>
<td>Mental Disengagement</td>
<td>.248**</td>
<td>.207**</td>
</tr>
<tr>
<td>Use of Instrumental Support</td>
<td>.267**</td>
<td>.182*</td>
</tr>
<tr>
<td>Behavioral Disengagement</td>
<td>.281**</td>
<td></td>
</tr>
<tr>
<td>Use of Emotional Support</td>
<td>.479**</td>
<td></td>
</tr>
<tr>
<td>Substance Use</td>
<td>.154*</td>
<td></td>
</tr>
<tr>
<td>Focusing on and Venting of Emotions</td>
<td></td>
<td>.281**</td>
</tr>
<tr>
<td>Denial</td>
<td></td>
<td>.411**</td>
</tr>
<tr>
<td>Active Coping</td>
<td></td>
<td>-.183*</td>
</tr>
</tbody>
</table>

**Correlation significant p<.01; *Correlation significant p<.05
<table>
<thead>
<tr>
<th>Coping Style</th>
<th>Active Coping</th>
<th>Use of Instrumental Support</th>
<th>Use of Emotional Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance</td>
<td>.252</td>
<td>.157</td>
<td></td>
</tr>
<tr>
<td>Planning</td>
<td>.643</td>
<td>.250</td>
<td></td>
</tr>
<tr>
<td>Positive Reinforcement and Growth</td>
<td>.297</td>
<td>.328</td>
<td></td>
</tr>
<tr>
<td>Use of Instrumental Support</td>
<td>.225</td>
<td>.563</td>
<td></td>
</tr>
<tr>
<td>Humor</td>
<td>.193</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral</td>
<td>-.183</td>
<td>-.182</td>
<td></td>
</tr>
<tr>
<td>Disengagement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restraint</td>
<td>.193</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suppression of Competing Activities</td>
<td>.452</td>
<td>.225</td>
<td></td>
</tr>
<tr>
<td>Focusing on and Venting of Emotions</td>
<td></td>
<td>.267</td>
<td>.479</td>
</tr>
<tr>
<td>Active Coping</td>
<td></td>
<td></td>
<td>.225</td>
</tr>
<tr>
<td>Denial</td>
<td>-.192</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of Emotional Support</td>
<td></td>
<td></td>
<td>.563</td>
</tr>
</tbody>
</table>

Note: All Correlations significant, $p<.01$
Table 7: Significance Data for MCS and PCS Respectively

<table>
<thead>
<tr>
<th></th>
<th>MCS</th>
<th>PCS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td>Positive Reinterpretation and Growth</td>
<td>.100</td>
<td>.920</td>
</tr>
<tr>
<td>Mental Disengagement</td>
<td>-2.186</td>
<td>.030</td>
</tr>
<tr>
<td>Focus on and Venting of Emotions</td>
<td>-4.178*</td>
<td>.000</td>
</tr>
<tr>
<td>Use of Instrumental Support</td>
<td>.397</td>
<td>.692</td>
</tr>
<tr>
<td>Active Coping</td>
<td>1.634</td>
<td>.104</td>
</tr>
<tr>
<td>Denial</td>
<td>-.379</td>
<td>.705</td>
</tr>
<tr>
<td>Religious Coping</td>
<td>.379</td>
<td>.705</td>
</tr>
<tr>
<td>Humor</td>
<td>1.130</td>
<td>.260</td>
</tr>
<tr>
<td>Behavioral Disengagement</td>
<td>-.838</td>
<td>.403</td>
</tr>
<tr>
<td>Restraint</td>
<td>.503</td>
<td>.616</td>
</tr>
<tr>
<td>Use of Emotional Support</td>
<td>1.964</td>
<td>.051</td>
</tr>
<tr>
<td>Substance Use</td>
<td>-1.926</td>
<td>.056</td>
</tr>
<tr>
<td>Acceptance</td>
<td>.379</td>
<td>.705</td>
</tr>
<tr>
<td>Suppression of Competing Activities</td>
<td>1.926</td>
<td>.056</td>
</tr>
<tr>
<td>Planning</td>
<td>1.067</td>
<td>.288</td>
</tr>
<tr>
<td></td>
<td>.747</td>
<td>.456</td>
</tr>
</tbody>
</table>
Table 8: Variance due to Coping (Mental Health)

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.503</td>
<td>.253</td>
<td>.189</td>
<td>7.54175</td>
<td>2.101</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Planning, Use of Emotional Support, Humor, Religious Coping, Acceptance, Mental Disengagement, Substance Use, Denial, Restraint, Suppression of Competing Activities, Behavioral Disengagement, Positive Reinterpretation and Growth, Focus on and Venting of Emotions, Use of Instrumental Support, Active Coping

b. Dependent Variable: Mental Health Component

Table 8a: Variance due to Coping (Physical Health)

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.358</td>
<td>.128</td>
<td>.054</td>
<td>6.05905</td>
<td>1.802</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Planning, Use of Emotional Support, Humor, Religious Coping, Acceptance, Mental Disengagement, Substance Use, Denial, Restraint, Suppression of Competing Activities, Behavioral Disengagement, Positive Reinterpretation and Growth, Focus on and Venting of Emotions, Use of Instrumental Support, Active Coping

b. Dependent Variable: Physical Health Component
### Table 9: Spearman’s Correlation for Demographic Categories

<table>
<thead>
<tr>
<th></th>
<th>Physical Health Component</th>
<th>Mental Health Component</th>
<th>Perceived Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Stress</td>
<td>-.016</td>
<td>-.290**</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.029</td>
<td>.103</td>
<td>.048</td>
</tr>
<tr>
<td>Number of Children</td>
<td>.239**</td>
<td>-.034</td>
<td>.030</td>
</tr>
<tr>
<td>Employment Status</td>
<td>-.108</td>
<td>-.077</td>
<td>-.039</td>
</tr>
<tr>
<td>Length of Time at Ins</td>
<td>.082</td>
<td>-.019</td>
<td>.046</td>
</tr>
<tr>
<td>Length of Time in HE</td>
<td>.003</td>
<td>-.058</td>
<td>-.018</td>
</tr>
<tr>
<td>Degree</td>
<td>-.110</td>
<td>.229**</td>
<td>.005</td>
</tr>
<tr>
<td>Role</td>
<td>.008</td>
<td>-.115</td>
<td>.130</td>
</tr>
<tr>
<td>Type of Ins</td>
<td>.115</td>
<td>-.040</td>
<td>.008</td>
</tr>
<tr>
<td>Carnegie Classification</td>
<td>.104</td>
<td>.228*</td>
<td>-.193*</td>
</tr>
<tr>
<td>Institution Size</td>
<td>-.018</td>
<td>.107</td>
<td>-.067</td>
</tr>
<tr>
<td>Typical Stress</td>
<td>-.072</td>
<td>-.397**</td>
<td>.399**</td>
</tr>
<tr>
<td>Supervision</td>
<td>-.018</td>
<td>-.059</td>
<td>-.052</td>
</tr>
</tbody>
</table>

*Correlation is significant at the .05 level (2-tailed)
**Correlation of significant at the level of .01 (2-tailed)
The use of instruments diagram depicts a graphic visual of the current study’s analysis. The Perceived Stress Scale scores will be correlated with the SF-12 scores for both subscales (PCS and MCS). The arrows represent the regression analysis between active coping and both SF-12 subscales as well as seeking social support (both emotional and instrumental) and the SF-12 subscales.
**Figure 2:** Health Outcomes of Participants According to the SF-12. This figure illustrates the mental health and physical health scores for participants compared to population norms.

Overall sample (N=192) mental health component score. This suggests that the sample of administrators had scores lower than the national average (50).

Overall sample (N=192) physical health component score. This suggests that the sample of administrators had scores just above the national average (50).

This chart suggests that 31% of the sample of administrators (N=192) are below the general population norm for mental health while only 8% are below the general population norm for physical health.

This chart suggests that 42% of the sample of administrators (N=192) are at risk of developing mental illness.