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## **Predicting differences in occupational stress and coping styles: The interactive effect of age and gender**

Tejas Archis Dalvi

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PREDICTING DIFFERENCES IN OCCUPATIONAL STRESS AND COPING  
STYLES: THE INTERACTIVE EFFECT OF AGE AND GENDER

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A Thesis  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science  
in  
Psychology:  
Industrial/Organizational

---

by  
Tejas Archis Dalvi  
December 2011

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December 2011

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## ABSTRACT

The literature on occupational stress and coping styles, specifically emotion-focused and problem-focused coping has been abundant; however, fewer studies have actually investigated how older workers in particular cope with work stress and the unique coping styles they utilize as compared to their younger colleagues. In addition, the age x gender interaction on work stress and emotion and problem-focused coping has rarely been investigated. The present study used archival data from the Professional Worker Career Experience Survey (PWCES) funded by the National Science Foundation with an approximate sample size of 756 working professionals ranging from ages 22 to 70. The PWCES online survey administered between December 2003 and September 2004 was designed as a data collecting tool from a matched sample of professionals employed in information technology (IT) and non-IT careers. The non-IT professionals had similar education levels as the IT sample but not specific degree fields to justify an IT position. Men comprised 57.4% of the overall sample whereas women comprised 42.1% of the sample. The participants in the sample were well educated with 36.2% holding a bachelor's degree and 27.9% holding a graduate degree. Results for gender and work stress indicated that

women did not experience significantly more work stress than men as we had hypothesized. In terms of coping styles, women did report higher scores on emotion-focused coping than men in general; however, men did not report higher scores on problem-focused coping than women. Nevertheless, while men and women used significantly more problem-focused coping than emotion-focused coping in the technical sample, the effect was much larger for men. For age and work stress, older and younger workers experienced comparable levels of work stress. Results for age and problem-focused coping indicated a positive correlation in scores on problem-focused coping for older workers than younger ones. The older the participant, the more problem-focused coping is utilized ( $r = .09$ ,  $p = .01$ ). However, there was no difference in scores on emotion-focused coping for older workers compared to younger workers ( $r = -.03$ ,  $p = .41$ ). Sequential regression analyses did not find age x gender interactions on any of the coping or work stress measures. Finally, limitations, implications, and future directions for research have been discussed in detail.

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## CHAPTER ONE

### INTRODUCTION

Stress, in general, has received widespread attention in the professional literature and popular press. One of the reasons for this attention is that stress represents a major health concern and ranks as one of the top ten leading causes of death in the United States, with the first being heart disease (World Health Organization, 1999). Research also suggests that excess stress can severely threaten an individual's psyche and negatively impact a multitude of other sources such as work, school, family, and interpersonal relationships. To alleviate some of the heartache stress brings, coping has also been extensively researched. Importantly, coping styles play a vital role in helping an individual buffer and alleviate the harmful effects of stress by utilizing family and co-worker support when confronted with challenges (Greenglass, 2002).

One form of stress that is commonly examined and is prevalent in today's fast-paced society is occupational stress, also referred to as job or work stress. Such stress results in a variety of negative health outcomes, impacting individuals, their families, and the

organization at which these individuals are employed. It stands to reason that a solid understanding of the causes and results of occupational stress can lead to improved health among workers, both young and old. According to Shultz and Adams (2007), the literature on aging in the workplace has been receiving more attention as the number of retirees reaching the age of eligibility for Social Security and Medicare is on the rise. With more Americans finding their retirement incomes insufficient to keep up their standard of well being or simply wanting to supplement what they receive, the demographic shift of older workers continuing in the workplace has instigated a whole new area of research on aging and stress in the workplace and the coping styles that may be unique to older workers. To retain an older workforce is to understand potential differences in how they, versus the young workforce, deal with occupational stress (Barnes-Farrell, 2005). Hence, this literature review contributes to the understanding of occupational stress and coping styles by first reviewing the concept of stress, its causes and consequences, and established models within the literature that attempt to explain the relationships among individuals, environmental characteristics, and stress. Furthermore, this paper will

review the literature concerning the construct of coping and the impact of age and gender, as well as their proposed interaction, upon both coping styles such as emotion and problem-focused coping and the experience of occupational stress.

## General Stress

### Background

The concept of stress incorporates two distinct ideas, stressors, which refer to environmental characteristics that cause adverse reactions in an individual, and strain, the actual adverse reaction to the stressors. While stress itself is most often associated only with the situation and the subsequent response, this conceptualization does not give consideration to mediating factors or individual susceptibility to the phenomenon. Therefore, stress is more aptly explained as a result or product of the interaction between individuals and their environment. As such, some situations are not stressful, but rather are defined that way by the unique individual involved in the situation. That is, "what one person may deem stressful, another individual may view as comfortable" (Bamber, 2006, p. 5).

Universally, stress may also be viewed in a more positive manner. For example, McGowan, Gardner, and Fletcher (2006) characterized stress as an interaction between demands made upon an individual and the ability to respond to those demands. The outcome of this interaction need not be negative since there exists a term for positive stress known as eustress in which the stressor elicits a positive response depending on the positive psychological state of the individual. For example, eustress may be characterized by positive affect, meaningfulness, and hope in response to a particular stressor. Moreover, this type of stress helps an individual cope with stress in a healthy manner.

Lazarus and Folkman (1980) developed the Cognitive Theory of Stress and Coping. This theory of stress suggests that there exists a relationship that is transactional between individuals and their environment which can be strenuous, could exceed their resources, and become threatening to their well-being. Judkins (2001) suggested that the emphasis of stress is on what the individual perceives as important or stressful based on the demands of the situation, the individual's ability to cope with those demands, and the availability of resources to cope with the demands of the stressful situation.

Thompson (1992) used Lazarus and Folkman's theoretical framework to further emphasize that stress is not an object in the world but it is a reaction of the organism to the events in the world. Thus, individuals experience stress based on how they react to life events such as stress at work.

### Occupational Stress

As occupational stress has become a common fixture of the lives of millions of Americans, consequences of this type of stress for both employees and organizations has received growing interest. Occupational stress is related to a range of factors both external and intrinsic to the workplace. Intrinsic factors include work overload or under-load (i.e., boredom), shift work, long hours, travel requirements, larger work environments, and poor physical work settings. Other factors associated with it include role ambiguity, role conflict, mistrust, or envy of coworkers, job insecurity, downsizing, poor communication among employees, low recognition by superiors, and low decision authority (Biron, Ivers, Brun, & Cooper, 2006; Danna & Griffin, 1999; Sexton, Teassley, Cox, & Carroll, 2007). External factors may be thought of as factors beyond the control of the individual. For example, a company's decision to merge with another company for

profit and does not take into account suggestions or concerns of its own employees. Occupational stress occurs when an individual experiences an overload of stressors stemming largely from the occupational environment. Bridger, Kilminster, and Slaven (2006) described a workplace stressor as an aspect related to the work environment which poses demands that the individual is not ready to comprehend, and as a result causing strain. So, a strain is caused by a stressor. For example, an employee who may feel overworked and skill-deficient due to the anxiety associated with meeting an important work deadline he is unsure of meeting. Past literature has specifically focused on researching domains that include the physical characteristics of the occupational climate such as heat, crowding, and noise and even the personal characteristics of workers within the occupational environments that include their coping styles, strong beliefs about avoiding stress, and cognitive capacities (Byrne & Espnes, 2008).

Sparks and Cooper (1997) argue that occupational stress can result from a combination of work stressors. Work relationships and interactions between supervisors and co-workers can be one source of both strain and support. For example, if employees considered their supervisors to be hostile towards them, they experienced

more pressure at work than those employees who had supportive bosses. Moreover, if employees had brief interactions with their supervisors without having a sufficient supervisor-employee time, employees might think that their supervisors are taking them for granted and unsupportive of their work. Cartwright and Cooper (1997) argued that another potential stressor can be a lack of job security. If an employee working in a company is uncertain of his or her job position, it may affect the overall work productivity and satisfaction of the employee. The reason is that this employee might constantly be under the stress of fear of job loss. Additionally, negative performance appraisals and persistent role ambiguity can be detrimental to employee well-being. Moreover, over-promotion such as frustration of having reached a career ceiling can make stress unbearable. In other words, an employee who has taken a leadership role or has been laden with many responsibilities by the company might feel over-worked and worn out.

Cooper and Lewis (1994) suggested the fact that the work-family interface can also be a likely stressor for employees coping with occupational stress. Experiencing work overload, lack of role clarity, and a hostile



environment at work may affect the home environment since the employee brings these problems home with him and thus can strain relationships with family members. Danna and Griffin (1999) also agreed with Cooper and Lewis that factors related directly to the work environment are not the only potential causes of stress but the link between home and work could also present problems. Difficulties in managing the dual environments, particularly among two-income couples or individuals experiencing a personal crisis, could contribute to occupational stress.

Other research suggests that individuals with certain personality traits are more prone to occupational stress. For example, the "Type D" personality is linked to introversion and neuroticism. Oginska-Bulik (2006) reported that individuals with this personality type were more likely to perceive their work environments as stressful, due to lack of rewards, control, and responsibility, and would experience greater frequency of burnout in the form of emotional exhaustion, and demonstrate mental health disorders, including anxiety, insomnia, and depressive symptoms. Other researchers have stated that individuals with high positive affect and low negative affect demonstrate lower levels of blood pressure in response to stress than do individuals with both a high

positive and negative affect (Norlander, Bood, & Archer, 2002).

The consequences of occupational stress can range in severity from mild to severe and impact both professional and personal lives. In one study of university staff members, participants identified professional aspects negatively impacted by stress such as job performance, interpersonal work relations, commitment to the organization, and extra-role performance, the latter which refers to participation in extra tasks in the workplace or willingness to work extra hours. As previously mentioned, occupational stress can also spillover into one's personal life. Negative consequences within this domain include physical health problems, such as weight loss, fatigue, back pain; psychological health problems such as burnout, anger, irritability, frustration, and feeling overwhelmed; as well as strained family and personal relations (Gillespie, Walsh, Winefield, Dua, & Stough, 2001). Several models on occupational stress have been proposed and have influenced contemporary organizational stress research and they are discussed in the following sections.

## Theoretical Models of Occupational Stress

### The Job Demand-Control Model of Occupational Stress

Karasek (1979) broke new ground by developing the Job Demand-Control Model in an effort to explain the unique relationships among job demands, job controls, and psychological strain in the workplace. Job demands are described as the amount of workload experienced by a worker, while job controls refer to a worker's sense of autonomy in the workplace and the ability to control the response to job duties and how to complete them (Karasek & Theorell, 1990). An additional component, support, was added to this model in the early 1990s by other researchers and this component consisted of the instrumental and emotional assistance provided generally by immediate supervisors to the work. It is also a theoretical model that suggests psychological strain as being a result of a combination of factors. Strain from a job environment is "influenced by job demands and by the amount of autonomy workers perceived they have in facing these work demands" (Tansey, Mizelle, Ferrin, Tachopp, & Frain, 2004, p. 54). These facets related to the work situation initiate conflicts and demands that place workers in a position dominated by stress. In other words,

if high work demand and low job control situations interact, they can trigger the onset of occupational stress. The main theme of the Job Demand-Control Support model is that job control and support is able to protect against the detrimental effects of high work demands on psychological strain.

The Job Demand-Control model consists of four dimensions, each incorporating various levels of job demand and control. The first of the three dimensions, termed "High Strain Jobs", suggests that when job demand is high and job control is low, there is a strong possibility for experiencing anxiety, fatigue and physical illness. "In situations with high levels of stress or strain, the resulting arousal becomes damaging when the worker has little to or no control over his environment and the constraints that restrict how he can respond to the strain" (Karasek & Theorell, 1990, p. 31). The second dimension of the model, known as "Active Jobs", represents a situation in which psychological demand and control are both high. In this particular situation, workers have the liberty to use their talents and skills to mitigate negative psychological stressors. "The energy from these stressors is then translated into action through active problem solving, which results in little psychological

disturbance and average amounts of psychological strain" (p. 35). For example, jobs of heart surgeons where psychological pressures such as operating on the heart and pressure to perform the operation on time is common practice, however, they have some decision latitude to make decisions in saving the life of the patient.

Karasek and Theorell (1990) described "Low Strain Jobs" as the third type of situation that is defined by a small number of psychological demands and high levels of control. "Such jobs are associated with relaxation and leisure and low levels of psychological strain and physical illness. There are a few challenges in the workplace, and the worker possesses the ability to respond to any challenges that may appear" (p. 36). An example of low strain jobs may be monitor technicians who monitor patient heartbeats and only report to the nurses if they see a spike in the patient's rhythm. Other than that, the job itself is comfortable because all you do is sit in front of the monitor until an abnormal heart rhythm is discovered.

The final component of the Job Demand-Control model is "Passive Jobs", distinguished by both low levels of demand and control. In this type of situation, the authors contended that the "worker's skills and abilities

eventually wither, resulting in negative learning, loss of skills, and low levels of leisure and political activity outside of the work environment" (p. 37). Motivation and productivity are threatened when one is incapable to fully satisfy one's desire to implement one's own ideas for improving the work environment or when a job is less challenging. In this case "jobs with low levels of both demand and control are also associated with average levels of psychological strain and illness" (p. 38). An example of a passive job might be janitorial duties. In this type of job, an individual is not challenged enough to do something about the work because the work requires minimal special knowledge or skills with little discretion of how to complete the work.

Mixed support for the Job Demand-Control model exists in the literature surrounding occupational stress. Dollard, Winefield, and De Jong (2000) utilized the model to investigate differences in self-reported levels of job strain and productivity among different occupational groups, contending that occupational stress was primarily due to environmental factors rather than personal characteristics. The authors collected data on negative affectivity, work environment, emotional strain, and productivity. Findings indicated that a negative work

environment significantly correlated with job strain. The level of job demand negatively correlated with satisfaction with job and positively with work stress and negative affectivity. Job control, however, positively correlated with job satisfaction and work stress.

Rusli, Edimansya, and Naing (2008) also utilized the Job Demand-Control model to investigate the relationship between job demand, job control, social support, stress, anxiety, depression, and quality of life. They mentioned that the quality of life was predicted by increased social support and less social support led to increased health risks. Other results demonstrated a relationship between social support and job control and demand. Results indicated that job demand was reciprocally related to environmental work conditions and job control was positively correlated with social relationships in the workplace. The researchers concluded that stress, anxiety, and depression mediated the relationship between job demand and quality of life. An additional result from this study, which adds an interesting perspective to the Job Demand-Control model, was that job control, stress, anxiety, and depression increased with increasing age of the worker.

Another study conducted by Tarris and Feij (2004) addressed occupational stress by presenting findings that did not necessarily support Karasek and Theorell's model. In this study, the researchers investigated how job demands, control, and strain impact working aspirations of young workers with respect to the motivation to learn from more experienced colleagues and supervisors. The data was collected from younger workers over a period of two years. Cross-sectional results supported each of the four tenets of the Job Demand-Control model, assuming that reduced job strain translated into increases in motivation to learn; however, some of these results did not hold true over time. For example, the authors demonstrated that increased job demand and control led to increased learning in the short term, but no increases in learning over the long term. Within these conditions over time, the level of strain decreased, likely due to the opportunity to utilize new strategies in dealing with strain. These results as with the study conducted by Rusli et al. (2008), suggest that changes may occur over time which cannot be explained in full by the Job Demand-Control model.

While the previous two studies involved younger workers with a mean age of 26 who were followed for a length of time, Totterdell, Wood, and Wall (2006) followed



a group of workers for six months whose mean age was 48 years old. The purpose of their study was to investigate how the Job Demand-Control model applied to changes within the individual with respect to work characteristics and strain over time. The researchers collected data concerning optimism, emotional stability, problem-solving demands, time and method control, emotional support, and job-related stress. Results suggested that while demands, control, and support all affected job strain, they did so in an independent manner rather than interactively, which is contrary to the model. However, when considering levels of personal optimism, interaction between demands and control was observed. For example, pessimists experienced greater levels of strain during periods of high demand and low control than did optimists. This study suggests that the components of the Job Demand-Control model were affected by extraneous factors, such as individual emotional characteristics, although it provided no clue as to whether or not younger workers would yield similar results. In addition, studies done on Job Demand-Control model have looked more at psychological work demands of employees in general without paying close attention to the types of work demands that are stressful to workers from various groups (e.g., older versus younger workers). Yet,

a recent study by Shultz, Wang, Crimmins, and Fisher (2009) did find some support of interactive effects of demand and controls for older workers, but not for younger workers. Specifically, they found that for the problem solving demand, only one job control mechanism such as having plenty of time to complete a work goal buffered a stressful response for younger workers while all job control mechanisms demonstrated buffering effects against job stress related to different job demand types for older workers.

#### The Effort-Reward Imbalance Model of Occupational Stress

A second model of occupational stress is the Effort-Reward Imbalance model or ERI, which adds a more subjective dimension to the Job Demand-Control model. This model asserts that occupational status and successful role performance provide the means to increase self-esteem. However, both the individual's efforts and the rewards obtained in response to those efforts, such as money or career opportunities are dependent on the psychological benefits associated with work. An individual who puts forth great efforts, whether due to extrinsic motivation such as job obligation and demands; intrinsic motivation such as employee over-commitment to strive to do the best

work possible on the job or a combination of both, but receives a few rewards experiences emotional stress and negative health consequences (Calnan, Wainwright, & Almond, 2000). Over-commitment, a third dimension of the model, may be a risk factor that impacts the balance between efforts and rewards (Niedhammer, Chastang, David, Barouhiel, & Barrandon, 2006).

Although this model can serve alone as a useful framework for understanding the impact of psychosocial factors on mental and physical health outcomes, it is further strengthened when considered in conjunction with the Job Demand-Control model. For example, Niedhammer et al. (2006) investigated the health outcomes of workers in a company that distributed publications. In light of the Job Demand-Control model, results indicated that, among male workers, job strain served as a risk factor for depressive symptoms, likely due to low levels of control and decision-making authority among such workers. In addition, women who experienced low levels of social support, an additional component of the Job Demand-Control model, were at a greater risk for depressive symptoms. When viewed in light of the ERI model, the data indicated that, among male workers, this imbalance was associated with depressive symptoms and psychiatric disorders,

possibly due to low rewards and job instability. Taken together, the two models provided a well-rounded picture of the association between work-related factors, including strain, social support, and an imbalance between effort and reward, upon the occurrence of depressive symptoms which is a negative health outcome. Moreover, Siegrist, Dagmar Starke, Chandola, Godin, Marmot, Niedhammer, and Peter (2004) agree with Niedhammer et al about ERI by suggesting that the consequences of occupational stress are related to the balance between the amount of effort an employee puts in the job and the level of rewards they receive such as money, self-esteem, and job security that can be gained from the effort put forth. The model further argues that those who are excessively motivated to be committed to their jobs may expose themselves to high work demands or they might exaggerate their efforts beyond what is required for a particular job. For example, employees might flatter their supervisors to make them feel worthy of them in order to receive a type of monetary reward.

Depressive symptoms are but one of many negative health outcomes that could occur when perceived effort does not correspond with perceived rewards (Martin-Fernandez, Gomez-Gascon, Beamud-Lagos, Cortes-Rubio, & Alberquilla-Menendez-Asenjo, 2007).

Preckel, Meinel, Kudielka, Huag, and Fischer (2007) reported on the effects of ERI upon the health outcomes of skilled workers within an aircraft manufacturing plant. Results indicated that over-commitment, a third dimension to this model, increased the risk of poor health outcomes, including self-reported health-related quality of life factors such as physical functioning; freedom from pain; vitality; vital exhaustion, characterized by loss of energy, trouble sleeping, irritability, and apathy; depressed mood; and negative affectivity. Another research study suggested that in a nursing profession, burnout and the desire to leave that profession, positively correlated with imbalances between efforts and rewards (Hasselhorn, Tackenberg, & Peter, 2004). However, the notion of "rewards" is subjective in nature, with some individuals placing higher value on certain rewards that may be deemed unimportant to others.

Voltmer, Kieschke, Schwappach, Wirsching, and Spahn (2008) attempted to further clarify the relationship between efforts/rewards and health outcomes by categorizing individuals according to correlated psychosocial factors and outcomes. In their study of medical students and physicians, the authors gathered data concerning professional commitment, resistance to stress,

and emotional well-being. Based upon the specific health risks that correlated with each of these work-related behaviors, researchers identified four categories of individuals. Type "G" or the Healthy Ambitious Type individuals are ambitious at work but remain capable of maintaining a healthy emotional distance from the environment. Such behaviors correlated with resistance to stress and positive emotions. The second type of individual, Type "S" or the Unambitious personality Type, demonstrated lower commitment to work and a higher sense of detachment from the work environment. However, individuals in this group also scored well on measures of inner balance, satisfaction with life, and social support, indicating an overall sense of commitment with their personal lives. Like Type G individuals, members of this group did not experience any significant negative health outcomes; however, the lack of motivation was identified as one negative outcome.

The remaining two groups of individuals demonstrated negative health outcomes related to behaviors at work. "Type A" individuals, described as excessively ambitious, were characterized by excessive commitment to their work and difficulty maintaining an emotional distance from that environment. Health outcomes for these individuals

included higher risk for coronary artery disease and myocardial infarction. "Type B" individuals, defined as "resigned" demonstrated low scores for professional commitment, emotional distancing, and coping skills. Outcomes for these individuals included greater risk for mental instability, dissatisfaction with work and life, and limited social support, all of which are related to job burnout. This study clearly illustrates the main premise of the Effort-Reward Imbalance model is that psychosocial factors related to the work environment serve as risk factors for physical and mental health outcomes.

#### Person-Environment Fit

The Person-Environment Fit Model or P-E Fit explains that positive outcomes occur when individuals are closely matched to their work environment with respect to career-relevant personality type (Carless, 2005). Since individuals are often unique in regards to personal qualities, abilities, coping skills, and needs, different individuals may perceive the same job in different ways. What one person views as being demanding and stressful, another employee may regard the same situation as challenging and exciting. Thus, based upon this theory, it is important to closely match an employee's unique characteristics with specific qualities of jobs.

Occupational stress is lessened when an appropriate match exists between the work environment and the individual; however, when a poor match exists, occupational stress may be quite high (Bamber, 2006).

According to the literature, several different types of fit occur within the realm of P-E Fit: these include Person-Organization Fit, Person-Job Fit, and Person-Innovation Fit. Carless (2005) described Person-Job fit as match between an individual's knowledge, skills, and abilities and job or personal demands and what the job provides. When these two dimensions closely match, positive outcomes occur, such as low attrition rate, high work performance, low turnover, and high job satisfaction. Person-Organization fit refers to the similarity that exists between the individual's and the organization's wants, needs, and characteristics. Individuals who perceive that an organization closely mirrors their own values, personality, attitudes, and goals are more likely to seek out and accept employment there.

Person-Innovation fit, a more recent development based upon the Person-Environment fit model, explains how people respond to innovations and predicts the outcomes of innovation implementation on an individual level. Values and abilities are two distinct attributes associated with



the concept of innovation. The values attribute refers to the perceived values and goals underlying the innovation, while the abilities attribute refers to skills, knowledge, and expertise needed for the innovation to be successfully implemented. Past research has shown that different types of person-innovation fit predict different types of individual outcomes. To be specific, job satisfaction, well-being and low stress is closely correlated with value-fit. While the value-fit correlates with affective outcomes, abilities-fit correlates with behavioral outcomes such as the use of technology or innovation and innovation implementation efforts (Choi & Price, 2005).

In addition to the characteristics associated with these three types of fit, including knowledge, skills, abilities, wants, needs, and values, another variation on the Person-Environment fit focuses upon an individual's interests. The Interest-Vocation fit suggests that a person's interests play a role in job satisfaction equal to the role played by skills and abilities. Furthermore, these factors are closely related, as research indicates that among some individuals, Interest-Vocation fit positively correlates with cognitive ability. More specifically, among individuals whose interests lie mostly in the artistic domains, high cognitive ability positively

correlates with successful Interest-Vocation fit. Individuals with high cognitive ability whose interests are characterized as conventional or realists were less likely to participate in vocations that matched their interests than their lower-cognitive ability counterparts (Reeve & Heggestad, 2004). In spite of the support found in the literature for the applicability of Person-Environment fit model in predicting factors such as work stress, criticism does exist. Bright and Pryor (2005), for example, discussed a number of these criticisms found in the literature. According to these authors, one problem with the model is that the interaction between the person and the environment is characterized in terms of traits. These traits, along with the concepts of "persons" and "environment" represent static ideas that do not reflect the changing nature of today's work environment. Other problems with this model include inadequate conceptualization and measurement within the literature with regards to the terms "person" and "environment" and the failure to incorporate the complexities and uncertainties associated with a changing job environment into the model.

## Coping

Coping with stress has become a crucial area for research in reducing workers' perceived level of stress. The focus on coping and ways in which it can reduce the levels of stress and promote a quality of life that is healthy has received abundant attention. According to Folkman and Lazarus (1980) coping takes into account the behavioral and cognitive efforts to familiarize, tolerate, and reduce the internal and external demands and conflicts among them. These coping efforts provide two main functions: the source of stress is to manage the person-environment fit, which is considered to be problem-focused; whereas the ability to regulate stressful emotions is considered to be emotion-focused. Additionally, it is important to understand that individuals make use of both coping styles to manage stressful demands. Basically, coping efforts are made in response to stress appraisals.

Folkman and Lazarus (1988) argued that cognitive appraisal can take two forms: primary and secondary. They emphasized primary cognitive appraisal in which the individual asks "What do I have at stake at this encounter?" The answer to this question relies on the intensity and emotional quality. For example, if an

individual's self-esteem is on the line at work, there is a potential for anger or shame whereas if an individual's physical well-being is on the line, there is potential for fear and worry. In the secondary appraisal, the individual's concern has to do with asking the question "What can I do?" or what coping options do I have in dealing with my problem. A third type of appraisal, called reappraisal occurs based on feedback from primary and secondary appraisal. For example, a person must first decide that the job is demanding (primary appraisal) and then decide how to cope with it by asking for assistance (secondary appraisal). At some point in time when the person has successfully coped with a particular situation, he no longer perceives the situation as stressful or threatening to well-being. Moreover, Folkman and Lazarus (1980) argue that coping is multidimensional depending on the nature of a demanding situation and how the thoughts of stress an individual experiences change as a particular situation unfolds is important to consider when investigating gender differences. Thus, the coping process is the process of thinking at that moment and then performing a situation-specific action when confronted with a demanding situation.

Coping Styles. Equally important in the application of models to understand occupational stress and the concept of coping is the study of coping styles used by individuals. A wide range of coping styles exist, perhaps as varied as individuals themselves. Researchers often distinguish these styles as emotion-focused versus problem-focused coping. As briefly mentioned previously, Lazarus and Folkman (1980) have described problem-focused coping as efforts to manage the present problem which may include finding solutions to resolve the problem, planning ahead, or evaluating the pros and cons of different problems to solve the current problem. Additionally, this type of coping is more effective when the individual possesses a high degree of control over external stressors and factors and is associated with general well being. On the other hand, coping that is emotion-based is utilized when a particular situation is dealt with emotionally and often involves coping forms such as denial, seeking social support for emotional reasons, positive reframing of events, and venting of emotions. The research indicates that emotion-focused forms of coping (e.g. wishful thinking) are only effective when the individual perceives that managing harmful or challenging environment or work conditions are beyond their control.

Research indicates that individuals in different occupations may rely upon different types of coping styles to deal with stress. One study, which explored occupational stress and coping styles among certified older registered nurses, reported that these individuals most often utilized emotion-focused coping mechanisms, including intentionally calming themselves down. Internalization of the stress, verbalizing stressors with friends and coworkers, joking, and distracting themselves from stress with hobbies outside of work were other emotion-focused strategies identified in the study (Perry, 2005). Like the nurses in this study, IT managers in another study indicated that social support was an important and effective coping mechanism. However, these individuals also relied upon problem-focused coping mechanisms, such as adding resources, problem-solving, and planning an action to cope with occupational stress. It was interesting to learn that men in the study used problem solving more often than women (Richmond & Skitmore, 2006).

Aspinwall and Taylor (1997) described proactive behavior, an example of using problem-focused coping as process of anticipating potential stressors and acting in advance to prevent the stressors from happening. They

further asserted the skills that are associated with this behavior include goal-setting, future planning, and organization of thoughts. In proactive coping, specifically, individuals see future risks, opportunities and demands as not threatening but perceive them as future challenges they have to confront (Greenglass, 2002). Basically, these individuals take personal charge of their stressful demands by acting on them to provide future success, personal growth, and happiness. The next sections introduce the idea of gender and age differences in predicting work stress and coping styles based on the following research questions. Specifically, do men and women differ in the amount of work stress perceived and style of coping? Furthermore, do older men and women differ in the amount of work stress perceived and the style of coping than their much younger colleagues? Finally, will age and gender interact in prediction of work stress and coping style?

#### Gender Differences in Occupational Stress

The literature on work stress suggests that how individuals experience and cope with stress is related to the gender of the worker. Women are prone to more job burnout, stress, and experience more fatigue than men (Patton & Goddard, 2006). The reason for this phenomenon

is related to men and women's different societal expectations and non-work demands. For example, women are burdened by home and family responsibilities in addition to being employed. Moreover, they are viewed by society to engage in multiple roles of being the wife, the mother, and professional employee (Ghorayshi, 2002; Nelson & Burke, 2002; Comish & Swindle, 1994). According to Nelson and Burke (2002), women experience challenges in achievement at work. For example, they may experience what is known as the "glass ceiling effect" which prevents women from entering top executive or managerial positions in companies. Full time female employees with expectant children might be seen as victims of cost-effective budgetary constraints. For example, supervisors might tell their employees to reduce their work hours or resign because they might think that once they have a child, their work performance will decrease. In addition, Vagg and Spielberger (1998) pointed out that if there was mismatch between task performance and the description of the job, women experienced more stress and fatigue. However, less stress was experienced by women when they felt they had more control on job tasks, had the opportunity to make valuable decisions on behalf of the company, and when they interacted well with co-workers



(Hill, Leinbaugh, Bradley, & Hazler, 2005). Men, on the other hand, reported stress more frequently when participation in policy decisions was minimal, departmental conflicts arose, dealt with health problems at work, had no overtime, had frequent travel and had lack of managerial support to perform duties (Vagg & Spielberger, 1998). In addition, men reported stress more frequently when they experienced gender role strain. This theory posits that men question their own gender roles and doubt their responsibilities as the household breadwinner if the respective female spouse earns more than the man (Nelson & Burke, 2002). Even though research suggests men and women do have their fair share of workplace stressors, the amount of stress perceived by women, specifically in the work environment is higher than for men.

Based on the information presented, the following hypothesis is proposed:

Hypothesis 1: Women will significantly experience more work stress than men.

#### Gender Differences in Coping Styles

Past studies have also focused on the coping differences between men and women. As previously mentioned, women are more emotion-focused while men are more problem-focused copers (Matud, 2004). For

example, women often seek emotional and moral support from co-workers, manage stressful emotions via positive reinterpretation, or deny that the stressor is real to actually come to grips with a stressful situation. Ashton and Fuehrer (1993) reported that men do not request and receive more social support than women. According to Ptacek, Smith, and Dodge (1994) for problem solving coping, there exist inconsistent findings that suggest no gender differences while other studies point to the fact that men are more problem-focused individuals. The data show that when men and women have the same status, power, and decision control, or when they have the same managerial roles, both genders use coping to the same extent. Nelson and Burke (2002) reported that the reason for the different effects of the coping styles involves the existence of a strong relationship between the "gender of the person doing the coping and the gender role of the coping itself" (p. 420). In other words, throughout history both genders have been taught to act according to their gender roles through gender socialization. For example, men have not been socialized in expressing their emotions, or emotionally caring about people as women have been educated to do so. On the contrary, men are expected to be fearless, strong, and

assertive (Burke, 2002). This literature clearly suggests that people should utilize coping styles that best fit their supposed gender roles. As previously suggested, if jobs catered to men and women equally, for example, having equal control and access to company resources, funding, and huge decision-making latitude, men and women utilize problem solving strategies to the full extent. However, Christie and Shultz (1998) found that emotional social support positively predicted work stress only for the sample of men. This suggests that if there is a mismatch in the utilization of a particular coping strategy and the gender role can lead to severe stress on the job.

Moreover, this finding takes into account the fact that men experience some degree of work stress when an emotional coping style is utilized. Based on the previously discussed research on gender differences and coping styles, the following hypotheses are proposed:

Hypothesis 2a: Women will have significantly higher scores on emotion-focused coping compared to men.

Hypothesis 2b: Men will have significantly higher scores on problem-focused coping compared to women.

#### Age Differences in Occupational Stress

A growing percentage of the workforce is occupied by older Baby Boomers (Barnes-Farrell, 2005; Alley &

Crimmins, 2007). To understand the concept of age in the workforce, we must be able to pay special attention to the needs of older workers and how they perceive occupational stress and eventually cope with it. In addition, we must be able understand the cognitive and emotional demands that work places on older workers and how we can help them be successful in their job. Age related differences in reaction to physical stressors can occur through an employee's physical capabilities and mental abilities. Research has suggested that old people experience less stress; however the rate of experiencing stress is greater for less educated people of low socio-economic status (Finkelstein, Kubzansky, Capitman, & Goodman, 2007).

Past research has relied on relying on stress models that identify the typical characteristics of the work task and the work environment that can hinder the capabilities of workers. Much of the research carried out has been driven to identify possible gaps between employee skill level and demands, their work task, and the environment at which they are employed. When a disparity arises between the task and physical/psychological characteristics of the individual and work environment, the result is a stress response to manage the person-environment fit (Barnes-Farell, 2005).

While the literature is not abundant with regards to how age impacts the factors such as occupational stress and coping styles, some studies do suggest that younger and older workers may react differently to occupational stress. For example, according to Wilkerson and Bellini (2006), emotional exhaustion, a form of burnout, which is a consequence of work stress, negatively correlated to the number of years of experience by school counselors implying that individuals with fewer years of experience were more likely to experience these outcomes of stress more frequently.

While Wilkerson and Bellini's (2006) study addressed years of experience rather than biological age, other research gives important insight into the differences between younger and older workers. For example, a recent study reported that departmental managers between the ages of 25 and 35 experienced increased job stress compared to their older counterparts, ranging in age from 36 to 55 years (Chandraiah, Agrawal, Marimuthu, & Manoharan, 2003). The work stress was related to employee harassment issues, less flexible work schedules, and low decision latitude. Other research confirms a greater impact of stress upon younger workers, in this case below the age of 25, than upon workers older than 45 with regards to emotional

exhaustion (Oyefeso, Clancy, & Farmer, 2008). These researchers found that these differences stemmed mainly from differences in personality, motivation, and the need for achievement. Conversely, Vokic and Bogdanic (2007) reported that workers over the age of 50 experienced greater stress than their younger counterparts in similar occupations. In another study, concerning Catholic school teachers, researchers reported that occupational stress was significantly predicted by age with younger workers experiencing greater levels of stress than older workers (De Noble & McCormick, 2007). Results from the Bristol Stress and Health at Work study, a survey of 17,000 random individuals, reported on workers from a wide variety of occupations, rather than focusing on one specific job. Investigators reported that individuals ranging in age from 33 to 50 experienced increased levels of stress over their younger and older counterparts (Smith, Brice, Collins, Mathews, & McNamara, 2000). Moreover, older workers experienced more stress from work overload and from the feeling of being responsible for the work organization compared to their younger counterparts. However, the conditions of physical environment (i.e., heat, noise) were deemed less stressful for older workers (Osipow & Doty, 1985).

Not every study examining the influences of age upon occupational stress reported a significant correlation. Since the current study will use archival data consisting of IT professionals, the study by Yahaya, Hashim, and Kim (2006) is of special interest to the current study since it also used technical workers, for example IT professors. The researchers reported that age did not impact the level of stress IT professors experienced due to student misbehavior, workload, time, and resource difficulties, or interpersonal relationships with coworkers. One possible reason for this result may involve some factor inherent in this specific occupation not present in other jobs such as efficient skill level. The age and work stress literature seems to be contradictory in explaining if there are differences between younger and older workers in the prediction of work stress; however, in the IT profession, including IT professors and technical analysts, there seems to be no difference in age and work stress.

Based on the previously discussed research on age differences in work stress, and justification for the current study the following hypothesis is proposed:

Hypothesis 3: There will be no differences between younger and older workers in terms of work stress.

### Age Differences in Coping Styles

Previous studies on age differences and coping have also been investigated. Wisdom is considered to play a role in combating occupational stress in older workers. In a study conducted by Limas and Hansson (1998), older working adults were given the chance to select a wise co-worker with the average age of 50 years whose presence facilitated honest responses in the growth and progress of the organization. Wise co-workers were honored for creating a safe environment and a culture of unity (Limas and Hansson as cited in Hansson, Robson, & Limas, 2001). Basically, the presence of a wise co-worker helped other team members feel more in control of their work load and be productive. They felt a sense of safety and security when confronted with work related problems. If they ran into any problems, they knew that they had someone at work to count on.

Tumkaya (2006) investigated if a relationship existed between university faculty members based on their age, gender, academic position, and the work environment related to their levels of job stress. In addition, the research was based on if the faculty members coped with work stress using humor, a form of emotion-focused coping as a coping strategy. The main effect of age was found to



be statistically significant for emotional exhaustion, which was previously mentioned as a form of burnout and a consequence of work stress. In addition, it was found that the higher the age the less exhaustion experienced by the faculty member. Older faculty members experienced less emotional exhaustion than their young colleagues. One reason for this difference was that older faculty members have been able to cope with stress because of the confidence they have gained from being on the job for a long time. The study also pointed out that humor, a form of emotion-focused coping was used mostly by older faculty members because they felt less threatened by competition with their younger colleagues. Since older faculty members had a sense of personal accomplishment and did not have to prove themselves to anyone quite often, they were less emotionally exhausted than their younger colleagues who had to constantly prove themselves in every situation. Additionally, older faculty members used more problem-focused coping such as goal setting or thinking about any steps to take to resolve a particular problem at hand. Other relevant research on age differences and coping focused on religious prayer as a means to combat a stressor experienced by older people (Becker, 2005). Furthermore, past research has suggested that older

workers make use of both coping styles when confronted with a perceived stressful situation (Stefani, 2004). With this in mind, the following hypotheses are proposed concerning the differences in coping styles and age differences.

Hypothesis 4a: Older workers will have significantly higher emotion-focused coping scores compared to younger workers.

Hypothesis 4b: Older workers will have significantly higher problem-focused coping scores compared to younger workers.

#### The Interaction of Age and Gender on Occupational Stress and Coping Styles

There is some research that has focused on predicting occupational stress, as well as coping responses based on the interactive effect of a single variable such as gender and a particular work context. However, inadequate research has been conducted that has addressed the overall interaction of both age and gender on coping and work stress. Krajewski and Goffin (2005) conducted a study on the interactive effect of gender and work context, in this case, self-focused and interpersonal context on predicting occupational stress and coping responses. Their findings suggested that when the work context and gender

interaction was tested for coping, a significant interaction effect was found in which women reported using significantly more emotion-focused coping within the interpersonal-work load situation (e.g. death of a loved co-worker). This lends support to the previous research that women generally use more coping strategies that are emotion-based. Men on the other hand, experienced less stress in the interpersonal work-load situation because of being more comfortable with expressing rank and less inclined to use their emotions. However, both men and women coped similarly in the self-focused work context (e.g. monetary pressures, health concerns). Nevertheless, how age interacts with gender in predicting differences in work stress perceived and coping style still remains to be seen. Based on previous research on the interaction effect of age and gender on predicting occupational stress and coping as well as using the Professional Worker Career Experience Survey on IT professionals with technical backgrounds the following hypotheses are proposed:

Hypothesis 5: Age and gender will not interact in prediction of work stress.

Hypothesis 6a: Age and gender will interact in predicting emotion-focused coping. Specifically, older men and women will have similar levels of emotion-focused

coping while younger women will have significantly higher levels of emotion-focused coping compared to younger men.

Hypothesis 6b: Age and gender will interact in predicting problem-focused coping. Specifically, older men will have significantly higher levels of problem-focused coping compared to older women, while younger men and women will have similar levels of problem-focused coping.

## CHAPTER TWO

### METHOD

#### Sample

The present study used archival data from the Professional Worker Career Experience Survey (PWCES) funded by the National Science Foundation (Rosenbloom, Ash, Dupont, & Coder, 2008) with an approximate sample size of 756 working professionals. The PWCES online survey administered between December 2003 and September 2004 was designed as a data collecting tool from a matched sample of professionals employed in information technology (IT) and non-IT careers. The non-IT professionals had similar education level as the IT sample but not specific degree fields to justify an IT position. Men comprised 57.4% of the overall sample whereas women comprised 42.1% of the sample. The average age of the sample was 39 years old with a median of 38 and an age range of 22 to 70. The participants in the sample were well educated with 36.2% holding a bachelor's degree and 27.9% holding a graduate degree (see Appendix A for a detailed breakdown of the sample demographics).

## Procedure

Participants were recruited from a multitude of sources ranging from staff members from a large Midwestern Insurance company to a small organization with offices in the central United States (see Rosenbloom, Ash, Dupont, & Coder, 2008, for additional details). To complete the online survey, participants were contacted via e-mail and directed to a secure website where they logged-in using a password provided to them in the contact e-mail. Varied occupation backgrounds were represented in the PWCES ranging from senior scientist to accountant (see Rosenbloom, Ash, Dupont, & Coder, 2008, for additional details).

## Measures

### Work Stress/Stress Inventory

Participants were asked to answer six questions to assess their level of stress on the job. Work stress was assessed using a 6-item measure with a rating scale of 1 (strongly disagree) to 6 (strongly agree) developed by Lait and Wallace (2002). One of the sample questions included was "I feel frustrated with my work" (see Appendix B for all the items on this scale). The measure had an alpha of .915.

### Stress Management/Coping

Participants were asked ten questions to assess their level of coping skills at work. One of the sample questions included "I use effective time management methods such as keeping track of my time, making to-do lists, and prioritizing tasks" (see Appendix B for all the items on this scale). Responses to these questions used a 6-point Likert format 1 (strongly disagree) to 6 (strongly agree). Previous research using this data set has not explored this measure, so it was investigated in detail in this study, including factor analyzing the items on the scale and determining the alpha reliabilities of the final scales that result. The 10-item coping scale was divided into two separate coping scales, represented by emotion-focused coping ( $k = 6$ ) with  $\alpha = .705$  and problem-focused coping ( $k = 3$ ), with  $\alpha = .785$ . Item 5 "I frequently affirm my priorities so that less important things don't drive out more important things" of the original coping scale cross loaded on both factors and subsequently removed (see Appendix C for the factor matrix and reliability information).

### Demographic Variables

Demographic variables included age, gender, ethnicity, length of the job (in years), length of occupation (in years), average number of hours worked a week, education level, and occupation level (see Appendix A for the demographic items).



## CHAPTER THREE

### RESULTS

#### Data Screening

Prior to tests of the substantive hypotheses, data from 756 participants were screened using various SPSS functions for missing values, univariate and multivariate outliers, normality of the sampling distributions, and multicollinearity/singularity. None of the variables except for work stress had missing values above the 5% criteria recommended by Tabachnik and Fidell (2007). The work stress scale (represented by six items) had 39 missing values (5.2%), emotion-focused coping had 7 missing values (.9%), problem-focused coping had 9 missing values (1.2%), while the dichotomous variables age and gender each had 4 missing values (1%). Factoring in the missing values analysis, the total sample size of (N = 756) reduced to a total sample size of 709. In addition, no significant missing value patterns were found. This suggested that the values were missing completely at random (please refer to Table 1 for means, standard deviations, and missing values).

Data were additionally screened for univariate outliers. Using the criterion of 9:1 ratio on dichotomous

variable (age < 40, > = 40, and gender) options, no significant univariate outliers were detected among the dichotomous items. As presented by Tabachnik and Fidell (2007), items with z-scores above 3.29 are identified as univariate outliers for continuous variables. Four univariate outliers were identified. Two univariate outliers were found on the emotion-focused (-3.54) and problem-focused coping (-3.67) respectively on a single case. The other two univariate outliers were found on two different cases for problem solving coping (-3.67). These three cases were deleted reducing the sample size to 706. Multivariate outliers were identified using Mahalanobis distance with  $p < .001$  as a criterion. Only two multivariate outliers were found on two cases and those cases were deleted. The final sample size reduced to 704 after deleting the two multivariate outliers. The final sample size after deleting all six outliers was 704.

Table 1. Means, Standard Deviations, and Missing Values of Measured Variables

Variables	Mean	SD	Missing
Work Stress	2.43	1.23	5.2%
Coping			
Emotion-Focused	4.03	.87	.9%
Problem-Focused	4.52	.96	1.2%

All variables were analyzed for the normality of their sampling distributions by reviewing histograms depicting the distribution of each score of the three continuous variables, instead of using the Kolmogorov-Smirnov test due to the large sample size. Scores on emotion and problem-focused coping were slightly positively skewed while scores on the work stress measure was slightly negatively skewed. None of the distribution of scores on each variable was skewed enough to violate the assumption of normality. Furthermore, there was no multicollinearity among the variables. None of the variables were highly correlated above the recommended criterion of  $r = .90$  (Tabachnik & Fidell, 2007). The highest correlation was  $r = .453$  for the problem-focused measure (see Table 2 for the correlation matrix).

## Reliability

Reliability analysis was conducted for the purpose of evaluating the internal consistency of each of the three measures. The 10-item coping scale was divided into two separate coping scales, represented by emotion-focused coping ( $k = 6$ ) with  $\alpha = .705$  and problem-focused coping ( $k = 3$ ), with  $\alpha = .785$ . Item 5 of the original coping scale cross loaded on both factors and therefore subsequently removed. The one-dimension work stress scale ( $k = 6$ ) had  $\alpha = .915$ . These reliability coefficient values, as well as their intercorrelations, are listed in Table 2.

Table 2. Correlations among Construct Variables

Construct Variables	1	2	3
1. Work Stress	<b>.92</b>		
2. Emotion-Focused	-.29	<b>.71</b>	
3. Problem-Focused	-.25	.45	<b>.79</b>

*Coefficient Alphas are shown in bold on the diagonal.*

*All correlations are statistically significant with  $p < .05$*

## Evaluation of Hypotheses

### Independent Samples t-Test Results

Hypothesis 1: An independent samples t-test was performed to see if women experienced significantly more

work stress than men. There was not a significant difference in women ( $M = 2.50$ ,  $SD = 1.26$ ) experiencing more work stress than men ( $M = 2.38$ ,  $SD = 1.21$ );  $t(702) = -1.387$ ,  $p > .05$ . Thus, Hypothesis 1 was not supported.

Hypothesis 2a: An independent samples t-test was performed to see if women had significantly higher scores on emotion-focused coping compared to their male counterparts. Women reported significantly higher scores on emotion-focused coping ( $M = 4.22$ ,  $SD = .82$ ) compared to men ( $M = 3.99$ ,  $SD = .85$ );  $t(702) = -5.172$ ,  $p < .05$ , however the effect size was small ( $\eta^2 = .037$ ). Thus, Hypothesis 2a was supported.

Hypothesis 2b: An independent samples t-test was performed to see if men had significantly higher scores on problem-focused coping than women. Men did not report higher scores on problem-focused coping ( $M = 4.52$ ,  $SD = .93$ ) compared to women ( $M = 4.57$ ,  $SD = .95$ );  $t(702) = -.747$ ,  $p > .05$ . Thus, Hypothesis 2b was not supported.

In a follow up paired-groups t-test, both men and women used significantly more problem-focused coping than emotion-focused coping. For men,  $t(428) = -13.60$ ,  $p < .05$ ,  $\eta^2 = .302$ , while for women  $t(315) = -6.16$ ,

$p < .05$ ,  $\eta^2 = .108$ . Thus, while both men and women use significantly more problem-focused coping than emotion-focused coping, the effect is much larger for men.

#### Pearson Product-Moment Correlation Results

Hypothesis 3: A Pearson product-moment correlation coefficient was computed to assess the relationship between age and work stress. There was no significant relationship between age and work stress ( $r = -.01$ ;  $p = .86$ ). Older and younger workers appeared to experience approximately the same level of work stress. Thus, Hypothesis 3 was supported.

Hypothesis 4a: A Person product-moment correlation coefficient was computed to see if the scores on emotion-focused coping were higher for older workers compared to their younger counterparts. There was no difference in scores on emotion-focused coping for older workers compared to younger workers ( $r = -.03$ ,  $p = .41$ ). Thus, hypothesis 4a was not supported.

Hypothesis 4b: A Pearson product-moment correlation coefficient was computed to see if scores on problem-focused coping were higher for older workers compared to younger workers. There was a positive correlation between scores on problem-focused coping and age. Thus, the older you are, the more problem-focused

copied is utilized ( $r = .09$ ,  $p = .01$ ). But again, the effect size was relatively small ( $r^2 = .0081$ ). Thus, Hypothesis 4b was supported.

### Sequential Regression Results

The assumptions for missing values, outliers, and normality of variable distributions were met as previously indicated. A test of assumptions of normality, linearity, and homoscedasticity were provided by the examination of residual scatter plots. Since the residuals were scattered symmetrically and distributed fairly evenly around the zero point, these assumptions were met.

Hypothesis 5: A sequential regression was conducted to see if an interaction existed between age and gender in predicting work stress. Specifically, it was hypothesized that age and gender will not interact in predicting work stress. Thus age and gender were entered first into the model followed by the interaction term (age x gender) which was entered second into the model. Prior to creating the interaction term, the independent variable age, which is also continuous, was centered given that no meaningful zero was present in the dataset. The results revealed that age and gender in fact did not interact in predicting work stress, Multiple  $R = .053$ ,  $R^2 = .003$ , Adjusted  $R^2 = .000$ ,

$F(2, 701) = .979, p > .05$ . Thus, Hypothesis 5 was supported (see Table 3).

Hypothesis 6a: A sequential regression was conducted to see if an interaction existed between age and gender in predicting emotion-focused coping. Specifically, it was hypothesized that older men and women will have similar levels of emotion-focused coping while younger women will have significantly higher levels of emotion-focused coping compared to younger men. Results indicated that age and gender did not interact in predicting emotion-focused coping, Multiple  $R = .194$ ,  $R^2 = .038$ , Adjusted  $R^2 = .035$ ,  $F(2, 701) = 13.88, p > .05$ . Thus, Hypothesis 6a was not supported (see Table 4).

Hypothesis 6b: A sequential regression was conducted to see if an interaction existed between age and gender in predicting problem-focused coping. Specifically, it was hypothesized that older men will have significantly higher levels of problem-focused coping compared to older women while younger men and women will have similar levels of problem-focused coping. Results indicated that age and gender did not interact in predicting problem-focused coping, Multiple  $R = .112$ ,  $R^2 = .012$ , Adjusted  $R^2 = .010$ ,  $F(2, 701) = 4.41, p > .05$ . Thus, Hypothesis 6b was not supported (see Table 5).



Table 3. Sequential Multiple Regression Results for Age and Gender in Predicting Work Stress

Variable	<u>Model 1</u>			<u>Model 2</u>		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Intercept	14.38*	.36		14.38*	.36	
Age	-.05	.28	-.01	-.11	.36	-.01
Gender	.78	.56	.05	.78	.56	.05
Age x Gender				.13	.56	.01
$R^2$		.003			.003	
$F$		.98			.67	
$\Delta R^2$		.003			.000	
$\Delta F$		.98			.05	

Note:  $N = 756$ .

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ .

Table 4. Sequential Multiple Regression Results for Age and Gender on Emotion-Focused Coping

Variable	<u>Model 1</u>			<u>Model 2</u>		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Intercept	3.99*	.04		3.99*	.04	
Age	-.03	.03	-.03	-.02	.04	-.02
Gender	.33**	.06	.19	.33**	.06	.19
Age x Gender				-.02	.06	-.02
$R^2$		.048			.048	
$F$		13.78			9.21	
$\Delta R^2$		.048			.000	
$\Delta F$		13.78			.10	

Note:  $N = 756$ .

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ .

Table 5. Sequential Multiple Regression Results for Age and Gender on Problem-Focused Coping

Variable	<u>Model 1</u>			<u>Model 2</u>		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Intercept	4.52*	.05		4.52*	.05	
Age	.10**	.04	.11	.09†	.05	.09
Gender	.05	.07	.03	.05	.07	.03
Age x Gender				.03	.07	.02
$R^2$		.012			.013	
$F$		4.41*			2.99*	
$\Delta R^2$		.012			.000	
$\Delta F$		4.41*			.167	

Note:  $N = 756$ .

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ .

## CHAPTER FOUR

### DISCUSSION

Previous research has indicated that the average age of the world population is increasing. By the year 2050, it is expected that one out of five individuals will be over the age of 60 (Arnold & Edgar, 2006). As the age of the general population increases, the average age of the workforce will also subsequently increase. Older workers are likely to experience greater amounts of age-related health problems related to work than their younger counterparts. This underscores the importance of addressing these health issues in the workplace, so that older workers are provided with the greatest opportunity possible to continue working successfully as they age. The current study represents a first step to see if there are differences in perceived occupational stress and coping styles, such as emotion and problem-focused coping, with regard to age, gender, and the proposed age by gender interaction. In addition, the present study is the first to use the Professional Worker Career Experience Survey (PWCES) to address these variables with regard to its existent work stress and coping scales.

## Gender Differences in Occupational Stress

Hypothesis 1, which proposed that women will experience significantly more work stress than men was not supported. The literature on work stress has consistently stated that both men and women experience work stress; however, the amount of work stress perceived is much higher for women on average compared to men (Nelson & Burke, 2002). One of the reasons for high rates of perceived stress in women is related to society's expectation of them taking on multiple roles as being the wife, mother, and professional employee (Ghorayshi, 2002; Nelson & Burke, 2002; Comish & Swindle; 1994). Other reasons mentioned concern women experiencing "the glass ceiling effect" which is a stereotypical barrier that prevents women from entering positions of power (Nelson & Burke, 2002) or if there is a mismatch between task performance and description of the job (Vagg & Speilberger, 1998). Men were likely to experience stress when they dealt with health problems at work, had no overtime, or when participation in policy decisions was minimal (Vagg & Speilberger, 1998). In addition, they experienced stress more often when they experienced gender role strain. For example, if female spouses work and earn more than their respective partners it creates strain that

results in men questioning their own gender roles as to where they actually belong and doubt their responsibilities of being a breadwinner. Moreover, they ask themselves, "Am I more equipped in raising children, doing household chores, or working outside the home" (Nelson & Burke, 2002). However, research has often yielded mixed results in terms of gender differences and work stress. When both men and women held similar job positions, had similar educational backgrounds, were of similar ages and had the same decision control opportunities on behalf of the company, no gender differences in stress were found (Hill, Leinbaugh, Bradley, & Hazler, 2005; Galankis, Stalikas, Kallia, Karagianni, & Karela, 2009). Each of these conditions was likely present in the current study and so may have contributed to the lack of gender differences in perceived stress.

In addition, the reasons for inconsistent findings in previous studies may be due to other issues as well. One may pertain to how the concept of stress is defined in the literature and how it affects both men and women differently. Some research suggests that the emphasis of stress is on what the individual perceives as important or stressful based on the demands of the situation, the

individual's ability to cope with those demands, and the availability of resources to cope with the demands of the stressful situation (Judkins, 2001). Other research suggests that stress has biological underpinnings and can be explained by cortisol activity in the brain and can be made worse by work and non-work demands (Bergman, Ahmad, & Stewart, 2008). The findings for this study can also be a result of men and women engaging in jobs that are described as "active jobs" coupled with the fact that the pre-existing data consisted of participants of similar ages, as well as occupational and educational backgrounds. Karasek and Theorell (1990) suggest that the second dimension of the Job Demand-Control model, known as "Active Jobs", represents a situation in which psychological demand and control are both high. In this particular situation, workers have the liberty to use their talents and skills to mitigate negative psychological stressors. "The energy from these stressors is then translated into action through active problem solving, which results in little psychological disturbance and average amounts of psychological strain" (p. 35). Another reason for the non significant results may be the work stress measure used in the study. The stress measure may not have been representative of other forms of stress

that affect men and women in the workplace such as burnout or anxiety. Future research should focus on developing a more concrete work stress measure that encompasses varying types of stress experienced by both men and women in the workplace.

### Gender Differences in Coping Styles

Hypothesis 2a, which proposed that women would have significantly higher scores on emotion-focused coping compared to men, was supported and was consistent with the past literature that stated that women are more emotion-focused than men because they deal with situations in which they entertain the possibility of using co-worker support, seeking advice, and asking for emotional assistance when confronted with difficulties (Matud, 2004). The coping literature has suggested that gender socialization drives the differential effects of coping styles (Nelson & Burke, 2002). In other words, both men and women are taught to act in accordance to their supposed gender roles through gender socialization. For example, throughout history men are taught to be more fearless and strong by suppressing their emotions as compared to women who are encouraged to express their emotions and utilize emotional social support when faced



with a stressful situation (Burke, 2002). Christie and Shultz (1998), for example, found added support for one of the coping styles. Specifically, they found that emotional social support positively predicted work stress only for the sample of men. This suggests that if there is a mismatch in the utilization of a particular coping strategy and the gender role, severe work stress can be experienced as a result. In addition, the dispositional hypothesis concept states that when both men and women experience similar work stressors, they cope in different ways (Tamres, Janicki, & Helgeson, 2002). This lends more support to the idea that men and women cope differently when faced with a demanding situation.

Hypothesis 2b, which proposed that men will have significantly higher scores on problem-focused coping compared to women, was not supported. The literature on problem solving coping has often suggested that men are more problem-focused human beings in that they are "at the moment" thinkers and are less likely to request emotional assistance from co-workers or friends (Ashton & Fuhrer, 1993). Other literature suggests that since women have been in jobs that are low in control (e.g., managing home/family in addition to work responsibilities) they tend to think of problem solving styles to cope with work

stressors as ineffective and risky. Since men are more involved in work outside the home, they utilize problem solving coping styles when dealing with stresses at work because they feel they have more control over those work stresses than women seem to think they do (Tamres, Janicki, & Helgenson, 2002). However, the literature on coping styles has yielded mixed results that suggest that if men and women have the same status, power, position, decision making latitude, and managerial roles they will both use the problem-focused coping style to the same extent (Ptacek, Smith, & Dodge, 1994), which may have been a contributing factor in the current study.

There may be several reasons for the present study's findings. One may be the influence of the role constraint theory which states that when men and women have similar threat appraisals when faced with a similar stressful situation, they would cope with the stressor similarly (Tamres, Janicki, & Helgenson, 2002). Another potential reason for the lack of gender differences in the present study with regard to the use of problem-focused coping is the role of Type A personality related to effort-reward imbalance model of work stress. That is, Type A individuals are described as excessively ambitious, characterized by excessive commitment to their work, time conscious, and

have difficulty maintaining an emotional distance from the environment (Voltmer, Kieschke, Schwappach, Wirsching, & Spahn, 2008). Research studies have found that Type A personality and utilization of problem-focused coping positively correlated with decreased stress in women (Nelson & Burke, 2002; Raza, 2007). Higher percentage of women participants in this study may have had Type A personality and utilized a problem-focused approach, such as planning, seeking instrumental support, goal-setting to adjust well and be successful in the technical professions. This may also have been the reason why Hypothesis 1 was not supported.

The archival nature of the data may have been another reason for the non significant results with regard to problem-focused coping. For example, the data may have provided a restricted sample of men and women within the same information technology profession, age range, and educational background. According to Rosenbloom and Ash (2003), the average age of the sample was 38, with 14% of women holding more than a bachelor's degree compared to 19% of men. Thus, both men and women may have been well suited and matched to their profession.

### Age Differences in Occupational Stress

Hypothesis 3, which proposed that no differences would be found between younger and older workers in terms of work stress, was supported. Yahaya, Hashim, and Kim (2006) found similar results to this study. They also used individuals from IT professions, specifically professors teaching in technical fields. The researchers reported that age did not impact the level of stress IT professors experienced due to student misbehavior, workload, time, and resource difficulties, or interpersonal relationships with coworkers. Only 17.4% of IT professors experienced stress due to work overload, however, the effect size was small. One possible reason for this result may involve some factor inherent in this specific occupation not present in other jobs such as efficient skill level or common personality characteristics.

Overall, the literature on age and work stress has yielded mixed results. Some articles have suggested that older workers experience more work stress compared to younger workers and vice versa in similar and different occupations (Oyefeso, Clancy, & Farmer, 2008). The reason may be the level of stress experienced by both age groups is dependent on the type of occupation. In terms of the current study, the type of occupation, in this case,

employment in Information technology or IT careers may have been the reason for no differences in age and work stress. Both older and younger workers may have handled their stress well by having enough access to resources, being in positions of power, or may have used simple goal-directed behavior to manage the work stress they might have experienced. In addition, when an appropriate match exists between the work environment and the individual as stated by the Person-Environment Fit theory, work stress is significantly minimized (Carless, 2005). Bamber (2006), for example, pointed out that individuals use their unique skills and personalities to closely match the specific qualities of the job which is exactly what the individuals in this study might have done to make a situation less stressful.

#### Age Differences in Coping Styles

Hypothesis 4a, which proposed that older workers will have significantly higher scores on emotion-focused coping compared to younger workers, was not supported. Past research has suggested that older workers use more emotion-focused coping compared to their younger counterparts, such as humor, or seeking emotional support when dealing with perceived stress. One reason that was

given was that older workers felt less threatened by competition with their younger colleagues. In one study, older faculty members had a sense of personal accomplishment and did not have to prove themselves to anyone quite as often, and hence were less emotionally exhausted than younger workers who had to constantly prove themselves in every situation (Tumkaya, 2006). In addition, Folkman and Lazarus (1980) suggested that older workers also used more emotion-focused coping when situations they perceived seemed out of control. The current study may have failed to find support for emotion-focused coping due to the fact that previous research on this construct has been conducted mainly on teachers, adolescents with health issues, and older people with learning/physical disabilities, while the current study focused on highly-trained individuals with technical skills that required the use of problem-focused coping.

The latter idea supports hypothesis 4b which proposed that older workers will have significantly higher scores on problem-focused coping compared to younger workers. Folkman and Lazarus (1980) have also suggested that older workers make use of both coping styles dependent on the perceived situation. For example, if a graduate student is having monetary problems, the older professor might use a

problem-focused approach (i.e., instrumental social support, in this case giving money to help someone in need). However, the older individual will use emotion-focused coping approach (i.e., providing emotional social support) to his or her pregnant daughter who just miscarried. Moreover, differences in coping may be a result of differences in changing demands and hence they might be trying to cope with different stressors that may require a particular coping style.

#### The Interaction of Age and Gender on Occupational Stress and Coping Styles

Age and gender did not interact in the prediction of work stress. This supports hypothesis 5 and suggests that as both men and women get older, they will have the same level of work stress as experienced by younger men and women. Past studies have not actually looked at age or the age by gender interaction of predicting work stress and coping. However, a few studies have looked at the gender by work context interaction on work stress and coping responses (Krajewski & Goffin, 2005). These previous results indicated a significant interaction of gender and work context on stress and coping. Specifically, the researchers found that men and women both coped similarly

in the self-focused work overload context (e.g. personal income or health concerns), whereas women showed higher use of emotional coping in the interpersonal work overload context (e.g., death of a loved co-worker, or in-group exclusion). Future research must consider the age by gender interaction on predicting work stress and coping by using a more representative sample size and looking at a variety of work contexts.

A significant interaction between age and gender on emotion-focused coping was not supported, as suggested by Hypothesis 6a. Specifically, it was hypothesized that older men and women would have similar levels of emotion-focused coping while; younger women would have significantly higher levels of emotion-focused compared to younger men. A study by Stefani (2004) had found support to Hypothesis 6a. Older and younger individuals were asked to evaluate their coping on perceived life stressors. Older individuals used the emotional strategies to the same extent when faced with a stressful situation, by using positive reappraisal of events and moving forward whereas younger women used avoidance coping, which is a maladaptive form of emotion-focused coping, more than men. However, individuals with no technical experience were used in that study. In the current study, since the



individuals had technical backgrounds, personality and motivational issues may have played a role in the outcome. That is, usually people in technical fields have a problem-focused background (Lim & Teo, 1999); however, the hypothesis for 6b, which proposed that older men will have significantly higher scores on problem-focused coping compared to older women, while younger men and women will have similar scores on problem-focused coping, was not supported either. The work environment might have created a situation in which problem-focused coping might not have been the only option and hence might have caused both of the age groups to utilize a coping style appropriate for the particular situation.

#### Study Strengths and Limitations

One possible limitation of the present study is that of scale restriction. Since the PWCES data were archival in nature, the stress scale was constructed to answer a different research question. This hindered our capabilities to search for other scales that closely matched our research goals. That is, the stress scale we used from the PWCES dataset was one-dimensional and measured work stress in general without closely examining other possible forms of stress that can be experienced

differentially by men and women of both age groups. Future researchers should construct or use a multidimensional work stress scale to measure different forms of work stress (e.g. burnout, anxiety, role ambiguity, and emotional exhaustion) experienced by men and women of both age groups. However, the emotion-focused and problem-focused coping scales had reliabilities at  $\alpha = .705$  and  $.785$  respectively, whereas the work stress measure had  $\alpha = .915$ , which can be considered a possible strength of this study.

Another strong point of this study was the fact that we found a dataset that catered to our research needs. Due to the age element in our research study, we were searching for a dataset that would have high age variability and adequate sample size to conduct our research. The PWCES dataset had adequate sample size of 704 participants ranging from ages 22 to 70.

A second limitation involves construction of the coping scales. The scales we created measured only two broad styles of coping. Future research could consider constructing scales for specific defense mechanisms (e.g. denial, projection, sublimation, compartmentalization, displacement, intellectualization, rationalization) that may examine the degree and type of defense mechanism used

by men and women of both age groups when experiencing different or similar types of work stress.

A third potential limitation involves the idea of sampling bias. The sample of the current study participants was limited to U.S. workers who were well educated and in technical jobs. For example, 36.2% of the participants held a bachelor's degree, while 27.2% had a graduate degree. This suggests that mainly professionals were sampled for this study. Future studies may use a sample that is more representative of the U.S. working population. In addition, future studies can examine differences in coping styles and work stress by conducting a cross cultural study. Researchers can compare a sample of international older and younger workers and U.S. workers to examine for a possible interaction effect of age and culture on work stress and coping styles with gender being controlled.

A fourth limitation involves the use of cross-sectional data and its influence on cohort differences. By directly comparing two different cohort groups at a particular point in time may show temporary age differences and not gradual developmental changes (Mann, 2003). Future studies should use longitudinal data

to examine work stress and coping based on the same cohort working sample over a period of time.

A fifth limitation relates to the fact that our analyses were based on employee self-report measures which may be subject to response biases including the social desirability response. According to Furr and Bacharach (2008), social desirability responding occurs when individuals respond in ways that would be socially pleasing while masking their true intentions and is dependent on the individual's personality. Paulhus (1991) discussed that socially desirable responding can take the form of self-deceptive enhancement (SDE). With SDE, individuals present themselves as having an exaggerated positive self-view but without conscious intent. In the current study, for example, the item such as "I strive to redefine problems as opportunities for improvement" (work stress scale) may be subject to SDE.

Self-report measures can also be affected by common method variance (CMV). The idea of CMV suggests that when a common method of data collection is used to assess two strongly related variables, the resulting correlations may be inflated (Doty & Glick, 1998; Spector, 2006). In this study, for example, self reports were used to assess both variables of work stress and coping styles and each may be

subject to response biases as previously mentioned and hence distort resulting correlations of both work stress and coping styles. However, the restriction of range of the work stress scale was more of an issue. For example, the work stress scale did not consist of items that could be considered extremely stressful. Lastly, the attitudes, actions, and personality of the individuals in the sample are beyond our control and hence can affect the generalizability of the results.

#### Theoretical Implications

The findings of the present study have important theoretical implications. Previous literature on work stress and coping provide a conceptual foundation to address two main questions "Do men and women differ in the amount of work stress perceived and style of coping?" and "Do older men and women differ in the amount of work stress perceived and style of coping compared to their younger colleagues"? Our study contributes to the literature on work stress and coping by examining if age and gender interact in predicting differences in work stress and coping styles, specifically emotion and problem-focused coping. To answer these questions, different models and theories of work stress and coping

were reviewed; they were the Job Demand-Control model, the Effort-Reward Imbalance model, the Person-Environment Fit model, and the cognitive theory of stress and coping. The current findings suggest that using a combination of aspects from each of the work stress models provides an opportunity to reduce work stress for men and women of both age groups. For example, we did not find any difference in the amount of work stress perceived between men and women of both age groups. These results can be explained by the three models of work stress. First, the Job Demand-Control model states that when job demand is low, job control is high, and both instrumental and emotional support is high both men and women will have decreased work stress regardless of age (Karasek & Theorell, 1990); the Effort-Reward Imbalance model when discussed in consonance with the Job Demand-Control support model suggests that the amount of effort put forth is dependent on occupational rewards such as promotion or a raise (Calnan, Wainwright, & Almond, 2000). So, if effort is put in a low demand, high control, and highly supportive working environment, the employee might do the best work possible in an environment not dominated by stress and obtain the desired occupational rewards.

In relation to the other stress models, the P-E fit model suggests that positive outcomes (e.g., decreased stress response) occur when the employee is closely matched with the working environment based on individual traits (Carless, 2005). Our findings suggests that there were no stress differences between any of the participants due to the fact that these individuals might have been closely matched to their specific job tasks and hence might have reduced levels of stress. In terms of coping, our research findings are in sync with the cognitive theory of coping which suggests that the emphasis on stress is dependent on what the individual perceives as stressful based on the demanding situation, their individual susceptibility in dealing with stressors, and the availability of important resources to cope with the stressful work situation. In other words, this theory tells us that individuals cope differently when faced with a challenging situation. Our study found that women coped differently by using more emotion-focused coping than men when experiencing work stress, whereas older workers used more problem-focused coping than their younger colleagues when experiencing work related stress.

### Practical Implications

The current study provides practical implications for men and women of both age groups, particularly older workers as well as organizations and companies who may want to hire or retain them. The findings of the present study call for stress reduction initiatives that may be applicable for men and women of both age groups. We should ask ourselves two questions "what can organizations do to help men and women in general be efficient and productive workers?" And more importantly "what can organizations or companies do to help different age groups, particularly older workers, reduce stress levels at work?"

Based on our current findings, women and men did not differ in their use of problem-focused coping, particularly in technical fields where the majority of employed individuals are men. However, research does suggest that men do use more problem-focused coping than women and women use more emotion-focused coping than men was supported (Ashton & Fuhrer, 1993). In a male dominated profession, for example, in technical jobs such as computer programmers or analysts, problem solving ability is vital for success since most technical jobs are based on actually analyzing different technical processes and hence, problem-focused coping such as technical planning



or thinking/solving problem at the moment is essential. Organizations can better assist both men and women of all ages by having training seminars on problem-focused coping. In these seminars employees would be able to answer questions about how to apply these techniques effectively on their jobs. The techniques learned may not be limited only to the specific job but life in general. The training sessions will also provide information on which problem-focused coping mechanisms are more appropriate to use by employees. Men, in general experienced higher work stress when departmental conflicts occurred or when they dealt with health concerns at work (Vagg & Spielberger, 1998). Organizations can also help men by having anger management seminars and focus groups to deal with their problems at work.

Age can hinder the physical and mental capacities of workers (Barnes-Farell, 2005). Organizations should pay close attention to needs of older workers. To reduce the levels of stress experienced by older workers, companies can create an organizational culture that is more welcoming and respectful of the values older employees are conveying such as loyalty, experience, or diversity (Barnes-Farrell, 2005). To accommodate older employees, organizations can start by reducing the impact of physical

stressors on its employees. Companies, for example, can develop flexible work schedules, limit work tasks that require excessive heavy lifting, and design mastery training sessions to help them learn technological skills. Organizations can also provide mentoring sessions for older and younger workers to manage work stress. Older workers can mentor their younger colleagues on a specific stressor that they experienced growing up and can help them fight it. On the other hand, younger workers can help older workers with building their technological skills, especially in work environments that are technologically advanced.

Barnes-Farrell and Dugan (2006) state that older workers need recovery time after a stressful experience. They suggest that organizations might help older workers mitigate work stress by allowing them to take work rest breaks (to rest their body and clear their mind by getting a cup of coffee or watching TV), allowing them to take more time off and engaging in downtime. Downtime is time in which individuals both young and older separate themselves from the work for a short period of time. For example, older workers are known to take walks outside the office to redirect their attention from work or its problems while younger workers engage in a recreational

activity such as playing sports. These initiatives on stress reduction can be useful in helping men and women of both age groups to be productive and efficient.

#### Future Directions

In summary, the current study makes a significant contribution to the work stress and coping literature by making it the first study to use the PWCES dataset to examine differences in work stress and coping styles with regard to age, gender, and their supposed interaction. Krajewski and Goffin (2005) have looked at the interaction of gender and a particular work context on stress and coping responses, however, fewer studies have actually examined the role of age and its interaction with gender on work stress and coping styles. Our study also provides a foundation to conduct a similar study using longitudinal instead of cross-sectional data. One recommendation for future research is to replicate this study using a sample that is more representative of the general U.S. population to confirm its strength. The present study adds to the validity of the existing stress and coping research by confirming that when women experience work stress, they do utilize a more emotion-focused coping style than men in general. The study also affirms that even though older and

younger workers experience similar levels of work stress overall, how both age groups cope with work stress is different. For example, older workers used more problem-focused coping than their younger colleagues when faced with a workplace stressor. In addition, the current study also suggests that men and women use significantly more problem-focused coping than emotion-focused coping in technical fields; however the effect is much larger for men than women. Future research should examine the relationship of age, work stress, and coping more carefully by answering the questions "Why do both age groups experience different types and varying levels of stress at work?", "What specific defense mechanisms both age groups use when they experience work stress?", and "What situation-specific factors are inherent in the occupation itself that pose a greater threat for older workers than their younger colleagues and vice-versa?" Future research can also consider other variables, such as race, ethnicity, discrimination, personality, ability, occupation level (supervisor versus non-supervisor differences in technical fields), and cultural differences that may contribute to differential stress levels and usage of coping styles. This knowledge can help organizations better assist both age groups mitigate the

harmful effects of workplace stress by providing effective stress-relief initiative programs and interventions.

APPENDIX A  
SUMMARY OF DEMOGRAPHIC VARIABLES

# SUMMARY OF DEMOGRAPHIC VARIABLES

	Range	Frequency	Percent	Mean	SD
Gender					
Women		318	42.1		
Men		434	57.4		
Age	22-70			38.75	9.75
Ethnicity					
American Indian		14	1.9		
African American		15	2.0		
Asian American		24	3.2		
White		536	70.9		
Native Hawaiian		1	0.1		
Latino		17	2.2		
Indian		2	0.3		
Other		7	0.9		
Education Level					
High school Grad/GED		5	0.7		
Trade or Tech Training		2	0.3		
Some College, no degree		25	3.3		
Associate degree		17	2.2		
Bachelor's degree		274	36.2		
Master's degree		211	27.9		
Professional degree		26	3.4		
Doctorate		25	3.3		
Unknown		2	0.3		
Occupation Level					
Entry level		36	4.8		
Non-Supv Employee		251	33.2		
Supervisor		61	8.1		
Management		140	18.5		
Executive		42	5.6		
Top Executive		21	2.8		
Other		28	3.7		
Unknown		8	1.1		
Length of Job (in yrs)	0-31			5.33	5.59
Avg. # of hours a week	0-82			43.32	10.24
Length of Occupation (in yrs)	0-52			10.13	8.13

APPENDIX B  
MEASURES USED



## MEASURES USED

### STRESS INVENTORY QUESTIONNAIRE

**RATING SCALE: 1 (STRONGLY DISAGREE) TO 6 (STRONGLY AGREE)**

1. I FEEL FRUSTRATED WITH MY WORK.
2. I FEEL DISCOURAGED ABOUT MY WORK.
3. I FEEL THAT THINGS ARE OUT OF CONTROL.
4. I FEEL OVERWHELMED BY MY WORK.
5. I FEEL LIKE GIVING UP ON MY JOB.
6. I FEEL UNABLE TO GET OUT FROM UNDER MY WORK.

Lait, J., & Wallace, J. E. (2002). Stress at work: A study of organizational-professional conflict and unmet expectations. *Relations Industrielles*, 57(3), 463-487.

## **STRESS MANAGEMENT/COPING ITEMS**

**RATING SCALE: 1 (STRONGLY DISAGREE) TO 6 (STRONGLY AGREE)**

1. I USE EFFECTIVE TIME MANAGEMENT METHODS SUCH AS KEEPING TRACK OF MY TIME, MAKING TO-DO LISTS, AND PRIORITIZING TASKS.
2. I MAINTAIN A PROGRAM OF REGULAR EXERCISE FOR FITNESS.
3. I MAINTAIN AN OPEN, TRUSTING RELATIONSHIP WITH SOMEONE WHOM I CAN SHARE MY FRUSTRATIONS.
4. I KNOW AND PRACTICE SEVERAL TEMPORARY RELAXATION TECHNIQUES SUCH AS DEEP BREATHING AND MUSCLE RELAXATION.
5. I FREQUENTLY AFFIRM MY PRIORITIES SO THAT LESS IMPORTANT THINGS DON'T DRIVE OUT MORE IMPORTANT THINGS.
6. I MAINTAIN BALANCE IN MY LIFE BY PURSUING A VARIETY OF INTERESTS OUTSIDE OF WORK.
7. I HAVE A CLOSE RELATIONSHIP WITH SOMEONE WHO SERVES AS MY MENTOR OR ADVISOR.
8. I EFFECTIVELY USE OTHERS IN ACCOMPLISHING WORK ASSIGNMENTS.
9. I ENCOURAGE OTHERS TO GENERATE RECOMMENDED SOLUTIONS, NOT JUST QUESTIONS, WHEN THEY COME TO ME WITH PROBLEMS OR ISSUES.
10. I STRIVE TO REDEFINE PROBLEMS AS OPPORTUNITIES FOR IMPROVEMENT.

Rosenbloom, J.L. & Ash, R. (2008). Professional Worker Career Experience Survey, United States, 2003-2004. Inter-University Consortium for Political and Social Research.

APPENDIX C  
ROTATED FACTOR MATRIX

### Rotated Factor Matrix<sup>a</sup>

	Factor	
	1 (PRFC)	2 (EMFC)
I encourage others to generate recommended solutions, not just questions, when they come to me with problems or issues	<u>.890</u>	.130
I strive to redefine problems as opportunities for improvement	<u>.642</u>	.302
I effectively use others in accomplishing work assignments	<u>.612</u>	.264
I frequently affirm my priorities so that less important things don't drive out more important things	.424	.581
I maintain a balance in my life by pursuing a variety of interests outside of work	.251	<u>.556</u>
I maintain an open, trusting relationship with someone whom I can share my frustrations	.140	<u>.497</u>
I maintain a program of regular exercise for fitness	.057	<u>.453</u>
I have a close relationship with someone who serves as my mentor or advisor	.287	<u>.412</u>
I know and practice several temporary relaxation techniques such as deep breathing and muscle relaxation	.128	<u>.397</u>
I use effective time management methods such as keeping track of my time, making to-do lists, and prioritizing tasks	.217	<u>.374</u>
Alpha Reliabilities	.785	.705
Extraction Method: Principal Axis Factoring.		
Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

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