

AN ANALYSIS OF THE RELATIONSHIP BETWEEN JOB STRESS AND
RESILIENCE AMONG U.S. MEMBERS OF THE ASSOCIATION OF
STANDARDIZED PATIENT EDUCATORS

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By

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AN ANALYSIS OF THE RELATIONSHIP BETWEEN JOB STRESS AND
RESILIENCE AMONG U.S. MEMBERS OF THE ASSOCIATION OF
STANDARDIZED PATIENT EDUCATORS (267 pp.)

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Among higher education professionals, job stress has been associated with numerous health risk behaviors and compromised health outcomes. The purpose of this study was to examine the relationship between selected demographics, resilience, and job stress among U.S. Standardized Patient Educators (SPEs) belonging to ASPE.

Using a purposive approach, a population study of ASPE SPEs was conducted via a web-based anonymous instrument survey. The instrument contained 56 items, measuring resilience, resilience sub-dimensions, job stress, and demographic variables. Descriptive statistics, Spearman Rho Rank Order Correlation, Pearson Product Moment Correlation, and Multiple Linear Regression were used to analyze the data.

Findings revealed statistically significant correlations between resilience and job stress; resilience sub-dimension, commitment, and job stress; resilience sub-dimension, control, and job stress; and resilience sub-dimension challenge and job stress. Further, the combination of commitment, control, and challenge accounted for 26% of the variance in measured job stress. Of note, the sub-dimension commitment uniquely accounted for 16% of the variance in measured job stress.

Resilience and resilience sub-dimensions are associated with decreased job stress among U.S. ASPE members. These findings can be used by health educators to design

targeted health promotion efforts to enhance resiliency among ASPE's SPEs. Further research is warranted to better understand these relationships outside professional association members and how to positively impact health and health behaviors in other at risk higher education populations.

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CHAPTER 1

INTRODUCTION

National Agenda for Job Stress

National health promotion, prevention, and protection agendas have had an unprecedented bipartisan 30-year history and evolution through the *Healthy People* initiatives (USDHEW, 1979; USDHHS, 2001; USDHHS, 2010a). Begun in 1980, this national agenda established a series of “10-year plans” that quantified and measured health promotion, prevention, and protective objectives for all Americans. The objectives for each subsequent decade’s objectives were enriched by and reflected changes in social and political concerns, technology, theory, and included a focus on the needs of special populations at the state and local level (Green & Fielding, 2011).

Occupational risks to health were identified in the initial United States Department of Health, Education, and Welfare’s (USDHEW) 1979 *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* (USDHEW, 1979) and are represented in *Healthy People 2020: Objectives for Improving Health* (U.S. Department of Health and Human Services [USDHHS], 2010b). Indeed, *Healthy People 2020: About Healthy People* puts forth four overarching goals:

1. Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.
2. Achieve health equity, eliminate disparities, and improve the health of all groups.
3. Create social and physical environments that promote good health for all, and

4. Promote quality of life, healthy development, and healthy behaviors across all life stages.

Importantly, three of these: (a) the focus on high quality of life, (b) creating social and physical environments to promote health, and (c) promoting quality of life, healthy development, and health behaviors across life stages are critical to occupational health.

In this context, the evolution of occupational safety objectives over the decades has been addressed primarily via the National Institute for Occupational Safety and Health (NIOSH). NIOSH, an agency of the Centers for Disease Control and Prevention, is responsible for conducting research regarding occupation related illness and injury (USDHHS, 1999a). NIOSH was established in 1970 to help assure safe and healthful working conditions by providing research, information, education, and training. Further, the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) was established as the regulatory agency that enforces federal labor laws (USDHHS, 1999b). The first federal law, the *Occupational Safety and Health Act*, was passed in 1970 to ensure that private and federal employers were provided with a place of employment that was free from hazards likely to cause death or serious physical harm (U.S. Department of Labor, OSHA, 1970).

Historically, during the 1970-80s, NIOSH identified physical and chemical exposure hazards in the work place including asbestos, hot environments, and noise (USDHEW, 1972a, 1972b, 1972c). Additionally, specific high-risk occupations and environments recognized by NIOSH included mining, healthcare, logging; and airports, hospitals, and manufacturing plants (USDHHS, 2012a). In 1977, NIOSH published

Occupational Diseases: A Guide to Their Recognition. Additionally, in 1977, NIOSH/OSHA published the *Pocket Guide to Chemical Hazards*. This guide presents data and information on prevalent chemicals in the work place. In specific, the guide assisted employers and occupational health professionals in recognizing and controlling chemical hazards in the workplace. Importantly, as NIOSH provided key work hazard information to worksites, courts simultaneously granted authority to OSHA to enter workplaces, examine medical records, and to disseminate research to measure the impact of published NIOSH policies. The surveillance of workplace illness and injury informed prevention strategies. Specifically, between 1986 to 1988, NIOSH released two documents, the *Proposed National Strategies for the Prevention of Leading Work-Related Diseases and Injuries: Part 1 and Part 2* (USDHHS, 1986, 1988b). These documents confirmed that the top work-related diseases and injuries at the time included

- occupational lung diseases;
- musculoskeletal injuries;
- occupational cancers;
- amputations;
- fractures;
- eye loss;
- lacerations;
- traumatic deaths;
- cardiovascular diseases;
- disorders of reproduction;

- neurotoxic disorders;
- noise induced loss of hearing;
- dermatologic conditions; and
- psychological disorders (USDHHS, 1983, 1986, 1988b).

These diseases and injuries were identified as the leading causes of illness and injury among U.S. workers. According to Levi (1990) all of these diseases and injuries were stress-related and preventable to some degree. Specifically, Levi argued that the etiology, pathogenesis, prognosis, treatment, and prevention of these diseases and injuries were amenable to human action, reaction, and inaction. Of particular interest, the NIOSH *Proposed National Strategies for the Prevention of Leading Work-Related Diseases and Injuries: Part 1 and Part 2* (USDHHS, 1986, 1988b) included psychological disorders. Sauter, Murphy, and Hurrell (1990) identified work-related psychological disorders such as anxiety, depression, and poor job satisfaction as well as maladaptive health behavior and life-style patterns such as chemical dependencies and alcohol abuse. The philosophy of Levi as well as the findings of Sauter et al. is consistent with the research of McGinnis and Foege (2004) regarding the root cause of deaths in the U.S. McGinnis and Foege attributed half of all deaths to modifiable behaviors including tobacco use, alcohol use, illicit drug use, and diet and activity patterns. Importantly, individual health behavior, including coping strategies in confronting stress, represented “the greatest single domain of influence on the health of the U.S. population” (McGinnis, Williams-Russo, & Knickman, 2002, p. 83). In the context of the philosophy of Levi (1990) and the research of McGinnis and Foege (1993) and McGinnis et al. (2002), job stress related health

behaviors appear to be a serious and preventable concern. Notably, stress at work has been researched over three decades and is still recognized as an important national workplace safety and health topic (USDHHS, 2013).

Distribution and Extent of Job Stress in the U.S.

Job stress surveys have been conducted by a variety of stakeholders. These include non-profit research organizations (The Families and Work Institute), insurance companies (Northwestern National Life), and universities (Yale). Surveys conducted by the Families and Work Institute (Bond, Galinsky, & Swanberg, 1998), Northwestern National Life (1992), and Yale University (Barsade, Wiesenfeld, The Marlin Company, 1997) have documented that 26 to 40% of workers find job stress to be frequent and severe. Northwestern Life (1991) also found that one fourth of employees viewed their jobs as the number one stressor in their lives. Further, job stress and effects on health are unequally distributed. Specifically, younger workers, working women, workers in occupations classified as low skill, and employees with precarious employment such as contractors or temporary workers bear a disproportionate preventable burden of job-stress related illness and disease (T. LaMontagne, 2012). Thus, the documented distribution, extent, and frequency of job stress affecting a large and specific portion of the workforce population underlies the importance of the examination of this phenomena.

Systems Framework for Job Stress

In specific, research during the late 1970s to 1990s further elucidated psychological and social factors contributing to work-place stress. Of note, work-related psychosocial structures that originate in the social structures and processes of work

influence health and contribute to disease or mortality. These structures and processes contribute to the emotional, cognitive, behavioral, and physiological health of the individual and the nation (Levi, 1990). Work-related health outcomes are complex and modified by situational and individual factors. The U.S. Surgeon General identified the role of both the individual and the system in the health of the nation as reflected by the statement, “We are killing ourselves by (a) carelessly polluting the environment, (b) permitting harmful social conditions to persist, and (c) our own careless habits” (USDHEW, 1979, p. viii). Indeed, a substantial body of discipline-specific evidence exists to support this dynamic relationship among the complex social work environment, an individual’s perceived stress, and occupational related disease. Importantly, an interdisciplinary and health-oriented approach to job stress research is still needed to understand how to best protect and promote occupational health and prevent work-related psychological disorders.

Organization of Work and Job Stress

Advances and accomplishments by the research and regulation arms of NIOSH and OSHA that emerged between the 1970s and the 1990s provided the foundation for attention to emerging modern occupational health challenges among the U.S. workforce. In 1996, NIOSH actively partnered with the National Occupation Research Agenda (NORA) to develop a national research agenda to explore and improve occupational health. In addition to the NIOSH partnership, NORA partnered with universities, large and small businesses, professional societies, other government agencies, and worker organizations (USDHHS, 2012b). By 1999, this partnership resulted in a report, *The*

National Occupational Research Agenda Update, May, 1999: 21 Priorities for the 21st Century (USDHHS, 1999a) and a global conference, Work, Stress, and Health 99: Organization of Work in a Global Economy.

Specifically, *The National Occupational Research Agenda Update, May, 1999: 21 Priorities for the 21st Century* (USDHHS, 1999a) established 21 priority research areas in three categories to examine the quality of working life and safety and health on the job. One of the 21 priority research areas was stress at work related to the changing organization of work. In specific, “organization of work” was a term coined in 1996 by NIOSH. This phrase refers to management practices, work production processes, and their influence on the way work is performed. The interdisciplinary NIOSH team composed of representation from industry, labor, and academia continued development of a national research agenda to address the impact of organization of work on job stress. To enrich understanding about the impact of the organization of work on the safety and health of working people, NORA designated three categories for further research. These included (a) disease and injury, (b) work environment and workforce, and (c) research tools and approaches. The category of work environment and workforce included the organization of work issue job stress.

To provide a systems’ orientation and framework, organization of work was further classified into three interrelated levels: (a) external, (b) organizational, and (c) work contexts. External contexts include legal, political, technological, and demographic forces at the national and international level. Organizational contexts include management structures: supervisory practices, production methods, and human resource

policies. Work contexts refer to job characteristics including task attributes—temporal aspects, complexity, autonomy, and physical and psychological demands; social-relational aspects of work; and career development (USDHHS, 2002). These contexts (external, organizational, and work) individually and in combination contribute to the experience of job stress.

Psychosocial Risk Factors for Job Stress

The interrelated nature of work contexts, organizational contexts, and external contexts and their effect on job stress is illustrated by organizations' responses to the recent downturn in the United States economy. Current organization-of-work practices include downsizing the workforce, lean production and service, as well as utilizing nontraditional employment of temporary or contract workers. Concerns have been raised that these organizational practices may directly impact workers and increase the individual worker's stress secondary to reduced job stability, increased workload demands, and increased working hours (USDHHS, 2002). Of note, workforce reductions, restructuring, and downsizing (organizational context) in the workplace (U.S. Department of Labor [USDOL], 2001) are direct responses to a poor economy (external context). Heightened risk factors in a downsized workforce include increased workload, extended work hours, and decreased job security (work context; USDHHS, 2002).

Further, data from NIOSH supports that working time has increased dramatically in the last two decades. Workers in the U.S. now log more hours on the job than their counterparts in most other countries. In July 2014, approximately 145 million people or 59% of the civilian workforce were employed in the U.S. (USDOL, 2014). Importantly,

these employees spend a significant amount of time, that is, a quarter of their lifetime, and up to half of their waking lives, at work or commuting to workplaces. In addition, current jobs are subject to rapid change and volatility secondary to economic recessions. Thus, the economic recession has extended negative effects to the organization and the worker that increase the risk of job stress.

In specific, the volatility of the U.S. job market has resulted in involuntary job displacement alternating with reactive job creation and resultant high levels of turnover. This volatility and turnover threatens stable long-term relationships between the employer and employee (Bureau of National Affairs, 2000). Positive employee-employer relationships have a moderating effect and decrease occupational stress, especially with respect to supervisory relations. Supportive supervisory practices are an organizational context factor found to reduce occupational stress. Specific mitigating factors include receiving constructive feedback from supervisors and relying on supervisors to assist with solutions to work problems via information or emotional support (State of Queensland, 2012). With the loss of these mitigating factors, the result is an external context factor (economic downturn) impacts an organizational context factor (supervisory practices) that negatively impacts a work context factor (a stable and positive professional social relationship between employee and supervisor). Importantly, social-relation support, a moderator of job stress, is disrupted and other social-relation supports may be at risk. Specifically, both internal and external social-relations and support have the potential to moderate occupational stress. Research suggests that positive social support has a direct effect on moderating job stress (Shaw, Fields,

Thacker, & Fisher, 1993). Shaw et al. (1993) identified studies (C. D. Fisher, 1985; Ganster, Fusilier, & Mayes, 1986) where an inverse relationship was found between external social support and job stress. Within the work environment, the support of colleagues and peers has been found to moderate or decrease occupational stress. Notably, the way in which workers are supported is key. The provision of information, assistance in performing tasks, and emotional support are all social-relational aspects that contribute to moderating job stress (State of Queensland, 2012).

In addition to social-relational work context factors described, task attributes represent a work context factor associated with occupational stress. Specific work context factor task attributes may be negatively impacted by the aforementioned external and organization context factors. This results in increased workload demand or role overload, increased complexity and pace of work, decreased autonomy, and increased role conflict and role ambiguity for many workers (House & Rizzo, 1972; McGrath, 1970). Likewise, Noblet (2003) identified important factors to build health promoting work settings. Specific factors included psychosocial work characteristics as well as knowledge regarding organizational-level issues. Additionally, he identified social support and job control as characteristics that can protect and promote employee health, specifically psychological health. Overall, Noblet advocated for education that focused on both the influence of organizational practices as well as individual behaviors to promote and protect health. Interestingly, Noblet supported teaching individuals how to not only cope but to thrive.

To build a healthy work environment and thrive, it is necessary to address multiple risk factors. In specific, Workplace Health and Safety Queensland (State of Queensland, 2012) identified eight work context risk factors associated with occupational stress and correlated with psychological or physical illness and injury. Work demands that exceed capacity have been implicated and include:

- time pressure with inadequate time or resources,
- working too hard or too fast,
- difficult targets,
- mental tasks that require prolonged concentration or high-level decision making,
- work that is monotonous or dull,
- work that does not use a worker's skills or training,
- emotionally disturbing work,
- working long hours, through breaks, or taking work home; and
- shift work that affects sleep and makes it difficult to balance work and family life.

Additionally, a low level of control or autonomy in making decisions regarding how work is done and unnecessary supervision or surveillance have been identified as a risk factor for illness. In addition to the aforementioned poor social support from supervisors and/or co-workers, another risk factor is lack of role clarity. Role conflict contributes to risk when a worker's values are incompatible with organizational demands or expectations. Of note, well-managed relational conflict allows positive growth and

innovation. Conversely, prolonged unresolved conflicts in relationships are a precursor to harassment and bullying. Further, low levels of recognition and reward can promote occupational stress. Likewise, poorly managed organizational change increases occupation stress. For example, badly managed change in worker roles, shift schedule, and institutional restructuring can easily result in increased anxiety and uncertainty in workers. Last, organizational justice or perceptions of fairness within the organization promotes respect and dignity while the lack thereof produces occupational stress (State of Queensland, 2012).

Health Effects of Job Stress

Ultimately, the organization of work and risk factors contributing to job stress negatively affect the quality of work life and overall well-being of the U.S. worker. Notably, the compromised quality of work life and job stress has been associated with poor physical and mental health outcomes and poor job satisfaction (Mark & Smith, 2008; USDHHS, 1999b). The Encyclopaedia of Occupational Safety and Health (Sauter, Hurrell, Murphy, & Levi, 1997) described that job stress has been associated with cardiovascular disease, musculoskeletal disorders, psychological disorders, workplace injury, suicide, cancers, ulcers, and impaired immune function. For example, differences in job stress levels have been linked to mental health consequences such as depression and burnout (Maslach, 1978). Maslach, Jackson, and Leiter (1996) reported that chronic job stress was correlated with physical exhaustion, insomnia, and increased alcohol and drug use. Chandola, Brunner, and Marmot (2006) concluded that chronic stress at work was a significant risk factor for metabolic syndrome, a cluster of risk factors associated

with increased risk of heart disease and Type 2 Diabetes. In addition, psychologically demanding jobs with decreased worker autonomy have been linked to cardiovascular disease. Further, these physical and mental health consequences lead to increased health care costs. Health care expenditures are 50% greater for workers who report high levels of job stress versus those with moderate to low stress (Goetzl et al., 1998).

Interestingly, in the 1980s, a new field in the psychological sciences, Occupational Health Psychology (OHP), emerged to focus specifically on addressing individual and organizational risk factors for stress in the workplace (Everly, 1986). Between 1990-2011, the national public occupational health sciences agency NIOSH partnered with the American Psychological Association (APA) to promote OHP. This partnership between a public health agency and a professional psychology society resulted in nine international conferences on work, stress, and health; establishment of the Society for Occupational Health Psychology (SOHP); and the establishment of the Journal of Occupational Health Psychology. This publication chronicles research, theory, and public policy articles to improve the quality of work life and to protect worker health. Additionally, graduate level training was initiated at major universities. The curriculum included occupational safety and health; health implications of stressful work such as physical, psychological, social, and economic outcomes; and organizational interventions including work redesign, and employee assistance programs. The intent of organizational interventions was to reduce occupational stress, illness, and injury (USDHHS, 2012c).

Despite, these efforts, further intervention and research remained necessary. In specific, Hammer and Sauter (2013) researched the relationship between work stress and

health behaviors and the need for a systems-based approach to prevention and promotion. The research evidence supported the relationship of work stress to poor health behaviors. The poor health behaviors reported included smoking, poor food choices, low levels of exercise, and decreased sleep. Further, in the context of the significant negative health behaviors and outcomes, Hammer and Sauter (2013) indicated the need for both scholars and practitioners to explore combining health promotion and health protection to prevent job stress related disease and promote healthy behaviors among the working population.

Strategies to Address Job Stress

Research in the U.S. (1980s-2000s) informed job stress management in work settings. Notably, NIOSH endorsed a comprehensive approach including individual stress management and organizational change (USDHHS, 1999b). For individuals, NIOSH proposed worker stress management training and employee assistance programs (EAPs) to enhance coping skills, time management skills, and relaxation skills. These organizational health promotion programs targeted individual-level interventions to equip workers with knowledge and resources to improve their health and resist hazards in the work environment. According to Healthy People 1979, “health promotion begins with people who are basically healthy and seeks the development of community and individual measures which can help them to develop lifestyles that can maintain and enhance the state of well-being” (USDHEW, 1979, p. 119). Thus, occupational health promotion is concerned with developing individual and community measures to promoting well-being and quality of work life among healthy individuals, in the context of modern work organization and processes.

In addition to individual health promotion interventions, NIOSH was especially concerned with health protection interventions at the institutional or organizational level. Specifically, changing the organizational structure and processes of work had the potential to ameliorate job stress and protect workers from associated negative health behaviors and consequences. NIOSH recommended that employers engage in root cause analysis of the work environment. Recommended organizational changes to prevent job stress included:

- alignment of workload with worker's capabilities and resources,
- design of jobs to provide meaning and opportunities to apply strengths,
- clear definition of work roles and responsibilities,
- opportunities to participate in decisions affecting work,
- improved communication regarding career development and opportunities for promotion,
- opportunities for social interactions, and
- flexible schedules for work-life balance (Sauter et al., 1990).

In 1999, the NIOSH/NORA collaborative committed to a national research agenda to explore and improve occupational health, and recommended strategies to prevent job stress (USDHHS, 1999a). NIOSH reported that job stress was an interactive or transactional process between the worker and working conditions. Accordingly, attribution and thus prevention could be directed at the individual (personal stress management) or the work condition (job design; USDHHS, 1999b). Further, NIOSH

research identified organizational characteristics that promote health, low-stress work, and high productivity. These included:

- employee recognition for good work,
- opportunities for career development,
- organizational culture that values the individual worker, and
- management actions consistent with organizational values (USDHHS, 1999b).

Specific to mental health, Sauter et al. (1990) identified organizational changes to prevent job stress. Recommendations included designing jobs to provide meaning and stimulation and providing a workload consistent with workers' capabilities and resources. Enhanced autonomy could be achieved by providing workers an opportunity to participate in decisions affecting their jobs. Additionally, providing a clear definition of work roles and responsibilities as well as opportunities for career development to improve future employment prospects were identified as means of reducing stress. Further changes to prevent stress included providing opportunities for workers to socialize and providing flexibility in work schedules to promote work-life balance (USDHHS, 1999b). Importantly, measuring the success of health promotion and protection interventions requires surveillance and analyses.

Specifically, baseline national data needs to be gathered and targets need to be established specifically related to both organizational and individual job stress factors. As such, the *Healthy People* initiative and 10 year plans provide an organized formalized bipartisan venue to address this national health challenge. Currently, only individual interventions have been proposed. In specific, *Healthy People 2020* addressed individual

stress reduction at work. *Healthy People 2020* Occupational Health and Safety objective, OSH-9, is a developmental objective concerned with worksite stress reduction programs targeting individuals. Specifically, OSH-9 seeks to “increase the proportion of employees who have access to workplace programs that prevent or reduce employee stress.” Data to establish baseline and targets potentially will be available through NIOSH’s Quality of Worklife Survey (USDHHS, 2010b). Thus, at the national level, baseline measures and targets have yet to be established. Importantly, the inclusion of a developmental objective to nationally monitor job stress is necessary, yet not sufficient. Importantly, the phenomena of job stress is transactional and interrelated consisting of both organizational (external, organizational, and work context) and individual factors. Thus, both individual and organizational factors need to be considered and measured. Of interest, in 2011, NIOSH established Total Worker Health™ (TWH™). TWH™ is an approach to combine occupational health protection and individual health promotion to prevent injury and promote health and well-being among workers. Notably, NIOSH funded four Centers of Excellence to Promote a Healthier Workforce to research TWH™. These four centers are located in New England (University of Massachusetts, University of Connecticut), Boston (Harvard University), Iowa (University of Iowa), and Oregon (Oregon Health and Science University; USDHHS, n.d.). Importantly, research to date from the New England Center has supported that best practice approaches for job stress interventions should be tailored to suit specific sectors and other contextual factors and apply a systems approach (T. LaMontagne, 2012).

As such, examining the common organizational contexts of a profession's work as well as individual factors to promote quality of work life and improve coping with job stress is necessary yet complex. Work context may indeed be the most proximal organization of work factor to address. As data are collected to establish baselines and targets for individual worksite stress reduction over the next decade, it is important to engage simultaneously in research to determine the relationship between profession-specific modern work stress and the individual skills that promote successful coping with stress and thriving with change. Workers in the U.S. benefited and physical safety improved as a result of extensive occupational health research from the late 1970s to the early 1990s. Importantly, the phenomenon of job stress resulting from the modern organization of work among emerging professions has not yet been researched extensively in the U.S. Furthermore, most of the recent U.S. job stress research has focused on organizational efficiency to improve economic business goals rather than promoting worker's health and personal development as an intrinsically valuable and worthy cause. Thus, research is needed to better understand the relationship of the individual within the modern work system and job stress, specifically, to tailor interventions to suit individuals and institutions in particular sectors or professions.

Resilience and Job Stress

Currently, a body of research suggests that the modern organization of work as well as individual characteristics contribute significantly to occupational health and job stress (Shaw et al., 1992; USDHHS, 2002). In specific, research has identified personality traits that mitigate the effect of stress (Tedeschi & Calhoun, 1996). These

include extraversion, openness to experience, and optimism. Interestingly, these broad personality traits or factors are not the best predictors of behavior (Paunonen & Ashton, 2001). Importantly, according to Paunonen and Ashton, personality traits are comprised of focused personality facets. Notably, the focused personality facets account better for behavior versus the broad personality traits. Thus, to account for variance in behavior, Paunonen and Ashton supported an approach that includes focused personality facets.

As such, Bartone (1999) researched the relationship between the personality facet of resilience and job stress among deployed U.S. Army Reservists. The research results of Bartone confirmed that resilience protected against the negative effects of stress. Importantly, the research of Britt, Adler and Bartone (2001) supported the relationship of resilience and engagement in meaningful work as a means to derive long-term benefit from stress among U.S. soldiers involved in peacekeeping missions in Bosnia. These findings are consistent with earlier research by Holahan and Moos (1994). Holahan and Moos also identified potential benefits derived from the experience of stress. These included improved self-reliance and empathy, better social relationships, and development of coping skills. Thus, despite appreciable levels of job stress, some individuals were better able to cope with challenging jobs. Improved coping results in feelings of productivity, job satisfaction, and enhanced quality of worklife rather than the detrimental individual and social costs and consequences of job stress. Of note, further research outside of the U.S. military population is necessary to examine if resilience is protective in civilian populations. Additionally, further research will provide a better understanding of how some individuals are resilient to job stress and approach the

challenges of the modern organization of work as an opportunity for growth rather than a threat. This will inform best practices in health education and promotion interventions to mitigate the negative impact of job stress as well as to promote effective coping.

Professional Development and Job Stress

Importantly, the delivery of health education to promote resilience and ameliorate job stress must apply a comprehensive systems approach and be tailored to specific sectors (A. D. LaMontagne & Keegel, 2012). Human resource departments and worksites with limited resources, limited understanding of profession-specific job stressors, and limited capabilities to rapidly change the organization of work are necessary yet, not sufficient. Rather, it is necessary to simultaneously gather data and identify venues where education and health promotion that address profession-specific occupational stress and enhance individual resilience can be delivered. One possible venue is profession-specific societies who provide assistance, education, and professional development to members of the organization (Bickel, 2007). According to Bickel, “professional societies form a living matrix where minds meet and engage and where trusted colleagues pool their knowledge, helping each other to glimpse and plumb larger forces at work, to see connections among events, and to imagine the future” (p. 91). Further, Bickel described professional societies as upbeat and generative versus organizational or institutional cultures that pursue “excellence through competition and human sacrifice” (p. 91). Rather, professional societies provide new energy, ideas, and motivation. The information and support provided by a professional society can fortify and assist members in managing occupational challenges. This is critical to occupational

stress because collegial relationships and support have been reported to moderate the effects of stress in the workplace (Abouserie, 1996; Hitchcock, Bland, Hekelman, & Blumenthal, 1995; Noblet, 2003).

Professional societies as a venue for health promotion and resilience education to successfully manage occupational stress appear to have specific advantages. These include the potential to create profession-specific collegial interpersonal and social relationships. Small professional societies are easily navigated and improve one's ability to establish supportive relationships in the profession (Bickel, 2007). Importantly, the professional organization, in support of the profession and the membership, has the ability to tailor health prevention, health promotion, and health protection efforts to the specific needs identified by the profession and its membership through engagement of health education and promotion professionals. The individuals comprising the profession have the potential to articulate how the organization of work issues impact the personal experience of job stress that guide health educators' resiliency health education efforts to promote professional and personal well-being.

The Transactional Model of Job Stress

According to transactional models of stress and coping, stress affects persons differently. Specifically, behavior and health consequences related to stress are considered to be the result of the transaction between individual characteristics and the work environment or context, that is, the "person-environment fit." This is consistent with the NIOSH model in which stressful job conditions interact with individual factors to contribute to job stress (USDHHS, 1999b). Important constructs of Lazarus and

Cohen's (1977) and Lazarus and Folkman's (1984) Transactional Model of Stress and Coping include primary appraisal, secondary appraisal, coping efforts, problem management, and emotional regulation. Primary appraisal refers to the individual's evaluation of the threat of a stressor. Secondary appraisal refers to an individual's evaluation of the controllability of the stressor and an individual's coping resources. Emotional regulation includes cognitive behavioral regulation to adjust thoughts and feelings while problem management involves actionable steps.

Notably, an understanding of an individual's subjective appraisal of coping is critical. Specifically, it is critical to better understand differences in how and how well an individual copes with job stress as either a component of the appraisal process or as a moderator of the stress-health relationship (Cox, Griffiths, & Rial-Gonzalez, 2000). The measurement of the construct of individual dispositional resilience provides a means to examine how and how well individuals cope (Bartone, 1999). According to Bartone (1999) and Bartone, Ursano, Wright, and Ingram (1989), resilience influences emotional responses and health behavior responses to health threats such as occupational stress. Importantly, understanding the relationship between individual resilience and job stress is necessary for the design of health promotion programs and health education knowledge and skills training to improve coping skills and enhance well-being.

Standardized Patient Educators

Standardized Patient Educators (SPEs) represent a group of professionals committed to training Standardized Patients (SPs) to educate and train healthcare professionals. SPs are healthy lay persons trained to role-play a patient scenario and

provide feedback to learners. SPs provide feedback to health professions students on the delivery of clinically competent care including interpersonal and communication skills (Barrows, 1993; Wallace, 2007). SPEs provide an educational service, training SPs to deliver valid and reliable performance-based formative and summative assessments of health professions students (Colliver & Swartz, 1997; Colliver & Williams, 1993).

SPEs share similarities to service and teaching professionals that increase the risk of job stress. Like others in education, SPEs may work long hours, be selfless and put other's needs first, and do whatever necessary to benefit the student. Thus, the potential imbalance resulting from high organizational work demands paired with insufficient resources puts SPEs at risk for high levels of job stress (Maslach & Goldberg, 1998).

Major organizational risk factors for job stress include: time pressure with inadequate time and resources to complete jobs satisfactorily, working too hard or too fast, conflict with colleagues and supervisors, ambiguous job roles, lack of autonomy or control over work responsibilities, level of responsibility, and increased work demands. The imbalance in occupational demands and resources could result in increased occupational stress, physical and psychological illness, and diminished well-being (Maslach et al., 1996). Likewise, Cox et al. (2000) identified imbalances in the psychosocial aspects of jobs that could potentially cause psychological, social, or physical harm. Specifically, the interaction among the individual and the work design, the organization and management of work, as well as the social and environmental contexts increased risks of job stress. Of note, the aforementioned risk factors, imbalances, and interactions are consistent with the nature of work of SPEs.

Importantly, these risk factors are amenable to health education and promotion interventions. Specifically, resiliency education, a type of health promotion, has been suggested as a professional development process to counter the effects of burnout related to workplace stress in nursing professionals (K. Edwards & Hercelinskyj, 2007). Jackson, Firtko, and Edenborough (2007) examined the development of personal resilience to reduce vulnerability to workplace adversity. They suggested that resilience education be encouraged through programs and professional support outside the immediate work environment. This further supports professional associations as a venue for resilience health education and health promotion interventions.

Association of Standardized Patient Educators

The Association of Standardized Patient Educators (ASPE) is the international organization dedicated to professionals in the field of Simulated and Standardized Patient Methodology. ASPE is dedicated to professional growth and development of its members, advancement of SP research and related scholarly activities, and setting standards of practice (ASPE, 2013). An ASPE survey membership (D. Souder, personal communication, October 12, 2011) indicated 86% of members indicated professional development and growth as a reason for joining ASPE. Disruptive psychosocial work environments reduce professionals' ability to concentrate, communicate, and collaborate (Fischer et al., 2006). Accordingly, professional growth and development optimally occurs when workers and workplaces are healthy. Specifically, health in the workplace promotes physical, mental, social, and economic well-being that translates to healthier communities and societies (Hammer & Sauter, 2013; VicHealth, 2012).

Importantly, with the current state of national job stress objectives, the lack of systems-based health promotion interventions, and the significant potential impact of interventions on individuals, communities, and organizations, there is a substantial need for professionals in health education and promotion to become meaningfully engaged in promoting occupational health and preventing job stress. Thus far, there are few empirical U.S. studies examining the relationship between job stress and resilience from the professional framework of health education and health promotion. To date, the existing empirical research focused on resilience and job stress has been conducted among military personnel by psychology professionals (Bartone, 1999, 2006b). Building on the works of Richardson and Waite (2002) in mental health promotion through resiliency education, the research of Bartone (2006b) regarding leaders influencing and developing resilience against job stress, and the assertion of Bickel (2007) that professional societies are generative and a new source of ideas and motivation, as well as an extensive body of interdisciplinary literature, the present study seeks to explore the relationship between job stress and resilience. Specifically, the present study conducted by a health education and health promotion professional researched a specific population of higher education health professions' educators, ASPE SPEs.

Purpose of the Study

The purpose of this study was to analyze the relationship between resilience, job stress, and selected demographics in the context of the Transactional Model of Stress and Coping among U.S. members of the Association of Standardized Patient Educators.

Research Questions

1. What is the relationship between selected demographics (job status hours, job status funding, job type, years of service, or education level) and job stress among SPEs?
2. What is the relationship between resilience and job stress among SPEs?
3. What is the relationship between commitment and job stress among SPEs?
4. What is the relationship between control and job stress among SPEs?
5. What is the relationship between challenge and job stress among SPEs?
6. How much variance in job stress can be explained by the sub-dimensions of resilience (commitment, control, and challenge)?
7. Which sub-dimension of resilience (commitment, control, or challenge) accounts for the most variance in job stress?

Definition of Terms

Standardized terminology for stress associated with the workplace varies. The body of literature references work stress, job stress, and occupational stress interchangeably (Cox et al., 2000). The term stress has been used describe stress related variables and stress-related outcomes (Hobfoll, 1989). Defining terms to standardize communication and research is necessary to examine the stress research across multiple disciplines including physiology (Cannon, 1915; Selye, 1950), psychology (Sarason, 1972; Spielberger, 1972) and health education and health behavior (Lazarus & Folkman, 1984). The following are germane definitions.

1. *Stress* represents the physical and psychological state that results from an interaction of an individual and situation where the individual resources are not sufficient to cope with the demands of the situation (Michie, 2002). *Stress* is a subjective experience and cognitive interpretation of the interaction (Dua, 1994).
2. *Job stress* refers to the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker (USDHHS, 1999b). *Job stress* is also referred to as work stress or occupational stress (Cox et al., 2000; A. D. LaMontagne, Keegel, Louie, Ostry, & Landsbergis, 2007).
3. *Hardiness* is the ability to find meaning, particularly in stressful events that challenge an individual (Kobasa, 1979; Kobasa, Maddi, & Kahn, 1982).
4. *Resilience* refers to a self-righting force within everyone that motivates an individual to pursue self-actualization, altruism, wisdom, and harmony with a spiritual source of strength when disrupted by change, adversity, challenge, and stress (Richardson & Waite, 2002). In a less metaphysical sense, Siebert (2005) defined resilience as the ability to cope well with high levels of ongoing disruptive change, sustain good health under situations of constant pressure, and do so without acting in a harmful way. Importantly, Bartone (1999) equated *resilience* as dispositional resilience or personal hardiness.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to analyze the relationship between resilience, job stress, and selected demographics in the context of the Transactional Model of Stress and Coping among U.S. members of the Association of Standardized Patient Educators (ASPE).

Conceptualizations and Frameworks of Stress as a Research Agenda

Scientific and Biological Frameworks

The terms stress, stressor, and stress response have evolved from three frameworks explored in the context of the body of occupational stress literature. According to Cox et al. (2000), these frameworks represent an evolution in understanding of the concept and constructs that define and operationalize the term stress. The three basic frameworks provide insight into occupational stress.

- The engineering framework refers to a stimulus characteristic of the work environment. The stressor is a level of demand or an aversive or noxious stimulus or demand confronting the individual. The stressor is a set of causes. The engineering approach was developed in the 1800s and lost favor in the 1900s as stress research applied to living organisms failed to uphold the proposed constructs borrowed from the mechanical sciences.
- The physiological framework is characterized as a stimulus-response approach in a living organism. Generalized non-specific physiological responses occur when an individual is exposed to and threatened by an aversive or noxious

stimulus. This approach prevailed throughout the early to mid 1900s. The foundations of this approach remain valid. Importantly, the recognition of psychological factors that influence the stress response lead to the development of models that included cognitive and emotional processes as well.

- The psychological framework consists of a dynamic process that is the result of the continuous interaction between the individual and the environment. The psychological approach considers individual cognitions and emotions as contributing to problematic person-environment interactions. Chronic problematic person-environment interactions have been demonstrated to be associated with poor psychological and physical health.

In specific, the engineering framework was developed in the 1800s in the context of the disciplines of physics and mathematics. According to Merriam-Webster 11th ed. “stress” (n.d. para. 1a) is a constraining force or influence exerted on one body pulling, pushing, or compressing another body. For example, a metal resists external forces or stress until sufficient pressure causes the material to lose resiliency. The consequences of such resistance to pressure result in the breakdown of the body of material.

Introduced in the Theory of Elasticity postulated in the 1800s, a French mathematician Augustin Cauchy (1789-1857) introduced the terms “stress” and “strain.” Cauchy examined the consequences of the application of pressure to an object and the corresponding changes in that object. According to his Theory of Elasticity, pressure was determined to produce a change or deformation in an elastic object (Timoshenko, 1983).

In this context, stress was defined as the pressure per unit area. The resulting strain was measured as the ratio of the change in the length of the object to its original length (Dato & Abyad, 1996). Returning to the example from material sciences, stress was characterized as the aversive or noxious mechanical pressure placed on the material that resulted in a measurable physical change in the form of the material termed strain.

Accordingly, these mathematical and physical definitions from the 1800s have provided a foundational and empirical approach to the study of stress in inanimate materials. This engineering framework was useful for describing the material sciences, but had limited application to living organisms. As a result, the concepts of “stress” and “strain” remained from the engineering approach in the physical sciences. Importantly, a new framework evolved to describe analogous processes in biological organisms and rendered the engineering framework obsolete.

In the early 1900s, the physiological approach to stress emerged as a way to describe the biological changes occurring in living organisms exposed to stress. In contrast to mechanical pressure mediating external physical change, biological changes in response to stress were facilitated by two systems intrinsic to living organisms. These two systems were identified as being part of the neuroendocrine system. The role of the neuroendocrine system and the physiological model of stress were introduced by Walter Cannon, a physiologist and physician by training. Cannon’s (1915) early work in the 1900s provided evidence of physiological changes in animals in response to a stress such as an actual (pain, hunger) or perceived threat (fear, rage).

The two neuroendocrine systems were the pituitary-adrenocortical axis (PAC) and the sympathetic adrenal-medullary system (SAM). In his work, Cannon (1915) determined that when animals were aroused by a potential threat, they underwent an activation of the SAM system. Such SAM activation resulted in the release of the hormones. Specifically, at the biochemical level, epinephrine and norepinephrine were catecholamine hormones secreted by the adrenal medulla or sympathetic nerve endings. These hormones regulated changes in blood pressure, heart rate, breathing rate, and increase blood supply to muscles. As such, these physiological changes prepared the animal for the “fight-or-flight” reaction, a protective emergency response to a threat. Cannon used the terms “stress” and “strain” related to an aroused state with activation of the SAM or PAC. Specifically, Cannon defined stress as a stimulus or force external to the organism. Strain was the departure of the organism from a homeostatic set point (Cannon, 1963).

Such stress and strain experienced during the aroused state presented a contrast to Cannon’s 1929 description of a physiological steady state. Cannon described the normal balanced physiological regulation of a steady state or homeostasis in an organism. Importantly, failure to maintain homeostasis was determined to be a consequence of a critical level of stress. This critical level of stress resulted in a level of strain within this organism. The strain was indicated by the physiological responses in the animal model related to illness.

Such physiological changes soon were determined to be associated with human disease as well. In 1928, Cannon (1936) expanded his studies from animal models to

explore the role of emotions in clinical disease states among humans. Whether considering an animal or a human model, Cannon postulated that prolonged or severe actual or perceived stress triggers physiological responses in human systems analogous to those found among their animal counterparts. The prolonged physiological stress response represented strain and was characterized by elevated levels of epinephrine and norepinephrine. The sustained elevation of these catecholamine hormones was associated with the failure of biological systems in the human organism. This failure of biological systems in the living organism was determined to be similar to the failure of structural integrity seen in a mechanically engineered system. In the biological system, the end result was determined to be a state of disease.

Importantly, in addition to the identified physiological contributions to the disease state, the impact of psychological and social determinants was examined. Specifically, in the context of the human disease model, the negative effects of psychological and social states on disease were described in the biopsychosocial model of medicine (Engel, 1977). This biopsychosocial model emerged as a way to account for the influence of psychological and social determinants on the biological disease state. Notably, Cannon's research from the 1920s through the 1960s set the stage for the field of psychosomatic medicine to emerge. This field of study further illuminated the effect of psychological and social stress related to human health and disease (Gitlin, Levenson, & Lyketsos, 2004). Critically, the field of psychosomatic medicine developed most fully after Selye expanded Cannon's physiological approach to include the psychosocial determinants.

Specifically, Hans Selye (1950), an endocrinologist who studied and expanded the physiological approach postulated by Cannon, confirmed that an animal confronted by a stressor would undergo activation of the SAM. In the context of this research, activation was determined to be characterized by a concomitant release of epinephrine (adrenaline) and norepinephrine (noradrenaline). Selye identified a second neuroendocrine pathway influencing the pathophysiologic manifestations of stress. This neuroendocrine pathway was labeled the pituitary-adrenocortical axis (PAC). Like Cannon, Selye (1956, 1974) asserted that both physical (actual) and psychological (perceived) stimuli acted as stressors to initiate a three-stage process. He labeled the three-stage physiological process in PAC activation the general adaptive syndrome (GAS) and identified three stages and characteristics of GAS:

1. The initial alarm stage is regulated by the sympathetic nervous system and marked by a hormone-mediated activation of cortical steroids. The sympathetic nervous system activates pathways to prepare an organism to react quickly. Specifically, during the alarm stage, the anterior pituitary gland secretes the hormone ACTH. ACTH activates the adrenal cortex to secrete corticosteroids. Corticosteroids contribute to increased blood pressure and heart rate, increased respiratory rate, and increased levels of blood glucose. These cardiovascular, respiratory, and metabolic physiological increases enhance the organism's resources for the "fight or flight" response.
2. The resistance stage is characterized by continued stable high levels of corticosteroids. Concomitantly, the parasympathetic nervous system attempts

to restore the physiological homeostasis. Corticosteroid levels remain high to focus the organism's attempts to adapt to the stressor.

3. According to Selye (1950), in the case of prolonged and severe stress, the second stage progresses to the third stage or exhaustion. The anterior pituitary and adrenal cortex are unable to secrete hormones, adaptation is limited, and vulnerable organs (secondary to genetics or environmental factors) are affected.

During the resistance and exhaustion stage, research has confirmed that the human organism is susceptible to a variety of clinical disease states including heart disease and hypertension (Herd, 1978; McCubbin, Surwit, & Williams, 1985; Raab, 1971).

Selye's research (1956, 1976) provided a foundation for establishing a link between prolonged exposure to stress and cardiac disease. Specifically, when subjected to a stressor, organisms experienced strain characterized by neuroendocrine changes. Such changes to the neuroendocrinology of the organism were confirmed to be associated with cardiac disease states. In time, research revealed that these disease states included increased blood pressure (McCubbin et al., 1985), myocardial lesions (Raab, 1971; Raab, Chaplin, & Bajusz, 1964), increased cardiac demand (Raab, 1971), and ventricular arrhythmias implicated in sudden cardiac death (Herd, 1978). In this way, Selye's research strengthened evidence confirming the link between physical stressors (prolonged exposure to heat or cold, physical exercise, chemical treatment, and immobilization) and the resultant physiological neuroendocrine responses or strain associated with the disease state.

Importantly, as Selye's (1974) research progressed, he expanded understanding solely beyond the negative outcomes of stress. In specific, Selye (1974, 1976) suggested that individual stress responses could have constructive potential. In contrast to the destructive processes associated with disease in the organism, Selye was the first to propose that a stressor could enhance human response and performance. Notably, he examined the effect of individual endogenous and exogenous variables to explain differences among individuals in expected responses. Specifically, Selye identified exogenous factors including social and intellectual environmental conditions, nutrition, and physical surroundings that moderated endogenous physiological responses.

With respect to enhancing performance, Selye (1974, 1976):

- suggested that outcomes related to the exposure of a stressor could be positive and developmental rather than deleterious, and
- labeled these concepts of stress 'eustress' and 'distress.' Eustress occurred when stress enhanced psychological or physical training in the cases of academic study or strength training. Distress occurred when function was not enhanced and coping or adaption was limited.

Le Fevre, Matheny, and Kolt (2003) concurred with the later work of Selye in the early 1980s (1987). Specifically, their work revealed that the interpretation of a stimulus by an individual was a determining factor over the extent to which the stimulus was perceived to be distressful or eustressful stress. Thus, a stressor was not per se experienced necessarily as a distress. Rather, these researchers postulated that only the individual confronted by a stressor was able to manage it through perception and

interpretation of the experience. Importantly, the influence of the environmental context impacted the perception of stress experienced by the individual. As a consequence, the focus of stress research shifted away from a simple stimulus-response paradigm based on a stressor, physiologic stress response, and associated disease state. In the late 1970s and early 1980s, a new interactive psychological orientation emerged that included an examination of relations among individual psychology, social psychology, and properties of the physical environmental. Important tenets of this approach included:

- the environmental stressor,
- an individual's perceptions of locus of control and self-efficacy,
- and the interaction of the environmental stressor and the individual's perceptions (Le Fevre et al., 2003).

Interaction Models

The interaction models that emerged during this period provided a foundation for exploring an occupational health approach as opposed to a disease orientation to address work stress. Specifically, such a psychological approach was consistent with the 1947 World Health Organization's definition of health. The WHO (1947, p. 100) defined health as "not merely the absence of disease or infirmity, but a positive state of complete physical, mental, and social well-being." Further, the WHO (1986) defined well-being as a dynamic state of mind with balance among the abilities, needs, and expectations of an individual in context of the environmental demands and opportunities confronting it. Accordingly, the individual's subjective assessment was the only available valid measure of well-being (Levi, 1992). In this context, occupational health was determined by the

subjective assessment of the individual with respect to the environmental context, individual abilities and expectations, and the interaction of the environment and individual.

This subjective assessment of the interaction between individual factors and environmental factors was termed person-environment fit (J. R. Edwards & Cooper, 1990). In contrast to the environmental strain-physiological disease approach to stress, this psychological approach considered the interaction between:

- human psychosocial and environmental strain factors,
- and the individual's perceptions of subjective health and well-being (Cox et al., 2000).

This emerging psychological approach to job stress provided a conceptual framework aligned with the education, protection, and promotion of occupational health and well-being (Cox et al., 2000) among employees in varied workplaces. Accordingly, a healthy work environment was hypothesized to provide workers with an abundance of health promoting opportunities to protect themselves against known harmful organization of work conditions. Such harmful conditions might include a deprived social environment, lack of support from coworkers and supervisors, lack of participation in decision-making, and responsibilities not matched with the preparation or skill of an individual worker (USDHHS, 1999b). In this context, health education and promotion professionals would be positioned to advocate for:

- supportive relationships between and among supervisors and colleagues,
- opportunities to exercise choice in work-related decision-making,

- a good fit or match between the demands of work and the worker's ability, knowledge, and skill set (WHO, n.d.-b).

Contemporary Frameworks and Transactional Models of Stress

Concomitant with Selye's 1950s research on stress, Kurt Lewin (1951) was engaged in human behavioral research. Lewin's human behavioral research influenced stress theories significantly between the 1960s and 1980s. Like Selye (1956, 1974), Lewin (1951), a cognitive theorist and social psychologist, advanced the knowledge of human behavior away from the passive organism stimulus-response paradigm postulated by Cannon. In contrast, the new paradigm was predicated on the dynamic interactions of individual cognitions. Specifically, human behavior resulted from the interaction of the individual with the social and physical environment. Importantly, as a cognitive theorist, Lewin's work emphasized the role of the subjective hypotheses and expectations of each individual to explain human behavior. In this context, Lewin believed that mental processes such as hypothesizing or expecting were critical sources of influence over human behavior. Thus, an individual's subjective values about circumstances and the subjective probability or expectancy of potential outcomes would be sources of influence over behavior.

In addition to being a cognitive theorist, Lewin (1951) also was an ecological psychologist. As such, he examined the influence of the outside environment or organization on the behavior of an individual (Butterfoss, Kegler, & Francisco, 2008). In 1951, Lewin proposed that the objective environment as well as perceptions or appraisals by the individual of the environment were important variables of influence over behavior.

Informed by orientations from both the disciplines of cognitive theory and ecological psychology, Lewin believed that behavior was based on the cognitions and emotions interacting with the environment of the individual.

In this way, Lewin's work (1951) was consistent with the contemporary psychological approaches to understanding work stress. The contemporary work stress approaches accounted for the dynamic nature of the interaction of the cognitions and emotions of the person with respect to the work environment. Eventually, both the cognitive and emotional interpretation of the work environment by the worker was included in contemporary stress frameworks. These cognitive and emotional interpretations accounted for the appraisal component of the transactional approach (Lazarus & Folkman, 1984). Importantly, the interaction of the individual appraisal with the organization of the work environment was a continuous and dynamic process. The on-going appraisals comprised the iterative translational nature of the person-work environment interaction.

Interestingly, Lewin's insights (1951) into the importance of environmental factors and the influences of cognitions and subjective values of the individual were determined to be key. Specifically, both the interaction and translational theories moved contemporary stress research away from a purely mechanical or physiological approach to a psychological approach.

Among the earliest contemporary stress researchers, Spielberger (1966, 1978) proposed a model in an attempt to describe the experience of anxiety or stress. Specifically, he examined the phenomenon of stress as it was related to test taking.

According to this scholar (1978), test anxiety was situation specific. Cognitions of worry and emotionality were revealed to be the major elements of influence over ensuing anxiety. As such, anxiety or stress resulted from the interaction among internal (emotionality), external (testing) and cognitive factors (worry). In this context, a test was considered to be stressful if it was appraised cognitively to represent an ego threat to the psychological self or self-esteem of the student. Additionally, a stress response was postulated to be related to the stable personality trait anxiety. Accordingly, persons with high trait anxiety reacted with elevated anxiety whereas persons under similar test taking conditions with low trait anxiety were less affected by the experience.

Consistent with the work of Spielberger, Sarason's (1972, 1975) research in the 1970s supported the notion that sensitivity to test anxiety was a consequence of the interaction among appraisal, a common environmental stressor, and the personality of the individual. Importantly, sensitivity to anxiety was determined to be specific to the particular stressor confronting the subject. Thus, sensitivity to test anxiety was not considered a trait. Rather, anxiety was considered a state generalizable to other environmental stressors.

As an outgrowth of the work of Spielberger (1978) and Sarason (1972), important conclusions were drawn. The specific interaction, rather than an internal or external stimulus or individual appraisal or personality trait, determined the stress response. Further, the sensitivity of each individual to one situation, for example, test anxiety was not indicative necessarily of sensitivity to another situation, for example, occupational stress. Thus, the stress response was characterized by an individual's interaction with a

specific environmental situation. The psychological interaction stress theories represented a departure from the previous physiological paradigm in which a passive organism's response was determined solely by the severity and frequency of a stimulus.

Job Stress Theories

As the general interaction stress theories were emerging in the literature, specific job stress theories were developed. Whereas Sarason (1972) had identified psychological interaction that accounted for test-related stress, the occupational stress theories emerging in the 1960s and 1970s accounted for the psychological interaction of an individual within a specific work environment. In 1962, at the University of Michigan, French and Kahn developed the Michigan Model (Mark & Smith, 2008). This model also was known as the Institute of Social Research Model, the Social Environment Model, or the Role Stress Approach. The Michigan Model emphasized the importance of the perceptions of an individual to environmental job stressors. Environmental stressors were determined to include role ambiguity, conflict, lack of participation, and job security. Additional environmental job stressors were determined to be excessive workload and lack of challenge. These aforementioned environmental stressors defined the "social work environment" and critical "work role" stressors. The social work environment and critical work roles interacted with an individual's subjective perceptions to determine the workers fit in a work environment (Mark & Smith, 2008).

In 1973, French furthered the understanding of the interaction theory of work stress based on the Person-Environment Fit concept. The Person-Environment Fit theory suggested that only when individual characteristics were congruent with environmental

work factors could a person experience optimal vocational health. In this way, the attitudes, skills, abilities, and resources of employees needed to match the demands of the job (French & Caplan, 1973). French and Caplan (1973) further distinguished job demand as qualitative versus quantitative workload. Quantitative workload referred to an individual's perceptions of having too much work to complete. By contrast, qualitative workload referred to perceptions of an individual that the workload was too difficult. Using questionnaires and interviews, French, Tupper, and Mueller (1965) examined the perceptions about qualitative and quantitative workload as well as stress symptoms from 122 university administrators and professors at a large university. The researchers found that the stress symptom, low self-esteem, was related to work overload. Interestingly, this was different for the two occupational groupings. Qualitative overload was correlated significantly to low self-esteem for the professors. Qualitative overload was not significantly correlated to low self-esteem for the administrators. Importantly, both qualitative and quantitative workload were revealed to be correlated with other symptoms of physical and psychological stress outcomes in both occupational groups including:

- job dissatisfaction,
- job tension,
- embarrassment,
- high cholesterol,
- increased heart rate,
- and increased smoking (French & Caplan, 1973).

Likewise, Margolis, Kroes, and Quinn (1974) examined quantitative workload in a national sample of 1496 employed persons. Margolis et al. found that quantitative overload was related to problematic health and work behavior outcomes. These risk behaviors included escapist drinking, absenteeism from work, and lowered self-esteem.

In addition to the elements of the quality and quantity of work, French, Caplan, and Harrison (1982) examined the impact of specific occupations on work stress and health status. French et al. reported on work stress and health among a sample of 2,010 men. These men were working in the United States in 23 different occupations in the late 1970s. The resulting findings supported the notion that objective measures of self-reported health were accounted for largely by subjective measures. Specifically, the results of these analyses revealed that objective occupation accounted only for approximately 2 to 6% of the variance in self-reported health. Thus, incongruence between the ability of the individual and the needs of the work environment resulted in increasing strain and health-related symptoms of stress. The strain and accompanying health-related symptoms occurred when significant gaps (either subjective or objective) resulted in discrepancies in ability to match the work demand and supply. Importantly, the resulting strain resulted in poorer health and decreased productivity.

Like the Person-Environment Fit Theory, Karasek (1979) developed the Job Demand-Control (JDC) model in the late 1970s. Karasek focused on examining the interaction between the individual and the work environment. The JDC model made a significant contribution to explaining the interaction of two psychosocial job characteristics, job control and job demands. In this model, job control referenced

decision latitude, a construct comprised of control of work situations. Additionally, job control referred to skill discretion. Skill discretion referred to whether the employee was permitted to use learned skills or gain additional skills necessary for job performance. Low control consisted of a lack of autonomy in decisions regarding the work environment or how work was accomplished. Additionally, low control jobs did not offer employees the opportunity to develop or use acquired skills or training (Van der Doef & Maes, 1998). Job demands included quantity of workload and time pressure. Time pressure was determined to occur when an employee perceived that they had inadequate time to complete assigned job responsibilities.

Based on the four potential interactions of high versus low levels of control and demand, Karasek (1979) created a model of job stress that classified four types of jobs that included active, passive, and low or high strain jobs.

- Active jobs were characterized by high workload demands in a time-pressured environment. This was coupled with high control in decision latitude and discretion in using learned skills.
- Passive jobs were characterized by low workload demands without time pressure. Jobs in this category were associated with low control in decision-making regarding the work environment and a lack of opportunity to learn new skills or use acquired skills.
- Low strain jobs were characterized by low workload demands with little time pressure. Simultaneously, low strain jobs were characterized by high

individual decision latitude in controlling the work environment and using learned skills.

- High strain jobs were characterized by high workload demands and a high degree of time pressure. These were accompanied by low decision latitude in controlling the work environment and using learned skills or gaining new skills. Importantly, high strain jobs had negative health consequences.

The negative health consequences associated with high strain jobs have been illustrated in a number of studies. Karasek, Baker, Marxer, Ahlbom, and Theorell's (1981) analysis revealed that employees in high strain jobs (low decision latitude and high demands) were more likely to report poor health. Specifically, Karasek et al. (1981) studied Swedish working men. Karasek et al. performed secondary analysis using the Swedish national Level of Living Surveys. The data analyzed in this study were collected from a large random sample of the Swedish male workforce. The workforce was surveyed in 1968 and again in 1974. According to Karasek et al., Swedish men who experienced time pressured, psychologically demanding jobs, with low levels of decision latitude were more likely to experience coronary heart disease symptoms and premature cardiovascular-cerebrovascular death.

Similarly, Landsbergis, Schnall, Dietz, Warren, and Pickering (1997) examined 285 United States male employees of public and private sector enterprises in New York City. The purpose of this research was to examine the association between job demands, job decision latitude, and job strain and cardiovascular-disease related health behaviors.

The health behaviors studied over a three-year period included cigarette smoking, alcohol

use, lack of exercise, and being overweight. Among 189 male subjects, an increase in job decision latitude was demonstrated to be associated with a decrease in cigarette smoking controlling for age, race, education, marital status, and number of children at home. Importantly, findings confirmed that there was not a change in being overweight or alcohol use. Overall, the demand-control model was supported moderately by empirical research and had strong popular appeal. Importantly, the model was criticized for being too simplistic, because it did not take into consideration the impact of the moderating variable of social support on the main variables of job control and job demand.

In the late 1980s, Johnson (1989) expanded the JDC model to include social support and address the shortcoming of the JDC model. This resulted in the “Job Demand-Control-Support” (JDSC) model. Findings from Johnson’s work revealed that both job control and social support are psychosocial resources. According to Johnson, these psychosocial resources moderated the influence of the psychological demands of a heavy workload situation.

To explain this phenomenon, Van der Doef and Maes (1998) proposed the buffer hypothesis. The buffer hypothesis predicts that job control and worksite social support moderate the negative health consequences related to high demands. Two studies of the JDSC model supported the three way interactive effect of control, demand, and social support (Parkes, Mendham, & von Rabenau, 1994). Parkes et al. found evidence of buffering effects in two samples. Both a cross-sectional sample of 145 healthcare workers and a longitudinal follow-up study of university graduates found a modifying effect of control on demand when social support was present in the work environment.

Johnson and Hall (1988) examined the presence of cardiovascular symptoms among 13,779 Swedish male and female subjects. Findings from this analysis suggest that there is a modifying effect of control on the demand-cardiovascular disease relation only when social support from coworkers is present.

Although the JCD and JCDS models had popular appeal, neither readily accounted for individual differences in susceptibility to the associated stress and potentially negative health outcomes according to the models. De Rijk, le Blanc, Schaufeli, and de Jonge (1998) provided empirical evidence for an interaction effect that included individual factors beyond job control and demands. De Rijk et al. used the JDC model to study 367 Dutch nurses employed in 18 intensive care units. Additionally, the research focused on two individual characteristics: active coping and the need of each individual to have control as moderators of the JDC model. The health outcome examined was described as “burnout.”

Burnout refers to negative psychological work experiences secondary to prolonged exposure to human contact-intensive occupations (Maslach & Schaufeli, 1993). Not surprisingly, this research did not support the demand-control interaction effect of the JDC model. Among subjects in the study, active coping did serve to moderate the interaction between job demands and job control for nurses with high active coping. By contrast, for nurses with low active coping, high job control increased the emotional exhaustion component of burnout. With respect to need for control, no moderating effect was noted on the relationship between demand-control interactions and burnout (de Rijk et al., 1998). Thus, the research of de Rijk et al. was illustrative of the

need to examine individual variables beyond the traditional job demands and job control variables included in the JDC model.

Like the JDC model, the JDCS model was criticized for failing to consider individual differences as a source of influence over susceptibility and potential for coping (Cox et al., 2000). Rotheiler, Richter, Rudolph, and Hinton (1993) examined 1,333 male and female subjects including: all levels of university employees, students, managers, and blue-collar and white-collar workers. The sample represented industries including education, agriculture, health services, and local government. The sample also included patients from hospitals and clinics who had suffered a myocardial infarction or were diagnosed with hypertension. Importantly, Rotheiler et al. revealed five critical individual work-related psychological factors associated with an increased coronary disease risk. The five common critical elements identified were:

- work obsession characterized by work carryover, inability to relax after work, and excessive work efforts;
- reactive uncontrol characterized by impulsiveness, impatience, and lack of self-control;
- dominance/competition characterized by being competitive and wanting to assume leadership;
- planning needs characterized by the need to plan with focus and without distractions and;
- self-discipline/commitment characterized by doing versus planning and taking on additional jobs.

These five factors identified individual characteristics that contributed to the experience of work stress and the potential for ensuing related disease. Specifically, these factors were associated with negative effects on sleep, relaxation, leisure, personal care, and coronary health. Importantly, these factors provided an explanation above and beyond what could be predicted solely by job control and job demand variables. Thus, identification of these critical individual characteristics and factors advanced the focus of job stress models from simple structural to more complex process models.

Specifically, the Person-Environment Fit, the JDC model, and the JDCS model have been identified as examples of such structural models. These models were used to generalize which job stressors tended to lead to which strain outcomes among which populations (Mark & Smith, 2008). As such, the structural models were proposed as a means of informing job redesign. In this context, job redesign was characterized as decreasing job stress and enhancing productivity and health among the working population.

Unfortunately, recent large-scale socio-economic and technological changes or the ‘changing world of work’ have rendered job redesign improbable in many circumstances (USDHHS, 2002). These economic, technology, and policy-level changes have altered dramatically how institutions organize work. According to Cox et al. (2000), the resultant new organization of work has resulted in:

- downsizing, outsourcing, and subcontracting;
- increased demands for worker’s flexibility in the number of functions and skills;

- and an increasing proportion of the population working in the service sector.

Importantly, these changes in both structure and process of work directly affected workers. For example, downward changes in the economy in the 1990s increased perceptions of job insecurity. Job insecurity functioned as a chronic stressor (WHO, 2003). The WHO reported that long-term stress including anxiety, insecurity, and lack of control over work, accumulate and increase the chances of poor mental health and premature mortality.

To address more fully the impact of modern organization of work issues on workers, the structural models have evolved into what have been described as process transactional models (Cox et al., 2000). The transactional models of job stress are cognitively based dynamic process models that account for the mental and emotional processes of the individual in response to how a work environment is structured. Specifically, “transaction” reflects the unique process between the beliefs and motives of the person within the context of the environment (Lazarus, 1990). Thus, the transactional models of stress and coping account for individual differences in perceptions of threat, coping, appraisal, and locus of control.

Transactional Model of Stress and Coping

Indeed, one of the most commonly employed transactional process research models used to examine stress was delineated by Lazarus and Folkman (1984) in the early 1980s. Lazarus and Folkman proposed the Transactional Model of Stress and Coping, also known as the Cognitive-Relational Approach. According to Lazarus and Folkman, stress represents a relationship between the person and the environment that is

appraised by the person as taxing or exceeding his or her resources and is a threat to well-being. As such, the Transactional Model of Stress and Coping describes the relationship between environmental demand and individual response capability. Two key concepts in the process of individual response are coping and appraisal (Cox et al., 2000).

The concept of appraisal has two levels. Primary appraisal is an initial appraisal of potential personalized individual risk (Park & Folkman, 1997; Perrewe & Zellars, 1999). Lazarus (1994) proposed three types of individual evaluations of personalized risk: irrelevant, benign-positive, and stressful. The irrelevant encounter with no individual personal significance is ignored. The benign-positive encounter is considered to be desirable. The stressful encounter is considered to be harmful or threatening. Additional primary appraisals are motivational relevance and causal focus. According to Smith and Lazarus (1993), a stressor appraised as having a major impact on an individual's goals or concerns (high motivational relevance) is likely to result in situation-specific distress. Further, a self-causal focus of perceiving personal responsibility is likely to result in depression (Smith, Haynes, Lazarus, & Pope, 1993).

In addition to the influence of a personal primary appraisal, a secondary appraisal occurs when a situation is evaluated by an individual as being stressful and potentially harmful. Secondary appraisal is concerned with perceptions regarding managing the stress. Secondary appraisals include perceived ability to manage one's emotion, perceived ability to change the situation, and expectations about the effectiveness of coping resources. These appraisals involve perceptions of the individual regarding control over feelings, control over threat, and coping self-efficacy, respectively (Glanz &

Schwartz, 2008). According to Bandura (1997), self-efficacy is the belief that one can behave in such a way as to exert control and achieve a desired outcome. Self-efficacy is not a global personality trait. Rather, it is specific to a given behavior (Bandura, 1997). For example, an individual can believe that she is a good test taker and have high self-efficacy in test taking while this same individual might not have high self-efficacy regarding playing a musical instrument.

In addition to self-efficacy and controllability, the level of engagement of an individual with a stressor also varies according to the level of the threat perceived. Disengaging strategies occur when a stressor is perceived as uncontrollable and highly threatening (S. E. Taylor et al., 1992). Such disengaging strategies include cognitive avoidance (not thinking about), behavioral avoidance (inaction), distraction, and denial. According to Kobasa (1979), persons with strong and rich coping resources might not appraise situations as taxing. Rather, those with strong coping resources perceive demanding situations to represent exciting challenges while the individual with poor coping resources feels overwhelmed by the same situation. Thus, cognitions and emotions of each individual comprise critical elements of the appraisal process of the person-environment transaction.

Importantly, the primary (individual risk) and secondary (individual resource) appraisal processes are mediated by coping efforts. Two such types of coping efforts include problem-focused coping and emotion-focused coping. Problem-focused coping or problem management include efforts to change the stressful situation. Alternatively, emotion-focused coping is directed at changing cognitions or emotions related to the

stress. As part of emotion-focused coping, emotional regulation strategies include seeking social support, venting feelings, avoidance, and denial (Lazarus & Folkman, 1984). Interestingly, there are differences that inform the success of coping strategies based on the nature of the changeability of the situation encountered. Specifically, problem-focused coping works best when applied in a context where stressors are changeable. Emotion-based coping works best when a stressor is unchangeable (Glanz & Schwartz, 2008).

In addition to problem-management and emotional regulation coping responses, another important reaction to stress is meaning-based coping. As postulated by Lazarus and Folkman (1984), meaning-based coping enhances positive emotions that sustain the coping process and allows reenactment of problem management and emotion regulation strategies (Glanz & Schwartz, 2008). Meaning-based coping has been determined by Carver, Scheier, and Weintraub (1989) to induce positive emotions by interpretation of a stressful situation in a personally meaningful way, which helps to sustain coping efforts. According to Carver et al., meaning-based coping includes using spiritual or religious beliefs, positive reappraisal or reinterpretation, and revising goals to create acceptance and positive emotions. Indeed, Folkman (1997) researched positive psychological states and coping with severe stress among caregiving partners of men diagnosed with AIDS. Folkman identified four types of coping processes associated with positive psychological states among caregivers during caregiving along with the bereavement of partners. These types of coping included:

- positive reappraisal, a cognitive reframing strategy by an individual of a potentially stressful situation as positive;
- problem-focused coping to provide an individual with personal control and a sense of accomplishment via setting attainable goals focused on immediate tasks;
- spiritual belief and practice to facilitate positive reappraisal; and
- instilling ordinary events with positive meaning when individuals perceived connectedness, caring, achievement, or self-esteem.

Interestingly, the common underlying focus of these four types of coping includes searching for and applying meaning to stressful circumstances. In this context, Folkman (1997) identified meaning-based coping as a way to facilitate positive emotions. The resultant positive emotions were determined to sustain the coping process through personally constructed meaning in the context of the stressor.

Specifically, personality traits such as hardiness (Kobasa, 1979) or resilience (Carver, 1998) are believed to support the meaning-based coping process that is related to the positive emotion. Importantly, resilience to stress and recovery from stress may play an important role in decreasing reactivity to subsequent stressors, faster recovery from stressors, or even a higher post-stress level of functioning (Carver & Antoni, 2004). Thus, in the transactional process of managing stress in general and job stress in particular, understanding the relationship of individual resilience variables that enhance meaning-based coping to situational work variables is critical to protect and promote health.

Extent of Job Stress in the United States

In order to ameliorate job stress and protect and promote health, it is important to gain an understanding of the extent, consequences, and prevention strategies for job stress critical to the nation's health. The Worker Health Chartbook, 2004 (USDHHS, 2004) is a descriptive epidemiological reference of occupational morbidity and mortality among U.S. workers. The data are gathered from a network of occupational illness and injury surveillance systems at multiple levels. Labor market activity and working conditions are gathered and reported by the U.S. Department of Labor Bureau of Labor Statistics (BLS; n.d.). Unfortunately, determining the extent and impact of job-stress related health issues is complicated by the variety of collection and classification methods. The kinds of data gathered are variable across states. Additionally, at the national level, job stress is not specifically identified and surveyed as an occupational illness. Rather, anxiety, stress, and neurotic disorders have been grouped together and tracked by federal agencies at the national level.

Accordingly, the best estimates are from the National Institute of Mental Health (NIMH) Epidemiological Catchment Area study (Freedman, 1984) and the National Comorbidity Survey (NCS) in 1994 (Kessler et al., 1994). The Epidemiological Catchment Area study revealed that the six-month prevalence of psychological disorders was approximately equal to that for hypertension. Lifetime prevalence rates for major psychological disorders were 29% to 38%. Psychological disorders were most common among working age adults from 25–44 years. According to the NCS, 50% of respondents reported at least one disorder that occurred over their lifetime. Results indicated that

30% reported at least one year-long disorder. With half of respondents identifying one lifetime psychological disorder and psychological disorders most common among working adults, it is critical to further examine the accompanying comorbidity.

Interestingly, with respect to overall missed days of work between 1992 and 2001, the number of cases attributed to stress that resulted in days away from work declined from 6,189 to 5,659 (U.S. Department of Labor, Bureau of Labor Statistics [BLS], 2003a, 2003b). During the same time, the rate of cases requiring days away from work declined 25% per 10,000 cases (BLS, 2003a). Importantly, the days off from work secondary to stress compared with all other non-fatal illness or injury cases resulted in higher percentages of days off from work or long-term work loss. The median for days away from work secondary to all nonfatal injuries and illnesses was six versus 25 for stress. Further, in 2001, 42.1% of anxiety, stress, and neurotic disorders involved greater than 30 days away from work. In comparison only 22 days away from work were attributed to all nonfatal injuries and illnesses combined. Thus, in 2001, anxiety, stress, and neurotic disorders resulted in a greater negative health and economic impact versus other morbidity.

Consequences of Job Stress on Health and Mental Health

In the late 1970s, Lazarus (1981) described the positive impact of work on emotional health via developing a sense of usefulness and productivity. Likewise, McGregor (2006) and Argyris (1964) reported the development of esteem and self-actualization through work. Thus, occupational roles appeared to have a significant relationship to the emotional health and well-being of the individual worker. To address

the consequences of job stress on health and mental health, two federal agencies collect data regarding occupational health: the United States Bureau of Labor Statistics (BLS) of the Department of Labor and the private National Safety Council (NSC). These organizations collect data regarding occupational death and illness. The occupational illness data is less accurate and complete. The three major contributors to the incomplete data are as follows.

- Occupational illnesses are often indistinguishable from non-occupational illnesses.
- Occupational illnesses are often not recognized and thus reported by the employee or employer.
- Illnesses with long latencies often occur after employment and/or exposure cease (Office of Technology and Assessment [OTA], 1985).

Because of the incomplete data, frequent arguments occur regarding the number of occupational illnesses. The arguments can easily obscure the fact that occupational illness is preventable. Importantly, workers in certain industries disproportionately bear increased risk for particular injuries or illnesses, as is the case with the service industry.

According to Dua (1994), job stress among university staff negatively impacts emotional, physical, and occupational health. The negative effects of job stress on emotional health include depression and anxiety. With respect to physical health, negative manifestations include increased heart disease, headaches, infections, and sleep disturbances. Negative organizational symptoms include absenteeism, lowered productivity, and poor work quality. Notably, the job stress research of Dua among

university staff is consistent with past research on stress and biochemical changes in adrenaline, cortisol, cholesterol, and immunity (Selye, 1976); psychophysiological changes in heart rate and blood pressure (Cannon, 1915); and psychological changes including depression, anxiety, and irritability (Lazarus, 1966; Sauter et al., 1990). Importantly, Dua found that perceived work stress worsened emotional health and was associated with increased depression, anxiety, and illness. Indeed, in the United States, NIOSH recognized psychological disorders as a leading occupational health issue (Sauter et al., 1990). NIOSH identified three psychological health behavior related disorders: affective disturbances, maladaptive behavioral and life-style patterns, and chemical dependencies including alcohol abuse. Thus, to protect employees from psychological disease and promote healthy behavior, policies and procedures need to exist to support the individual health behavior of the employee. Further, in addition to individual health promotion policies, a population-based (Mackay, Cousins, Kelly, Lee, & McCaig, 2004) and systems-based (Hammer & Sauter, 2013) approach to work health policy must be considered. In specific, policy attention and resources must be focused on health education, health promotion and health protection that effectively prevent and mitigate these risks (Mackay et al., 2004; McGinnis et al., 2002).

Policy and Procedure to Reduce and Prevent Job Stress Related Psychological

Illness

To create and codify policy to reduce or prevent job stress, interventions typically are classified as organizationally and individually focused, organizational-only focused, and individual-only focused (A. D. LaMontagne et al., 2007). A similar international

model of best practice uses a systems approach to identify the level and focus to direct job stress interventions. The intervention levels are primary, secondary, and tertiary.

With respect to focus, primary interventions are preventive and proactive. The goal of primary intervention is to reduce risk factors prior to the worker experiencing stress-related symptoms or disease. The intervention targets stressors at the organizational level. Examples of organizational targets include job redesign, workload reduction, improved organizational communication, and conflict management skill development.

In the event that work stress is already occurring, the intervention is referred to as secondary. Thus, the secondary intervention level is ameliorative. The goal at the secondary level is to equip individual workers with the knowledge, skills, and resources to cope with work stress (A. D. LaMontagne et al., 2007). Specifically, the secondary level intervention targets employees' perceived stress or strain. Examples of widely used strategies to ameliorate an individual's psychological health status include cognitive behavioral therapy, coping classes, and anger management. The secondary intervention level is a preemptive strategy to prevent a tertiary intervention.

Specifically, when secondary interventions are not effective, the tertiary intervention is engaged. The tertiary intervention is fully reactive to identified impairments in health. At this level, reactions to improve psychological health include treating, compensating, and rehabilitating workers who have developed stress-related symptoms or disease (A. D. LaMontagne et al., 2007). Such interventions target short term and adverse health effects. Examples include counseling services such as employee

assistance programs. Additionally, rehabilitation programs assist employees in recovery from symptoms to the pre-morbid state. At this point, an employee is deemed ready to return to work (A. D. LaMontagne et al., 2007).

Augmenting the interventions classification, the “hierarchy of controls” describes the principles for preventing and controlling occupational exposure and disease (OTA, 1985). According to the hierarchy of controls, the further upstream the intervention from the adverse health outcome, the greater the prevention effectiveness. Thus primary prevention at the organizational level is ordinarily more effective than secondary at the individual level. Similarly, secondary prevention is more effective than tertiary intervention post-injury or illness. Given these findings, it is reasonable to assume that optimal health education regarding occupational stress would promote awareness of organizational upstream factors while simultaneously addressing individual health education, health protection and health promotion.

Consistent with the need to prevent work-related psychological disorders, in the 1990s as part of the NIOSH working group, Sauter et al. (1990) developed a comprehensive national strategy to protect and promote the psychological health of U.S. workers. Notably, this proposal had the potential to reduce morbidity and promote psychological growth and well-being. Key initiatives proposed to meet these goals included improving working conditions and employee mental health services along with increased research and surveillance. Like the Canadian Health Field Model, the strategy proposed by Sauter et al. (1990) acknowledged a process of adjustments between the individual and environment. Specifically, categories of variables examined included: (a)

individual psychological factors, (b) environmental factors including social and physical work environment, and (c) health care systems (USDHHS, 1988a). Accordingly, components of a prevention strategy included:

- job design to improve working conditions,
- surveillance of psychological disorders and associated risk factors,
- information dissemination and education regarding risk factors and mitigating risks,
- and enrichment of psychological health services for workers (Sauter et al. 1990).

Accordingly, in the early 1990s, Murphy (1996) published a critical review of the health effects of stress management in work settings. He reported that the variability in stress-management techniques, a wide range of health outcomes, and methodological concerns made it difficult to draw a consistent conclusion about the efficacy of the published interventions. Further, he indicated that the efficacy of a particular stress management program was dependent on specific health outcomes identified and targeted. His review also supported that some portion of job stress is related to workers' cognitions. Importantly, these cognitions are amenable to change.

Murphy's (1996) findings suggest that worksite stress management programs need to become more comprehensive. Specifically, education and training needs to be individually focused on prevalent stressors in the environment while simultaneously attending to organizational factors. Murphy also advocated for an 'action research' approach that involves workers directly in the design and evaluation of stress

interventions and the decision-making process to support sustained organizational change.

A Global and Systems Perspective on Job Stress

The WHO (n.d.-b) asserted that the most stressful work is that which places a premium on excessive demands and pressures that are not matched to the knowledge and abilities of the worker. The combination of demands and pressures coupled with few opportunities to exercise choice or control has the potential to increase stress. Further, when demands and lack of control exist in a work environment with little support from other colleagues or supervisors, the resulting stress may be severe. Although it is true that confronting pressure at work is unavoidable, that which is perceived to be unmanageable or excessive leads to stress.

In this context, it is important to examine the situational work factors or threats that can lead to unmanageable stress. The WHO (n.d.-b) has defined two main categories of work threats: (a) work content and (b) work context. Threats in work content have been identified to include such factors as:

- job content (monotony, under-stimulation, meaningless tasks, etc.);
- work load and work pace (too much or too little to do, time pressures);
- work hours (strict or inflexible, long and unsocial, or unpredictable); and
- lack of participation and control (in decision-making, over work processes, pace, hours, methods, and the work environment).

Further, threats in work context might include such variables as:

- career development, status and pay (job insecurity, lack of promotion opportunities, work perceived as low in social value, unclear or unfair performance evaluation systems, being over- or under-skilled for a job);
- role conflict (unclear and conflicting roles);
- interpersonal relationships (inadequate or unsupportive supervision, poor relationships with colleagues, bullying/harassment and violence, isolating or solitary work);
- organizational culture (poor communication, poor leadership, lack of clarity about organizational objectives, structures and strategies);
- and work-life balance (conflicting demands of work and home, lack of support for domestic problems at work, lack of support for work problems at home, lack of organizational rules and policies to support work-life balance).

Thus, the WHO (n.d.-b) distinguished organizational work-context from work-content related work threats as described above.

Likewise, the United Kingdom's governmental health and safety division, the Health and Safety Executive (HSE, 2007) identified numerous factors contributing to work-related stress including:

- demands due to workload, work patterns, and the work environment,
- control regarding how much say a worker has in the way they do their work,
- managerial support regarding encouragement and resources provided by the employer,
- peer support due to colleague encouragement and support at work,

- relationships that promote positive working to avoid conflict and deal with unacceptable behavior,
- role regarding understanding job role and employer assurance that no conflicting roles exist, and
- change with respect to how organizational change is managed and communicated at work.

Importantly, threats to occupational health and work-related stress are a complex phenomenon. A systems-based or social ecological context (Stokols, 1996) offers insight into the interactions between the organizational factors and the individual. According to Stokols, the core principles of social ecological theory are concerned with the dynamic interrelationship between the individual and the environment that promote health. Specifically, the social ecological model considers both personal attributes and situational factors that influence health. Personal attributes include genetics, psychological disposition, and behavior patterns. Situational factors include physical conditions and social processes and interactions. Stokols explored health promotion beyond either individual behavioral change strategies or environmental. Indeed, Stokols cited the modest impact of behavior change models as a limitation of behavior-change only models of health promotion. Also, Stokols identified the limited utility of an environmental approach that included “health protection” as the avoidance of unhealthy or unsafe environments. Specifically, Stokols advocated for an interdisciplinary social ecological approach of health promotion. The multiple disciplines included health education, organizational behavior, human psychology, public health, and medicine. Key

determinants to health in the social ecological approach to health promotion included the extent of fit between an individual's biological, behavioral, and sociocultural needs in relationship to the available environmental resources. Accordingly, health promotive interventions would need to integrate both individual behavior and environmental strategies to optimize health outcomes. For example, Stokols commented on how physical features of the work environment could result in psychological stress and personal and interpersonal strain. Examples of physical features detrimental to optimal social work conditions include excessive noise or separation from team members. Also, he emphasized the need for both active and passive interventions to support the intended changes. Thus, in the aforementioned example, active interventions such as individual hearing protection gear would be accompanied by organizational policies aimed at reducing the environmental noise level or limiting individual exposure.

Interestingly, in the 20th century, the medical and public health disciplines adopted the social ecological approach to promote health within their existing scientific paradigms. The Future of the Public's Health in the 21st Century published by Institute of Medicine (IOM) in 2002 identified that the behavior and health of an individual have multiple influences. These include social, family, and community networks; living and working conditions; and broader social, economic, and environmental conditions and policies. These influences may occur at the global, national, state, and local level (IOM, 2002). Likewise, the necessity of a systems perspective (Stokols, 1996) to improve health has been confirmed by other professional health education and promotion associations and organizations. Numerous publications, reports, and policy initiatives

from the health education and promotion profession acknowledge the interaction of complex systems on health. The recent Report of the 2011 Joint Committee on Health Education and Promotion Terminology (American Association for Health Education & the American Alliance for Health, Physical Education, Recreation, and Dance [AAHE/AAHPERD], 2012) published consensus terminology pertinent to health educators. Multiple definitions of health were included that reflect the complexity and interactive nature of health. These include the 1946 Preamble to the Constitution of the WHO, the 1986 WHO Ottawa Charter for Health Promotion, and the 1998 WHO Health Promotion Glossary. Whereas the 1946 WHO definition included the social and mental well-being aspects of health, the Ottawa Charter for Health Promotion (WHO, 1986) emphasized health as a “resource for everyday life” and a “positive concept emphasizing social and personal resources” (para 2). According to McKenzie, Pinger, and Kotecki (2008), health “results from a person’s interaction with and adaptation to his or her environment” (p. 600). Therefore, these definitions support the need to consider the social and mental aspects, personal resources, and interactions and adaptations to the work environment that best protect and promote occupational health.

According to the WHO (n.d.-b), the public health organizations of Sweden have identified issues at the system level that contribute to job stress and compromise health. The Swedish identified the role of a “healthy working life” as a significant domain to “create societal conditions for good health on equal terms for the whole population” (WHO, n.d.-b; Social Determinants of Health, para 1). Accordingly, the systems’ approach also includes the following domains: (a) economic and social security, (b)

healthy and safe environments, (c) increased physical activity, (d) good eating habits, (e) reduced use of alcohol and tobacco, and (f) elimination of illicit drugs. These domains address work-related health risks in contemporary society at the level of the system. Specifically, the risks include (a) threat of unemployment, (b) environments that are physically and socially deficient, (c) unhealthy dietary behaviors, and (d) abuse of alcohol, tobacco, and drugs. With respect to health outcomes, these risks have been determined to be associated with work-related disease (Chandola et al., 2006; McCubbin et al., 1985; Raab, 1971; Raab et al., 1964) and mental illness (Sauter et al., 1990: USDHHS, 1999b).

Interestingly, the Swedish systems approach to health education, promotion, and protection related to occupational health is consistent with a population health approach. Similar to a systems' approach, the population health approach to health education and promotion explains differences in health status via determinants (Kovner & Knickman, 2011). Such determinants in a population approach to understanding health issues include:

- the social and economic environment with factors like income, education, and social support;
- the physical environment;
- genetics;
- medical care;
- and health behaviors that link back to the previous determinants. These health behaviors include smoking, exercise, and diet.

Importantly, like the Swedish Public Health approach to health, the concept of population health postulated by Kindig and Stoddart (2003) supports the relationship among many of the determinants in the social and physical environment that limit or influence the behavioral choices of the individual. Thus, from a system perspective, occupational stress research needs to recognize not only the role of individual cognitions and emotions but the organizational contributions as well. Indeed, McKinlay (1979) proposed that the organization that produces goods and services is also responsible for “manufacturing illness.” That is to say, one by-product of providing a service is the resultant morbidity and mortality of those employed in that industry. McKinlay criticized the ascription of culpability to individuals based on their inclusion in a social category such as ethnicity or socioeconomic status. He described the job advertisements seeking traits such as competitiveness, drive, and aggressiveness that promote hiring employees with traits associated with occupational-related cardiac disease. Finally, he discussed the moral implications associated with this ideology and related employment practices.

Interestingly, he proposed that many health interventions are unsuccessful secondary to failure to account for the social contexts that reinforce the behaviors targeted for change.

Similar to McKinlay (1979), Levi, Frankenhauser, and Gardell (1982) identified four values that guide research into occupational stress at both the individual and organizational levels. These values include a humanistic-idealistic desire for a good society and working life; a drive for health and well-being; a belief in individual worker participation, influence, and control; and an economic interest in competitive and profitable business organizations. The latter, an economic interest in competitive and

profitable business organizations, only served political priorities of economic gain and organizational efficiency, not employee health and well-being. The economic interest value has predominated organizational occupational stress research (Levi, 1990).

In contrast, health education and promotion research has accounted for another set of values: idealistic desire for a good life, individual participation and influence, and health and well-being (Carter, 1984; Epp, 1986; Greenberg, 1978; Minkler, 1989; Nyswander, 1967). Nyswander, a health education leader, advocated for a broad role for health educators in an open society. Specifically, she defined an open society as one concerned with the rights and dignity of the individual, a respect for diversity and dissent, and increased social justice with self-determined individuals. Similarly, the 1986 Epp Report (Epp, 1986), with the Canadian goal of “health for all,” challenged the nation to reduce inequities, increase prevention, and enhance coping abilities. Likewise, Minkler (1989) suggested that health educators could assist in creating opportunities for “reciprocal maintenance.” Reciprocal maintenance was described by Duhl (1986) as an exchange and interdependence among the individual, social units, and broader society. Specifically, in a “healthy and open society,” the rights and dignity of individuals would be respected as well as the participation in decision-making and opportunities for employment and other key components of a healthy life would be assured (Minkler, 1989).

With respect to a drive for health and well-being, Carter (1984) separated medical status from health status. Carter and Wilson (1982) defined health as a “dynamic status that results from an interaction between hereditary potential, environmental

circumstances, and lifestyle selection” (p. 5). Thus, the drive of an individual for health and well-being extends beyond a static medical state of good health. Carter included positive thoughts, feelings, and behaviors that can influence health status regardless of medical status. Last, Greenberg (1978) supported health education as a means of freeing the individual to make health-related decisions based on personal needs and interests. As such, health education efforts would assist individuals with skill development, knowledge acquisition, and analytic skills to:

- enhance self-esteem;
- decrease social isolation, powerlessness, and normlessness;
- improve awareness of the effect of group peer pressure;
- clarify values to increase value-behavior congruency;
- increase health knowledge; teach health skills;
- develop an internal locus of control;
- enhance problem solving and decision making skills;
- as well as communication and assertiveness skills.

Importantly, the values of idealistic desire for a good life, individual participation and influence, and health and well-being are evident in the Swedish Public Health initiatives, the U.S. Healthy People initiatives (USDHEW, 1979; USDHHS, 1980, 2000, 2010a) and the WHO’s (n.d.-b) focus on occupational health promotion and disease prevention.

Job Stress in Education

An important consideration when examining the distribution of job stress is the type of occupation. According to the U.S. Worker Health Chartbook (USDHHS, 2004),

three occupational categories account for 77.6% of the distribution of anxiety, stress, and neurotic disorders among employees: technical, sales, and administrative support (39.9%); managerial and professional specialty (23.6%); and service (14.1%). Compared with employees of all other types of private industry, in 2001, service workers reported a higher incidence of anxiety, stress, and neurotic disorders (0.7) versus the rate for all other private sector workers (0.6) per 10,000 full-time workers.

In this context, the incidence and deleterious consequences of job stress evident among human service professionals have been well documented (Cherniss, 1995; Dewe, Leiter, & Cox, 2000). With respect to psychological stress, Louden (1987) studied overall job stress among 2138 subjects representing teacher stress in education. His findings revealed that 10-20% of teachers experienced psychological distress while 9% suffered from severe psychological stress. According to Louden (1987), the associated proportion of stress for both the psychological distress and the severe psychological stress groups was greater than that found in the general population.

Consequently, education, a human service profession, is targeted frequently for job-related stress-management interventions (Murphy, 1995). Interestingly, job stress among educators is ubiquitous throughout a variety of education levels. As such, multiple studies have documented the risks, mechanisms, and ill health effects of job stress among primary and secondary educators (Blase, 1986; Borg, Riding, & Falzon, 1991; Farber, 1991; Grayson & Alvarez, 2008; Lewis, 1999; Nagra, 2013) as well as in higher education (Abouserie, 1996; Dua, 1994; Gillespie, Walsh, Winefield, Dua, & Stough, 2001).

Given the prevalence of psychological stress (10–20%) among educators, it is important to understand how stress manifests itself both emotionally and physically. The Australian Independent Education Union (IEU) represents members of industries and professions throughout Australia. Of note, IEU conducted a survey of workload and perceptions of occupational stress among educators in Victoria Australia. Specific signs and symptoms associated with psychological stress were identified among union members employed in Catholic schools and education offices. The IEU survey research revealed that manifestations of psychological stress included irritability, anxiety, feeling powerless, and psychosomatic complaints included headaches, shingles, and heart palpitations (IEU, 1996).

Of note, the psychological stresses described in the IEU (1996) study are consistent with the phenomena of job “burnout” (Maslach, 1976). Burnout is characterized by three dimensions: (a) overwhelming emotional exhaustion, (b) cynicism and depersonalization, and (c) professional failure versus a sense of personal accomplishment (Maslach & Goldberg, 1998; Maslach & Jackson, 1981). Grayson and Alvarez (2008) researched burnout among 320 teachers, aides, and assistants from 17 public schools in rural southeastern Ohio. According to Grayson and Alvarez, both personal and environmental factors impacted teacher burnout. In specific, school culture or climate contributed differentially to the three dimensions of burnout. Of note, the role of the educator as a mediator of conflict among students, parents, and the community was identified as an important factor contributing to the emotional exhaustion dimension of burnout. Importantly, both negative teacher-student relationships and

teacher-administrator relationships were identified as contributing to both the emotional exhaustion and the cynicism and depersonalization subdimensions of burnout. In addition, instructional management characterized by frequent interruptions that detracted from classwork time was identified as a factor contributing to the lack of personal accomplishment dimension of burnout. As such, the physical and the psychological health and well-being of teachers may be supported best by health promotion interventions targeting improving relations within the school environment. Specifically, understanding professional expectations and improving connectedness is key. Thus, burnout may be ameliorated by professional development activities that include mental health promotion aimed at (a) understanding goals and values of the profession, (b) enhancing relationships with the administrative leadership of the school, and (c) building relationships with the broader community (Grayson & Alvarez, 2008).

Recently, Watts and Robertson (2011) reviewed literature regarding burnout in university teaching staff. Specifically, 12 empirical articles were identified and reviewed. In specific, the review concluded that the level of burnout in university teaching staff was comparable to levels of burnout in primary and secondary school teachers and hospital staff. Further, younger staff were more susceptible to job stress related burnout. Similar to primary and secondary teacher job stress, common patterns of stress specific to higher education and university faculty have been identified by Gmelch, Lovrich, and Wilke (1983). The top three individual and environmental stressors identified in the body of work includes high self-expectations, disproportionate time constraints, and insufficient resources. Further, Gmelch et al. conducted research to elucidate the unique dimensions

of stress among university faculty. These researchers sampled 1,920 faculty employed at 80 doctoral-degree granting institutions. Their findings described the unique multidimensional nature of stress in the life of academicians. Specifically, numerous roles demanding attention were revealed to result in strain on individuals fulfilling an academic role. These roles included teacher, researcher, colleague, adviser, and provider of service to the broader university. The factor analysis of data collected among faculty on a 45-item Faculty Stress Index revealed five specific dimensions of perceived job stress. These included:

- reward and recognition,
- time constraints,
- departmental influence,
- professional identity, and
- student interaction.

To quantify more broadly university job stress as identified by Gmelch et al. (1983), Dua (1994) examined the extent of job stress among all employees in a university setting. Importantly, subjects in this study included all university staff and their faculty counterparts. Dua measured job stress secondary to organizational job stressors in the following categories:

- job factors,
- role in organization,
- career development,
- relationships at work,

- and organizational culture.

Findings revealed that there was significant stress among all types of university employees. In specific, 82% of subjects experienced more than seven specific types of job stressors. Six percent experienced more than 17 of 21 identified job stressors.

Specific examples of job stressors identified included:

- lack of autonomy in carrying out work responsibilities;
- not receiving regular feedback regarding work quality;
- not performing work that was meaningful;
- suboptimal workplace conditions with respect to space, light, and noise;
- lack of clarity in role expectations;
- excessive workload;
- excessive time pressure;
- lack of job security;
- little or no opportunity for promotion;
- the role of unit or department politics versus performance to determine promotions;
- lack of decision-making authority in unit or department;
- a poor relationship with the supervisor;
- poor relationships with co-workers;
- lack of equipment and infrastructure to support the demands of the job;
- poor organizational change management; and
- poor self-efficacy.

Of note, the research performed by Dua (1994) among university faculty and staff identified lack of job security as an important job stressor. Likewise, Porfeli and Vondracek (2009) confirmed job security as a concern. The work by Porfeli and Vondracek suggested that the life cycle of occupations has shortened, occupational pathways potentially are less stable, and current occupations risk becoming obsolete. These vocational changes and lability pose a significant threat to the health and well-being of workers employed in these occupations.

As a specific example of occupational lability in higher education, Dua (1994) described the negative impact of university reorganization on the educational staff. The results of his research confirmed that the educational staff directly affected by the reorganization had the highest levels of stress. For example, reorganization often reduces the number of employees in the workforce, increases workload to employees whose positions are not eliminated, reassigns staff classified in similar roles to new units as pre-determined by policy, while offering the individual employee very little autonomy or decision making capacity. Thus, reorganization has the potential to promote perceived job stress among employees. Indeed, Cooper and Marshall (1976) and Cooper and Payne (1978) identified five main organizational job stressors implicated by institutional reorganization including. According to Cooper and Marshall (1976), the five stressors associated specifically with coronary heart disease and mental illness included:

- intrinsic job factors such as poor working conditions or work overload,
- role in organization such as role conflict or role ambiguity,
- career development such as lack of promotion policies or job security,

- poor relationships at work with supervisors or colleagues, and
- organizational culture including politics and lack of decision making.

Building upon the research of Dua (1994), Abouserie (1996) studied job stress, coping strategies, and job satisfaction among university academic staff in the United Kingdom (U.K.). In this study, 74% of academic staff rated work as the most significant source of stress in their lives. Further, approximately 85% of staff rated the stress as moderate or severe. Although, no differences in job stress were found based on the sex of the subjects, significant differences in stress were identified based on the academic rank of the faculty member. In general, junior faculty was revealed to experience more stress than the more senior faculty counterparts.

To address and ameliorate the source and severity of job stress, Abouserie (1996) identified a variety of coping strategies that are useful during stressful periods.

Work-specific coping strategies included:

- acceptance of the problem,
- talking with others,
- coming to terms with the problem,
- involving oneself with friends,
- saying no to unnecessary demands,
- talking about problems with colleagues,
- thinking of human limitations,
- bringing feelings into the open,
- shutting oneself in the office,

- forcing oneself to rest, and
- not going to work.

Interestingly, the coping strategies reported to be used over 50% of the time included: (a) acceptance of the problem (58%), (b) talking with others (57.7%), (c) trying to come to terms with the problem (55.8%), (d) involving oneself with friends (51.7%), and (e) saying no to unnecessary demands (51.7%). Those coping strategies used less than 20% included shutting oneself in the office (19.1%), forcing oneself to take rests (18.4%), and not going to work (10.7%).

Confounding variables of job stress examined among university staff include age, job type (various levels of faculty, administrative staff, and support staff), educational degree attainment, job status (permanent or temporary and full-time or part-time), recent university reorganization, and supervisory role (Dua, 1994). Dua examined characteristics of the job or job stressors that contribute to overall job stress. His research was performed at the University of New England, Armidale, New South Wales, Australia. He examined the extent to which university staff experienced job stressors as well as if job stressors acted differentially in a variety of categories. Specifically, he examined whether job stressors were differentiated based on:

- sex (males versus females),
- age (subgroup years: under 20, 21–30, 31–40, 41–50, 51–60, and over 60),
- job-type (administrative versus academic versus support staff),
- education attainment (trade versus high school versus college versus postgraduate),

- job status (permanent versus temporary and full-time versus part-time),
- supervisory role (supervising versus not supervising), and
- ethnic background.

His results did not find that job stress was experienced differently for males versus females. Importantly, there was an overall significant effect by age with younger staff reporting more job stress versus older staff. Interestingly, differences in specific factors that comprised overall job stress varied between the younger and older staff. For example, younger staff reported more job stress than older staff related to job significance (1.86 for the 31–40 age group versus 1.74 for the over 50 age group); work politics (2.12 for the under 30 age group versus 1.89 for the over 50 age group); and working conditions (1.80 for the 31–40 age group versus 1.59 for the over 50 age group). By contrast, older staff reported more stress than their younger counterparts from workload (2.17 for the over 50 age group versus 1.68 for the under 30 age group) and university reorganization (2.13 for the over 50 versus 1.94 for the under 30 age group).

In consideration of job type, junior faculty followed by staff reported higher levels of job stress versus administration, library, research, and technical support positions. Further, in this study, level of education had no effect on job stress. Interestingly, those members of the temporary staff reported more job stress than permanent staff. No significant differences occurred for full-time versus part-time staff. In addition, there was no significant difference in those who supervised versus those who did not. Lastly, ethnic backgrounds had no effect on job stress.

Like the United States, the United Kingdom's higher education sector has experienced significant change. These changes include increased numbers of students, major reductions in funding, and increased use of short-term contracts (Tytherleigh, Webb, Cooper, & Ricketts, 2003). Tytherleigh et al. (2003, 2005) revealed that compared to other professions, in higher education, the most significant source of job stress was job security. Also, these higher education employees also reported significantly higher levels of stress related to work relationships, control, resources, communication, and significantly lower levels of commitment both to and from the organization.

Resilience

According to Kobasa (1979), hardiness is a cognitive style related to good health and performance under stress. Likewise, Bartone (1999) identified personality hardiness or dispositional resilience as a protective factor against work related-stress. In specific, Bartone (1991, 2007) proposed a resilience scale to operationalize and measure the personality trait hardiness. Notably, prior validation studies supported that the construct of resilience is distinct from other dispositions. Dispositions separate from resilience include neuroticism (Maddi, Khoshaba, Harvey, Lu, & Persico, 2002), Type A behavior (Kobasa, Maddi, & Zola, 1983), negative affect (Maddi & Khoshaba, 1984), and optimism (Maddi & Hightower, 1999). As such, resilience is considered a distinct pattern of attitudes and skills (Maddi, 2007) that protect against stress.

In specific, three interrelated factors comprise the construct of resilience. These factors include commitment, control, and challenge (Kobasa, 1979; Maddi, 2002, 2007).

In specific, commitment refers to the tendency to stay engaged with persons or events rather than choosing to isolate oneself. Control refers to the belief that ones efforts and struggle will influence outcomes. Challenge refers to the belief that change is natural and an opportunity for growth. Importantly, resilience has been associated with decreased stress and improved mental and physical health (Bartone, 1999; Brooks, 2008; Hystad, Eid, & Brevik, 2011; Kobasa, 1979; Maddi & Kobasa, 1984; M. K. Taylor, Pietrobon, Taverniers, Leon, & Fern, 2013).

With respect to mental health, Bartone (1999) examined the role of hardiness in military personnel subjected to organizational downsizing and reliance on volunteer reserves. He examined 787 active duty officers. In general, the interaction of hardiness with stress predicted 38% of ill health effects including psychiatric symptoms such as depression, anxiety, and hostility. Bartone (2006b) proposed that resilience moderates the stress-illness relationship. Specifically, following exposure to stress, many persons remain physically and mentally healthy. Indeed, prospective studies of employees of the Illinois Bell Telephone company affected severely by reorganization and downsizing revealed that hardiness, social support, and physical exercise protect against stress related illness regardless of inherited vulnerabilities that increase these risks (Kobasa, Maddi, & Courington, 1981; Kobasa, Maddi, & Kahn, 1982; Kobasa, Maddi, & Puccetti, 1982). Importantly, a study by Kobasa, Maddi, Puccetti, and Zola (1986) identified hardiness as being twice as effective in decreasing subsequent risk of illness versus social support and physical exercise. Thus, resilience in the form of personality hardiness was identified as

a critical construct to understand and teach to vulnerable individuals to protect and promote occupational health.

A significant amount of theorizing and research advanced the concept and application of resilience and resiliency education to promote and protect health (Maddi, 2002). Specifically, resilience has been examined through three basic lenses: qualities of resilience; the process of resilience; and resilience as a motivating force. Resilience inquiry focuses on individual and social strengths. The development of resilient qualities can moderate the perceived severity of stressors and facilitate effective coping with disruptions and destructive relationships (Richardson & Waite, 2002; Waite & Richardson, 2004).

Resiliency as a Quality

According to Benson (1997), resilient characteristics are recognized as protective factors or developmental assets. Benson identified external and internal assets in youth. Specifically, external assets included a strong social support network of family, neighborhood, school, and adults. Additional external assets included receiving empowerment or being valued; having boundaries and expectations; and using time constructively. In contrast, internal assets described factors such as (a) achievement motivation; (b) positive values including caring, honesty, integrity, and responsibility; (c) social competencies; and (c) a positive self-identity including a sense of purpose, self-esteem, and internal locus of control.

Consistent with the internal assets described by Benson (1997), the field of positive psychology (Seligman & Csekszentmihayli, 2000) has described indicators of

resiliency and vitality in mental health. Characteristics identified include happiness (Buss, 2000), subjective well-being (Diener, 2000), optimism (Peterson, 2000), faith (Myers, 2000), creativity (Simonton, 2000), hope (Snyder, 2000), dreams (Snyder & McCullough, 2000), forgiveness (McCullough, 2000), and gratitude (Emmons & Crumpler, 2000).

Other research concurred with the description of factors important to resiliency. For example, in her study of resilient youth, Werner (1982) identified healthy self-esteem, being female, socially adaptable, achievement oriented, and a good communicator as important characteristics. In his study of children, Rutter (1990) identified self-efficacy, planning skills, and warm close relationships with adults as important characteristics. Garmezy (1991) and Garmezy, Masten, and Tellegen (1984) identified effectiveness in work, love, and play; high expectancies; self-esteem; internal locus of control; self-discipline; good problem solving and critical thinking skills; and humor as important factors. He also identified a triad of resiliency assets: personality disposition, a supportive family environment, and an external support system.

Resiliency as a Process

The resiliency process describes how resilient characteristics are acquired. Richardson (2002) described this experience as one of disruptive change, opportunity, adversity, stress, or challenge. A period of disorder follows after which one accesses personal strengths to grow stronger. Likewise, Flach (1988, 1997) described this as a process of disruption and reintegration. Resilient reintegration is a coping process that

results in growth, knowledge, self-understanding, and increased resiliency (Richardson, 2002).

Resiliency as a Motivator

Richardson (2002) defines resiliency as a self-righting drive towards self-actualization, altruism, wisdom, and harmony via a spiritual source of strength. Interestingly, in the late 1920s, the research of Cannon (1936) regarding human stress had revealed self-righting physiologic response to restore chemical balance. This physiologic process paralleled Richardson's proposed process of resiliency as a motivator to restore psychological harmony and balance. Similarly, Selye (1974), an endocrinologist, studied the physiologic process of stress and the means to alleviate stress. Selye theorized that pursuing meaningful purpose in life was an important tactic to ameliorate stress and improve health. Like Canon and Selye's basic science models, Richardson's model describes resiliency in its physical state as an exchange of energy between the ecosystem and the individual. According to post Newtonian quantum physics, Einstein's Theory of Relativity is that at a subatomic level, matter and energy are equivalent ($E=MC^2$) and interchangeable. Accordingly, for an individual experiencing a distressing physical symptom such as a headache or fatigue (matter), exposure to an external source of energy whether a medication (physical) or a visit from a loved one (social) might have a positive effect of ameliorating a minor physical ailment (Richardson, 2002).

Further, relationships between the metaphysical and physical sciences have helped explain the mechanism by which spirituality is translated into a motivational

source of resilience. Richardson (2002) asserted that faith in a power beyond oneself potentially provides strength and resiliency by enhancing the immune system and increasing self-efficacy. Ader, Felten, and Cohen (1991) discovered a connection between the brain and the immune system since termed psychoneuroimmunology. Psychoneuroimmunology is concerned with how information transferred on a molecular and cellular level is translated into emotions, cognitions, and physical conditions (Foss, 1999; Pert, 1997). Neuropeptides are the information transfer molecules. These molecules bind to receptor sites on cells to energize or depress functions of the cells that form the tissues that make up organs and organ systems in the body. Thus, the human physical and emotional state is changed from the cellular level to the human system level (Pert, 1997). Indeed, faith and hope, spiritual capacities, have been implicated in the placebo effect cure of patients (Ader, 2000; Brody & Brody, 2000; Wickramasekera, 2000).

Seaward (1991) also described the role of spirituality in achieving optimal health. Specifically, Seaward presented a theoretical health education model of spiritual well-being. Seaward indicated that spiritual well-being draws on a variety of disciplines including psychology, sociology, and theology. He delineated three factors implicated in spiritual well-being:

- a meaningful purpose in life,
- a personal value system, and
- internal and external relationships.

The health education model he proposed included exercises in existing health education programs to remove barriers blocking spiritual development in these three factors.

Additionally, he proposed designing courses to promote spiritual development of the factors. Seaward believed that health education and promotion focused on these factors would ultimately enhance the “hardy individual traits” necessary for growth, development, and resiliency to stress.

Similarly to Seaward, Hawks (2004) proposed that spiritual health contributes to optimal health. Specifically, he posited that social and emotional health contribute to the motivation necessary for health behavior changes. Positive health behavior changes then enhance physical and intellectual health. Importantly, Hawks argued that health education models like Seaward’s (1991) necessitate considering both a holistic multidimensional nature of health as well as active engagement in a self-defined higher purpose.

This directly contrasts with national health objectives. National health objectives focus on prevention of physical illness with concomitant valid and reliable measures such as blood pressure in heart disease or body mass index in metabolic disorders. Further, these tangible physical variables and physical health objectives drive funding and resource allocation. Thus, health educators face pressure to pursue these in lieu of less defined and operationalized measures for non-physical dimensions of health. Notably, professional associations and joint committees need to establish consensus in health education standards and terminology (Report of the 2011 Joint Committee on Health Education and Promotion Terminology, 2012) to inform the design of measures for

outcome goals of non-physical dimensions of health. As importantly, health educators must engage in research agendas that lead to valid and reliable measures of other dimensions of health such as emotional, spiritual, and social.

Resiliency represents one such measure. Resiliency as a process and motivator was related to particular qualities or attitudes that positively impact health. According to Kobasa (1979) and Maddi (2002), three specific attitudes were identified as moderating the negative effects of stress on health and well-being. The attitudes identified included commitment, control, and challenge. Commitment referred to active involvement versus denial, detachment, isolation, or alienation from persons and situations. Control referred to the cognitions and behaviors of an individual that she was able to influence other persons and situations. This was in contrast to individuals who experienced helplessness, passivity, and powerlessness when confronted with the same persons and situations. Challenge referred to the perception that one can learn from both positive and negative experiences when facing uncertainty and potential threats.

Interestingly, these attitudes, commitment, control, and challenge, were consistent with several theories of psychotherapy and counseling. Specifically, theories associated with existential psychology and cognitive therapy align with the concept of coping via resilience.

Existential psychology purports that meaning is created through decisions a person makes and acts upon or does not make and fails to act upon (Frankl, 1959; Kierkegaard, 1954). Existential therapy examines life themes including freedom, responsibility to self and others, and finding meaning in life (Sharf, 2008b). Meaning

systems are established over time and can only be changed via awareness and applied effort. According to Kierkegaard (1954), human development and progress requires existential courage or faith in choosing a different future versus complacency with a known present or past. Like Seaward (1991), Kierkegaard drew a spiritual analogy and likened actively choosing a future to drawing oneself closer to God, an archetypal future-chooser (Maddi, 2002). Thus, the resilience factor of commitment aligns with the existential concept of freedom, responsibility, and choice to take action and create a meaningful life.

In addition to parallel constructs in existential psychology and resiliency, cognitive counseling theories also inform coping through resiliency. Specifically, in cognitive therapy, belief systems and cognitions are identified as precursors to behaviors and feelings (Sharf, 2008a). Likewise, the resiliency factors of control and challenge both rely on cognitions and beliefs that influence feelings and behaviors. Specifically, control refers to cognitions and behaviors consistent with the ability to influence situations and people. Importantly, challenge, independent of control, is concerned with the belief that one is able to learn and develop, regardless of whether the outcome is negative or positive.

Regardless of the lens through which resilience is examined, the concept of creating meaning is consistent with constructs from the transactional model of stress and coping. Specifically, according to Lazarus (1981), work can enhance psychological health. It can act as refuge against problems, loneliness, and depression or serve as a positive form of coping. Transformational coping allows one to reappraise stress as an

opportunity and minimizes ineffective regressive coping through denial or avoidance (Maddi, 2002). Stress research supports that resilience or hardiness training is protective by promoting effective transformational coping. Resilience training has the potential to enhance positive reappraisal and protect against stress, specifically job stress. Indeed, prevention of work-related psychological disorders might not only reduce morbidity. Prevention and promotion could enhance psychological growth and development (Sauter et al., 1990). Thus, understanding the nature of occupational stress in a particular profession is necessary to develop and tailor effective health education and promotion efforts to the population. This is crucial to the health of the individuals who comprise this population as well as the sustainability and growth of the profession.

Standardized Patient Educators and Job Stress

The body of institutional employees given the title of Standardized Patient Educators (SPEs) is comprised of staff and faculty engaged in higher education of health professionals. SPEs work toward a common educational goal of using standardized patient methodology to teach and assess health professions students on crucial clinical and interpersonal communication skills (Barrows, 1993; Wallace, 2007). The profession of SPEs developed and grew to meet the training needs of students enrolled in the health professions at colleges and universities throughout the United States and abroad.

Organized and chartered in 1995, the Association of Standardized Patient Educators (ASPE) was formed as a professional society to represent the profession of the SPE. The ASPE Mission Statement is as follows:

ASPE is the international organization of simulation educators dedicated to:

- Promoting best practices in the application of SP methodology for education, assessment and research,
- Fostering the dissemination of research and scholarship in the field of SP methodology,
- Advancing the professional knowledge and skills of its members,
- Transforming professional performance through the power of human interaction (ASPE, n.d.-b).

Thus, professional identity as an SPE represents a recent and emerging occupational category. As recently as 2012, the Society for Simulation in Healthcare launched a certification for educators focused on healthcare simulation including SPEs, the Certified Healthcare Simulation Educator (CHSE; SSH, Certification, n.d.). Interestingly, Porfeli and Vondracek (2009) described the emergence of entirely new industries and occupational titles as influential in career development, work, and occupational well-being. Importantly, despite the professional society and certification, the SPE to date has not been officially recognized by the U.S. Department of Labor's occupational titles in the Occupational Information Network (USDOL, O*NET, 2013). Unfortunately, this lack of recognition and categorization renders these self-identified professionals at risk with respect to occupational health and well-being.

Further, the lack of standard job descriptions results in the SPE assuming responsibilities across multiple occupational categories. Typical responsibilities of an SPE in the education service industry might include these occupational categories: technical, sales, and administrative support; managerial and professional specialty; and

service. Importantly, these three occupational categories account for 77.6% of the distribution of anxiety, stress, and neurotic disorders (USDHHS, 2004). Specifically SPEs provide education and administrative support to clinical faculty in the implementation of simulation-based health professions curriculum. Additionally, SPEs provide technical support to administer SP performance-based assessments. The technical support involves administration of assessment software and operation of A/V hardware. SPEs also simultaneously manage substantial numbers of contract or employed standardized patients who participate in the performance-based assessments (ASPE, n.d.-a). Thus, the professional profile of the SPE is consistent for a population of employees at high risk for job stress and the related health sequela.

Likewise, occupational lability and reorganization of the institutions and roles in which the SPE participates is a current concern facing SPEs (D. Souder, personal communication, October 12, 2011). Lane (2007) reported how resistance to change in higher education, specifically health professional education, was related to fears of effect on workload, role stability, and time pressures. Notably, Lane recommended coping with change through an inclusive participatory process and communication strategies. According to Lane, well-managed change can be energizing and essential for healthy individuals. Of concern, while Lane provided an understanding of the fears and resistance of educators, she lacked a compelling plan to address the negative health sequelae frequently associated with organizational change. Importantly, organizational change has continued in higher education. Specifically, the Chronicle of Higher Education (Olson, 2010) documented the ubiquitous reorganizations of higher education

in the United States over the past decade secondary to fiscal challenges at the state and national level. Olson reported reorganizations at Arizona State University, Northeastern University, Florida Atlantic University, University of Northern Iowa, and Eastern Washington University and Idaho State University. Importantly, SPEs share similar characteristics to employees in higher education who have experienced organizational changes secondary to fiscal challenges. These include increased demand for services and product, decreased resources (funding and staffing), and high levels of stress related to human work relationships.

Notably, according to the Accreditation Council for Pharmacy Education (ACPE), structured engagement in individual professional development or Continuing Professional Development (CPD) has the potential to promote well-being and professional satisfaction (ACPE, n.d.). The goal of the ACPE's continuing professional development is to enhance knowledge, skills, attitudes, and values. Importantly, learning is focused in an area of preference or interest where a need has been self-identified. The learning is interactive, self-directed with specific objectives and outcomes, and uses more than one intervention. This philosophy is consistent with the conclusion of Murphy (1996) that work-related health outcomes must involve self-determined and self-directed health topics, objectives, and outcomes.

ASPE, like ACPE, is well positioned to facilitate development of members, including members' ability to improve occupational health and resiliency individually and organizationally. Specifically, with an ill-defined professional role and the lability and ubiquitous changes in higher education organization, it is critical that ASPE explore

the relationship between job stress and resilience among a population of health professions educators, SPEs. By proactively identifying factors that ameliorate job stress and enhance resilience among SPEs, health education and promotion efforts can be developed and specifically tailored to strengthen the individuals who comprise this maturing profession.

CHAPTER III

METHODOLOGY

Purpose of the Study

The purpose of this study was to analyze the relationship between resilience, job stress, and selected demographics in the context of the Transactional Model of Stress and Coping among U.S. members of the Association of Standardized Patient Educators.

Subjects

Association of Standardized Patient Educators

The Association of Standardized Patient Educators, Inc. (ASPE) is the name of a member organization for Standardized Patient Educators (SPEs). ASPE is not-for-profit and was incorporated in the state of Arkansas. ASPE was founded in 2001. Consistent with the By-Laws Article I, Section 2: Purpose:

ASPE is the international organization for professionals in the field of Simulated and Standardized Patient Methodology. ASPE is dedicated to:

- Professional growth and development of its members
- Advancement of SP research and related scholarly activities
- Setting standards of practice (ASPE, 2013).

Kautter Management Group (KMG) is the administrative manager for ASPE. According to KMG, in January 2013, ASPE was comprised of 508 members across the United States (U.S.) and internationally (M. Dixon, January 29, 2013, personal communication). The following 44 states and one district had members in the U.S.: Washington, Oregon, Idaho, California, Nevada, Utah, Colorado, Arizona, New Mexico, Texas, North Dakota,

South Dakota, Nebraska, Oklahoma, Missouri, Kansas, Louisiana, Mississippi, Arkansas, Iowa, Minnesota, Illinois, Indiana, Ohio, Wisconsin, Michigan, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, Pennsylvania, New York, New Jersey, Maryland, and Washington DC. Internationally, the following countries and territories were represented by individual members: Canada, Norway, the Netherlands, the United Kingdom, Germany, Switzerland, Turkey, Singapore, Malaysia, China, Korea, Japan, Taiwan, Australia, Dominican Republic, Iran, Qatar, Nassau, and South Africa.

The membership of ASPE is constituted of professional standardized patient educators (SPEs). SPEs are employed by universities, colleges, academic health sciences centers, clinical skills assessment centers, professional boards of pharmacy, and medicine testing centers. It also includes independent contractors who provide SP services to universities (Kautter Management Group (KMG; M. Dixon, January 29, 2013, personal communication). In addition to individual members' names and e-mail addresses, the ASPE database included status (active versus inactive), educational degree, institutions, postal mail addresses, and country. Importantly, examination of the membership database confirms that not all ASPE members have self-identified information for all fields. Additionally, ASPE does not collect other specific demographic data about the members for inclusion in the ASPE database (M. Dixon, January 29, 2013, personal communication). Importantly, ASPE communicates regularly via e-mail with all

members through ASPE eNews, a quarterly newsletter, annual conference information, and member surveys.

Study Population

Gravetter and Wallnau (1996) defined a population as a set of all individuals of interest in a particular study. This is in contrast to a sample that serves to represent a population to be studied. In this context, using an entire population for analysis in this study eliminated the need to make inferences. Further, Gravetter and Wallnau explained that the population parameters or numerical values that describe a population will have more power as inferences are not expected to be made from sample statistics to population parameters. As such, the present study was a population health study. Importantly, increasing statistical power was important to the present study given the small population that was surveyed. Because of the small size of the association, by including the entire population, the data collected was more robust. The present study population of SPEs was identified for three reasons:

1. it was a readily available and convenient population,
2. it included members of ASPE throughout the U.S., and
3. the support provided by the professional association in this population (ASPE) was thought to enhance study participation.

Thus, for the purposes of this study all individual ASPE members received the study invitation e-mail from ASPE on behalf of the investigator. Consistent with the Tailored Design Method (Dillman, Smyth, & Christian, 2009) for Internet surveys, three reminders were sent at two-week intervals over a period of six weeks. Only those

members of the organization who were employed in the U.S. were included in the final study.

Importantly, according to Kindig and Stoddart (2003), it is important to study the health of groups of individuals or populations. Population health is influenced by social, economic, and physical environments as well as by individual capacity and coping skills (Dunn & Hayes, 1999). Specifically, determinants of health such as social and economic environment are considered to impact the health and subjective well-being of individuals who comprise the population (Kindig & Stoddart, 2003). Further, Kindig and Stoddart defined population health as being concerned with both the definition and measurement of health outcomes and the role of determinants. In specific, better understanding of the interaction of determinants on health outcomes can result in the development of knowledge. The gained knowledge informs the development and implementation of policies and programs to improve the health of the studied population (Dunn & Hayes, 1999). Importantly, information gleaned from populations is important to policy makers as a foundation for decision-making about such matters as resource and allocation flow.

Instrumentation

Sources of Scales

The instrument for this study consisted of 56 items. The items were organized into two subscales. Each subscale was developed and validated through prior research. Basic demographic items pertinent to the literature review also were included (Appendix A).

The two subscales that were included in the instrument were the (a) Health and Safety Executive Management Standards Indicator Tool (HSE-MS) and the (b) Dispositional Resilience Scale version 3 (DRS-v3). Specifically, the response set included three nominal items and 53 ordinal items (50 are Likert scales).

A pilot study was conducted in November of 2013 to simulate the protocol proposed for the main study. In addition, this pilot provided a means of establishing the reliability of the scales selected for the instrument, estimating a likely response rate, and identifying any items with a high nonresponse rate prior to investing resources in the main study (Dillman et al., 2009). The Kent State University (KSU) Institutional Review Board (IRB; Appendix C) approved the proposed protocol for both the pilot and research study.

Resilience scale. Resilience was measured on a 15-item dispositional resilience scale, the DRS-15v3 (Bartone, 2006a). Approval to use the DRS-v3 scale was obtained from Paul Bartone prior to data collection (Appendix B). The 15-item resilience scale was derived from the original scales used to measure hardiness (Kobasa, 1979; Maddi & Kobasa, 1984). Bartone (1999) equated hardiness as a personal disposition for resilience. According to Bartone, the 15-item dispositional resilience scale measures total resilience. Resilience consists of three sub-dimensions: commitment, control, and challenge. The research of Sinclair and Tetrick (2000) confirmed the factor structure for the three sub-dimensions that comprise the total resilience scale: commitment, control, and challenge. Overall, these three sub-dimensions provide a measurement for the general construct of resilience.

According to Hystad, Eid, Johnsen, Laberg, and Bartone (2009), the DRS-15v3 is culturally balanced and accurate scale to best translate items in both English and non-English languages. Further, Hystad et al. reported the following psychometric properties for the DRS-15v3: Cronbach's alpha coefficient for the total scale was 0.79 for resilience (hardiness), 0.76 for commitment, 0.74 for control, and 0.62 for challenge. The three-week test-retest reliability coefficient for this scale was 0.78 (Bartone, 2007).

Pilot of resilience instrument. An instrument comprised of the resilience scale was piloted in November 2013. Of note, seven items (1, 2, 7, 8, 10, 14, and 15) were modified from the original DRS-15v3 scale to minimize bias and simplify syntax. Scale reliability analysis was conducted with the piloted DRS-15v3. The piloted DRS-15v3 had a Cronbach's alpha of .85. Cronbach's alpha coefficient for the piloted subscales was 0.88 for commitment, 0.84 for control, and 0.71 for challenge, respectively. Thus, the reliability (Cronbach's Alpha = .85) and response rate (52%) associated with the modified piloted DRS-15v3 were strong.

Of interest, when the modified instrument was piloted, the license agreement had expired. Further, the license agreement revealed that modifications of the scale were not permissible. Thus, the author of the original DSV-15v3 was contacted to inform and obtain advisement (Appendix B). Upon further consultation with the author of the original instrument, the committee determined that the original intact resilience instrument would be used for the main study. The unmodified resilience scale provided a validated instrument. Normative data had been collected and would be available for comparison of previous results from military samples with the proposed population to be

studied. Thus, a request to amend the scale for the main study was submitted to the IRB for approval and approved February 19, 2014 (Appendix D).

Job stress scale. Job stress was measured by a 35-item scale of work-related stress, the Health and Safety Executive Management Standards Indicator Tool (HSE-MS, 2007). The HSE-MS is open source to the public. An e-mail from the agency confirmed that no permissions for use were required (Appendix B).

This self-report survey tool helps to assess the psychosocial working conditions leading to work-related stress. This scale was selected because it was originally designed and administered to work sectors with the highest prevalence of work-related stress: health, education, government, and finance (Cousins et al., 2004). Importantly, results can be used at both the individual and organizational level to manage job stress reduction interventions. The scale was validated by a dataset consisting of employees from 39 different organizations in the UK. Twenty-one of the 39 organizations who completed the Indicator Tool represented hospitals, universities, or colleges. The Indicator Tool provides an overall global measure of work-related stress as well as work stress across seven factors:

- demands due to workload, work patterns, and the work environment;
- control regarding how much say a worker has in the way they do their work;
- managerial support regarding encouragement and resources provided by the employer;
- peer support due to colleague encouragement and support at work;

- relationships that promote positive working to avoid conflict and deal with unacceptable behavior;
- role regarding understanding job role and employer assurance that no conflicting roles exist; and
- change with respect to how organizational change is managed and communicated at work (J. A. Edwards, Webster, Van Laar, & Easton, 2008).

The reported scale reliabilities of the seven factors or work stressors were: demands = 0.87; control = 0.82; managerial support = 0.88; peer support = 0.82; relationships = 0.78; role = 0.83; and change = 0.80. Overall scale reliability for the 35-item measure was 0.92 (J. A. Edwards et al., 2008).

Pilot of job stress scale. The primary difference between the original scale HSE-MS and the scale piloted in November 2013 consisted of changes to reflect terms prevalent in an education versus a business culture. Specifically, the wording from three HSE-MS items (23, 29, and 35) included the term “line manager” to designate the immediate supervisor of an employee in the “line” of supervisory reporting. A description from a Midwestern university employee handbook distinguishes the role and title of an employee’s manager as follows. The supervisor is the individual to whom an employee directly reports. These individuals have many titles and levels of responsibility within the University. “Nonetheless, the relationship between employee and immediate supervisor is the most important for establishing clear understanding about work and work priorities” (NEOMED, 2013). Thus to clarify, the term “line manager” was

replaced by “supervisor” in these three items. With respect to reliability, the piloted HSE-MS had a Cronbach’s alpha of .90.

Operationalizing the Variables

To test the hypotheses in this study, the following variables were analyzed. The dependent variable, job stress, consisted of seven subscales with a total of 35 items measuring employee work-related stress. The seven subscales included: demands, control, managerial support, peer support, relationships, role, and change. The 35 items were constructed with response categories on Likert scales. These items represented categorical variables on an ordinal scale to approximate a continuous variable on an interval scale. The 5-point scale response options included: *Never, Seldom, Sometimes, Often, Always*. All items were recoded so that a higher score represented increased job stress. An individual’s global work-related measure of stress was calculated as the score across the seven subscales.

The independent variable was the individual dispositional resilience. This variable had a total of 15 items across three sub-dimensions: commitment, control, and challenge. The 15 items were constructed with response categories on Likert scales. These items represented categorical variables on an ordinal scale to approximate a continuous variable on an interval scale. The 4-point Likert scale response options included: *Not at all true, a little true, quite true, or completely true*. All items were recoded so that a higher score represented increased dispositional resilience. An individual’s measure of resilience was calculated as the sum of the scores across the three sub-dimensions.

Demographic variables consisted of:

- A. Job status—Hours worked: self-reported; the selected options were (a) full-time, (b) part-time: categorical variable on an ordinal scale.
- B. Job status—Funding: self-reported; the selected options were (a) Permanent, (b) Temporary: categorical variable on an ordinal scale.
- C. Primary job type: self-reported; the selected options were (a) Faculty, (b) Management, (c) Support staff: categorical variable on an ordinal scale.
- D. Years of service: self-reported in years: (a) less than 2 years, (b) 2–10 years, (c) 10–20 years, (d) greater than 20 years: categorical variable on an ordinal scale.
- E. Highest level of education completed: self-reported; the selected options were (a) high school, (b) associate degree, (c) bachelor's degree, (d) master's degree, (e) doctoral degree: categorical variable on an ordinal scale.
- F. Primary place of employment: self-reported by country or continent: categorical variable on a nominal scale.

Pilot Study

A purposive sample of health professions education staff and faculty at a Midwestern medical university were invited to participate in a cross-sectional, web-based, self-administered pilot survey. The human resources department provided e-mails for all staff and faculty in the Division of Academic Affairs, Department of Academic Services ($n = 48$). The employees of this division were selected as the most representative sample of the ultimate population study. Specifically, all employees in the Division of Academic

Affairs, Department of Academic Services provide varying levels of education support service to three health profession colleges. The support services provided include course and program orientation, scheduling, and implementation. Additional services include evaluation of students, faculty, and courses. SPEs typically provide these types of support services in addition to recruiting, training, and supervising SPs.

Of the 48 e-mail addresses provided, four were members of ASPE and excluded from the pilot. These individuals received an invitation to participate in the main study. Of the 44 individuals who received the e-mail invitation, 25 individuals accessed the survey. Twenty-three of the 25 subjects completed the survey in its entirety, resulting in a response rate of 52%.

Of the 23 subjects, the majority was employed in full-time (82.6%) and permanent (91.7%) positions. Over half the subjects identified the primary job type as support staff (58.3%) and a minority of subjects was faculty (8.3%). Almost half the subjects had greater than 20 years of service in health professions education (45.8%). Over one third of the subjects had completed a master's degree (37.5%), followed by approximately one fifth with a bachelor's degree (20.8%), less than a fifth with an associate degree (16.7%), and equal amounts of subjects with a high school or doctoral degree (12.5% respectively).

Of the 55 items, no items revealed a strong nonresponse rate. Ninety-two percent of subjects responded to all items. Thus, the pilot study established overall strong reliability for total scale scores on job stress and resilience. Likewise, the resilience subscales of commitment, control, and challenge were strong (commitment and control)

to moderate (challenge). Finally, the strong response rate did not support the need to further revise the instrument.

Research Design and Data Collection Protocol

The design of this study was a cross sectional, web-based, self-administered survey. The ASPE Director of Grants & Research, Cate Nicholas, M.S., PA., Ed.D., provided a letter of support for this study (Appendix C). This letter was incorporated into the application to the Institutional Review Board (IRB) at Kent State University (KSU; Appendix D). The data collection protocol was consistent with guidelines according to the Dillman Tailored Design Method, which provided procedures and processes related to data collection via survey research, and specifically Internet administered surveys (Dillman et al., 2009).

The initial study invitation from the investigator was e-mailed by a representative of ASPE's management group to the 530 members within the ASPE database. Specifically, all ASPE members were e-mailed an invitation page briefly explaining the purpose and benefit of the survey research to the prospective subject. This invitation to participate in the study also contained a link to a secured website containing access to an informed consent sheet. The informed consent identified the principle and co-investigators, and detailed the purpose, procedure, duration, risks, benefits, costs, and impartial contacts, and clarified anonymity and the opportunity to withdraw at any time without penalty. Specifically, anonymity was assured through a feature of the web-based survey only being identified by an assigned IP address. Thus, no individual results were reported.

Importantly, only by checking a consent to participate radio button was the prospective subject able to enter responses into the survey. Lack of Internet access or lack of skill was not an issue with this population. All ASPE members and thus potential subjects have Internet access at work and must be computer literate to perform job tasks.

The ASPE database consisted of Standardized Patient Educators throughout the United States and internationally. Given this study involved only the U.S. population of SPEs, the sixth demographic variable in the survey asked the subject to self-identify the primary place of employment. Only subjects indicating primary employment in the U.S. were included in the final study data.

E-mail reminders were sent to all ASPE members by an ASPE management representative. The reminders were sent every two weeks after the initial e-mail throughout a six-week timeframe. Once the period for data collection closed, all data were exported to SPSS Statistics 21.0. Initial data management protocol included data cleaning and review of descriptive statistics for all variables. Each composite score was examined for outliers, distribution of data, and frequency of data across key demographic variables.

Research Hypotheses

The research questions for this study were informed by the literature review about resilience and job stress in higher education. The literature review identified pertinent demographic variables of job status hours, job status funding, job type, years of service, and education level. Thus, job status, job type, years of service, and education level were compared to job stress. Importantly, the relationship between resilience and job stress

among SPEs employed in the U.S. was examined. In addition, three sub-dimensions of resilience (commitment, control, and challenge) were examined. Specifically, the relationship between commitment and job stress, control and job stress, and challenge and job stress was explored. Additionally, the relationship of commitment, control, and challenge to job stress was examined to determine the amount of variance accounted for in job stress by the combination of these variables. Finally, the sub-dimension of resilience that accounted for the most variance in job stress was examined.

Research Questions

Research Question 1: Is there a significant correlation between job status hours, job status funding, job type, years of service, education level, and job stress among U.S. SPEs?

Research Question 2: Is there a significant correlation between resilience and job stress among U.S. SPEs?

Research Question 3: Is there a significant correlation between commitment and job stress among U.S. SPEs?

Research Question 4: Is there a significant correlation between control and job stress among U.S. SPEs?

Research Question 5: Is there a significant correlation between challenge and job stress among U.S. SPEs?

Research Question 6: How much variance in perceived job stress scores can be explained by scores on the resilience sub-dimension scores (commitment, control, challenge) among U.S. SPEs?

Research Question 7: Which sub-dimension score (commitment, control, challenge) of resilience accounts for the most variance in perceived job stress scores among U.S. SPEs?

Data Analysis and Test of Hypotheses

In the context of these identified research questions, the following null hypotheses were tested:

Hypothesis One: No statistically significant relationship exists between job status hours (full-time versus part-time) and job stress.

Statistical Test: Spearman Rank Order Correlation

Hypothesis Two: No statistically significant relationship exists between job status funding (permanent versus temporary) and job stress.

Statistical Test: Spearman Rank Order Correlation

Hypothesis Three: No statistically significant relationship exists between job type (faculty, management, support staff) and job stress.

Statistical Test: Spearman Rank Order Correlation

Hypothesis Four: No statistically significant relationship exists between years of service (less than 2 years; 2–10 years; 10–20 years; greater than 20 years) and job stress.

Statistical Test: Spearman Rank Order Correlation

Hypothesis Five: No statistically significant relationship exists between education level (high school, associate, bachelor's, master's, doctorate) and job stress.

Statistical Test: Spearman Rank Order Correlation

Hypothesis Six: No statistically significant relationship exists between resilience and job stress.

Statistical Test: Pearson Product Moment Correlation

Hypothesis Seven: No statistically significant relationship exists between commitment and job stress.

Statistical Test: Pearson Product Moment Correlation

Hypothesis Eight: No statistically significant relationship exists between control and job stress.

Statistical Test: Pearson Product Moment Correlation

Hypothesis Nine: No statistically significant relationship exists between challenge and job stress.

Statistical Test: Pearson Product Moment Correlation

Hypothesis Ten: There is no significant proportion of variance in job stress that can be explained by the combination of the resilience sub-dimensions (commitment, control, and challenge).

Statistical Test: Multiple regression

Hypothesis Eleven: There is no one significant resilience sub-dimension (commitment, control, or challenge) that accounts for the most variance in job stress.

Statistical Test: Multiple regression

CHAPTER IV

RESULTS

Purpose of the Study

The purpose of this study was to analyze the relationship between resilience, job stress, and selected demographics in the context of the Transactional Model of Stress and Coping among U.S. members of the Association of Standardized Patient Educators.

The instrument in this population study consisted of 56 items. These items were organized from two scales and included demographic items at the end of the instrument. In specific, the two subscales included a total of 50 items. Both scales had been developed and validated independently through prior research. Of the 56 items, six items were demographics (Appendix A). The order of the scales in the final instrument were resilience, followed by job stress, and last the demographic items. In specific, the two scales included in the instrument were as follows:

- The first scale was the Dispositional Resilience Scale version 3 (DRS-v3). The Dispositional Resilience Scale was originally developed for use in U.S. Army military personnel. The original DRS consisted of 30 items to measure hardiness, also referred to as personal resilience (Bartone, 1999). The DRS measured overall personal resilience as well as three sub-dimensions of personal resilience: commitment, control, and challenge (Bartone, 1991). Scores from the 30-item scale have been found to be predictive of continued mental and physical health for persons who experienced social stressors (Bartone et al., 1989). The version of the DRS used in this study consisted of

15 items. The 15-item scale was modified from the original version in order to provide better cultural balance as well as balance between negatively and positively keyed items. Overall, the revised version, DSR-v3 minimizes cultural and acquiescence response bias and may improve response rate (Bartone, 2007). Further, the shortened form maintains balance across the sub-dimensions of the overall personal resilience scale. Specifically, the sub-dimensions of commitment, control, and challenge are each measured by five distinct items (Appendix A).

- The second scale used was the Health and Safety Executive Management Standards Indicator Tool (HSE-MS). The HSE-MS is a measurement scale developed by the United Kingdom's Health and Safety Executive, an independent regulator of work-related health and safety. The HSE-MS consists of six standards that represent the primary sources of stress at work: demands, control, support, relationships, role, and change. Thirty-five items measure work-related stress. This work stress risk assessment identifies the main risk factors for work-related stress within an organization or profession (Cousins et al., 2004). Work-related stress is referred to as job stress in the reported data.

Data Collection

The population under study consisted of all U.S. members of the international Association of Standardized Patient Educators (ASPE). Because ASPE was unable to provide a database of only U.S. members, the initial study population consisted of 530

individuals with whom ASPE had regular communication (B. King, personal communication, May 12, 2014). The database included both U.S. and international members. In specific, the ASPE database consisted of Standardized Patient Educators (SPEs) who were involved in supporting health professions education via planning, design, and implementation of performance-based assessment among graduate health professions education students. In educational institutions, SPEs recruit and train Standardized Patients (SPs); design and construct SP cases, checklists, and scoring rubric; implement SP performance-based assessments; and provide data demonstrating performance of SPs and students (ASPE, n.d.-a).

The design of the study was a cross-sectional, web-based, self-administered instrument. The ASPE Board of Directors and Chair of ASPE Grants and Research Committee, Cate Nicholas, provided a letter of support for this study on August 13, 2013. This letter was included in the application to the Institutional Review Board (IRB) at Kent State University (KSU), which was approved on October 01, 2013 (Appendix C). The data collection protocol was consistent with procedures outlined by the Dillman Tailored Design Method. The Dillman Tailored Design Method details essential processes to optimize data collection via Internet survey research (Dillman et al., 2009).

The initial study invitation was e-mailed to all active status subjects within the ASPE member database on March 28, 2014, by a representative of ASPE (Appendix E). Initial response to the survey was moderate with 87 responses within the first two weeks after the study invitation was e-mailed. Two weeks after the initial study invitation e-mail, on April 11, 2014, a reminder e-mail was sent to ASPE members by an ASPE

representative. This e-mail thanked those who had participated and reminded non-responders that the survey was still open for completion (Appendix E). Within the first week after the initial reminder, an additional 52 responses were recorded bringing total responses to 139. The second reminder was sent Friday, April 25, to thank those who responded and to remind non-responders that the survey would remain open for two weeks, until May 08 (Appendix E). The second reminder generated an additional 26 responses within a week, bringing the total to 165 by May 02. The final reminder was sent Tuesday, May 06, thanking those who already responded and asking those who had not to complete the survey by the close date and time, Thursday, May 08, 2014, at noon. By the final reminder, 217 subjects had begun the survey of which seven had declined to participate. Importantly, the specific population under study included only those subjects working as SPEs in the U.S. Only 181 subjects had identified the country in which they were employed. Of those 181 subjects, 147 identified themselves as working in the U.S. Among the 147 U.S. subjects who identified their primary workplace as the U.S., 110 completed all subscales and sub-dimension scales included in the study instrument required for all analyses. The only exception was one subject who completed all items with the exception of the demographic item on job status funding. With only one missing item, responses provided by this subject were included in the final data set. Thus, the final study population of U.S. SPEs completing the instrument for all required analyses was 111.

The initial dataset for analysis downloaded from the Vovici survey software and exported to IBM SPSS Statistics 21 on May 08, 2014, included all U.S. members of

ASPE ($n = 147$). The initial data management process included data cleaning and review of descriptive statistics for all variables. In addition, this protocol provided a means to check variables for any violation of assumptions as well as screen missing data to examine any nonrandom patterns of missing data. The frequency distributions of demographic variables were explored. Additionally, the composite scores, histograms, and distributions for job stress, resilience, commitment, control, and challenge were examined to confirm that necessary assumptions were met including normal distribution and lack of outliers. These results are presented in Tables 1 and 2. For consistency and clarity, the final analyses handled missing data according to a listwise procedure, and thus included only those subjects who completed all items necessary for all analyses. The only exception was the inclusion of data from one subject who did not complete the demographic item regarding job-funding status. Exclusion of this data point appeared random. Thus, the data provided by this respondent was included in the final analyses ($n = 111$). Demographic data and psychometric properties of the final sample ($n = 111$) are presented in Tables 3 and 4.

Population Parameters

A total of 217 subjects began the instrument, and 210 (97%) consented to participate. A total of 181 subjects identified working either inside ($N = 147$, 81.2%) or outside ($N = 34$, 18.8%) the U.S. As this population study was designed to specifically examine job stress and resilience in SPEs in the United States, only U.S. participants were included in the initial data analysis. To begin with, both preliminary statistics (descriptive) and statistical techniques to explore relationships between variables

(correlation and multiple regression) handled missing data by excluding cases pairwise. Exercising the “excluding cases pairwise” option analyzed the data for each analysis according to the number of cases (persons) that completed all items specific to these analyses. As such, the range of cases (persons) completing the demographics section ranged from $n = 146$ to $n = 147$. The results of the descriptive statistics exploring demographic variables are presented in Table 1.

Table 1

Demographic Characteristics of All U.S. Subjects Who Participated

Characteristic	n	Valid %	
Job Status Hours	Full-time	137	93.2
	Part-time	10	6.8
Job Status Funding	Permanent	140	95.9
	Temporary	6	4.1
Job Type	Faculty	35	23.8
	Management	75	51.0
	Support Staff	37	25.2
Years of Service	Less than 2	5	3.4
	2-10	58	39.5
	10-20	50	34.0
	Greater than 20	4	23.1
Highest Degree	High School	9	6.2
	Associates	9	6.2
	Bachelors	46	31.5
	Masters	59	40.4
	Doctoral	23	15.8

Note. $n = 147$ for each demographic variable except Job Status Funding. One U.S. subject did not complete the Job Status Funding item

Likewise, by excluding cases pairwise, the results from descriptive statistics exploring dependent (job stress) and independent variables (resilience, commitment, control, challenge) are presented in Table 2. The variability in sample size (n) is consistent with excluding cases pairwise and the order of the subscales and sub-dimensions that comprised the research study instrument. Specifically, the first 15 items presented in the survey measured the resilience subscale. Of note, each of the three sub-dimension measures consisted of a combination of five discrete items from the 15-item subscale. The five discrete items that comprise the sub-dimensions were not adjacent or grouped together. In this context, the higher rate of completion of the three sub-dimensions (commitment $n = 145$; control $n = 144$; and challenge $n = 140$) was consistent and missing data appeared to be random. Likewise, with the “excluding cases

Table 2

Psychometric Properties of the Dependent and Independent Study Variables

Variable	n	M	SD	Cronbach's Alpha	Range	
					Potential	Actual
Job Stress	117	86.25	19.34	.94	35 – 175	52 – 139
Resilience	136	47.36	5.20	.83	15 – 60	26 – 60
Commitment	145	15.72	2.44	.84	5 – 20	7 – 20
Control	144	16.10	1.90	.69	5 – 20	11 – 20
Challenge	140	15.48	2.44	.72	5 – 20	5 – 20

Note. The variance in sample size is due to the number of participants who answered all items in a subscale or sub-dimension.

pairwise” option, the overall resilience scale sample size ($n = 136$) is consistent. In specific, all items from all three sub-dimensions (commitment, control, challenge) that comprise the overall resilience scale had to be present to be included in the preliminary descriptive analysis of the continuous independent variable resilience.

Further, the second subscale completed in the final instrument was for job stress. All 35 items needed to be answered by each subject to be included in calculating the overall mean for the sample. Once again, no appreciable nonrandom pattern was noted with respect to answers of job stress items. The fact that the sample who answered the job stress subscale decreased to a total $n = 117$ was attributed to order of this subscale in the instrument, the larger number of items, and subject survey fatigue.

According to ASPE (B. King, personal communication, May 12, 2014) at the time of this study, the membership was comprised of 81% U.S. ASPE members and 19% non-U.S. members. Given that the overall size of the population of ASPE members was 530 during the study, 429 members would have been employed in the U.S. The initial response rate ($n = 147$) was 34% for the U.S. member population. Based on the subjects who completed the entire instrument ($n = 111$) for all analyses, the final response rate was 26% of the total U.S. ASPE membership.

The final subjects ($n = 111$) reported job status by hours and funding. Specifically, the majority were employed full-time (92.8%) and had permanently funded positions (96.4%). The subjects’ primary work roles were fairly evenly split between faculty (22.5%) and support staff (25.2%). These two roles combined (faculty and support staff) comprised slightly under one half the primary work role, whereas

Table 3

Demographic Characteristics of Final U.S. Survey Participants

Characteristic		n	Valid %
Job Hour Status	Full-time	103	92.8
	Part-time	8	7.2
Job Funding Status	Permanent	106	95.5
	Temporary	4	3.6
Job Type	Faculty	25	22.5
	Management	58	52.3
	Support Staff	28	25.2
Years of Service	Less than 2	4	3.6
	2-10	42	37.8
	10-20	43	38.7
	Greater than 20	22	19.8
Highest Degree	High School	8	7.2
	Associates	7	6.3
	Bachelors	31	27.9
	Masters	50	45.0
	Doctoral	15	13.5

Note. $n = 111$ for each demographic variable except Job Funding Status. One U.S. subject, who completed all other subscales, did not complete the Job Funding Status item.

management comprised slightly over half (52.3%). With respect to highest education level achieved, subjects with high school diplomas (7.2%) and associate degrees (6.3%) were least represented. The majority of subjects revealed that they had earned master's degrees (45.0%), followed by bachelor's degrees (27.9%) and then doctoral degrees (13.5%). Most subjects had 10–20 years of service in the profession (38.7%) with slightly less subjects having 2–10 years service (37.8%). Approximately one fifth of the

subjects had greater than 20 years of service (19.8%) to the profession. A small number of subjects (3.6%) had less than 2 years of service in the profession.

Descriptive Parameters of the Dependent and Independent Variables

The dependent variable, job stress, was measured using the HSE-MS. This scale consisted of 35 items. The response set for each item consisted of Likert options from one to five. The 5-point scale response options included: *Never*, *Seldom*, *Sometimes*, *Often*, and *Always*. All items were recoded so that a higher score represented increased job stress. A subject's global work-related measure of stress was calculated as the score across the seven subscales. The average of these 35 items from the sample ($n = 111$) was computed to represent the total pool job stress score. The range of potential item scores was one to five, with higher scores representing higher job stress. A Cronbach's alpha of .941 was calculated for this scale. The mean score for this sample was 85.92 with a range from 52 - 139.

The independent variable, resilience, was measured using the DSR-v3. Bartone (1999, 2007) developed the scale to measure the resilience of an individual. In specific, the developed scale consisted of 15 items. The response set for each item consisted of a 4-point Likert scale. The four response options included: *Not at All True*, *A Little True*, *Quite True*, or *Completely True*. Additionally, three sub-dimensions of resilience (commitment, control, and challenge) were measured. In specific, each of the three sub-dimension measures consisted of a combination of five discrete items from the original 15-item scale. The five discrete items that comprised the sub-dimensions were not adjacent or grouped together in the scale.

Of note, all items were recoded so that a higher score represented increased resilience, commitment, control, or challenge. For both overall resilience and sub-dimension measures, higher scores represented higher levels of resilience, commitment, control, and challenge, respectively. In specific, overall individual scores for resilience ranged from 35–179 whereas individual sub-dimension scores ranged from 5–20. The average resilience score for the total pool was the average resilience score across the final sample ($n = 111$). Likewise, the average sub-dimension scores (commitment, control, challenge) were the averages across the final sample ($n = 111$).

A Cronbach's alpha of .83 was calculated for overall resilience ($M = 46.94$, $SD = 5.26$). Cronbach's alpha for commitment was .84 ($M = 15.68$, $SD = 2.46$). Cronbach's alpha for control was .70 ($M = 15.92$, $SD = 1.90$). Cronbach's alpha for challenge was .74 ($M = 15.33$, $SD = 2.53$). Table 4 summarizes the descriptive parameters of the dependent and independent variables for the final sample ($n = 111$).

Table 4

Psychometric Properties of the Dependent and Independent Study Variables for Final Sample ($n = 111$)

Variable	M	SD	Cronbach's Alpha	Range	
				Potential	Actual
Job Stress	85.92	19.53	.94	35 – 175	52 – 139
Resilience	46.94	5.26	.83	15 – 60	26 – 60
Commitment	15.68	2.46	.85	5 – 20	7 – 20
Control	15.92	1.90	.70	5 – 20	11 – 20
Challenge	15.33	2.53	.74	5 – 20	5 – 20

Summary of Descriptives

The final sample ($n = 111$) consisted of all SPEs that worked in the United States. The majority of the sample reported that they were working full-time with permanent funding. The majority had a master's or bachelor's degree and was working in a management role. The majority had also served in the profession as an SPE for 2–10 years or 10–20 years (see Table 3).

Analyses of Hypotheses

Hypotheses 1–5

Null Hypothesis 1: There is no statistically significant relationship between job status hours and job stress.

Alternative Hypothesis 1: There is a statistically significant relationship between job status hours and job stress.

The analysis of hypothesis 1 was conducted using the Spearman Rank Order Correlation test. Since Spearman's Rank Order Correlation is a nonparametric correlation, there was no need to satisfy assumptions including normality, linearity, and homoscedasticity. The Spearman Rank Order Correlation test revealed no statistically significant relationship between job status hours and job stress ($r_s = -.071$, $n = 111$, $p = .461$). Based on this, the null hypothesis 1 was retained. As such, there is no relationship between a subject who works full-time and job stress experienced. Likewise, there is no relationship between a subject who works part-time and job stress experienced. Table 5 summarizes the results of this Spearman Rank Order Correlation test.

Table 5

Summary of Hypothesis 1-5, Spearman Rho Correlation Coefficients

Variable	H ₁ : Job Hrs	H ₂ : Job Fund	H ₃ : Job Type	H ₄ : Years of Service	H ₅ : Education Level
Job Stress	-.071	-.020	.221*	-.182	-.056

* $p < .05$ (2-tailed).

Null Hypothesis 2: There is no statistically significant relationship between job status funding and job stress.

Alternative Hypothesis 2: There is a statistically significant relationship between job status funding and job stress.

The analysis of hypothesis 2 was conducted using the Spearman Rank Order Correlation test. Since Spearman's Rank Order Correlation is a nonparametric correlation, there was no need to satisfy assumptions including normality, linearity, and homoscedasticity. There was no statistically significant relationship between job status funding and job stress ($r_s = -.020$, $n = 110$, $p = .837$). Based on this, the null hypothesis 2 for job status funding was retained. As such, there is no relationship between a subject who has a permanently funded position and job stress experienced. Likewise, there is no relationship between a subject who has a temporarily funded position and job stress experienced. Table 5 summarizes the results of this Spearman Rank Order Correlation test.

Null Hypothesis 3: There is no statistically significant relationship between job type and job stress.

Alternative Hypothesis 3: There is a statistically significant relationship between job type and job stress.

The analysis of hypothesis 3 was conducted using the Spearman Rank Order Correlation test. Since Spearman's Rank Order Correlation is a nonparametric correlation, there was no need to satisfy assumptions including normality, linearity, and homoscedasticity. There was a statistically significant relationship among job type and job stress ($r_s = .221, n = 111, p < .05$). Based on this, the null hypothesis 3 was rejected. As such, a statistically significant relationship existed based on a subject's job type and job stress. Of note, job type was revealed to be only weakly related to job stress. Specifically, job type accounted for 5 percent of the shared variance of higher job stress scores. Table 5 summarizes the results of the Spearman Rank Order Correlation test.

To further explore significant differences between pairs of job types, a parametric test was performed. Of note, necessary assumptions to apply a parametric test including level of measurement, independence of observations, normality and homogeneity were met. Thus, analysis was conducted using an ANOVA test with a post hoc Tukey HSD test. Consistent with the statistically significant Spearman Rank Order Correlation test, there was a statistically significant relationship between job type and job stress, $F(2,108) = 3.0, p = .05$. Despite reaching statistical significance, the actual difference in mean scores between groups was moderately small. The effect size calculated using eta squared was .05. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for support staff ($M = 91.10, SD = 20.68$) was significantly different from faculty ($M = 78.36, SD = 19.49$), $p = .05$. Management ($M = 86.67, SD = 18.29$) did not

differ significantly from either faculty or support staff. In specific, a more powerful parametric test revealed that support staff compared to faculty perceived greater job stress. Of note, the strength of the difference between groups or the influence of the independent variable, job type, was moderately small.

Null Hypothesis 4: There is no statistically significant relationship between years of service and job stress.

Alternative Hypothesis 4: There is a statistically significant relationship between years of service and job stress.

The analysis of hypothesis 4 was conducted using the Spearman Rank Order Correlation test. Since Spearman's Rank Order Correlation is a nonparametric correlation, there was no need to satisfy assumptions including normality, linearity, and homoscedasticity. There was not a statistically significant relationship between years of service as an SPE and job stress ($r_s = - .182, n = 111, p = .055$). Based on this, the null hypothesis 4 for years of service was retained. In specific, increasing years of service as an SPE was not related to decreased job stress. Table 5 summarizes the results of this Spearman Rank Order Correlation test.

Null Hypothesis 5: There is no statistically significant relationship between education level and job stress.

Alternative Hypothesis 5: There is a statistically significant relationship between education level and job stress.

The analysis for hypothesis 5 was conducted using the Spearman Rank Order Correlation test. Since Spearman's Rank Order Correlation is a nonparametric

correlation, there was no need to satisfy assumptions including normality, linearity, and homoscedasticity. There was not a statistically significant relationship among education level and job stress ($r_s = -.056, n = 111, p = .561$). Based on this, the null hypothesis 5 for education level was retained. As such, a subject's advanced education level (high school diploma, associate degree, bachelor's degree, master's degree, doctoral degree) was not inversely related to job stress. Table 5 summarizes the results of this Spearman Rank Order Correlation test.

Thus, we retained null hypothesis 1 for job status hours, null hypothesis 2 for job status funding, null hypothesis 4 for years of service, and null hypothesis 5 for education level. In contrast, we rejected the null hypothesis 3 for job type. Table 5 summarizes the results of the Spearman Rank Order Correlation tests.

Hypotheses 6–11

Null Hypothesis 6: There is no statistically significant relationship between resilience and job stress.

Alternative Hypothesis 6: There is statistically significant relationship between resilience and job stress.

The relationship between resilience and job stress was analyzed using Pearson Product Moment Correlation Coefficient test. Preliminary analyses were performed to assure no violations of assumptions: normality, linearity, and homoscedasticity. Preliminary analyses included generation of a scatterplot to check for outliers, inspection of the distribution of data points, and determination of the direction of the relationship between variables. There was a moderate negative correlation between resilience and job

stress ($r = -.461, p = 0.000, n = 111$) that was statistically significant at the $p \leq .01$ level. Based on this result, the null hypothesis 6 was rejected. Thus, higher levels of resilience were associated with lower levels of job stress.

Null Hypothesis 7: There is no statistically significant relationship between commitment and job stress.

Alternative Hypothesis 7: There is a statistically significant relationship between commitment and job stress.

The relationship between commitment and job stress was analyzed using Pearson Product Moment Correlation Coefficient test. Preliminary analyses were performed to assure no violations of assumptions: normality, linearity, and homoscedasticity. Preliminary analyses included generation of a scatterplot to check for outliers, inspection of the distribution of data points, and determination of the direction of the relationship between variables. There was a moderate to strong negative correlation between commitment and job stress ($r = -.516, p = 0.000, n = 111$) that was statistically significant at the $p \leq .01$ level. Based on this result, the null hypothesis 7 is rejected. Thus, higher levels of commitment were strongly associated with lower levels of job stress.

Null Hypothesis 8: There is no statistically significant relationship between control and job stress.

Alternative Hypothesis 8: There is a statistically significant relationship between control and job stress.

The relationship between control and job stress was analyzed using Pearson Product Moment Correlation Coefficient test. Preliminary analyses were performed to

assure no violations of assumptions: normality, linearity, and homoscedasticity.

Preliminary analyses included generation of a scatterplot to check for outliers, inspection of the distribution of data points, and determination of the direction of the relationship between variables. There was a moderate negative correlation between control and job stress ($r = -.323, p = 0.001, n = 111$) that was statistically significant at the $p \leq .01$ level. Based on this result, the null hypothesis 8 was rejected. Thus, higher levels of control were moderately associated with lower levels of job stress.

Null Hypothesis 9: There is no statistically significant relationship between challenge and job stress.

Alternative Hypothesis 9: There is a statistically significant relationship between challenge and job stress.

The relationship between challenge and job stress was analyzed using Pearson Product Moment Correlation Coefficient test. Preliminary analyses were performed to assure no violations of assumptions: normality, linearity, and homoscedasticity. Preliminary analyses included generation of a scatterplot to check for outliers, inspection of the distribution of data points, and determination of the direction of the relationship between variables. There was a weak negative correlation between challenge and job stress ($r = -.214, p = 0.024, n = 111$) that was statistically significant at the $p \leq .05$ level. Based on this result, the null hypothesis 9 was rejected. Thus, higher levels of challenge were weakly associated with lower levels of job stress.

Null Hypothesis 10: There is no significant proportion of variance in job stress that can be explained by the combination of the resilience sub-dimensions (commitment, control, and challenge).

Alternative Hypothesis 10: There is a significant proportion of variance in job stress that can be explained by the combination of the resilience sub-dimensions (commitment, control, and challenge).

A standard multiple linear regression analysis was performed between the dependent variable (job stress) and the independent variables (commitment, control, and challenge). With standard multiple linear regression, all independent variables are entered into the equation simultaneously. The results indicate how much variance this set of variables accounts for in job stress. Assumptions were tested by examining normal probability plots of residuals and scatter diagrams of residuals versus predicted residuals. No violations of normality, linearity, or homoscedasticity of residuals were detected. In addition, box plots revealed no evidence of outliers.

Standard multiple regression analysis of the final sample ($n = 111$) revealed that the model with three factors (commitment, control, and challenge) was statistically significant in accounting for variance in job stress, $F(3,110) = 13.76, p = .000$. R^2 for the model was .28 and adjusted R^2 was .26. Adjusted R^2 provides the best estimate of the true population value in a small sample (Tabachnick & Fidell, 2001). Thus, the model of resilience that included commitment, control, and challenge explained 26% of the variance in job stress. Table 6 displays the unstandardized regression coefficients (B) and standardized regression coefficients (β) for each variable.

Table 6

Multiple Regression Analysis of Commitment, Control, and Challenge

Independent Variables	Unstandardized Coefficient	Beta	% Accounted for Variance	
			<i>p</i>	Part Correlation <i>R</i> ² Total
Commitment	-3.653	-.461	.000*	16
Control	-1.261	-.123	.185	
Challenge	-.039	-.005	.955	
			.000*	26

Note. Dependent Variable is Job Stress.

**p* < .001

Overall, based on these results, the null hypothesis 10 is rejected. The proposed overall model including commitment, control, and challenge explains 26% or almost one third of the variance in perceived job stress.

Null Hypothesis 11: There is no one significant resilience sub-dimension (commitment, control, or challenge) that accounts for the most variance in job stress.

Alternate Hypothesis 11: There is a significant resilience sub-dimension (commitment, control, or challenge) that accounts for the most variance in job stress.

A standard multiple linear regression analysis was performed between the dependent variable (job stress) and the independent predictor variables (commitment, control, and challenge). All independent variables were entered into the equation simultaneously. The results indicate how much unique variance each independent

variable (commitment, control, and challenge) accounts for in the dependent variable, over and above the other independent variables in the set.

Assumptions were tested by examining normal probability plots of residuals and scatter diagrams of residuals versus predicted residuals. No violations of normality, linearity, or homoscedasticity of residuals were detected. In addition, box plots revealed no evidence of outliers.

In terms of individual contribution of the independent variables in explaining variance in job stress, commitment ($t = -4.86, p < .01$) accounts for the most significant unique variance in job stress, when the other independent variables (control and challenge) were controlled for. Note neither control ($t = -1.33, p = .186$) nor challenge ($t = -.06, p = .96$) made a significant unique contribution. Interestingly, the part correlation coefficient (also known as the semipartial correlation coefficient) for commitment is $-.399$. Thus, commitment accounted for a unique contribution of 16% to explain the variance in job stress. Note that the total adjusted R^2 value for the model (.26) does not equal all the squared part or semipartial correlation coefficients added up. Specifically, the total R^2 value includes the unique variance explained by each independent variable as well as the shared variance. In contrast, the part correlation value represents only the unique contribution of each variable, with any overlap or shared variance removed or partialled out. Thus, based on these results, the null hypothesis 11 is rejected. The factor of commitment uniquely explains 16% of the variance in job stress.

Summary

In this chapter, 11 proposed hypotheses were subjected to statistical analyses including Spearman Rho Correlation test, ANOVA, Pearson Product-Moment Correlation Coefficient, and Multiple Linear Regression. Findings from these analyses revealed job type had a statistically significant, albeit, small effect on job stress. Importantly, findings from analyses revealed a statistically significant inverse relationship between resilience and job stress, commitment and job stress, control and job stress, and challenge and job stress. These findings suggest that among study subjects, increased levels of resilience, commitment, control, and challenge were associated with decreased job stress. Further, the combination of the three resilience sub-dimensions, commitment, control, and challenge accounted for 26% of the variance in job stress scores. Finally, commitment accounted specifically for 16% of the variance in job stress scores. These findings supported that as resilience and resilience sub-dimensions increased, job stress decreased.

CHAPTER V

DISCUSSION AND RECOMMENDATIONS

Purpose of the Study

The purpose of this study was to analyze the relationship between resilience, job stress, and selected demographics in the context of the Transactional Model of Stress and Coping among U.S. members of the Association of Standardized Patient Educators.

Literature-Based Context

Occupational risks to health have been revealed to be salient in the U.S. over the past 35 years. Initially the U.S. government documented occupational risks in the U.S. Department of Health, Education, and Welfare's (USDHEW) 1979 *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* (USDHEW, 1979). The measurement of occupational health promotion, protection, and prevention objectives has persisted to the most recent U.S. *Healthy People* iteration, *Healthy People 2020: Objectives for Improving Health* (Department of Health and Human Services [USDHHS], 2010a). Indeed, several overarching goals of *Healthy People 2020* are operationalized by the leading U.S. occupational health agency.

Specifically, the primary job stress research agenda of the CDC National Institute for Occupational Safety and Health (NIOSH) is focused on revealing a better understanding of the influence of the "organization of work" or the impact of psychosocial factors on work-related stress (USDHHS, 2013). Aligned priorities in *Healthy People 2020* include the creation of social and physical environments that promote good health for all. Additional aligned priorities consist of promoting quality of

life, healthy development, and healthy behaviors across all life stages. Thus, the recent inclusion of social determinants of health as a new topic area for U.S. health promotion improves the likelihood that psychosocial health objectives related specifically to occupational health will appear in future iterations of *Healthy People*.

As defined by Kindig and Stoddart (2003), determinants of health include aspects of the social environment such as employment and social support. These social determinants have been demonstrated to affect health, health risks, and quality-of-life outcomes. Not surprisingly, the physical conditions of the workplace are not the sole determinant of occupational health. Rather, social and economic conditions related to an occupation influence the security, well-being, and overall health of the employee. This is consistent with earlier research in which Lazarus (1981) described the positive impact of work on emotional health. Specifically, Lazarus described the role of work in developing a sense of usefulness and productivity.

Conversely, the emergence of new industries, occupational titles, and job categories has the potential to exert a negative influence on healthy development and quality of life (Porfeli & Vondracek, 2009). Of interest, human service professionals, particularly those in education, have been identified as at risk for stress and negative emotional health sequelae (Grayson & Alvarez, 2008; Maslach, Schaufeli, & Leiter, 2001). In specific, since the early 1990s, job stress in higher education has been identified as a risk to both physical and emotional health (Abouserie, 1996; Dua, 1994; Watts & Robertson, 2011). More recently organizational changes in higher education, specifically higher education in health professions (Lane, 2007), have necessitated

enhanced individual coping skills in response to rapid change. Organizational change presents a challenge to the security and well being of the individual. Specifically, during times of change, the individual employee experiences fear of uncertainty, loss of status, and concern about increased workload (Lane, 2007). Thus, social and economic factors that drive organizational change directly influence the experience of job stress for the individual.

Importantly, the experience of job stress is related to health. Well-researched negative health sequelae associated with job stress include coronary heart disease and poor mental health (Cooper & Marshall, 1976; Karasek et al., 1988; Maslach et al., 2001). Of note, in the late 1980s, Sauter et al. (1990) explored work-related psychological disorders including anxiety, depression, and poor job satisfaction. Sauter et al. identified a relationship between poor mental health and maladaptive health behavior and life-style patterns including chemical dependencies and alcohol abuse. Importantly, chemical dependencies and alcohol abuse are considered modifiable health risk behaviors. Of concern, the WHO (2003) indicated that such psychosocial determinants of health exert a summative effect over a lifetime. Specifically, the effect is deleterious and associated with increased risk of poor mental health and premature mortality. Importantly, McGinnis (1985, 2003) noted the limits of prevention and the need to shift the focus from extending the years of life to extending the quality of life. Thus, appropriate health promotion interventions towards modifiable risk behaviors have significant potential to prevent premature mortality and improve the health and quality of life of the U.S. population (McGinnis & Foege, 1993; McGinnis et al., 2002).

In context of a national focus on occupational health, quality of life, and health development across all life stages, research to further explore the relationship between job stress and protective factors is warranted and indeed necessary. In specific, research in military populations has examined the role of resilience as protective against job stress (Bartone, 1999; Britt, Adler, & Bartone, 2001) and more recently, how military leaders can influence positively peacekeeping operations via enhanced resiliency (Bartone, 2006b). Importantly, there is a paucity of published empirical research regarding resilience and job stress among adult civilian populations in the service sector. As higher education in the health professions continues to experience rapid organizational change (Lane, 2007), the combination of organizational change with the emergence of new job categories and industries poses a unique risk to those individuals employed in this sector.

Since the early 1980s, simulation that utilizes SPs has been recognized as an educational method to provide a safe practice and learning environment for neophyte health professions students (Barrows, 1993). Specifically, simulation with SPs provides a validated educational tool in a dedicated practice environment to frequently educate and assess large numbers of health professions students throughout a longitudinal curriculum. According to McConvey (ASPE, n.d.-c), a SP is a person trained to portray a scenario for the instruction, assessment, or practice of skills. In specific, skills assessed include taking a medical history, performing a physical exam, diagnosing, and formulating an assessment and plan. Notably, SPs provide a means of evaluating the interpersonal and communication skills essential to the provision of safe and patient-centered healthcare. Thus, for many health professions, SPs have provided standardized realistic patient

encounters to teach and assess practice-based professional skills in a safe environment for both learners and patients.

In this context, in 1991, the Association of Standardized Patient Educators (ASPE) was formed as a professional society to represent members employed in the emerging profession of the SPEs who direct the SPs and implement this educational tool. Leaders of ASPE organized the first national Standardized Patient Educators (SPEs) conference in 2002 (ASPE, n.d.-d) to target professional development. Importantly, McConvey (ASPE, n.d.-c) indicated that the role of SPEs in the 21st century continues to expand rapidly to meet the training needs of high-risk health and human service fields.

Currently, the professional SPE has multiple roles and responsibilities. In specific, the SPE collaborates with faculty to develop profession-specific SP case scenarios and appropriate scoring rubric. The SPE then recruits, trains, and implements simulations involving SPs for the purpose of formative and summative assessment of the students. In addition to continuously evaluating SPs to ensure standardization, validity, and reliability for all learners, the SPE fulfills other responsibilities. Notably, while recruiting, training, and evaluating SPs, the SPE is also responsible for administration of the assessments involving SPs and learners in dedicated simulation centers. This requires the ability to multitask disparate roles. Specifically, concurrent roles during implementation include: orienting students, faculty, and SPs to the simulation center and educational goals for the session; operating complex administration software and hardware systems to audio and video record student sessions and gather data; ensuring

validity of assessment via troubleshooting any scheduling, technical, or interpersonal challenges; and monitoring and assisting SPs, students, and faculty.

Importantly, despite the organization of a professional society and recent certification efforts, the SPE to date has not been officially recognized by the U.S. Department of Labor's occupational titles in the Occupational Information Network (O*NET, 2013). The lack of formal recognition, recent organizational changes in health professions education, and increased workload and complexity means that ASPE represents a higher education profession at increased risk for job stress and negative health sequelae.

Study

Population

The population of subjects for this study included all U.S. members from the Association of Standardized Patient Educators (ASPE), the only international nonprofit organization in the United States dedicated to service to the profession of Standardized Patient Educators. At the time of data collection, ASPE roles consisted of approximately 530 members from the United States and abroad. In specific, at this time, the membership was comprised of 81% U.S. ASPE members and 19% non-U.S. members (B. King, personal communication, May 12, 2014). The present research was concerned only with U.S. members. Importantly, to gather data for further research of both U.S. and international ASPE members, all members were invited to participate in the present study. The study was a cross-sectional, web-based, self-administered, and anonymous survey. The instrument was e-mailed to subjects by ASPE between March 28, 2014, and

May 08, 2104. In light of the paucity of research in job stress in the U.S. in higher education, specifically, in emerging professions, this study was designed to examine job stress and resilience among SPEs in the United States. Only those subjects employed in the U.S. were included in the final data analysis ($n = 147$). Of the 147 U.S. subjects who identified her or his primary workplace as the U.S., 110 completed all subscales and sub-dimension scales included in the study instrument required for all analyses. The only exception was one participant who completed all items with the exception of the demographic item on job status funding. With only one missing item, this participant was included in the data set bringing the final number to 111. Thus, the final study population of U.S. SPEs completing the instrument for all required analyses was $n = 111$.

Instrumentation and Theoretical Framework

The instrument used in this study consisted of 56 items and two scales measuring the constructs of job stress and resilience. The first subscale of the instrument was the Dispositional Resilience Scale version 3 (DRS-v3). The DRS-v3 consisted of 15 items that measure individual resilience (Bartone, 2007). Three sub-dimensions were measured within the 15-item DRS-v3: commitment, control, and challenge. In specific, commitment referred to the tendency to stay engaged with persons or events rather than choosing to isolate oneself. Control referred to the belief that the efforts of the individual will influence outcomes. Challenge referred to the belief that change is natural and an opportunity for growth (M. K. Taylor et al., 2013). The n of items for which each sub-dimension was comprised was five. The second subscale included in the instrument was the Health and Safety Executive Management Standards Indicator Tool (HSE-MS).

The HSE-MS was a 35-item measurement scale that measured work stress secondary to the interaction between the work environment and the individual.

In addition to an item regarding the SPE's primary country of work, the end of the instrument was comprised of five demographic items pertinent to the limited published research around work stress among university faculty and staff. Specifically, these items included job status hours (full-time versus part-time); job status funding (permanent versus temporary); job type (faculty, management, support staff); years of service in the profession; and highest education level achieved (high school, associates degree, bachelor degree, masters degree, doctorate degree).

The theory that served as the foundation of this study was the Transactional Model of Stress and Coping (TMSC). TMSC describes stress as a relationship between the person and the environment that is appraised by the person as exceeding his or her resources and is a threat to well-being (Lazarus & Folkman, 1984). According to the model, evaluation of the significance of a stressor constitutes the primary appraisal. Secondary appraisal is the evaluation of the controllability of the stressor and coping resources. Specifically, secondary appraisals include perceived ability to manage one's emotion, perceived ability to change the situation, and expectations about the effectiveness of coping resources. These appraisals involve perceptions of the individual regarding control over feelings, control over threat, and coping self-efficacy, respectively (Glanz & Schwartz, 2008).

In addition to self-efficacy and controllability, the level of engagement between an individual and a stressor also varies. Disengaging strategies occur when a stressor is

perceived as uncontrollable and highly threatening (S. E. Taylor et al., 1992). In specific, disengaging strategies include cognitive avoidance (not thinking about), behavioral avoidance (inaction), distraction, and denial. In contrast, according to Kobasa (1979), persons with strong coping resources might not appraise situations as taxing. Thus, those with strong coping resources perceive demanding situations to present challenges while the individual with poor coping resources feels overwhelmed by the same situation. Thus, cognitions and emotions of each individual comprise critical elements of the appraisal process of the person-environment transaction.

Coping efforts include active problem solving as well as changing how one thinks or feels about a stressful situation (Cohen & McKay, 1984; Lazarus & Folkman, 1984; Folkman & Moskowitz, 2000). Importantly, the primary (individual risk) and secondary (individual resource) appraisal processes are mediated by coping efforts. Two such types of coping efforts include problem-focused coping and emotion-focused coping. Problem-focused coping or problem management include efforts to change the stressful situation. Alternatively, emotion-focused coping is directed at changing cognitions or emotions related to the stress. As part of emotion-focused coping, emotional regulation strategies include seeking social support, venting feelings, avoidance, and denial (Lazarus & Folkman, 1984). Meaning-based coping is an emotion-focused coping process that can induce positive emotion. Meaning-based coping consists of positively reappraising a stressful situation, revising goals, engaging spirituality and acceptance (Carver et al., 1993).

Thus, the subscales that comprised the instrument (DRS-v3 and HSE-MS) in this study measured critical constructs of the TMSC. The HSE-MS measured primary sources of stress at work: demands, control, support, relationships, role, and change. Resilience measured appraisal and coping. In specific, resilience measured secondary appraisal (control), level of engagement (commitment), problem-based coping (commitment) and emotion-based coping (challenge) in response to work stress.

Analyses of Hypotheses 1–5

Null Hypothesis 1: There was no statistically significant relationship between job status hours and job stress.

Findings from the Spearman's Rank Order Correlation Coefficient test revealed that there was no statistically significant relationship between job status hours and job stress. This led to rejection of null hypothesis 1. This is consistent with the findings of Dua (1994) that job status (full-time versus part-time job status) was not related to job stress. As such, there was no relationship between a subject who works full-time and job stress experienced. Likewise, there was no relationship between a subject who works part-time and job stress experienced. Of note, based on the distribution of data [Full-time (92.8%) versus Part-time (7.2%)], meaningful interpretation of the analysis was subject to question.

Null Hypothesis 2: There was no statistically significant relationship between job status funding and job stress.

Findings from the Spearman Rank Order Correlation test revealed that there was no significant relationship between job status funding and job stress. Based on this, the

null hypothesis 2 for job funding status was retained. As such, there was no relationship between a subject who has a permanently funded position and job stress experienced. Likewise, there was no relationship between a subject who has a temporarily funded position and job stress experienced. These results are not consistent with prior research by Dua (1994). In specific, Dua did report increased job stress in temporary versus permanent staff. Notably, limitations in distribution of the ASPE population in job status [temporary (3.6%) versus permanent (95.5%)] limited the ability to find statistically significant relationships if these existed. Thus, based on this distribution of data, meaningful interpretation was subject to question.

Null Hypothesis 3: There was no statistically significant relationship between job type and job stress.

Findings from the Spearman's Rank Order Correlation Coefficient test revealed a statistically significant relationship between job type (faculty, management, support staff) and job stress. This led to rejection of null hypothesis 3. As such, a statistically significant relationship existed based on a subject's job type and job stress.

Because the analysis of job stress and job type did not violate assumptions necessary for a parametric test, an ANOVA was run. In specific, to explore further any significant differences among the mean scores by job type, a post hoc Tukey HSD test was performed. There was a statistically significant difference between two of the three job type levels (faculty, management, support staff) and job stress. Importantly, the post hoc Tukey HSD test revealed the lower status job type (support staff) perceived higher job stress when compared to higher status job type (faculty). Of note, job type was only

weakly related to job stress. Specifically, job type accounted for only 5% of the shared variance of higher job stress scores.

The results from the ANOVA are consistent with the initial weak statistically significant relationship that correlated lower status jobs to higher levels of stress. Like the present study, Dua (1994) and T. LaMontagne (2012) did report that job type was related to job stress. In specific, LaMontagne reported that workers in occupations classified as less skilled, bore a disproportionate preventable burden of job stress and related illness and disease. Likewise, Dua examined this relationship among the university employee ranks in a university institution in Australia. The staff and faculty ranks identified in the research of Dua (senior lecturer or above, below senior lecturer, research, senior technical officer, administrative officer grade 4 or above, administrative officer grade 2–4, below administrative officer grade 2; library, and support) do not directly align with the rank order among ASPE members (faculty, management, support staff) in U.S. higher education. Dua did report staff below senior lecturer rank with increased job stress. Thus, differences in job stress among job types in ASPE members would warrant further investigation in a similar study with a larger population.

Null Hypothesis 4: There was no statistically significant relationship between years of service and job stress.

Findings from the Spearman's Rank Order Correlation Coefficient test revealed no statistically significant relationship between years of service and job stress. In specific, years of service of employees (less than 2 years, 2–10 years, 10–20 years, and greater than 20 years) were not significantly related to job stress. Thus, increasing years

of service as an SPE was not associated with decreased job stress. In contrast, Blau (1981) reported that length of service was an important variable in job stress. Specifically, increased length of service was associated with decreased job stress. Similarly, Dua (1994) reported significant differences by age group with younger employees reporting more job stress than more senior colleagues. Of note, the present research design considered only years of service as an SPE. Age group was not a demographic variable examined.

Importantly, the published literature examining years of service (Blau, 1981) are not supported in the present study. Based on the distribution of data collected in the present study, meaningful interpretation was subject to question. Overall, further study of these demographics (job status, job type, years of service, and age) would benefit from a larger population study as well as further analysis to examine differences between and among groups of educators in higher education in the United States. Specifically, the findings of this study applied to a larger population of ASPE SPEs could be analyzed with parametric analysis (t-test or ANOVA) to respectively determine differences between and among groups. Additionally, parametric analysis with post hoc procedures would identify where these differences occur. This would provide information to tailor health promotion efforts based on differences identified.

Null Hypothesis 5: There was no statistically significant relationship between education level and job stress.

The analysis was conducted using the Spearman Rank Order Correlation test. There was not a statistically significant relationship among education level and job stress.

Based on this, the null hypothesis 3 for job type was retained. As such, a subject's education level (high school diploma, associates degree, bachelors degree, masters degree, doctoral degree) was neither positively nor negatively related to job stress.

Thus, the null hypotheses were retained for job status hours; job status funding; years of service; and education level. In contrast, the null hypothesis for job type was rejected.

Analyses of Hypotheses 6–11

Null Hypothesis 6: There was no statistically significant relationship between resilience and job stress.

The relationship between resilience and job stress was analyzed using Pearson Product Moment Correlation Coefficient test. There was a moderate negative correlation between resilience and job stress. Based on this result, the null hypothesis 6 was rejected. Thus, higher levels of resilience were associated with lower levels of job stress.

Stress and specifically job stress have been recognized as an important social determinant of health (WHO, 2003). The resulting negative correlation between job stress and resilience is consistent with that reported by Bartone (1999) and Britt et al. (2001) in U.S. military peacekeeping populations.

Null Hypothesis 7: There was no statistically significant relationship between commitment and job stress.

The relationship between commitment and job stress was analyzed using Pearson Product Moment Correlation Coefficient test. Preliminary analyses included generation of a scatterplot to check for outliers, inspection of the distribution of data points, and

determination of the direction of the relationship between variables. There was a moderate to strong negative correlation between challenge and job stress. Based on this result, the null hypothesis 7 is rejected. Thus, higher levels of commitment were strongly associated with lower levels of job stress.

The correlation of the specific resilience sub-dimension, commitment, with job stress has limited research to date as well. Like the challenge and control sub-dimensions of resilience, commitment has been validated as a measure that predicts protection against job stress (Bartone, 2007). Therefore, the moderate negative correlation is consistent with these models and supports a strong contribution of this sub-dimension to the proposed resilience model to mitigate job stress.

Null Hypothesis 8: There is no statistically significant relationship between control and job stress.

The relationship between control and job stress was analyzed using Pearson Product Moment Correlation Coefficient test. There was a moderate negative correlation between control and job stress. Based on this result, the null hypothesis 8 was rejected. Thus, higher levels of control were moderately associated with lower levels of job stress.

The correlation of the specific resilience sub-dimension, control, with job stress has limited research to date. Control has been validated as a sub-dimension of a resilience measure that predicts protection against job stress (Bartone, 2007). Importantly, the inverse relationship between similar control constructs and job stress has been well documented in multiple work stress models (Johnson, 1989; Karasek, 1979; Van der Doef & Maes, 1998). Thus, the negative correlation is consistent with these

models and supports the inclusion and contribution of this sub-dimension to a resilience model that mitigates job stress.

Null Hypothesis 9: There was no statistically significant relationship between challenge and job stress.

The relationship between challenge and job stress was analyzed using Pearson Product Moment Correlation Coefficient test. There was a weak negative correlation between challenge and job stress that was statistically significant. Based on this result, the null hypothesis 9 was rejected. Thus, higher levels of challenge were weakly associated with lower levels of job stress.

Challenge is a unique sub-dimension of resilience (Bartone, 2007). Research to date on the sub-dimension of challenge cautions that internal consistency for the challenge scale is low and is best used empirically as part of an overall resilience score (Bartone, 2007). The weak negative correlation is consistent with this research.

Null Hypothesis 10: There was no significant proportion of variance in job stress that could be explained by the combination of the resilience sub-dimensions (commitment, control, and challenge).

A standard multiple linear regression analysis was performed between the dependent variable (job stress) and the independent variables (commitment, control, and challenge). Results indicate that the model with three factors (commitment, control, and challenge) was statistically significant in accounting for variance in job stress, Specifically, the model of resilience that included commitment, control, and challenge,

explained 26% of the variance in job stress. This led to the rejection of null hypothesis 10.

Null Hypothesis 11: There was no one significant resilience sub-dimension (commitment, control, or challenge) that accounted for the most variance in job stress.

A standard multiple linear regression analysis performed between the dependent variable (job stress) and the independent variables (commitment, control, and challenge) revealed that commitment accounted for the most significant unique variance in job stress, when the other independent variables (control and challenge) were controlled for. In specific, the factor of commitment uniquely explained 16% of the variance in job stress. This led to rejection of null hypothesis 11.

Of note with respect to hypotheses 10 and 11, the present research study is the first empirical research to specifically examine Bartone's model and the best sub-dimension predictor of resilience in higher education professionals. Notably, Richardson and Waite (2002) explored mental health promotion through resilience and a resiliency education program consisting of five day-long sessions over a five-week period. Specifically, Waite and Richardson (2004) had reported on the effectiveness of a resiliency program on the psychosocial well-being of government employees in Northern Utah. Specifically, Waite and Richardson reported increased self-esteem, locus of control, purpose in life, interpersonal relationships and job satisfaction among participants compared to a control group. Of concern, in general, employee access and funding for such health promotion efforts to reduce job stress and enhance resiliency are limited.

Importantly, the present research study identified a resiliency model and best predictor upon which resiliency education efforts could be developed, streamlined, and made available to the ASPE population and others if warranted by further research.

Recommendations for Further Research

Findings from this study suggest the need for further research. Potential areas of expanded research are as follows:

1. **Further Quantitative Research:** The same instrument should be used to reproduce the study among a larger pool of SPEs who are not ASPE members. The SPEs who are members of ASPE may differ from those SPEs who are not. The experiences of SPEs not belonging to a professional association or specifically ASPE may differ significantly from those represented in the ASPE population. Importantly, with a larger population, further analyses of demographic data with parametric statistics could better identify differences in job stress between and among subjects by job status, job type, years of service, and educational degree. Additionally, inclusion of both U.S. and non-U.S. SPEs would provide data to explore the differences between these two groups.
2. **Qualitative Research:** As constructed, the present study yielded purely quantitative data through administration of the chosen instrument and statistical analysis of the data to analyze the proposed hypotheses. The research topic of job stress and resilience was also well-suited to qualitative research. In specific, the model that informed the research, the Transactional

Model of Stress and Coping (Lazarus & Folkman, 1984) is concerned with the relationship between an individual and the environment. Exploring this process with descriptive data as well as correlational statistical outcomes could better inform the concept of “meaningfulness” intrinsic to coping with job stress via positive reappraisal (Folkman, 1997), resilience (Carver, 1998), and meaning-based coping (Carver & Antoni, 2004). In turn, this could better inform the sub-dimension of challenge in the resilience scale proposed by Bartone (2007) and lead to refinement of the instrument (Creswell, 2009). Additionally, a naturalistic approach (Bogdan & Biklen, 1998) consisting of focus groups with ASPE members, using the researcher’s insight as the key instrument, could be conducted to better understand how the work context of SPEs influence an individual’s experience of job stress and health behavior.

3. Intervention Research: There is a need for empirical evidence-based interventions to support the efficacy and explore the mechanisms by which resilience serves to protect against job stress among SPEs. Specifically, it is critical to examine the efficacy of a tailored accessible form of resiliency education for mental health promotion. By building on the curriculum by Richardson and Waite (2002) and the research in military populations by Bartone regarding the protective nature of resilience and the potential for leaders in the profession to educate the workforce (1999, 2006b), it would be possible to design and deliver accessible health promotion programming to ASPE members. These could occur annually at face-to-face meetings as well

as via free webinars not limited by location and time. Both outcome and process evaluation would need to be measured to inform and assure that the interventions are indeed evidence-based.

Recommendations for Health Promotion and Prevention Interventions

From 1974 to 1994, stress management in the workplace utilized a large number of different techniques to measure a wide variety of health outcomes (Murphy, 1996). Health promotion efforts for workplaces studied over the 20 years included: (a) progressive muscle relaxation, (b) biofeedback, (c) meditation, (d) cognitive-behavioral training, and (e) combinations of these efforts. Health outcomes measured included: (a) lowering blood pressure level; (b) general well-being; (c) decreasing frequency of psychiatric symptoms such as anxiety, depression, and burnout; and (d) decreasing levels of associated biological stress markers such as the catecholamines, adrenaline and noradrenaline. Of concern, the variability in health promotion efforts and outcomes measured made it difficult to generalize about the efficacy of the techniques employed to improve health outcomes. Importantly, Murphy (1996) recommended a more comprehensive approach with interventions aimed at both individual and organizational level factors. Notably, almost 10 years later, A. D. LaMontagne et al. (2007) reported that from 1995–2005, the number of comprehensive job stress intervention evaluations in the published literature had increased. The comprehensive job stress interventions simultaneously focused on both the individual and the organization. These comprehensive job stress interventions were referred to as primary, preventive, and proactive interventions. The primary interventions were directed at educating individuals

to address job specific stressors. Simultaneously, these interventions informed the organization of how the psychosocial determinants of the work environment contributed to job stress. Importantly, A. D. LaMontagne et al. (2007) recommended the need for further measures to “foster the dissemination and implementation of systems approaches to examining interventions to work stress” (p. 268).

In this context, the present research study contributes to increasing knowledge about comprehensive and primary health promotion, prevention, and protection efforts targeted towards job stress. Specifically, the present study included measures to evaluate job stress of individual SPEs among the maturing profession of SPEs and resilience, a potential health protection and health promotion measure. Arguably, the findings from this study indicate the feasibility of disseminating and implementing this comprehensive systems approach among U.S. SPEs that are members of ASPE. According to the study findings, a primary health promotion approach to job stress among ASPE SPEs, that includes both the individual and the associated professional organization is reasonable and likely to benefit both the individual SPE and the profession of SPE.

Health education and promotion professionals (HEDP) are well suited to provide these services through two primary mechanisms, health education and advocacy. In specific, HEDP professionals are uniquely qualified to engage in assessment, planning, implementation, and evaluation of evidence-based programming to promote health through work and prevent job stress (National Commission on Health Education Credentialing, Inc. [NCHEC], 2008). An HEDP professional could use the findings of the present study to plan, implement, and evaluate a program on health promotion

through resiliency education. Specifically, to serve a national audience, a webinar could be developed to educate SPEs about job stress and promote health and well-being at work through resilience.

HEDP professionals are also uniquely qualified in conveying effective messages and engaging in evidence-based health advocacy strategies (NCHEC, 2008). As health promotion through resiliency education is identified to be effective in SPEs, this success will need to be conveyed to the universities and academic health centers that employ SPEs. HEDP professionals must communicate the utility of this strategy to the national professional organizations to receive the resources and support required to sustain this type of programming. Concurrently, HEDP professionals must collaborate with national professional organizations such as ASPE to create a unified message to universities and academic health centers. Consistent with the study findings regarding the commitment sub-dimension of resilience, the messaging needs to advocate for an organizational culture that supports increased engagement of employees with colleagues, students, and the community served. Given the role of professional societies in the professional development and health of members (Bickel, 2007), HEDP professionals should advocate for their profession to be present and active at annual conferences for higher education health professions. HEDP professionals with advocacy, education, and promotion skills are uniquely prepared to provide evidence-based health promotion programs to these populations, enhance occupational health, and decrease job stress.

Overall, current health professions higher education organizations and institutions faced with rapid change in the organization of education and health professions have

much to learn from the HEDP profession and professionals. Specifically, the HEDP tradition of a holistic approach to health and well being combined with well-developed skills in health education, promotion, and advocacy uniquely equip the HEDP professional to lead efforts in the improvement of occupational health in the U.S.

Limitations

- The population was fairly homogenous as professional SPE members of ASPE. SPE subjects were not recruited to the study from outside the membership database. Thus, it is possible that ASPE SPEs are different from non-ASPE SPEs.
- As this was a population study of ASPE members, generalizations could not be made beyond this population.
- The response rate for the U.S. population was 26%. Thus, the potential for nonresponse error exists. Specifically, SPEs in the ASPE population that chose not to respond may in fact be different from those who responded.
- The results were based on self-reported data and thus, subject to error. Specifically, self-reported data is subject to bias, including recall bias. Additionally, error may have been introduced by subjects providing socially desirable responses versus accurate responses.
- This study was cross sectional survey research. Therefore, it is not possible to derive causations from study results, rather only associations.

APPENDICES

APPENDIX A
INSTRUMENT

Appendix A

Instrument Piloted

Directions: Below are statements about life that people often feel differently about. Please show how much you think each one is true for you. Give your own honest opinions..... There are no right or wrong answers!

		Not at all true	A little true	Quite true	Completely True
1	Most of my life gets spent doing things that are meaningful				
2	By working hard you can nearly always achieve your goals				
3	I don't like to make changes in my regular activities				
4	I feel that my life is somewhat empty of meaning				
5	Changes in routine are interesting to me				
6	How things go in my life depends on my own actions				
7	I really look forward to my work activities				
8	I don't think that there is much I can do to influence my own future				
9	I enjoy the challenge when I have to do more than one thing at a time				
10	Most days, life is really interesting & exciting for me				
11	It bothers me when my daily routine gets interrupted				
12	It is up to me to decide how the rest of my life will be				
13	Life in general is boring for me				
14	I like having a daily schedule that doesn't change much very much				
15	My choices make a real difference in how things turn out in the end				

Directions: Below are a series of statements that aim to identify sources of pressure in your working life. Please check the box that best represents your perceptions.

		Never	Seldom	Sometimes	Often	Always
1	I am clear what is expected of me at work					
2	I can decide when to take a break					
3	Different groups at work demand things from me that are hard to combine					
4	I know how to go about getting my job done					
5	I am subject to personal harassment in the form of unkind words or behavior					
6	I have unachievable deadlines					
7	If work gets difficult, my colleagues will help me					
8	I am given supportive feedback on the work I do					
9	I have to work intensively					
10	I have a say in my own work speed					
11	I am clear what my responsibilities and duties are					
12	I have to neglect some tasks because I have too much to do					
13	I am clear about the goals and objectives for my department					
14	There is friction or anger between colleagues					
15	I have a choice in deciding how I do my work					
16	I am unable to take sufficient breaks					
17	I understand how my work fits into the overall aim of the organization					
18	I am pressured to work long hours					
19	I have a choice I deciding what I do at work					
20	I have to work very fast					
21	I am subject to bullying at work					
22	I have unrealistic time pressures					
23	I can rely on my line manager to help me out with a work problem					
24	I can get help and support I need from colleagues					
25	I have some say over the way I work					
26	I have sufficient opportunities to question managers about change at work					
27	I receive the respect at work I deserve from my colleagues					

28	Staff are always consulted about change at work					
29	I can talk to my line manager about something that has upset or annoyed me about work					
30	My working time can be flexible					
31	My colleagues are willing to listen to my work related problems					
32	When changes are made at work, I am clear how they will work out in practice					
33	I am supported through emotionally demanding work					
34	Relationships at work are strained					
35	My line manager encourages me at work					

Please read and answer the following questions with the best answer.

What is your work status?

- Full-time
- Part-time

What is your work status?

- Temporary
- Permanent

What is your primary job type?

- Faculty
- Management
- Support staff

What is the highest degree you have earned?

- High school
- Associates Degree
- Bachelors Degree
- Masters Degree
- Doctoral degree

How many years of service do you have as an SPE?

- Less than 2 years
- 2-10 years
- 10-20 years
- Greater than 20 years

My primary place of employment as an SPE is

- a. The United States
- b. Canada
- c. Europe
- d. Asia
- e. Africa
- f. South America
- g. Australia

IRB Approved Modification of Survey Instrument

Directions: Below are statements about life that people often feel differently about. Please show how much you think each one is true about you. Give your own honest opinions.....There are no right or wrong answers!

		Not at all true	A little true	Quite true	Completely True
1*	<i>Most of my life gets spent doing things that are meaningful</i>				
2*	By working hard you can <i>nearly always</i> achieve your goals				
3	I don't like to make changes in my regular activities				
4	I feel that my life is somewhat empty of meaning				
5	Changes in routine are interesting to me				
6	How things go in my life depends on my own actions				
7*	I <i>really</i> look forward to my work activities				
8*	I don't think that <i>there is much I can do</i> to influence my own future				
9	I enjoy the challenge when I have to do more than one thing at a time				
10*	<i>Most days</i> , life is really interesting & exciting for me				
11	It bothers me when my daily routine gets interrupted				
12	It is up to me to decide how the rest of my life will be				
13	Life in general is boring for me				
14*	I like having a daily schedule that doesn't change <i>very much</i>				
15*	My choices make a <i>real</i> difference in how things turn out in the end				

Directions: Below are a series of statements that aim to identify sources of pressure in your working life. Please check the box that best represents your perceptions.

		Never	Seldom	Sometimes	Often	Always
1	I am clear what is expected of me at work					
2	I can decide when to take a break					
3	Different groups at work demand things from me that are hard to combine					
4	I know how to go about getting my job done					
5	I am subject to personal harassment in the form of unkind words or behavior					
6	I have unachievable deadlines					
7	If work gets difficult, my colleagues will help me					
8	I am given supportive feedback on the work I do					
9	I have to work intensively					
10	I have a say in my own work speed					
11	I am clear what my responsibilities and duties are					
12	I have to neglect some tasks because I have too much to do					
13	I am clear about the goals and objectives for my department					
14	There is friction or anger between colleagues					
15	I have a choice in deciding how I do my work					
16	I am unable to take sufficient breaks					
17	I understand how my work fits into the overall aim of the organization					
18	I am pressured to work long hours					
19	I have a choice I deciding what I do at work					
20	I have to work very fast					
21	I am subject to bullying at work					
22	I have unrealistic time pressures					
23	I can rely on my supervisor to help me out with a work problem					
24	I can get help and support I need from colleagues					
25	I have some say over the way I work					
26	I have sufficient opportunities to question managers about change at work					
27	I receive the respect at work I deserve from my colleagues					

28	Staff are always consulted about change at work					
29	I can talk to my supervisor about something that has upset or annoyed me about work					
30	My working time can be flexible					
31	My colleagues are willing to listen to my work related problems					
32	When changes are made at work, I am clear how they will work out in practice					
33	I am supported through emotionally demanding work					
34	Relationships at work are strained					
35	My supervisor encourages me at work					

Please read and answer the following questions with your best answer.

What is your work hour status?

- c. Full-time
- d. Part-time

What is your work funding status?

- c. Temporary
- d. Permanent

What is your primary job type?

- d. Faculty
- e. Management
- f. Support staff

What is the highest degree you have earned?

- f. High school
- g. Associates Degree
- h. Bachelors Degree
- i. Masters Degree
- j. Doctoral degree

How many years of service do you have in health professions education?

- e. Less than 2 years
- f. 2-10 years
- g. 10-20 years
- h. Greater than 20 years

APPENDIX B
SCALE PERMISSIONS

Appendix B

Scale Permissions

Holly Gerzina

From: Jill.Worrall@hse.gsi.gov.uk
Sent: Tuesday, May 14, 2013 5:18 AM
To: Holly Gerzina
Subject: FW: Stress feedback

Dear Holly

Thank you for your message of yesterday.
Please feel free to use any of our material providing of course it is not for profit. I am sure your dissertation will fall into that category.
Please acknowledge HSE as the source.
I am pleased to say that there will not be a charge for this.
Good luck with your doctorate.

Best wishes

Jill

Jill Worrall
Work, Environment, Radiation & Gas Division Desk 49
5 S G Redgrave Court
Usual Work Pattern Tue - Fri 08.00 - 16.00hrs

-----Original Message-----

From: HSE Online
Sent: 13 May 2013 17:44
To: Jill Worrall
Subject: Stress feedback

Message sent at 17:39:33 on 13/05/2013

Stress feedback

mailfrom:
hse.online@hse.gsi.gov.uk

name:
Holly A. Gerzina

E_mail:
hgerzina@neomed.edu

E_mailConf:
hgerzina@neomed.edu

phone:
330 325-6746

1

add1:
 4209 SR 44

 add2:
 PO Box 95

 city:
 Rootstown

 county:
 USA

 postcode:
 44272

 orgSector:
 4

 orgRole:
 Executive Director & Instructor

 size:
 MoreThan250

 found:
 foundYes

 ebull:
 ebullYes

 consult:
 consultYes

 comments:
 To Whom it May Concern:
 I'm a doctoral student in the US. I'm interested in gaining permission to use this survey as part of doctoral dissertation on job stress.
 Please let me know if there are any steps for permission and any costs associated with using the instrument?
 Best Regards,
 Holly A. Gerzina, M.Ed., M.Ed.

 submit:
 Submit

The original of this email was scanned for viruses by the Government Secure Intranet virus scanning service supplied by Vodafone in partnership with Symantec. (CCTM Certificate Number 2009/09/0052.) On leaving the GSi this email was certified virus free.
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www.hse.gov.uk

Please note : Incoming and outgoing email messages are routinely monitored for compliance with our policy on the use of electronic communications and may be automatically logged, monitored and / or recorded for lawful purposes by the GSI service provider.

Interested in Occupational Health and Safety information?
Please visit the HSE website at the following address to keep yourself up to date

www.hse.gov.uk

The original of this email was scanned for viruses by the Government Secure Intranet virus scanning service supplied by Vodafone in partnership with Symantec. (CCTM Certificate Number 2009/09/0052.) On leaving the GSi this email was certified virus free. Communications via the GSi may be automatically logged, monitored and/or recorded for legal purposes.



Holly Gerzina

From: Dr.Paul T.Bartone [bartonep@gmail.com]
Sent: Tuesday, August 02, 2011 11:07 PM
To: Holly Gerzina
Subject: DRS Download Information

Hello -

Thanks for your interest in the Dispositional Resilience Scale and for agreeing to the terms of use.

The term of your license is for one year from the date of purchase, and is valid for use only by the licensee. Your download link will be sent to you in a separate email upon completion of payment. If you have any questions, feel free to contact me.

Sincerely,

Dr. Paul T. Bartone
<http://www.hardiness-resilience.com>

Holly Gerzina

From: bartonep@gmail.com
Sent: Tuesday, August 02, 2011 11:11 PM
To: Holly Gerzina
Subject: Thankyou for purchasing DRS-15: 1-Year Academic License, Holly A Gerzina

Hello Holly A Gerzina,

Thank you for purchasing DRS-15: 1-Year Academic License.

Your receipt number is: 5XH48654XN483824G

You can download DRS-15: 1-Year Academic License for the next 48 hours.

Your personal download link is:

<http://www.upandrunning.net/dlg/download.php?r=5XH48654XN483824G&p=1>

Thank you for your support,

Best wishes,
Paul Bartone, Ph.D
DRS Instrument Developer

(Your sales IP address is: 66.211.170.66)

P.S. - This product is protected by DLGuard, the most advanced download management system available on the Internet. If you would like to learn more about protecting your own downloadable products, visit: <http://www.dlguard.com/info?a=vplyafako>

Holly Gerzina

From: paul bartone [bartonep@gmail.com]
Sent: Tuesday, January 07, 2014 11:14 AM
To: Holly Gerzina
Cc: hgerzina@kent.edu
Subject: Re: DRS-15

Hi Holly,

Thanks for your note and information update.

Since you only used the DRS scale for a pilot study and haven't used it for your full dissertation research yet, we can extend your existing license for another year at no cost in order for you to complete your data collection.

Yes, please do send a copy of your modified scale.

There are many reasons not to make even minor modifications to item wording in scales like the DRS. Not the least is that you sacrifice comparability with other studies using this scale. While your changes may seem minor and appear sensible to your dissertation advisor, even small changes can have a big effect on item meaning, how the item is interpreted and responded to. Although you found good internal consistency - reliability coefficients in your pilot study with the modified scale, this does not speak to validity. So again I recommend AGAINST such modifications.

That said, I would not restrict you from publishing or reporting your pilot work. And if you still wish to use the revised version in your dissertation all things considered, I will let that be your decision.

Either way, in reporting results you may report sample items, but not the entire scale. This is standard practice for copyrighted scales.

I'd love to chat with you sometime but am totally swamped right now. Let me know if you have any urgent requirements....

Best regards,

Paul

On Sun, Jan 5, 2014 at 10:21 PM, Holly Gerzina <hgerzina@neomed.edu> wrote:
 Dear Dr. Bartone,

Happy New Year!

I had previously purchased a license to use the DRS-15 in my doctorate research (August 02, 2011) examining job stress and resilience in health professions education - specifically in the field of simulation with standardized patients. Because I have worked full time while pursuing my doctorate part-time, I have just recently reached a point to use the DRS-15 in my research study as a doctoral student.

Over this weekend, while organizing & copying instrument permissions to document for a committee meeting in late January, I uncovered two challenges. I realized that the license permission was only for 1 year from purchase date and the modifications were not permitted beyond language translations. I needed to let you know that I inadvertently used DRS-15v3 for a small pilot study (n=44) among health professions educators at NEOMED. I also had made minor modifications to 7 of the existing questions by removing "modifiers" such as "most," "all," etc. My major dissertation advisor had requested that modifiers be removed from survey items as the existing Likert scale provided sufficient degrees of measures of order.

I did perform preliminary statistical reliability analyses (Cronbach's alpha) on the scale total and sub scales. The DRS-15v3 with modifiers removed had a Cronbach's alpha of .85. Cronbach's alpha coefficient for the DRS-15 subscales was 0.88 for commitment, 0.84 for control, and 0.71 for challenge, respectively. I have not distributed the results from the survey or statistical analyses.

I am requesting your advisement and permissions as follows:

1. I'd like to use the DRS-15 with modifiers removed from questions 1, 2, 7, 8, 10, 14, and 15.
2. I'd like to request and pay for another year's licensing fee to use this modified scale in my doctoral study research.
3. I'd like to be able to acquire retroactive permission to this past fall (Oct/Nov 2013) to be able report the pilot results.
4. I'd like to publish the results from both the pilot study and main study in my dissertation.

I would agree, as per the original request, that you would retain ownership of all copyrights and other intellectual property rights including the version of the scale with the modifications.

I would be glad to provide you any additional information, including a copy of the modified instrument, that would assist you with this request.

My current doctoral research project was designed to look at resilience and job stress, specifically among educators working with human simulation. Through my role with ASPE, I wanted to be able to increase knowledge about resilience and job stress among this population. I have included a brief bio that is listed as part of my current positions with NEOMED, a medical university in the Midwest. My doctoral dissertation has been a journey to integrate 2 areas of professional interest - work as a health professions educator and work as a health educator.

<http://www.neomed.edu/academics/wassoncenter/employees/5710>

I would welcome the opportunity to speak with you or Skype further if this would be helpful. I did want to notify you immediately upon realizing these concerns.

Best Regards,

Holly

Holly A. Gerzina, M.Ed., M.Ed.

Executive Director,
Wasson Center for Clinical Skills &
Continuing Professional Education

Northeast Ohio Medical University

Doctoral Candidate
Health Education & Promotion
College and Graduate School of Education, Health, and Human Services
Kent State University

hgerzina@neomed.edu
v [330.325.6746](tel:330.325.6746) f [330.325.5917](tel:330.325.5917)

4209 St. Rt. 44, PO Box 95
Rootstown, Ohio 44272

APPENDIX C

IRB APPLICATION AND APPROVAL FOR PILOT AND MAIN STUDY

Appendix C

IRB Application and Approval for Pilot and Main Study

Kent State University Mail - IRB approval for protocol #13-416 - retain this email for you... Page 1 of 13

KENT STATE
UNIVERSITY

HOLLY GERZINA <hgerzina@kent.edu>

IRB approval for protocol #13-416 - retain this email for your records

5 messages

RAGS Research Compliance <researchcompliance@kent.edu>

Tue, Oct 1, 2013 at 12:41 PM

To: "WAGNER, LAURIE" <lyoo@kent.edu>, "hgerzina@kent.edu" <hgerzina@kent.edu>

RE: IRB # 13-416 entitled "An Analysis of the Relationship Between Job Stress and Resilience among Standardized Patient Educators"

Hello,

I am pleased to inform you that the Kent State University Institutional Review Board reviewed and approved your Application for Approval to Use Human Research Participants as a Level II/Expedited, category 7 project. **Approval is effective for a twelve-month period:**

September 25, 2013 through September 24, 2014.

**A copy of the IRB approved consent form is attached to this email. This "stamped" copy is the consent form that you must use for your research participants. It is important for you to also keep an unstamped text copy (i.e., Microsoft Word version) of your consent form for subsequent submissions.*

Federal regulations and Kent State University IRB policy require that research be reviewed at intervals appropriate to the degree of risk, but not less than once per year. The IRB has determined that this protocol requires an annual review and progress report. The IRB tries to send you annual review reminder notice to by email as a courtesy. **However, please note that it is the responsibility of the principal investigator to be aware of the study expiration date and submit the required materials.** Please submit review materials (annual review form and copy of current consent form) one month prior to the expiration date.

HHS regulations and Kent State University Institutional Review Board guidelines require that any changes in research methodology, protocol design, or principal investigator have the prior approval of the IRB before implementation and continuation of the protocol. The IRB must also be informed of any adverse events associated with the study. The IRB further requests a final report at the conclusion of the study.

<https://mail.google.com/mail/u/0/?ui=2&ik=85fbfb75fd&view=pt&search=inbox&th=141...> 1/29/2014

Kent State University Mail - IRB approval for protocol #13-416 - retain this email for you... Page 2 of 13

Kent State University has a Federal Wide Assurance on file with the Office for Human Research Protections (OHRP); [FWA Number 00001853](#).

If you have any questions or concerns, please contact the Office of Research Compliance at Researchcompliance@kent.edu or 330-672-2704 or 330-672-8058.

Respectfully,

Kent State University Office of Research Compliance

224 Cartwright Hall | fax 330.672.2658

Kevin McCreary | Research Compliance Coordinator | 330.672.8058 | kmccrea1@kent.edu

Paulette Washko | Manager, Research Compliance | 330.672.2704 | Pwashko@kent.edu

For links to obtain general information, access forms, and complete required training, visit our website at www.kent.edu/research.

Mail Delivery Subsystem <mailer-daemon@googlemail.com>

To: hgerzina+caf_=hgerzina=neoucom.edu@kent.edu

Delivery to the following recipient failed permanently:

hgerzina@neoucom.edu

Technical details of permanent failure:

DNS Error: Domain name not found

----- Original message -----

X-Google-DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed;

d=1e100.net; s=20130820;

h=x-original-authentication-results:x-gm-message-state:delivered-to

:from:to:subject:thread-topic:thread-index:sender:date:message-id

:accept-language:content-language:content-type:mime-version;

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y5FA==

X-Original-Authentication-Results: mx.google.com; spf=neutral (google.com: 207.46.163.25 is neither perm

<https://mail.google.com/mail/u/0/?ui=2&ik=85fbfb75fd&view=pt&search=inbox&th=141...> 1/29/2014

IRB Application

An Analysis of the Relationship Between Job Stress and Resilience Among *Standardized Patient Educators*

Submitted: September 13, 2013

By: Laurie M. Wagner, PhD., MCHES and Holly Gerzina, Doctoral Candidate

IRB LOG NUMBER _____



Health Sciences Use of Human Subjects in Research Application
(LEVEL II or LEVEL III projects)

<p><i>IMPORTANT: Please be sure to indicate an answer to all of the questions on this form. Submission of incomplete forms or failure to include all of the needed attachments will most likely result in delays for IRB review/approval. Handwritten forms are not accepted.</i></p> <p>INSTRUCTIONS for INVESTIGATORS:</p> <p>1. Submit this completed document with any needed attachments via <u>email attachment</u> to an <u>IRB discipline specific reviewer</u>.</p> <p>To submit the form with a typed signature, the form <u>must be</u> submitted from the Investigator's @kent.edu email account. If completed form is signed and then scanned as a PDF attachment, the @kent.edu email requirement does not apply.</p> <p>2. Do NOT begin data collection prior to receiving notification from the KSU IRB that the study has received final approval.</p>	<p align="center">IRB Office use only</p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">AGENDA DATE</td> <td></td> </tr> <tr> <td>Log # email</td> <td></td> </tr> <tr> <td>Approval email</td> <td></td> </tr> <tr> <td>Reminder of Annual review email</td> <td></td> </tr> </table>	AGENDA DATE		Log # email		Approval email		Reminder of Annual review email	
AGENDA DATE									
Log # email									
Approval email									
Reminder of Annual review email									

To complete this form: Single left-click to complete text fields. To check a box, double left-click on the box, then click "checked". Click OK.

Title of Study: An Analysis of the Relationship Between Job Stress and Resilience among Standardized Patient Educators

Section 1 – PRINCIPAL INVESTIGATOR (PI) INFORMATION

Last Name: <u>Wagner</u>		Laurie	
Email: <u>lyoo@kent.edu</u>		Phone: <u>(330) - 672 - 0685</u> or extension <input type="text"/>	Department: <u>Health Sciences</u>
Status:	<input checked="" type="checkbox"/> Faculty	Project:	<input type="checkbox"/> Faculty Research
	<input type="checkbox"/> Staff		<input checked="" type="checkbox"/> Student Thesis/Dissertation → Complete <u>Appendix A</u>
			<input type="checkbox"/> Course Requirement
			<input type="checkbox"/> Other: Specify: <input type="text"/>

Only faculty members and professional staff who are full-time university employees are eligible for PI status. Students conducting research for their dissertation or master's thesis research can still have primary responsibility for the intellectual content, conduct of the research, or primary authorship in publications by serving as co-investigators or key personnel on IRB applications. If you are a KSU employee conducting research involving human subjects as part of your graduate or undergraduate program, your faculty advisor must serve as the PI of record for IRB protocols. Please review IRB policy for PI eligibility and responsibilities.

a. Are there any Kent State University affiliated co-investigators or key personnel on this protocol? Yes → Complete Appendix A No

"Key personnel" are defined as individuals who participate in the design, conduct, or reporting of human subjects research. At a minimum, include individuals, who recruit participants, obtain consent or, who collect study data. Students conducting research for their dissertation or master's thesis research can still have primary responsibility for the intellectual content, conduct of the research, or primary authorship in publications

IRB LOG NUMBER _____



by serving as co-investigators or key personnel on IRB applications.

- b. Are there any **external** (non-Kent State University affiliated) co-investigators or key personnel **engaged** in the research? Yes → Complete **Appendix B** No

"Engaged" individuals are those who intervene or interact with participants in the context of the research or who will obtain individually identifiable private information for research funded, supervised, or coordinated by Kent State University. See OHRP Engagement Guidance or contact ORC for more information.

- c. Has the Principal Investigator (PI) completed the required web-based course years (CITI, or equivalent) in the protection of human research subjects? Yes → Attach **Copy of completion certificate** No

Educational requirements (initial and continuing) should be satisfied prior to submitting the application for IRB review. See Human Subjects Protection Training policy for more information. Final approval from the IRB will not be obtained until all requirements are fulfilled.

- d. Are there other person(s) (e.g., research manager, study or regulatory coordinator, research assistant, etc.) that we should contact if further information about this application is needed? Yes No

If Yes → Name: _____

Phone: _____

Email: _____

Section 2 – FUNDING INFORMATION

- a. Does this research have **external** funding or have you requested **external** funding for this research? Yes No

If Yes → Specify sponsor: _____

Protocol/Proposal # _____

Institution (if not KSU): _____

Have all Kent State University investigators and key personnel completed the required COI disclosure for externally funded research for the purposes of this research project? Yes No

- b. Is any support other than monetary (e.g., drugs, equipment, supplies, etc.) being provided for the study? Yes No

If Yes → Specify support and provider: _____

Attach a copy of the grant application or funding proposal.

The university is required to verify that all funding proposals and grants (new or renewals) have been reviewed by the IRB before funds are awarded. If the research funded by a federal agency and involves a subcontract to or from another entity, an IRB Authorization Agreement may be required. Contact the Office of Research Compliance (ORC) for more information.

- c. Does the PI for this research or their immediate family members (i.e., spouse, domestic partner, or dependent children) have a financial interest that would reasonably be affected by the research, or a financial interest in any entity whose financial interest would reasonably appear to be affected by the research? Yes → Complete **Appendix Z** No

Financial interests include (but are not limited to) salary or other payments for services (e.g., consulting fees or honoraria), equity interests (e.g., stocks, stock options, or other ownership interests), and intellectual property rights (e.g., patents, copyrights, and royalties from such rights).

IRB LOG NUMBER _____



- d. Does the PI for this research or their immediate family members (*i.e.*, spouse, domestic partner, or dependent children) have a non-financial Conflict of Interest that would reasonably be affected by the research
- Yes → Complete Appendix Z //
- No

A non-financial conflict of interest is an interest, other than monetary, of an individual (or his/her immediate family) in the design, conduct, or reporting of the research or other interest that competes with the obligation to protect research participants and potentially compromises the objectivity and credibility of the research process.

Section 3 – RESEARCH DESIGN

- a. Will any members of the research team be conducting or coordinating study activities at a site other than Kent State University
- Yes → Complete Appendix O //
- No

Research to be conducted at locations other than Kent State University may require a letter of support, another institution's approval if personnel are engaged or, the execution of an IRB Authorization Agreement. See [DHRP Engagement Guidance](#) or contact ORC for more information.

- b. Is any of this research being conducted outside of the U.S.A?
- Yes → Complete Appendix U //
- No

- c. What are the estimated beginning and end dates of the project? **August 2013 to May 2014**

- d. Briefly summarize the purpose of the proposed research using *non-technical* language that can be readily understood by someone outside the discipline. *Use complete sentences (limit 300 words).*

The purpose of this research is to study the relationship between job stress and resilience in a population of educators in higher education of the health professions. Specifically, this study examines a profession that was organized in the mid 1990s to address the need for professionals dedicated to educating graduate level health professionals via simulating patient care. Simulation occurs via standardized patients (SPs). SPs are healthy lay-persons trained to role play health care scenarios for health professions students without risk to actual patients. For the purposes of this study, health professions' education includes medicine, nursing, and pharmacy.

Standardized patient educators (SPEs) are the professionals who recruit and train SPs for performance-based assessment of such students. The SPE profession is represented by the Association of Standardized Patient Educators (ASPE). The SPE profession has experienced significant growth and change over the past two decades. An increased demand for these educational services; new certification requirements of SPEs; and limited resources to accommodate growth have challenged SPEs. Additionally, SPEs are at increased risk for job stress, similar to other higher education and service professionals who directly interact with students and clients.

Job stress is a phenomenon influenced by both individual factors as well as the organization of work. The way a professional's work is organized is influenced by institutional factors. SPEs who experience job stress as a result of both individual and organizational factors are at increased risk for physical and psychological disease. Thus, job stress negatively impacts health status.

Importantly, resiliency is an individual quality that protects against the deleterious effects of job stress. Health education in the form of resiliency education provides a means of improving knowledge and skills that protect and promote health when employees experience job stress. Further, enhancing resiliency has been shown to be prospectively protective with future stress.

46.134 Cooperative Research

46.131(a)(1) Criteria for approval of research

IRB LOG NUMBER _____



- e. List the scientific or scholarly aims of the research study

The scholarly aim of this research is to explore the relationship between job stress and resilience in the population of ASPE's SPEs. This will allow health educators to design effective resiliency education to promote health and protect SPE professionals from the deleterious effects of job stress.

- f. Summarize existing knowledge and previous work that support the expectation of obtaining useful results without undue risk to human subjects. *Use complete sentences (limit 300 words).*

Existing literature has identified individuals in people-oriented professions including human services, education, and health care to be at high risk of job stress (Maslach & Goldberg, 1998; Dua, 1994; Sharpley, Reynolds, Acosta & Dua, 1996; Gmeich, Wilke & Lovrich, 1986). Chronic stress leads to poor psychological health status including burnout with emotional exhaustion, depersonalization, and reduced personal accomplishment (Sauter, Murphy, & Hurrell, 1990; Maslach & Jackson, 1981). Importantly, Bartone (1999) has identified resiliency as protective against the deleterious psychological effects of job stress.

Given the literature regarding the deleterious consequences of job stress and the protective nature of resiliency health education, it is prudent to examine the phenomenon of job stress in the people-oriented health professions educator role of SPEs. The benefit is that the results of this research will provide a means of identifying the extent of job stress among SPEs and the best resiliency factor that predicts protection against job stress. Analyzed results will help guide health education and promotion efforts for SPEs experiencing stress. Additionally, SPEs will be empowered to advocate for changes in work organization to decrease job stress. Thus, the likelihood of deleterious health consequences will be minimized and subjects who participate will have the opportunity to benefit from the findings with minimal risk.

- g. Identify and describe (in order of occurrence, if applicable) all interventions and interactions that are to be performed solely for the research study. *Attach a copy of materials to be used (e.g., interview/focus group questions, instruments, data collection forms, etc.).*

Upon notification of IRB approval, the pilot of this study will commence. The aim of the pilot is to test the instrument for ease of completion as well as for validity/reliability. Email invitations will be sent to approximately 50 faculty and staff at NEOMED. Potential subject contact information will be taken from publicly available directories of health professions educators. The email invite (see attached) will contain a link to the survey. When a potential subject clicks on the link, they will be taken to a Vovici survey page (see attached) that will provide them with the detail of the pilot and allow them to choose to consent or not. If they choose to consent, the survey will proceed. If they do not, it will opt them out to a thank you page (see attached).

Once the pilot has been completed and reviewed, it will be determined whether any changes need to be made to the instrument or study protocol. If any changes are necessary, IRB modification procedures will be completed. If no changes are required, the main study will proceed. The study protocol for the main study will be the same as for the pilot with the exception of the subjects. Email invitations will be sent to approximately 550 faculty and staff SPEs at ASPE. Potential subject contact information will be taken from ASPE's directory of SPEs. The email invite (see attached) will contain a link to the survey.

IRB LOG NUMBER _____



h. Check all research activities that apply. Attach a copy of materials to be used (e.g., interview/focus group questions, instruments, data collection forms, etc.).

- | | |
|--|--|
| <input type="checkbox"/> Anesthesia (general or local) or sedation | <input type="checkbox"/> Magnetic Resonance Imaging (MRI) |
| <input type="checkbox"/> Audio, video, digital, or image recordings | <input type="checkbox"/> Materials that may be considered sensitive, offensive, threatening, or degrading |
| <input type="checkbox"/> Biohazards (e.g., rDNA, infectious agents, select agents, toxins) | <input type="checkbox"/> Non-invasive medical procedures (e.g., EKG, Doppler) |
| <input type="checkbox"/> Biological sampling (other than blood) | <input type="checkbox"/> Observation of participants (including field notes) |
| <input type="checkbox"/> Blood drawing, injections, surgical procedures (including biopsies) → Complete Appendix Q | <input type="checkbox"/> Oral history (does not include medical history) |
| <input type="checkbox"/> Coordinating Center | <input type="checkbox"/> Placebo |
| <input type="checkbox"/> Data, not publicly available | <input type="checkbox"/> Pregnancy testing |
| <input type="checkbox"/> Data, publicly available | <input type="checkbox"/> Radiation (e.g., CT or DEXA scans, X-rays, nuclear medicine procedures) → Complete Appendix V |
| <input type="checkbox"/> Data/Specimen storage/repository → Complete Appendix C
(future unspecified use, including research databases for purposes of sharing data or specimens collected with other researchers/studies in the future) | <input type="checkbox"/> Record review (which may include PHI) |
| <input type="checkbox"/> Deception → Complete Appendix D & Appendix M1 | <input type="checkbox"/> Specimen research |
| <input type="checkbox"/> Devices → Complete Appendix E | <input type="checkbox"/> Stem cell research |
| <input type="checkbox"/> Diet, exercise, or sleep modifications | <input checked="" type="checkbox"/> Surveys, questionnaires, or interviews (one-on-one) |
| <input type="checkbox"/> Drugs or biologics → Complete Appendix F | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Emergency research | Specify: <input type="text"/> |
| <input type="checkbox"/> Focus groups | |
| <input type="checkbox"/> Food supplements | |
| <input type="checkbox"/> Gene transfer | |
| <input type="checkbox"/> Genetic testing → Complete Appendix G | |
| <input type="checkbox"/> Internet or e-mail data collection | |

i. Estimate the time required from each participant, including individual interactions, total time commitment, and long-term follow-up, if any.

The estimated time from each participant includes reading the informed consent and completing the survey. The estimated time to complete both informed consent and the survey is 15 minutes or less. No long-term follow-up will be necessary or scheduled.

IRB LOG NUMBER _____



h. Check all research activities that apply. Attach a copy of materials to be used (e.g., interview/focus group questions, instruments, data collection forms, etc.).

- | | | | |
|--------------------------|---|-------------------------------------|---|
| <input type="checkbox"/> | Anesthesia (general or local) or sedation | <input type="checkbox"/> | Magnetic Resonance Imaging (MRI) |
| <input type="checkbox"/> | Audio, video, digital, or image recordings | <input type="checkbox"/> | Materials that may be considered sensitive, offensive, threatening, or degrading |
| <input type="checkbox"/> | Biohazards (e.g., rDNA, infectious agents, select agents, toxins) | <input type="checkbox"/> | Non-invasive medical procedures (e.g., EKG, Doppler) |
| <input type="checkbox"/> | Biological sampling (other than blood) | <input type="checkbox"/> | Observation of participants (including field notes) |
| <input type="checkbox"/> | Blood drawing, injections, surgical procedures (including biopsies) → Complete Appendix Q | <input type="checkbox"/> | Oral history (does not include medical history) |
| <input type="checkbox"/> | Coordinating Center | <input type="checkbox"/> | Placebo |
| <input type="checkbox"/> | Data, not publicly available | <input type="checkbox"/> | Pregnancy testing |
| <input type="checkbox"/> | Data, publicly available | <input type="checkbox"/> | Radiation (e.g., CT or DEXA scans, X-rays, nuclear medicine procedures) → Complete Appendix V |
| <input type="checkbox"/> | Data/Specimen storage/repository → Complete Appendix C
(future unspecified use, including research databases for purposes of sharing data or specimens collected with other researchers/studies in the future) | <input type="checkbox"/> | Record review (which may include PHI) |
| <input type="checkbox"/> | Deception → Complete Appendix D & Appendix M1 | <input type="checkbox"/> | Specimen research |
| <input type="checkbox"/> | Devices → Complete Appendix E | <input type="checkbox"/> | Stem cell research |
| <input type="checkbox"/> | Diet, exercise, or sleep modifications | <input checked="" type="checkbox"/> | Surveys, questionnaires, or interviews (one-on-one) |
| <input type="checkbox"/> | Drugs or biologics → Complete Appendix F | <input type="checkbox"/> | Other: |
| <input type="checkbox"/> | Emergency research | | Specify: <input type="text"/> |
| <input type="checkbox"/> | Focus groups | | |
| <input type="checkbox"/> | Food supplements | | |
| <input type="checkbox"/> | Gene transfer | | |
| <input type="checkbox"/> | Genetic testing → Complete Appendix G | | |
| <input type="checkbox"/> | Internet or e-mail data collection | | |

i. Estimate the time required from each participant, including individual interactions, total time commitment, and long-term follow-up, if any.

The estimated time from each participant includes reading the informed consent and completing the survey. The estimated time to complete both informed consent and the survey is 15 minutes or less. No long-term follow-up will be necessary or scheduled.

IRB LOG NUMBER _____



this specific group is justified.

- f. Will any participants be **excluded** based on age, gender, race/ethnicity, pregnancy status, language, education, or financial status? Yes
 No

If Yes → Explain the criteria and reason(s) for each exclusion. Consider the study's scientific or scholarly aims and risks.

- g. Are any of the participants likely to be vulnerable to coercion or undue influence? Consider students, employees, terminally ill persons, or others who may have limited autonomy. Yes
 No
- The regulations require that, "An investigator shall seek such consent only under circumstances that provide the prospective subject or the representative sufficient opportunity to consider whether or not to participate and that minimize the possibility of coercion or undue influence."

If Yes → Describe additional safeguards to protect participants' rights and welfare. Consider strategies to ensure voluntary participation.

Section 5 - RISK/BENEFIT ASSESSMENT

- a. Do you think that the probability and magnitude of harm or discomfort anticipated for the participants are greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests? Yes
 No

If Yes → Describe the plan to oversee and monitor data collected to ensure participant safety and data integrity. Include the following:

- The information that will be evaluated (e.g., incidence and severity of actual harm compared to that expected);
- Who will perform the monitoring (e.g., investigator, sponsor, or independent monitoring committee);
- Timing of monitoring (e.g., at specific points in time, after a specific number of participants have been enrolled); and
- Decisions to be made as a result of the monitoring process (e.g., provisions to stop the study early for unanticipated problems).

- b. Describe all reasonably expected risks, harms, and/or discomforts that may apply to the research. Discuss severity and likelihood of occurrence. As applicable, include potential risks to an embryo or fetus if a woman is or may become pregnant. Consider the range of risks, including physical, psychological, social, legal, and economic.

Overall, there is minimal risk to subjects who choose to participate by completing the survey. Subjects may feel minimal psychological discomfort completing a survey related to job stress. Results from the survey will be anonymous and only released in aggregate. Thus, no individual data will be available to either NEOMED or ASPE. Anonymous data will be secured by the PI as follows: electronically with password protection and any hard copies in a locked cabinet in a private and locked closet in Nixson Hall.

CFR 45.111 Criteria (6) for IRB approval of research (THRU END OF SECTION 6)

IRB LOG NUMBER _____



- c. Describe how risks, harms, and/or discomforts will be minimized. *If testing will be performed to identify individuals who may be at increased risk (e.g., pregnant women, individuals with HIV/AIDS, depressive disorders, etc.), address timing and method of testing; include how positive test results will be handled.*

Potential subjects have the opportunity to decline informed consent and participation without penalty. Participants will not be asked to disclose psychological disorders. The survey is not intended to diagnose psychological disorders. Regardless, contact information will be provided on the informed consent portion of the survey and may be printed. This will recommend that the individual seek professional mental health services if current job stress is perceived by the subject as severe and posing a personal health risk to oneself or others. Only a licensed professional is qualified to diagnose and treat psychological disorders. The national emergency hotline number for mental health support will be provided: National Alliance on Mental Illness (NAMI) 1-800-950-NAMI (6264). NAMI is the largest grassroots mental health organization present in the United States and over 1,000 local NAMI community affiliates.

- d. List the potential benefits that individual participants, society or both may expect as a result of this research study. State if there are no direct benefits to individual participants. *Compensation is not to be considered a benefit.*

This study has the potential to improve individual health status and allow a professional society to address profession related job-stress through education and advocacy. Importantly, this study is heuristic in its potential to inform future research regarding job stress and resiliency more broadly in people-oriented higher education and health service fields. Further, it is hoped that the results of this study may be presented at the national ASPE conference as well as published in a journal where the subjects, and others like them, may view and possibly benefit from the findings.

- e. Discuss how risks to participants are reasonable when compared to the anticipated benefits to participants (if any) and the importance of the knowledge that may reasonably be expected to result.

As this research has the potential to inform participants how to protect themselves from current and future job stress, this anonymous survey with minimally expected psychological discomfort has the potential to decrease current and future stress related to work and provide education to ameliorate current health status and protect future health.

- f. Is it possible that this study will discover a previously unknown condition such as a disease, suicidal intentions or genetic predisposition in a participant as a result of the study procedures?

Yes
 No

If Yes → Explain how you will manage the situation.

- g. Will this study collect information about research participants' family history that includes personal identifiers (e.g., secondary subjects)?

Yes → Complete **Appendix P**
 No

- h. Is this a double blind randomized study in which neither the participants nor the research team knows the assignment to the study drug or placebo?

Yes
 No

IRB LOG NUMBER _____



If Yes → Describe the unblinding plan

Section 6 - PARTICIPANT IDENTIFICATION, RECRUITMENT, & SELECTION

a. Specify the recruitment methods for this study and attach copies of written documents to this application: _____

- | | |
|---|--|
| <input type="checkbox"/> Personal contact | <input type="checkbox"/> Flyers |
| <input type="checkbox"/> Contact or approach letters | <input type="checkbox"/> Internet |
| <input type="checkbox"/> Telephone calls (include script) | <input type="checkbox"/> Home visits |
| <input type="checkbox"/> Brochures | <input type="checkbox"/> Radio or TV (include written text of the advertisement and brief layout of images) |
| <input type="checkbox"/> Printed advertisements | <input checked="" type="checkbox"/> Email (include copy of text to be used)
Specify frequency: every 2 weeks for 6 weeks |
| | <input type="checkbox"/> Other
Specify: _____ |

b. Who will approach or recruit potential participants?

- Principal Investigator
 Research Staff
 Other → please describe: _____

c. When/how often will participants be recruited? (e.g., before/after a counseling visit, via email with 3 reminders sent at specific intervals)

Via e-mail with 3 reminders sent a 2 week intervals

d. Where will participants be recruited? (e.g., doctor's office, classroom, online)

Recruitment for pilot instrument study will occur through email invitation to NEOMED faculty & staff who have similar job characteristics as SPEs. Recruitment of participants for ASPE SPÉs will also occur by email from a membership list provided by the ASPE management group.

e. What steps will be taken to avoid coercion or undue influence in the *recruitment* of research participants? (e.g., will the potential participants be afforded the opportunity to take material home and discuss the study with family members and/or primary care providers?)

Emails will be sent to the subjects' work-related email, but it will be clearly stated that the choice to participate or not has no influence on their employment. Specifically, survey data will be collected anonymously, and no connections can be made that would identify who participated and who did not.

IRB LOG NUMBER _____



Section 7 - INCENTIVES or COMPENSATION TO PARTICIPATE

- a. Will participants receive compensation or other incentives (e.g., free services, cash payments, gift certificates, parking, classroom credit, travel reimbursement) to participate in the research study? Yes No

Compensation plans should be pro-rated (not contingent upon study completion) and should consider participation withdrawals, as applicable.

If Yes → Describe the compensation/incentive. Include the amount and timing of all payments.

- b. Have you reviewed the Procedures for Compensating Research Participants policy that is available on our website at <http://www.kent.edu/research/researchsafetyandcompliance/irb/forms.cfm>? Yes No

Section 8 - INFORMED CONSENT PROCESS

The human subject protection regulations at 45 CFR 46:

- List ten basic elements of information that must be provided to subjects when investigators are seeking informed consent from subjects to participate in research (unless the IRB approves a request for a waiver/alteration of any/all of the basic elements for consent.)

The basic elements of consent are:

- ✓ Purpose, procedures and expected duration of the research
- ✓ Risks and discomforts
- ✓ Potential benefits
- ✓ Alternative procedures or treatments (if any)
- ✓ Compensation for participation in the research (if any)
- ✓ Provisions for confidentiality
- ✓ Management of research related injury
- ✓ Contacts for additional information
- ✓ Voluntary participation and the right to discontinue participation without penalty

- Require that participants sign a consent form (unless the IRB approves a request for a waiver of documented consent.)

If participants cannot give informed consent, it must be obtained from their legal representatives. For example, when subjects are minors (under 18) or when they are mentally incapacitated, consent from a legal representative (such as a parent or legal guardian) is required.

To develop a consent form, begin by using the consent form template that is available from our website at

- a. Who will discuss and obtain consent from participants? Principal Investigator Research key personnel Other: Specify **On-line consent with contact info for PI & IRB**

- b. Are you requesting approval for a waiver/alteration of any/all of the basic elements of consent (see information above) for any part of the research? Yes → Complete **Appendix M1** No

(e.g., investigators conducting research that involves deception might request a waiver/alteration of the basic elements of consent so that the true purpose of the research is not disclosed in the consent form.)

- c. Are you requesting a waiver of the requirement for participants to sign a consent document? Yes → Complete **Appendix M2** No

46.116 General requirements for informed consent

46.117 Documentation of informed consent



IRB LOG NUMBER _____



(e.g., an investigator conducting research that only involves the use of anonymous surveys might request a waiver of signed consent.)

d. Describe who will provide consent or permission (i.e. participant, legally authorized representative, parent and/or guardian)? N/A

Participant will provide consent by checking "Agree" in the on-line survey

e. Check all that apply:

- | | |
|---|---|
| <input type="checkbox"/> Informed Consent – Signed Form | <input type="checkbox"/> Parental Permission – Form |
| <input checked="" type="checkbox"/> Informed Consent – Verbal Script/Online/Unsigned form | <input type="checkbox"/> Parental Permission – Verbal Script/Online/Unsigned |
| <input type="checkbox"/> Assent – Form | <input type="checkbox"/> Translated Consent/Assent – Form(s), Script(s), etc. (provide copy of English version with description the qualifications of the translator. |
| <input type="checkbox"/> Assent – Verbal/Online/Unsigned | <input type="checkbox"/> Photograph/video/audio taping consent form (or permission for photographs/video/audiotaping included as section on informed consent) |
| <input type="checkbox"/> Not Applicable (existing data or specimens) | <input type="checkbox"/> Other (Specify): |

f. Describe the consent process. Explain when and where consent will be obtained and how subjects and/or their legally authorized representatives will be provided sufficient opportunity (e.g., waiting period, if any) to consider participation.

The consent process will occur when the potential subject accesses the on-line survey via a link provided in an e-mail. There will be no time pressure or other pressure for the subject to consent. He or she may read the consent document and discuss with family, IRB, or PI prior to continuing the on-line survey by clicking an "Agree" icon/option.

g. Will any other tools (e.g., quizzes, visual aids, information sheets) be used during the consent process to assist participant comprehension? Yes → Provide copies of these tools No

Section 9 - HIPAA RESEARCH AUTHORIZATION

a. Will individually identifiable Protected Health Information (PHI) subject to the HIPAA Privacy Rule requirements be accessed, used, or disclosed in the research study?

- No
- Yes → Check all that apply:
 - Written Authorization → Provide a copy of the Authorization Form
 - Partial Waiver of authorization (recruitment purposes only; preparatory to research) → Complete Appendix N
 - Full Waiver of authorization (limited data set with no direct identifiers and with a data use agreement; information on descendant's) → Complete Appendix N

46.111 and 46.117 Documentation of Informed Consent and



IRB LOG NUMBER _____



Section 10 - PRIVACY OF PARTICIPANTS

- a. Describe the provisions to protect the privacy interests of the participants. Consider the circumstances and nature of information to be obtained, taking into account factors (e.g., age, gender, ethnicity, education level, etc.) that may influence participants' expectations of privacy.

The on-line survey will be administered by an e-mail from the co-investigator at NEOMED for the initial pilot instrument study and by the management group of ASPE for the SPE research. All data collected will be anonymous and only associated with the individual by an anonymous web id address.

- b. Does the research require access to personally identifiable private information? Yes
 No

If Yes → Describe the personally identifiable private information involved in the research. List the information source(s) (e.g., educational records, surveys, medical records, etc.).

- c. Explain any circumstances (ethical or legal) where it would be necessary to break confidentiality. N/A

- d. Will this study obtain IDENTIFIABLE information from students' educational records? Yes
 No

If Yes → Does the individual obtaining the information have legitimate access (e.g. as the student's teacher/professor)? Yes
 No

The FERPA (Family Educational Rights and Privacy Act) applies when student educational records are used for research. FERPA requires a signed permission when IDENTIFIABLE information from student records is released to anyone who did NOT already have legitimate access.

Section 11 - CONFIDENTIALITY OF DATA

- a. What format will be used to store participant information? Check all that apply.

- Hardcopy paper documentation Audio Tapes
 Database system Video Tapes
 Disk (CD ROM, floppy disk, flash drive) Other
Specify: _____

CFR 45.111 (f) There are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of data.

CFR 45.111 (f) There are adequate provisions to protect the privacy of subjects and to maintain the co

IRB LOG NUMBER _____



- Appendix B: Addition of External Co-Investigators & Key Personnel
- Appendix C: Data Repositories
- Appendix D: Deception
- Appendix E: Devices
- Appendix F: Drugs or Biologics
- Appendix G: Genetic Testing
- Appendix I: Children
- Appendix J: Non-English Speaking Participants
- Appendix K: Pregnant Women/Fetuses/Neonates
- Appendix L: Prisoners
- Appendix M1: Waiver or Alternation of Elements of Consent
- Appendix M2: Waiver of Documentation (signed) Consent
- Appendix N: HIPAA Waiver of Authorization
- Appendix O: Multisite Study
- Appendix P: Collection of Family History
- Appendix U: International Setting
- Appendix V: Radiation
- Appendix W: Adults with Decisional Impairment
- Appendix Z: Conflict of Interest
- Consent form(s), Assent Form(s), Permission Form(s), and Verbal Script(s) (question 18)
- Data Collection Form(s) involving protected health information (question 14)
- Recruitment Materials (e.g., ads, flyers, telephone or other oral script, radio/TV scripts, internet solicitations) (question 16b)
- Script(s), Instructions, or Information Sheet(s) (question 14)
- Instruments (e.g., questionnaires or surveys to be completed by participants) (question 14)
- Other Committee Approvals/Letters of Support (questions 12)
- Complete Grant Application or Funding Proposal (question 9)
- Other supporting documentation and/or materials

Section 14 - ASSURANCE- PRINCIPAL INVESTIGATOR

I agree to follow all applicable policies and procedures of Kent State University and federal, state, and local laws and guidance regarding the protection of human subjects in research, as well as professional practice standards and generally accepted good research practice guidelines for investigators, including, but not limited to, the following:

- Perform the research as approved by the IRB with appropriately trained and qualified personnel with adequate resources;
- Initiate the research after written notification of IRB approval has been received;
- Obtain and document (unless waived) informed consent and HIPAA research authorization from human subjects (or their legally authorized representatives) prior to their involvement in the research using the currently IRB-approved consent form(s) and process;
- Promptly report to the IRB events that may represent unanticipated problems involving risks to subjects or others;
- Provide significant new findings that may relate to the subjects willingness to continue to participate;

IRB LOG NUMBER _____



- Inform the IRB of any proposed changes in the research or informed consent process before changes are implemented, and agree that no changes will be made until approved by the KSU IRB (except where necessary to eliminate apparent immediate hazards to participants);
- Complete and submit a Continuing Review of Human Subjects Research application before the deadline for review at intervals determined by the IRB to be appropriate to the degree of risk (but not less than once per year) to avoid expiration of IRB approval and cessation of all research activities;
- Maintain research-related records (and source documents) in a manner that documents the validity of the research and integrity of the data collected, while protecting the confidentiality of the data and privacy of participants;
- Retain research-related records for audit for a period of at least three years after the research has ended (or longer, according to sponsor or publication requirements) even if I leave the University;
- Contact the Research Compliance for assistance in amending (to request a change in Principal Investigator) or terminating the research if I leave the University or am unavailable to conduct or supervise the research personally (e.g., sabbatical or extended leave);
- Provide a Final Study Report to the IRB when all research activities have ended (including data analysis with individually identifiable or coded private information); and
- Inform all Co-Investigators, research staff, employees, and students assisting in the conduct of the research of their obligations in meeting the above commitments.

I verify that the information provided in this Use of Human Subjects in Research application is accurate and complete.

Laurie M. Wagner
Signature of Principal Investigator

9.13.2013
Date

Laurie M. Wagner
Printed name of Principal Investigator

Consent Forms



Informed Consent to Participate in a Research Study

Study Title: *An Analysis of the Relationship between Job Stress and Resilience Among Standardized Patient Educators*

Principle Investigator: Laurie Wagner, Ph.D., MCHES
 Kent State University
 School of Health Sciences
 Health Education & Promotion Program
 330.672.0685
lyoo@kent.edu

Co-Investigator: Holly A. Gerzina, M.Ed., M.Ed., Ph.D. Candidate
 Kent State University
 School of Health Sciences
 Health Education & Promotion Program
 330.325.6746
hgerzina@kent.edu

Purpose of the Study

You are invited to participate in an anonymous survey about job stress and resilience. The purpose of this study is to determine how individual resiliency protects against job stress.

Study Procedures and Duration

Approximately 600 subjects will be invited to participate (50 subjects to pilot the survey and 550 subjects in the full study). This study involves a web-based survey designed to understand the relationship between resilience and job stress. The study is being conducted by Holly Gerzina, a doctoral student in the College of Health Sciences' Department of Health Education and Promotion at Kent State University. It has been approved by the Kent State University Institutional Review Board. Filling out this survey will take about 15 minutes of your time.

Risks

No deception is involved, and the study involves no more than minimal risk to participants (i.e., the level of risk encountered in daily life). All responses are anonymous, and in no case will responses from individual participants be identified. Rather, all data will be pooled and published in aggregate form only. This survey is being run from a "secure" https server of the kind typically used to handle credit card transactions. So, there is a very minimal risk that responses could be viewed by unauthorized third parties (e.g., computer hackers). Participants should be aware, however, that this minimal risk exists to the same extent as other transactions on secure servers.



If you or someone you know is experiencing job-related stress or other mental health concerns please seek help. **The national emergency hotline number for mental health support from the National Alliance on Mental Illness (NAMI) is 1-800-950-NAMI (6264).**

Benefits

The benefit to you is that the aggregate results will assist in identifying health education services that may be offered to improve job stress and job satisfaction.

Costs

There is no cost to you for participating in this study.

Impartial Third Party Contact

If participants have further questions about this study or their rights, or if they wish to lodge a complaint or concern, they may contact the principal investigator, Laurie Wagner, Ph.D., MCHES at (330) 672-0685. You may also contact an impartial third party not associated with this study regarding any concerns, the Kent State University Institutional Review Board, at (330) 672-2704.

Confidentiality

This survey will be administered electronically with no personal identifiers. Further, all responses are anonymous, and in no case will responses from individual participants be identified. The anonymous results will be stored by the PI electronically with password protection and any hard copies will be in a locked cabinet in a locked closet.

Conflict of Interest

The investigators have no potential or actual conflict of interest.

Voluntary Participation/Early Withdrawal

Participation is voluntary and refusal to take part in the study involves no penalty or loss of benefits to which participants are otherwise entitled, and subjects may withdraw from the study at any time without penalty or loss of benefits to which they are otherwise entitled.

Do you consent to participate in this study?

- I have read and understand the above information. I acknowledge that I am participating in a research study and may withdraw at any time.
- I do not wish to participate

Next

Study Invite Email

Proposed E-mail Invitation

Below is the link to a survey regarding job stress and resilience. You are invited to participate in this anonymous survey. The purpose of this study is to determine how individual resiliency protects against job stress. Additionally, this survey will provide valuable information to the institution regarding how work is organized that may be contributing to job stress. Ultimately, this information will be used to develop policy and education programs to improve workplace health for standardized patient educators.

Filling out this survey will take less than 15 minutes of your time. Please understand the choice to participate or not is entirely up to you and will have no bearing on your employment or membership in ASPE.

Thank you in advance for completion of the survey. Please click on the link below to begin.

<https://LINK inserted here.>

Holly

Holly A. Gerzina, M.Ed., M.Ed.

Doctoral Candidate

Health Education and Promotion

College and Graduate School of Education, Health, and Human Services

Kent State University

Survey Instrument

Directions: Below are statements about life that people often feel differently about. Please check a box to show how much you think each one is true for you. Give your own honest opinions. There are no right or wrong answers.

		Not at all true	A little true	Quite true	Completely True
1	My life gets spent doing things that are meaningful/				
2	By working hard you can achieve your goals				
3	I don't like to make changes in my regular activities				
4	I feel that my life is somewhat empty of meaning				
5	Changes in routine are interesting to me				
6	How things go in my life depends on my own actions				
7	I look forward to my work activities				
8	I don't think that I can do things to influence my own future				
9	I enjoy the challenge when I have to do more than one thing at a time				
10	Life is really interesting & exciting for me				
11	It bothers me when my daily routine gets interrupted				
12	It is up to me to decide how the rest of my life will be				
13	Life in general is boring for me				
14	I like having a daily schedule that doesn't change much				
15	My choices make a difference in how things turn out in the end				

Directions: Below are a series of statements that aim to identify sources of pressure in your working life. Please check the box that best represents your perceptions.

		Never	Seldom	Sometimes	Often	Always
1	I am clear what is expected of me at work					
2	I can decide when to take a break					
3	Different groups at work demand things from me that are hard to combine					
4	I know how to go about getting my job done					
5	I am subject to personal harassment in the form of unkind words or behavior					
6	I have unachievable deadlines					
7	If work gets difficult, my colleagues will help me					
8	I am given supportive feedback on the work I do					
9	I have to work intensively					
10	I have a say in my own work speed					
11	I am clear what my responsibilities and duties are					
12	I have to neglect some tasks because I have too much to do					
13	I am clear about the goals and objectives for my department					
14	There is friction or anger between colleagues					
15	I have a choice in deciding how I do my work					
16	I am unable to take sufficient breaks					
17	I understand how my work fits into the overall aim of the organization					
18	I am pressured to work long hours					
19	I have a choice I deciding what I do at work					
20	I have to work very fast					
21	I am subject to bullying at work					
22	I have unrealistic time pressures					
23	I can rely on my line manager to help me out with a work problem					

24	I can get help and support I need from colleagues					
25	I have some say over the way I work					
26	I have sufficient opportunities to question managers about change at work					
27	I receive the respect at work I deserve from my colleagues					
28	Staff are always consulted about change at work					
29	I can talk to my line manager about something that has upset or annoyed me about work					
30	My working time can be flexible					
31	My colleagues are willing to listen to my work related problems					
32	When changes are made at work, I am clear how they will work out in practice					
33	I am supported through emotionally demanding work					
34	Relationships at work are strained					
35	My line manager encourages me at work					

Please read and answer the following questions with your best answer.

What is your work hour status?

- Full-time
- Part-time

What is your work funding status?

- Temporary
- Permanent

What is your primary job type?

- Faculty
- Management
- Support staff

What is the highest degree you have earned?

- a. High school
- b. Associates Degree
- c. Bachelors Degree
- d. Masters Degree
- e. Doctoral degree

How many years of service do you have as an SPE?

- a. Less than 2 years
- b. 2-10 years
- c. 10-20 years
- d. Greater than 20 years

My primary place of employment as an SPE is in

- a. The United States
- b. Canada
- c. South America
- d. Europe
- e. Asia
- f. Africa
- g. Australia

Opt Out

Opt out Thank you

You have indicated that you do not wish to participate in the survey of job stress and resilience. I appreciate your consideration and wish you the best.

Sincerely,
Holly

Holly A. Gerzina, M.Ed., M.Ed.
Doctoral Candidate
Health Education and Promotion
College and Graduate School of Education, Health, and Human Services
Kent State University

APPENDIX A1 – Co-Investigator(s) or Key Personnel IRB LOG NUMBER _____



KSU Co-Investigator(s) or Key Personnel

<p>INSTRUCTIONS for INVESTIGATORS:</p> <ol style="list-style-type: none"> 1. Complete this form to add <u>KSU-affiliated</u> Co-Investigator's or Key Personnel to research that involves human subjects. 2. Submit this completed document with your application via email attachment.. To submit the form with a typed signature, the form <u>must</u> be submitted from the Investigator's @kent.edu email account. If completed form is signed and then scanned as a PDF attachment, the @kent.edu email requirement does not apply. 3. Do NOT begin data collection prior to receiving notification from the KSU IRB that the study/modification has been fully approved. <p>DEFINITIONS</p> <p>Key personnel: Individuals who participate in the design, conduct, or reporting of human subjects research. At a minimum, include individuals who recruit participants, obtain consent, or who collect study data. Conflict of Interest is a financial interest or other opportunity for tangible personal benefit of an individual or his/her immediate family that may exert a substantial and improper influence on the individual's professional judgment in exercising any institutional duty or responsibility, including the conduct or design of research.</p> <p>Financial Conflict of Interest: An interest of an individual (or his/her immediate family) of monetary value that would reasonably appear to be affected by the research or an individual's interest in any entity whose financial interests would reasonably appear to be affected by the research. Financial interests include (but are not limited to) salary or other payments for services (e.g., consulting fees or honoraria), equity interests (e.g., stocks, stock options, other ownership interests), and intellectual property rights (e.g., patents, copyrights, and royalties from such rights).</p> <p>Non-Financial Conflict of Interest: An interest other than monetary of an individual (or his/her immediate family) in the design, conduct, or reporting of the research or other interest that competes with the obligation to protect research participants and potentially compromises the objectivity and credibility of the research process.</p> <p>Immediate Family: An Investigator's or Key personnel's spouse or domestic partner and dependent children.</p>	<p style="text-align: center;">IRB Office use only</p> <table border="1" style="width: 100%; height: 100%;"> <tr> <td style="width: 70%;">AGENDA DATE</td> <td></td> </tr> <tr> <td>Date received</td> <td></td> </tr> <tr> <td>Date of IRB Determination email to Investigator</td> <td></td> </tr> </table>	AGENDA DATE		Date received		Date of IRB Determination email to Investigator	
AGENDA DATE							
Date received							
Date of IRB Determination email to Investigator							

To complete this form: Single left-click to complete text fields. **To check a box,** double left-click on the box, then click "checked". Click OK.

Last Name: Wagner First Name: Laurie

Title or, IRB log number of Research (should match Human Subjects Research Application)

An Analysis of the Relationship Between Job Stress and Resilience among Standardized Patient Educators

APPENDIX A1 – Co-Investigator(s) or Key Personnel IRB LOG NUMBER _____



KSU Co-Investigator(s) or Key Personnel

KSU CO-INVESTIGATOR(S) and/or KEY PERSONNEL (#):

- Co-Investigator Status:
 Key Personnel Faculty Graduate Student Undergraduate Student Staff

Name (Last, First, MI): Gerzina, Holly, A

E-mail: hgerzina@kent.edu

Phone: 330.685-6611 (cell)

- a. Have Co-Investigator(s)/Key personnel completed the CITI online (or equivalent) training? Yes → **attach copy of completion certificate.** No
- b. Describe the role/activities that this Co-investigator or Key Personnel will perform for this study (e.g., subject recruitment, informed consent):

- c. Where will the Co -investigator or Key Personnel perform the research activities? at KSU at external research site → **complete Appendix Q**
- d. Does Co-Investigator or Key personnel have a Conflict of Interest related to the research? Yes → **provide explanation below** No

Explanation:

- e. Does Co-Investigator or Key personnel have a patent or, pending patent, or current patent idea that could be conceivably related to this research project? Yes → **provide explanation below.** No

Explanation:

- f. Has/will Co-Investigator or Key personnel receive funds or, other resources (including equipment, devices, etc...) from a Sponsor or funding agency/entity for purposes of this research project? Yes → **provide explanation below.** No

Explanation:

I agree to follow all applicable policies and procedures of Kent State University and federal, state, and local laws and guidance regarding the protection of human subjects in research, as well as professional practice standards and generally accepted good research practice guidelines for investigators, including, but not limited to, the following:

APPENDIX A1 – Co-Investigator(s) or Key Personnel IRB LOG NUMBER _____

KSU Co-Investigator(s) or Key Personnel

- Perform the research as approved by the IRB under the direction of the Principal Investigator (or Advisor) by appropriately trained and qualified personnel with adequate resources;
 - Initiate the research after written notification of IRB approval has been received;
 - Obtain and document (unless waived) informed consent and HIPAA research authorization from human subjects (or their legally authorized representatives) prior to their involvement in the research using the currently IRB-approved consent form(s) and process;
 - Promptly report to the IRB events that may represent unanticipated problems involving risks to subjects or others;
 - Provide significant new findings that may relate to the subjects willingness to continue to participate;
 - Inform the IRB of any proposed changes in the research or informed consent process before changes are implemented, and agree that no changes will be made until approved by the KSU IRB (except where necessary to eliminate apparent immediate hazards to participants);
 - If applicable, complete and submit a Continuing Review of Human Subjects Research application before the deadline for review at intervals determined by the IRB to be appropriate to the degree of risk (but not less than once per year) to avoid expiration of IRB approval and cessation of all research activities;
 - Maintain research-related records (and source documents) in a manner that documents the validity of the research and integrity of the data collected, while protecting the confidentiality of the data and privacy of participants;
 - Retain research-related records for audit for a period of at least three years after the research has ended (or longer, according to sponsor or publication requirements) even if I leave the University;
- I verify that the information provided in this form is accurate and complete.

Signature Haey G. Keryn Date 9/13/13

KSU CO-INVESTIGATOR(S) and/or KEY PERSONNEL (P)

- Co-Investigator Status:
- Key Personnel Faculty Graduate Student Undergraduate Student Staff

Name (Last, First, MI):

E-mail: _____@kent.edu

Phone: _____

- g. Have Co-Investigator(s)/Key personnel completed the CITI online (or equivalent) training? Yes → attach copy of completion certificate. No
- h. Describe the role/activities that this Co-investigator or Key Personnel will perform for this study (e.g., subject recruitment, informed consent):
- i. Where will the Co-investigator or Key Personnel perform the research activities? at KSU at external research site → complete Appendix O
- j. Does Co-Investigator or Key personnel have a Conflict of Interest related to the research? Yes → provide explanation below No

APPENDIX A1 – Co-Investigator(s) or Key Personnel IRB LOG NUMBER _____

KSU Co-Investigator(s) or Key Personnel*Refer to definitions above.*

Explanation:

- k. Does Co-Investigator or Key personnel have a patent or, pending patent, or current patent idea that could be conceivably related to this research project? Yes → provide explanation below. No

Explanation:

- l. Has/will Co-Investigator or Key personnel receive funds or, other resources (including equipment, devices, etc...) from a Sponsor or funding agency/entity for purposes of this research project? Yes → provide explanation below. No

Explanation:

I agree to follow all applicable policies and procedures of Kent State University and federal, state, and local laws and guidance regarding the protection of human subjects in research, as well as professional practice standards and generally accepted good research practice guidelines for investigators, including, but not limited to, the following:

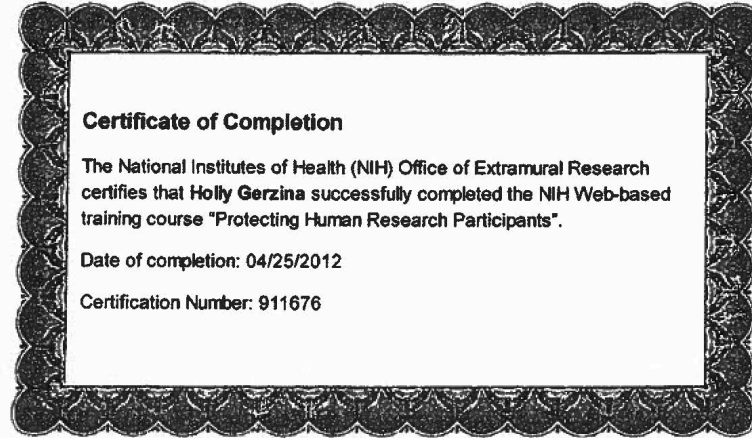
- Perform the research as approved by the IRB under the direction of the Principal Investigator (or Advisor) by appropriately trained and qualified personnel with adequate resources;
- Initiate the research after written notification of IRB approval has been received;
- Obtain and document (unless waived) informed consent and HIPAA research authorization from human subjects (or their legally authorized representatives) prior to their involvement in the research using the currently IRB-approved consent form(s) and process;
- Promptly report to the IRB events that may represent unanticipated problems involving risks to subjects or others;
- Provide significant new findings that may relate to the subjects willingness to continue to participate;
- Inform the IRB of any proposed changes in the research or informed consent process before changes are implemented, and agree that no changes will be made until approved by the KSU IRB (except where necessary to eliminate apparent immediate hazards to participants);
- If applicable, complete and submit a Continuing Review of Human Subjects Research application before the deadline for review at intervals determined by the IRB to be appropriate to the degree of risk (but not less than once per year) to avoid expiration of IRB approval and cessation of all research activities;
- Maintain research-related records (and source documents) in a manner that documents the validity of the research and integrity of the data collected, while protecting the confidentiality of the data and privacy of participants;
- Retain research-related records for audit for a period of at least three years after the research has ended (or longer, according to sponsor or publication requirements) even if I leave the University;

I verify that the information provided in this form is accurate and complete.

Signature _____ Date _____

Copy and Paste table if additional Co-Investigators/Key Personnel.

NIH/CITI Training Certificates



CITI Collaborative Institutional Training Initiative

Social & Behavioral Research - Basic/Refresher Curriculum Completion Report Printed on 11/6/2012

Learner: Laurie Wagner (username: LaurieMWagner)

Institution: Kent State University

Contact Information P.O. Box 5190
120 Nixon Hall
Kent State University
Kent, Ohio 44242 USA
Department: School of Health Sciences
Phone: 330.672.0685
Email: lyoo@kent.edu

Social & Behavioral Research - Basic/Refresher: Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.

Stage 2. Refresher Course Passed on 08/03/12 (Ref # 8057424)

Required Modules	Date Completed	Score
SBR 101 REFRESHER MODULE 1 - History and Ethics	08/03/12	5/5 (100%)
SBR 101 REFRESHER MODULE 2 - Regulatory Overview	08/03/12	5/5 (100%)
SBR 101 REFRESHER MODULE 3 - Risk, Informed Consent, and Privacy and Confidentiality	08/03/12	4/5 (80%)
SBR 101 REFRESHER MODULE 4 - Vulnerable Subjects	08/03/12	4/4 (100%)
SBR 101 REFRESHER MODULE 5 - Education, International, and Internet Research	08/03/12	5/5 (100%)
How to Complete The CITI Refresher Course and Receive the Completion Report	08/03/12	no quiz
SBR 201 Introduction	08/03/12	no quiz
Undue Influence	08/03/12	1/1 (100%)
Research Activities Eligible for Exemption	08/03/12	1/1 (100%)
Privacy vs Confidentiality in Social & Behavioral Research	08/03/12	1/1 (100%)
Informed Consent in Social & Behavioral Research	08/03/12	1/1 (100%)
Assessing Risk in Social & Behavioral Research	08/03/12	1/1 (100%)
Conducting Social and Behavioral Research with Children.	08/03/12	1/1 (100%)
Social and Behavioral Research in Public Schools	08/03/12	1/1 (100%)
Completing the SBR 201 Refresher Course	08/03/12	no quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

IRB Authorization Agreement Request Form

IRB AUTHORIZATION AGREEMENT REQUEST FORM (IAA)

IRB LOG NUMBER _____



<p>INSTRUCTIONS for INVESTIGATORS: The Kent State University Institutional Review Board (IRB) is responsible for reviewing research involving human subjects conducted by KSU investigators. However, in cases where use of an external (non-KSU) IRB is appropriate (e.g., in multi-site studies where all sites are using the same IRB; or in cases where review at another IRB is required and duplicate review by the KSU IRB could add unnecessary administrative burden on the investigator), the KSU IRB may defer to the external IRB under a fully-executed "IRB Authorization Agreement" (IAA). This process is pursuant to guidance from the DHHS Office for Human Research Protections (OHRP), at http://www.hhs.gov/ohrp/IRBfaq.html.</p> <p>1. Complete this form in its entirety and provide copies of the following documents:</p> <ul style="list-style-type: none"> • Approved IRB application and approval letter(s) • Approved consent documents • Funding Proposal (if applicable) • Additional research site support documentation (if applicable) <p>2. Submit all documents <u>via email attachment</u> to Researchcompliance@kent.edu. To submit the form with a typed signature, the form <u>must be</u> submitted from the Investigator's @kent.edu email account. If completed form is signed and then scanned as a PDF attachment, the @kent.edu email requirement does not apply.</p> <p>3. Each IRB decides the appropriateness of ceding or accepting responsibility for the review of any research involving human subjects. The IAA must be approved and signed by the Institutional Officials at both institutions. We will notify you of the determination via email. The process can take up to 3 weeks.</p> <p>4. Do not begin data collection prior to receiving notification from the KSU IRB that the IAA agreement has been fully approved.</p>	<p>IRB Office use only</p> <table border="1"> <tr> <td>AGENDA DATE</td> <td></td> </tr> <tr> <td>Date of fully signed agreement received</td> <td></td> </tr> <tr> <td>Date of IRB Determination email to Investigator</td> <td></td> </tr> </table>	AGENDA DATE		Date of fully signed agreement received		Date of IRB Determination email to Investigator	
AGENDA DATE							
Date of fully signed agreement received							
Date of IRB Determination email to Investigator							
<p>IRB Office Use <input type="checkbox"/> Project does NOT qualify for external IRB review/approval Initials: _____ Date: _____ Reason: _____</p>							

To complete this form: Single left-click to complete text fields (i.e., _____). To check a box, double left-click on the box (i.e.,) , then click "checked". Click OK.

<p>Project Title (should match at both institutions):</p>	
<p>An Analysis of the Relationship Between Job Stress and Resilience Among Standardized Patient Educators</p>	
<p>Section I - KSU Investigator Information</p>	
<p>Last Name: Wagner First Name: Laurie</p>	<p>IRB Log #</p>
<p>Email: lyoo@kent.edu</p>	
<p>Phone: (330) - 672 - 0685 or extension</p>	<p>Department: Health Sciences</p>
<p>Grant Proposal number (if any). Specify Institution if KSU is not primary: NA</p>	

IRB AUTHORIZATION AGREEMENT REQUEST FORM (IAA)

IRB LOG NUMBER _____



Are there additional KSU Investigators that will be working on this project?	<input checked="" type="checkbox"/> Yes → Complete Appendix A <input type="checkbox"/> No
Section II - IRB Authorization Agreement Request	
<input type="checkbox"/> EXTERNAL IRB REVIEW - I have received IRB approval from another institution for this project. I am requesting that the KSU IRB enter into an agreement with the Institution/IRB to avoid duplicate review. Check all that apply:	
<input type="checkbox"/> Kent State faculty/staff will be performing the majority of the study procedures at an external institution/site and the institution/site holds a current FWA and IRB registration.	
<input type="checkbox"/> The involvement of the KSU investigator(s) is limited. (For example, data analysis of information collected at another institution.)	
<input type="checkbox"/> Another institution's reviewing IRB is more properly constituted to review a certain scope of work, or may have knowledge of the local research context. (For example, an international research project where the interaction with subjects is performed at an external site and the site has a FWA.)	
<input type="checkbox"/> This is a multi-site study with multiple IRB reviews/approvals.	
<input type="checkbox"/> This is a multi-site study and all sites are deferring to only one approving IRB.	
<input type="checkbox"/> Other, (Provide details:)	
<input checked="" type="checkbox"/> KSU IRB REVIEW - I am requesting that the <u>KSU IRB</u> be the IRB of record for this project. Check all that apply:	
<input checked="" type="checkbox"/> The majority of the study procedures will be performed at Kent State, or by Kent State faculty/staff.	
<input checked="" type="checkbox"/> This is a multi-site study and all sites are deferring to one approving IRB.	
<input type="checkbox"/> This is a multi-site study with multiple IRB reviews/approvals.	
<input type="checkbox"/> Other, (Provide details:)	
Provide a summary of your role in the space below:	
This study is a dissertation being overseen by Dr. Wagner as the faculty advisor. Holly Gerzina is the Doctoral Candidate and will be conducting the study protocols under supervision.	
Section III - External Institution and Investigator Information	
Name of External Institution: NEOMED	
External Institution's Address: 4209 SR 44 PO Box 95 Rootstown OH 44272	
External Investigator Last Name:	First Name:
Email: @	
Phone: () - - or extension	Department:
External IRB Application number NA	

IRB AUTHORIZATION AGREEMENT REQUEST FORM (IAA)

IRB LOG NUMBER _____



External IRB Registration number NA	FWA #
Name of IRB representative:	
Email Information for External IRB representative:	
Phone Number Information for External IRB representative: () - - extension	
Provide a summary of EXTERNAL INVESTIGATOR'S role in this project in the space below:	
<p>For requests for KSU IRB to be the IRB of record...Are there any additional EXTERNAL Investigators that will be working on this project?</p> <p><input type="checkbox"/> Yes → Complete Appendix B </p> <p><input checked="" type="checkbox"/> No</p>	
Section V - Investigator Assurance Statements	
I certify that the information provided in this document, and in all attachments, is complete and correct.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
I understand that I have ultimate responsibility for the protection of the rights and welfare of human participants, the conduct of this project, and the ethical performance of this project.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
I agree to comply with all KSU policies and procedures, the terms of its Federal Wide Assurance, and all applicable federal, state, and local laws regarding the protection of human participants in research.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Unanticipated problems, adverse events, and new information that may affect the risk-benefit assessment for this project will be reported to the KSU IRB Office (330-672-2704) and to my Departmental Chair/Director/Dean.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
I certify that the proposed project/research has not yet been done, is not currently underway, and will not begin until IRB determination/approval has been obtained.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
I understand that I am responsible for ensuring that the KSU IRB office receives copies of approvals/renewals/amendments/consent forms and subsequent approvals from the external approving IRB for inclusion into the KSU IRB file. Protection of participants in research projects remains the responsibility of all institutions involved in the research. Designating a reviewing IRB does not absolve another institution involved in the research of such responsibility.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Section VI - Signature	
I attest that the information contained herein is a true and accurate representation of this study and the typed name below can serve as my	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

IRB AUTHORIZATION AGREEMENT REQUEST FORM (IAA)

IRB LOG NUMBER _____



signature.	
<p>IMPORTANT: To have your typed name serve as your signature, you MUST send the completed form to Research Compliance via your @kent.edu email account. Alternatively, you can hand-sign this form, scan to PDF, and then send the completed form to Researchcompliance@kent.edu.</p>	
Signature: <i>Laurie M. Wagner</i>	Date: 9.13.2013
Attach copies of the following:	
<input type="checkbox"/> Approval letter(s) <input type="checkbox"/> Approved Consent form(s) <input type="checkbox"/> Approved Application <input type="checkbox"/> Measures, Instruments, Surveys, etc...	

**Institutional Review Board (IRB)/Independent Ethics Committee (IEC)
Authorization Agreement for Collaborative Research**

Name of Institution or Organization Providing IRB Review (Institution A):
Kent State University
IRB Registration #: IRB00000361
Federalwide Assurance (FWA) #: 00001853

Name of Institution Relying on the Designated IRB (Institution B):
Northeast Ohio Medical University (NEOMED)
FWA #: 00000027

The Officials signing below agree that Northeast Ohio Medical University may rely on the designated IRB for review and continuing oversight of its human subject's research described below: *(check one)*

This agreement applies to all human subjects' research covered by Institution B's FWA.

This agreement is limited to the following specific protocol(s):

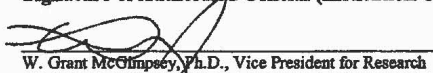
Name of Research Project: "An Analysis of the Relationship Between Job Stress and Resilience Among Standardized Patient Educators"
Name of Principal Investigator: Laurie M. Wagoner, Ph.D. (KSU Principal Investigator, study number 13-416), Holly Gerzina, M.Ed.- KSU Doctoral Student, (NEOMED employee using NEOMED resources to conduct pilot study)
Sponsor or Funding Agency: N/A

Other

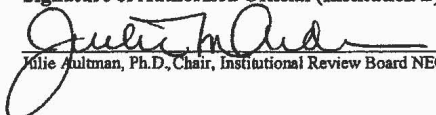
(describe): _____

The review performed by the designated IRB will meet the human subject protection requirements of NEOMED's OHRP-approved FWA. The IRB at Kent State University will follow written procedures for reporting its findings and actions to appropriate officials at NEOMED. Relevant minutes of IRB meetings will be made available to NEOMED upon request. NEOMED remains responsible for ensuring compliance with the IRB's determinations and with the Terms of its OHRP-approved FWA. Each institution is responsible for its own negligence in connection with the performance of the Study. This document must be kept on file by both parties and provided to OHRP upon request.

Signature of Authorized Official (Institution/Organization A):

 Date: 10/30/13
W. Grant McClintock, Ph.D., Vice President for Research

Signature of Authorized Official (Institution B):

 Date: 10-28-13
Millie Aultman, Ph.D., Chair, Institutional Review Board NEOMED

Letters of Support



August 05, 2013

Dissertation Committee
 Health Education and Promotion
 Kent State University
 Kent, OH 44240

Dear Committee Members,

On behalf of NEOMED's Office of Human Resources, I am pleased to offer this letter of support for the dissertation research of Holly A. Gerzina, M.Ed., M.Ed., focusing on the relationship between resilience and job stress in health professions educators.

As a university dedicated solely to educating health care professionals and to providing employees a work environment that promotes health and well-being, NEOMED is excited to work with Holly on her dissertation by sending out pilot study invitation emails to the NEOMED health professions educator community.

We are grateful for the opportunity to work with Holly on this research. We look forward to her sharing useful trending information about our employees. We anticipate that suggestions about the focus of health education and promotion efforts will be generated and included in this information. Such information would be most useful to provide to our employees as part of our comprehensive human resource initiatives surrounding organizational development and employee training.

Sincerely,

A handwritten signature in cursive script that reads "Barbara Tobias".

Barbara Tobias, SPHR

Director, Human Resources

btobias@neomed.edu

330-325-6726

Cc: Holly Gerzina

Sergio Garcia, Chief of Staff, Office of the President

4209 St. Rt. 44, PO Box 95 • Rootstown, Ohio 44272 • USA • neomed.edu



Kent State University
Health Sciences Use of Human Subjects in Research Application

Re: Title of Study: An Analysis of the Relationship Between Job Stress and Resilience among Standardized Patient Educators.

Primary Investigator: Laurie Wagner, lyoo@kent.edu, phone number 330-672-0685
Department Health Sciences.

Date: 08/13/13

To whom it may concern:

The Board of Directors of the Association of Standardized Patient Educators (ASPE) and the Grants and Research Committee have reviewed and approved the study being proposed. We feel it will benefit our Association members and the profession of Standardized Patient Educators (SPEs) as it will explore the relationship of job stress and resilience in the population of ASPE's SPEs. We agree that the benefits will be to reduce stress and promote a healthy workplace environment. Please contact me with any questions

Sincerely,

A handwritten signature in black ink, appearing to be a cursive name, possibly 'Laurie Wagner'.

Chair of ASPE Grants and Research Committee

Director of Simulation Education and the Standardized Patient Program

Clinical Simulation Laboratory Fletcher Allen Health Care/University of Vermont

Rowell 237 106 Carrigan Dr.

Burlington, VT 05405-0068 Office 802-656-8373 Cell 802-734-939



Research Conducted at Multiple Sites

<p>INSTRUCTIONS for INVESTIGATORS:</p> <ol style="list-style-type: none"> Complete this form to include performance sites outside of Kent State University for your research activity (e.g., obtaining consent, conducting research procedures, obtaining or accessing identifiable data for research purposes, etc.) <u>OR</u> Any component of your research will be conducted by <u>collaborators outside</u> of Kent State University and you are responsible for <u>coordinating</u> the conduct of all or part of this research (e.g., you are running the study at multiple locations; you are conducting or coordinating parts of the research such as follow-up at multiple locations; your data analysis work is being done at an outside institution.) Submit this completed document via email along with the Human Subjects Research application. Retain a copy of the Human Subjects application and applicable attachments. Do NOT begin data collection prior to receiving notification from the KSU IRB that your application has been fully approved or determined by the IRB to be exempt from annual review. <p>DEFINITIONS</p> <p>Engaged in Research - an institution is considered engaged in research when its employees or agents for the purposes of the research project obtain: (1) data about the subjects of the research through intervention or interaction with them; (2) identifiable private information about the subjects of the research; or (3) the informed consent of human subjects for the research.</p> <p>Performance Site – a site whose staff, facilities or private records of individuals are engaged in the conduct of research; or a site that receives HHS funds. The performance site is the actual place where the research activity (e.g., site where staff are consenting subjects).</p> <p>IRB of Record – The IRB responsible for review of research and for determining that the research meets the regulatory requirements for approval.</p>	<p>IRB Office use only</p> <table border="1" style="width: 100%; height: 100%;"> <tr> <td style="width: 50%;">AGENDA DATE</td> <td style="width: 50%;"></td> </tr> <tr> <td>Date received</td> <td></td> </tr> </table>	AGENDA DATE		Date received	
AGENDA DATE					
Date received					

To complete this form: Single left-click to complete text fields. **To check a box,** double left-click on the box, then click "checked". Click OK.



Last Name:Wagner First Name: Laurie

Title of Study (should match Human Subjects Research Application)

An Analysis of the Relationship Between Job Stress and Resilience among Standardized Patient Educators



APPENDIX O – Multi-site Study

IRB LOG NUMBER _____



Performance site #:
<p>1. Name of Performance Site (e.g. Oriana House, Akron Children's Hospital, Summa, School)</p> <p>Northeast Ohio Medical University (NEOMED) Rootstown, OH – Initial Pilot Study of Survey Instrument</p>
<p>2. Who is conducting research activities at this Performance Site?</p> <p><input checked="" type="checkbox"/> KSU PI, CO-PI or key personnel</p> <p><input type="checkbox"/> Collaborator → Local PI Name:</p>
<p>3. Performance Site contact name & phone number for IRB matters</p> <p>Beth Cline, Executive Director, Office of Research & Sponsored Programs, NEOMED 330.325.6498</p> <p>Trish Wilson, Research & Sponsored Programs Administrator, IRB Office, NEOMED 330.325.6364</p>
<p>4. Who will be the IRB of Record for research conducted at this Performance Site?</p> <p><input checked="" type="checkbox"/> KSU IRB → answer question #5</p> <p><input type="checkbox"/> Performance Site's IRB → provide FWA # and expiration</p> <p><input type="checkbox"/> Other IRB → Name:</p>
<p>5. If KSU <u>is</u> the IRB of Record, what is the method of documenting the Performance site's reliance on our IRB?</p> <p><input type="checkbox"/> Master IRB Collaboration Agreement (currently only applicable for Summa)</p> <p><input type="checkbox"/> IRB Authorization Agreement (applicable for a location with an FWA)</p> <p><input checked="" type="checkbox"/> Individual Investigator Agreement/Letter of Support (applicable for researchers at locations with no FWA)</p>
<p>6. If KSU <u>is not</u> the IRB of record, has the site's local IRB granted approval?</p> <p><input type="checkbox"/> No → Explain:</p> <p><input type="checkbox"/> Yes → provide dates of site IRB Approval: _____ to: _____ → (attach copy of the Performance Site's IRB Approval letter). </p> <p>Performance Site's IRB file number: _____</p>
<p>7. What are the study procedures that will take place at this Performance Site (e.g., conduct research interviews; obtain informed consent, accessing records).</p> <p>Obtain informed consent and e-mail survey to 50 NEOMED employees</p>

APPENDIX O – Multi-site Study

IRB LOG NUMBER _____



Performance site #2	
8. Name of Performance Site (e.g. Oriana House, Akron Children's Hospital, Summa, School)	Association of Standardized Patient Educators (ASPE)
9. Who is conducting research activities at this Performance Site?	<input checked="" type="checkbox"/> KSU PI, CO-PI or key personnel <input type="checkbox"/> Collaborator → Local PI Name:
10. Performance Site contact name & phone number for IRB matters	Cate Nicholas, MS, PA, EdD 802.656.8373 cate.nicholas@uvm.edu
11. Who will be the IRB of Record for research conducted at this Performance Site?	<input checked="" type="checkbox"/> KSU IRB → answer question #5 <input type="checkbox"/> Performance Site's IRB → provide FWA # and expiration <input type="checkbox"/> Other IRB → Name:
12. If KSU <u>is</u> the IRB of Record, what is the method of documenting the Performance site's reliance on our IRB?	<input type="checkbox"/> Master IRB Collaboration Agreement (currently only applicable for Summa) <input type="checkbox"/> IRB Authorization Agreement (applicable for a location with an FWA) <input checked="" type="checkbox"/> Individual Investigator Agreement/Letter of Support (applicable for researchers at locations with no FWA)
If KSU <u>is not</u> the IRB of record, has the site's local IRB granted approval?	<input type="checkbox"/> No → Explain: <input type="checkbox"/> Yes → provide dates of site IRB Approval: _____ to: _____ → (attach copy of the Performance Site's IRB Approval letter). Performance Site's IRB file number: _____
13. What are the study procedures that will take place at this Performance Site (e.g., conduct research interviews, obtain informed consent, accessing records).	Obtain informed consent and e-mail survey to ASPE members

**If additional Performance Site's, copy/paste table below.

APPENDIX D

IRB APPROVAL – INSTRUMENT MODIFICATION

Appendix D

IRB Approval – Instrument Modification

Kent State University Mail - FW: IRB approval for MODIFICATION(S) (protocol # 13-4... Page 1 of 2

KENT STATE

HOLLY GERZINA <hgerzina@kent.edu>

FW: IRB approval for MODIFICATION(S) (protocol # 13-416) - retain this email for your records

WAGNER, LAURIE <lyoo@kent.edu> Wed, Feb 19, 2014 at 11:30 AM
To: "hgerzina@kent.edu" <hgerzina@kent.edu>, "SYMONS, CYNTHIA" <csymons@kent.edu>

YAY!!!!!!!!!!!!

Laurie

Laurie M. Wagner, M.Ed., Ph.D., MCHES
Assistant Professor
Health Education & Promotion Program
School of Health Sciences
Co-Coordinator LG&TQ Studies
Kent State University
120 Nixon Hall
330.672.0685

From: Richmond, Alleene **On Behalf Of** RAGS Research Compliance
Sent: Wednesday, February 19, 2014 11:30 AM
To: WAGNER, LAURIE
Subject: IRB approval for MODIFICATION(S) (protocol # 13-416) - retain this email for your records

RE: IRB # 13-416 entitled "An Analysis of the relationship between job stress and resilience among standardized patient educators"

Hello,

The Kent State University Institutional Review Board (IRB) has reviewed and approved your protocol amendment/change request. It is understood that the research is continuing with modifications including to modify the originally approved scale. The modification to this protocol was approved on February 18, 2014.

**If applicable, a copy of the IRB approved consent form is attached to this email. This "stamped" copy is the consent form that you must use for your research participants. It is important for you to also keep an unstamped text copy (i.e., Microsoft Word version) of your consent form for subsequent submissions. Note that if you are conducting an online study the stamped consent form is only for record keeping purposes.*

Federal regulations and Kent State University IRB policy requires that research be reviewed at intervals appropriate to the degree of risk, but not less than once per year.

<https://mail.google.com/mail/u/0/?ui=2&ik=85fbfb75fd&view=pt&search=inbox&msg=14...> 2/20/2014

Kent State University Mail - FW: IRB approval for MODIFICATION(S) (protocol # 13-4... Page 2 of 2

****REMINDER: The annual review for this protocol is due prior to the expiration date of September 24, 2014. ****

HHS regulations and Kent State University Institutional Review Board guidelines require that any changes in research methodology, protocol design, or principal investigator have the prior approval of the IRB before implementation and continuation of the protocol. The IRB must also be informed of any adverse events associated with the study. The IRB further requests a final report at the conclusion of the study.

Kent State University has a Federal Wide Assurance on file with the Office for Human Research Protections (OHRP); [FWA Number 00001853](#).

If you have any questions or concerns, please contact us at Researchcompliance@kent.edu or by phone at 330-672-2704 or 330.672.8058.

Thank you

Respectfully,
Kent State University Office of Research Compliance
224 Cartwright Hall | fax 330.672.2658

Kevin McCreary | Research Compliance Coordinator | 330.672.8058 | kmccrea1@kent.edu
Paulette Washko | Manager, Research Compliance | 330.672.2704 | Pwashko@kent.edu

For links to obtain general information, access forms, and complete required training, visit our website at www.kent.edu/research.

<https://mail.google.com/mail/u/0/?ui=2&ik=85fbfb75fd&view=pt&search=inbox&msg=14...> 2/20/2014

APPENDIX E
SURVEY CORRESPONDENCE

Appendix E

Survey Correspondence

Holly Gerzina

From: ASPE Headquarters [aspe@kmgnet.com]
Sent: Friday, March 28, 2014 3:09 PM
To: Holly Gerzina
Subject: Short Survey (7 minutes) on SP Educator Job Stress & Resilience



**ASSOCIATION OF STANDARDIZED
PATIENT EDUCATORS**

Below is the link to a survey regarding job stress and resilience. You are invited to participate in this anonymous survey. The purpose of this study is to determine how individual resiliency protects against job stress. Additionally, this survey will provide valuable information to the institution regarding how work is organized that may be contributing to job stress. Ultimately, this information will be used to develop policy and education programs to improve workplace health for standardized patient educators.

Filling out this survey will take less than 15 minutes of your time. Please understand the choice to participate or not is entirely up to you and will have no bearing on your employment or membership in ASPE.

Thank you in advance for completion of the survey. Please click on the link below to begin.

<https://surveys.neomed.edu/se.ashx?s=705E3EE124F1FAF8>

Holly

Holly A. Gerzina, M.Ed., M.Ed.
Doctoral Candidate
Health Education and Promotion
College and Graduate School of Education, Health, and Human Services Kent State
University Holly A. Gerzina, M.Ed., M.Ed.

*** IF YOU DO NOT WISH TO RECEIVE FUTURE E-MAIL COMMUNICATIONS FROM ASPE, PLEASE REPLY REQUESTING SAME. YOU WILL BE IMMEDIATELY AND PERMANENTLY REMOVED FROM DISTRIBUTION. PLEASE DO NOT REPORT THIS MESSAGE AS SPAM AS IT HINDERS OUR ABILITY TO COMMUNICATE WITH OUR MEMBERS AND OTHERS WHO DO WISH TO RECEIVE COMMUNICATIONS FROM ASPE.hqerzina@neomed.edu

Holly Gerzina

From: ASPE Headquarters [aspe@kmgnet.com]
Sent: Friday, April 11, 2014 10:29 AM
To: Holly Gerzina
Subject: REMINDER: Short Survey (7 minutes) on SP Educator Job Stress & Resilience



**ASSOCIATION OF STANDARDIZED
PATIENT EDUCATORS**

Dear ASPE Member,

This is a reminder about your invitation to participate in the survey "Job Stress & Resilience." For those of you who have already participated, thank you very much! If you have not filled out the survey, you can still do so.

Below is the link to a survey regarding job stress and resilience. You are invited to participate in this anonymous survey. The purpose of this study is to determine how individual resiliency protects against job stress. Additionally, this survey will provide valuable information to the institution regarding how work is organized that may be contributing to job stress. Ultimately, this information will be used to develop policy and education programs to improve workplace health for standardized patient educators.

Filling out this survey will take less than 15 minutes of your time. Please understand the choice to participate or not is entirely up to you and will have no bearing on your employment or membership in ASPE.

Thank you in advance for completion of the survey. Please click on the link below to begin.

<https://surveys.neomed.edu/se.ashx?s=705E3EE124F1FAF8>

Holly

Holly A. Gerzina, M.Ed., M.Ed.
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Holly Gerzina

From: ASPE Headquarters [aspe@kmgnet.com]
Sent: Friday, April 25, 2014 1:42 PM
To: Holly Gerzina
Subject: REMINDER: Short Survey (7 minutes) on SP Educator Job Stress & Resilience



**ASSOCIATION OF STANDARDIZED
PATIENT EDUCATORS**

Dear ASPE Member,

This is a reminder about your invitation to participate in the survey "Job Stress & Resilience." For those of you who have already participated, **thank you very much!**

If you have not filled out the survey, you can still do so until NOON on THURSDAY, MAY 08.

Below is the link to a survey regarding job stress and resilience. You are invited to participate in this anonymous survey. The purpose of this study is to determine how individual resiliency protects against job stress. Additionally, this survey will provide valuable information to the institution regarding how work is organized that may be contributing to job stress. Ultimately, this information will be used to develop policy and education programs to improve workplace health for standardized patient educators.

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Holly Gerzina

From: ASPE Headquarters [aspe@kmgnet.com]
Sent: Tuesday, May 06, 2014 8:37 AM
To: Holly Gerzina
Subject: REMINDER: FINAL REMINDER: Short Survey (7 minutes) on SP Educator Job Stress & Resilience



**ASSOCIATION OF STANDARDIZED
PATIENT EDUCATORS**

Dear ASPE Member,

This is the FINAL reminder about your invitation to participate in the survey "Job Stress & Resilience." Thanks to those who have participated!

For those who would like to participate, the survey will close at NOON on THURSDAY, MAY 08.

Below is the link to a survey regarding job stress and resilience. You are invited to participate in this anonymous survey. The purpose of this study is to determine how individual resiliency protects against job stress. Additionally, this survey will provide valuable information to the institution regarding how work is organized that may be contributing to job stress. Ultimately, this information will be used to develop policy and education programs to improve workplace health for standardized patient educators.

Filling out this survey will take less than 15 minutes of your time. Please understand the choice to participate or not is entirely up to you and will have no bearing on your employment or membership in ASPE.

Thank you in advance for completion of the survey. Please click on the link below to begin.

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