

## **ABSTRACT**

McDONALD-FLETCHER, VARNELL DIONE. The Impact of Stress and Social Support on Burnout. (Under the direction of Dr. Brad Mehlenbacher and Dr. Sandra Wall Williams.)

This study was conducted in an effort to bring forth an awareness in the medical community of the emergence of stress, burnout, and social support in today's health-care system. The problem of the study was three-fold: 1) to develop a clear concise definition of burnout, 2) to develop a conceptual model that could be used in future research, and 3) to determine the statistical outcomes of this research in order to establish the need for and provide a plan to change the educational framework of physician assistants.

A search of the literature was conducted to identify content and methods of statistical analyses used in prior research. The literature reported various stress factors which appeared to be common among health-care providers. The current study tested the reliability level of these stress factors using Cronbach's alpha.

The American Academy of Physician Assistants provided a random sample of 1700 physician assistants for this survey. A questionnaire was mailed to seventeen hundred physician assistants, and approximately 360 responded. The data for analysis were extracted from only 345 questionnaires because of missing data in the remaining 15.

The multiple regression analysis revealed moderate levels of stress, low levels of burnout, and high levels of social support in this population. Of the three components of burnout, emotional exhaustion revealed a greater presence in PAs. Females demonstrated higher levels of emotional exhaustion, and males demonstrated increased levels of depersonalization and reduced personal accomplishment. The total number of hours worked in a week and occupational focus influenced the levels of stress, burnout, and social support. The total number of hours worked had an inverse effect on reduced personal

accomplishment. As PAs aged, they demonstrated lower levels of stress and burnout. The findings of this study suggest a need for further research to develop and implement interventional programs which will not only benefit physician assistants, but other health-care professionals.

The Impact of Stress and Social Support on Burnout

by  
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## **DEDICATION**

To my parents, Mr. and Mrs. William E. McDonald, who stressed the importance of education, and sacrificed to provide me with the opportunity for an education.

## **BIOGRAPHY**

Education is the key to success. Educating others is the reward of success. These are the two statements which have designed both the educational and career path of Varnell D. McDonald-Fletcher. Varnell received her primary, and part of her secondary, education in the Columbus, Ohio, school system. In 1973, she relocated to Durham, North Carolina, where she graduated from Hillside High School. In 1985 and 1986, she graduated from North Carolina Central University with Bachelor of Science degrees in Biology and Chemistry. While an undergraduate student at N. C. Central University, she was a recipient of the National Institutes of Health MBRS (Minority Biomedical Research Student) scholarship and the MARC (Minority Access to Research Careers) scholarship. During this time, she was a member of Beta Kappa Chi Honor Society, Alpha Kappa Mu Honor Society, and the National Deans List.

In 1991, she entered the Duke University Physician Assistant Program. Upon graduation, she was accepted into the Norwalk/Yale Physician Assistant Surgical Residency Program, and was a recipient of the Board of Trustees Award and the Residents Medical Writing Award. Prior to graduation from the surgical residency program, she was accepted in the Adult and Community College Education (Health Occupations Education) doctoral program at North Carolina State University. As a student at North Carolina State University, she is a member of Phi Kappa Phi Honor Society and Epsilon Pi Tau Honor Society.

Employed by Duke University Medical Center, Varnell has worked as a physician assistant for fourteen years. Her primary medical training is in the field of neurosurgery/neuro-oncology. Ms. McDonald-Fletcher is currently employed as a physician

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Ms. McDonald-Fletcher is the daughter of William and Ruth McDonald, and the mother of Wilbert J. Fletcher, III. She resides in Durham, North Carolina.

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I am so very blessed and grateful to be surrounded by individuals who have instilled in me the self-confidence, determination, education, and lessons that have prepared me for this academic journey to complete my doctoral degree.

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## CHAPTER I: INTRODUCTION

As we move through the twenty-first century, emphasis has been placed on efficiency, cost-effectiveness, and value for money. Although there are a whole variety of phrases being used globally, they all mean one thing: increased pressure on staff and on institutions (Obholzer & Roberts, 1994).

In the mid-1970's the concept of burnout emerged as a result of a change in the structure of the workplace. Profound changes in the workplace occurred at the end of the 1980's and early 1990's. Privatization of the public sector and the information technology revolution paved the way for the workplace changes. Organizations downsized and changed their internal structure forcing employees to expand their job description in terms of increased workload, longer hours, and flexibility without the rewards of career mobility and job security. According to Paine (1982), these factors could lead to the burnout stress syndrome defined as a consequence of high levels of job stress, personal frustration, and inadequate coping skills which have significant personal, organizational, and social cost. Schaufeli, Maslach, and Marek (1993) contended that the etiology of burnout is related to the nature of the job and the stressors associated with the job. Today, burnout is defined as a multidimensional phenomenon characterized by three factors emotional exhaustion, depersonalization, and reduced personal accomplishment.

As stated, burnout consists of a tripartite model: emotional exhaustion, depersonalization, and reduced personal accomplishment as developed by Maslach. The first construct, emotional exhaustion, primarily occurs among service workers that have high interpersonal contact with clients and reduced resources and social support. Because it was

the most widely reported and most thoroughly analyzed, the emotional exhaustion construct was considered the “central quality of burnout” (Maslach, Schaufeli, & Leiter, 2001, p.34). The second component of burnout was depersonalization, which was an attempt to place distance between oneself and the service recipient. Distancing occurred as an immediate response to exhaustion. For example, exhausted employees may develop an indifferent or cynical attitude. The third component was reduced personal accomplishment. Although it follows depersonalization, this component appeared to result from exhaustion, but it did not occur until after the observation of depersonalization. That is, chronic demands and exhaustion eroded one’s sense of effectiveness.

The development of a conceptual model of burnout progressed through several phases to arrive at the Maslach and Jackson burnout model that is widely used today. The *Pioneer Phase* of burnout was first identified as 1) a unique syndrome that occurred among people working in human service and health care, and 2) focused on the clinical side and issues of mental health. In the *Empirical Phase*, the observation of burnout became 1) a form of job stress that extended beyond the health service to the general population. In this phase, the model also theoretically expanded to a model of person-job fit (Maslach et al., 2001). Lastly, Maslach and Leiter (1997) proposed an extension of the job-person paradigm to a broader and more complex conceptualization of the person situated in the job context (2001). This focus concentrated on the degree of match or mismatch between the person and the job environment. Hence, the greater the mismatch, the greater the stress, and the more likely burnout would occur.

Historically, the development of burnout derived from observations of extreme psychological strain first described by Bradley (1969) and later Freudenberger (1974). Research has found that stress could lead to strain. In recent years, occupational stress became of great concern in the human services. The expenditure on occupational stress has been huge. Schaufeli and Enzmann (1998) reported The International Labor Office (1993) estimated that in the United States occupational stress costs employers in excess of \$200 billion per year in absenteeism, reduced productivity, medical expenses, and compensation claims. Unfortunately, in health care occupational stress not only affects the employee but the patients being treated.

The field of Medicine, like most other areas of our society, has been affected by this trend. Medicine today has evolved into a more technically efficient, sophisticated, and complex system. However, advanced technology provided better health care at the expense of the health-care provider. An increase of profit-oriented organizations in the medical services and the growth of managed-care have increased external control over health-care services and health-care organizations. As a result, clinical staff was pressured to provide more patient care with fewer human, economic, and technical resources.

With the current increase in the overall population (especially the aging population), the requirement to see more patients with reduced reimbursement, longer work hours, a decrease in medical school admissions, and a retiring physician population suggested the reasons for a decline in the number of those entering the health profession and an increase in those leaving the health profession. With these pressures, the impending odds are that burnout has struck a health-care professional at some point in his or her career.

A search of the literature implied that overall medical staff shortage, the intensity of the work, and the emotional bonds formed while trying to help people are contributors to increased stress and burnout in the health profession (Flaherty, 2002). Medical personnel are educated according to the “Halsteadian” ideals of strict discipline and dedication to the profession of medicine. A medical professional who lacks discipline and waivers in their dedication to the profession was not respected among his or her peers. Ideally, medical training does not allow vulnerability when exposed to chronic psychological, physiological, and social stressors leading to burnout, because the result was decreased productivity.

However, researchers today recognized that increasing the demand on productivity of health-care professionals was increasing the vulnerability to burnout. These issues are leading to a predictive thirty-percent shortage of medical students for the future of health care, and causing those entering the medical profession to sometimes replace humanistic values and dedication to the profession with a decrease in quality of medical care. The medical profession was faced with two issues. The first issue was recognizing factors that impact the vulnerability to burnout among health professionals, and the second issue was determining how to reduce the shortage of medical personnel.

In 1961, the concept of the “extern” or assistant to a physician emerged as a strategy to resolve the staffing shortage of primary-care physicians. The idea was modeled after other countries which had successfully trained nonphysician providers and expanded the role of nurses. Today, the role of the Physician Assistant has evolved and expanded into all areas of medicine and research.

Physician Assistants are in high demand because they have the ability to provide medical care, their salaries are less than those of physicians, and they are trained to interface with other health-care professionals to provide a holistic approach to patient care. The physician shortage was encouraging health-care educators to increase the enrollment in Physician Assistant programs to meet this shortage. According to the literature, Physician Assistants have an educational model unlike the physician educational model. Physician Assistants are educated and certified (written examination) every six years allowing them to practice in various disciplines of medicine; whereas, physicians are usually board certified into one discipline (Pagels, 2006).

To accommodate the shortage of physicians, the Physician Assistant profession has two obligations. First, the Physician Assistants must be trained to assume a new role of more responsibility. Second, to prevent Physician Assistants from facing the same burnout issues which contributed to the physician shortage, the PA profession must identify the stress factors which impact burnout. The Physician Assistant educational model, which is based on a didactic and clinical model only, can then be reconstructed to meet the demands of a changing health profession. The new educational model can serve as a basis for developing and implementing new training methods to prevent professional burnout. Following this model could prevent further decline in the number of individuals entering and remaining in the health-care profession. The challenge of this research was to find the impact of unique stress factors and social support on burnout in Physician Assistant.

Demographic Factors such as gender, age, type of practice, the number of years, and the total hours work may have a significant impact on burnout. Implications of this research will hopefully determine the population most likely to be affected by burnout.

### Stress Factors That May Impact Burnout

In determining the stress factors that impact burnout, the literature provided a basic outline. Cordes and Dougherty (1993), initially categorized stress factors impacting burnout into three types: individual, job (environmental), and organizational. Recent literature by Maslach and Leiter demonstrated that areas of work life include the combination of job (environmental) and organizational factors. Wolfgang demonstrated there were stress factors specific to healthcare providers. For the purpose of this research, stress factors in healthcare providers were delineated into two categories: healthcare stressors, and worklife (environmental) stressors.

#### *Healthcare Stressors*

The literature on stress among Physician Assistants points out that stress was identified in PA's who were involved in direct patient care and had to explain their roles to others, defend the value of their job, accept responsibilities delineated by the supervising physician, and had few options for career mobility (Holmes and Fasser, 1993, Schneller, 1978, Bell 2002, Lane 2003, Hooker 2003). Wolfgang (1998, 1994, 2002) recognized the need to identify unique stress factors in healthcare providers. Today, for example, there is an increase in demand to see more patients in less time, an increase in malpractice cases, conflicts in health-care delivery, and a lack of reward for a demand job. With the shift in residents' hours, it was important to identify potential stressors before burnout ensued

resulting in a mass exodus from the profession. Based on Wolfgang's suggestions the conceptual model for this research used the following stress factors to impact the PA profession: 1) patient care responsibilities – defined as providing the medical care for treatment of the patient. 2) professional uncertainty – uncertain of job expectation and performance in regard to patient care.

### *Worklife Stressors*

Medicine today is being driven by issues related to access, cost, and quality requirements. Maslach and Leiter (1997) recognized that a mismatch of employees' expectations and aspirations with the reality of the work environment and organizational system promoted burnout. This mismatch identified six potential stress factors which include workload, control, reward, community, fairness, and values. These stressors are important because of the changing environment and organizational role of the PA.

### *Workload*

According to the 2005 Physician Retention Survey, 70% of physicians left the medical profession under voluntary resignation. One reason for voluntary resignation was workload. The 2006 Census report by the American Academy of Physician Assistants estimates there were 2.5% of Physician Assistants not employed by choice. Workload referred to the amount of labor required within a specific period which had the potential to induce stress in these individuals. Healthcare workers felt pressure from the job and long hours which were incompatible with quality of lifestyle.

### *Control*

Control was the opportunity to make choices and decisions to solve problems, and contribute to the fulfillment of responsibilities. For Physician Assistant's their autonomy was dependent on their supervising physician. When the supervising physician relinquished control from the PA, role conflict ensued. Role conflict from the diverse expectations of physicians, administrators, and patients can lead to stress and result in burnout.

### *Reward*

Approximately 45% of physicians left the medical profession secondary to compensation (Physician Survey, 2005). Compensation or reward can be financial or social. A meaningful reward system acknowledges contributions to work and provides clear indications of what the organization values. With PA's assuming the role of physicians who are or will be leaving the profession, monetary compensation and/or social reward was important for retention in a role with more responsibility.

### *Community*

Community was representative of an organization's social environment. Healthcare providers usually provided excellent care in a community that provides support, collaboration, and appreciation. Negative interpersonal relationships within the healthcare community with the absence of social support from colleagues, superiors, or patients can result in major stressors (Cooper et al., 2001).



### *Fairness*

Fairness implied the extent to which the organization had consistent and equitable rules for everyone. The healthcare organization within the constraints of insurance companies created rules on the time allotted for examination of each patient, type of care provided based on insurance coverage, and hours of operation based on cost-effectiveness. According to Herrick (2004), the outcry of Physician Assistants across the country was consistent with the unfairness of how they are being utilized within the changing face of health care.

### *Values*

Success in health care is congruent with personal values within the healthcare system. Differences can occur between the values of the healthcare system and the healthcare provider. When healthcare providers cling to the values internalized during training, but find themselves having to act in accordance with conflicting values of the organization, they are forced to capitulate resulting in stress and burnout (Muldary, 1983).

### Social Support

Social Support provides resources in the social structure to meet the needs of individuals or systems to provide resources, esteem, values, communication, respect, and mutual obligation (Lin and Ensel, 1989; and Cobb cited in Pines, Aronson, and Kafry, 1981). Social Support is important to health care because it is the process by which resources in the social structure of medicine are brought to meet the functional needs of healthcare. A lack of social support can lead to frustration and job dissatisfaction.

In organizational support, employees want to know that the organization values their contributions, cares about their well-being, will reward for superior performance, and will provide help when needed. Organizational support can vary significantly based on the organizational schema and political environment. Supervisory support, procedural justice, education, and socialization have a substantial effect on the performance within an organization. An individual's interpretation of support can vary depending on their position within the organization. Health professionals differ in terms of the importance they attribute to social support, the support available to them, and the effectiveness of that support against burnout (Farber, 1983).

Peer support, through positive relationships with colleagues, is necessary for teamwork. Professionals ambiguous about the contacts, staff members, and restricted social interactions with colleagues in their own subgroup scored higher on depersonalization. Higher emotional exhaustion was found in professionals who had to concentrate on social contacts within a formally defined work area.

Family support was important especially for those who lacked social support systems at work and began to demand fulfillment from their families. Families can provide emotional sustenance, assistance, resources in times of need, and share standards and values. A lack of social support at home with a lack of social support in the work environment may make it difficult for the employee to face job challenges resulting in stress.

When healthcare professionals were socialized into the healthcare profession, they learned values, standards of practice, modes of interaction and styles of communication specific to their chosen profession. Variance in the scope of practice prevents diversity in the

social support aimed at maintaining organizational function. The impact of social support on burnout depends on the match between types of support and the stressors encountered, level of support, availability of support, and distinction between perceived support and objective support.

### Problem

There have been many approaches to studying burnout in the health-care provider. The difference in the approach to burnout research was problematic when identifying what impacts burnout. In review of the literature on burnout in Physician Assistants, there were four problems identified. First, with the change in health care and the suggestion of role change in implementing Physician Assistants there has been minimal burnout research among this group of healthcare providers. The literature search identified only one publication measuring burnout in emergency Physician Assistants, which does not provide a clear representation of burnout in all Physician Assistants. Second, a clear and concise definition of burnout in health care and the factors which impact this phenomenon must be determined. Third, the research was based on theory without a conceptual framework of burnout. The key component to reducing occupational stress and the propensity for burnout, especially in health care, required the development of a conceptual model of burnout in Physician Assistants that could be incorporated into all health education and training models. Fourth, previous research has analyzed burnout as unidimensional and recently research is recognized burnout as a complex multidimensional phenomenon requiring multiple regression analysis.

*Problem I: Identifying Burnout in Physician Assistants*

Health care has increased the demand to employ PA's as primary-care providers and specialty assistants, thus extending their professional responsibilities. The practice of using PA's to fill the personnel gap created by (1) downsized residency programs, (2) obscured lines of command for supervising physicians are not clearly established, so the role and liability risks of the PA are assumed has added increased responsibility, (3) increased autonomy of the PA in physician roles, but not comparable with current physician training, (4) health-providers retiring before traditional retirement age secondary to dissatisfaction with the profession thus decreasing the number of supervising physicians, (5) positions often without proper monetary compensation, and (6) providers not willing to accept large workloads. Expansion of the PA role is affected by autonomy, salary, workload, work hours, and increased responsibility for human life. For PA's, medicine has introduced additional causes of stress and burnout. Their high demand and change in role must not decline secondary to burnout. To prevent a decline in Physician Assistants in health care, this research sought to identify the stress factors that impact burnout in Physician Assistants.

*Problem II: Definition of Burnout for this research study*

There must be a clear and concise definition of burnout for this research. In the mid-1970's the concept of burnout began to emerge. Maslach (2003) thought burnout evolved from a grassroots, bottom-up path derived from people's workplace experiences rather than a top-down path. There have been different definitions and theories about what produces and results from burnout. Historically, burnout has been viewed or perceived as a prolonged job stress. Maslach 2001, Farber 1983, and Cooper et al. 2001 all viewed burnout as a response

to chronic stress factors. The popular view of burnout was as a single concept. This fact led people to argue that burnout as a single dimension of emotional exhaustion. The reason for this misconception was that of the three components, emotional exhaustion which was thought to be the closest to an orthodox stress variable. Shirom (1989) points out that there was a clear trend in early research that stress variables were strongly correlated with emotional exhaustion, depersonalization, and reduced personal accomplishment and were incidental or unnecessary. Schaufeli and Enzmann (1998) defined burnout as a multidimensional construct which was a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that could occur among individuals who perform human service work.

Muldary (1983) defined burnout for the health professional as “the process by which a once-committed health professional becomes ineffective in managing the stress of frequent emotional contact with others in the helping context, experiences exhaustion, and as a result, disengages from patients, colleagues, and the organization” (p.14). This definition defined the process but not the components of burnout. For this research of burnout in PA’s, the definition of burnout was a combination of the theories of Schaufeli and Enzmann (1998) and Maslach and Jackson (1986): Burnout is a unique multi-dimensional stress reaction which is a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment which occurs in individuals who provide human services.

### *Problem III: Designing a Conceptual Model of Stressors and the Impact on Burnout*

To begin this research a theoretical model of burnout was constructed. Burnout research began with real-world problems trying to work toward a theoretical model, instead

of starting with theory and finding implications for a particular social issue. Initially the studies of burnout were based on concepts of psychological theories. Unfortunately, many prior studies, including those with longitudinal designs were not grounded in a theoretical framework, and did not conceptualize burnout. Healthcare problems can be complex, and therefore a single theory of burnout may guide the development of a single theoretical model.

Burnout appeared in the nursing profession in 1978, and was defined as a state of physical, emotional, and mental exhaustion. In the upcoming challenges in healthcare roles, there was a need to identify the impact of stress factors and social support in predicting burnout in Physician Assistants. In previous research, there were various definitions of burnout among medical specialties. Surgical physicians defined burnout primarily by lack of personal accomplishment, emotional exhaustion, and depersonalization. Nurses defined burnout in terms of emotional exhaustion and lack of personal accomplishment. PAs who work in an Emergency Department defined burnout in terms of emotional exhaustion and depersonalization. Due to the absence of a theoretical framework, there was no consistency among relevant studies, and no clear methodology to determine results. A shared theoretical framework would guide the choice of constructs and their operationalization which would introduce needed consistency in measurement practices. A theoretical framework would suggest meaningful research and answer the question to guide research findings.

#### *Problem IV: Burnout is Multidimensional / Multidimensional Analysis*

Once the stress factors were identified, their impact on burnout was analyzed. Prior studies looked at burnout as the relationship between two variables: stress factor and a burnout factor using correlational analysis. Freudenberger & Richelson (1980) and Pines and

Aronson (1988) thought the predilection to describe burnout was as a single unidimensional phenomenon with corresponding measures proposed to assess. Bivariate analysis was used to examine the impact of a stressor on each dimension of burnout. Researchers attempted to demonstrate a cause and effect relationship. In the one burnout survey among Physician Assistants by Bell et al. (2002) multiple regression was not used for data analysis but Pearson and Spearman's correlation coefficients provided a bivariate measure of association (strength) of the relationship between two variables used to test for statistical significance only between a criterion variable and a predictor variable.

Today, we recognize burnout as a complex multidimensional phenomenon. Schaufeli (1993) cited that the more recent studies have determined that burnout is multidimensional consisting of three distinct components (emotional exhaustion, depersonalization, and reduced personal accomplishment) impacted by various variables of stress. The multidimensional model articulated the interrelationship among the three components of burnout rather than simply considering each of them in isolation. Multiple regression is a statistical tool which has the ability to examine the predictive relationships between multiple predictive variables in multidimensional models.

Multiple Regression was extremely useful in determining if one set of variables could significantly and meaningfully predict the variation in a criterion (Rourke et al., 2005). Multiple regression analysis was implemented in the study of stressors and the effect on burnout as an analytical tool demonstrating whether there was a significant relationship or significant amount of variance between the criterion variables (each construct of burnout) and the multiple predictor variables (stressors), how much variance in the criterion was

accounted for by the predictors, and which predictor variable was a relatively important predictor of the criterion while holding the criterion stable. A number of recent burnout studies used multiple regression to analyze factors which impact burnout. Nowack and Hanson (1983) looked at Type A behavior and the impact on burnout using multiple regression. Results demonstrated that Type A behavior was detrimental to job performance which impacted burnout. Multiple regression was important as a useful tool to determine if the independent (predictor) stress variables identified among Physician Assistants could explain the impact of a proportion of the variance in each dependent (criterion) variable of burnout at a significant level therefore demonstrating that the theoretical model confirmed the predictors of burnout in PA's.

This research developed a theoretical framework of burnout by constructing a conceptual model to identify factors which impacted burnout among Physician Assistants, and used the results of this data to propose developing and changing the educational course for Physician Assistants. Future research can then measure the effectiveness of a new curriculum in the prevention of burnout.

#### Purpose of the Study

The purpose of this study was to determine the predictive value of selected stressors and social support variables on burnout identified in certified Physician Assistants in hope of developing and changing the educational curriculum to prevent burnout of these matriculating healthcare providers.



## Research Questions

The study will seek to answer the following questions:

- 1) Is there a significant difference between the levels of burnout, healthcare stressors areas of worklife stressors, and social support among the various demographic groups in this study (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 2) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict burnout in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)? (a global model with all demographic questions included)
- 3a) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict emotional exhaustion (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 3b) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict depersonalization (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time

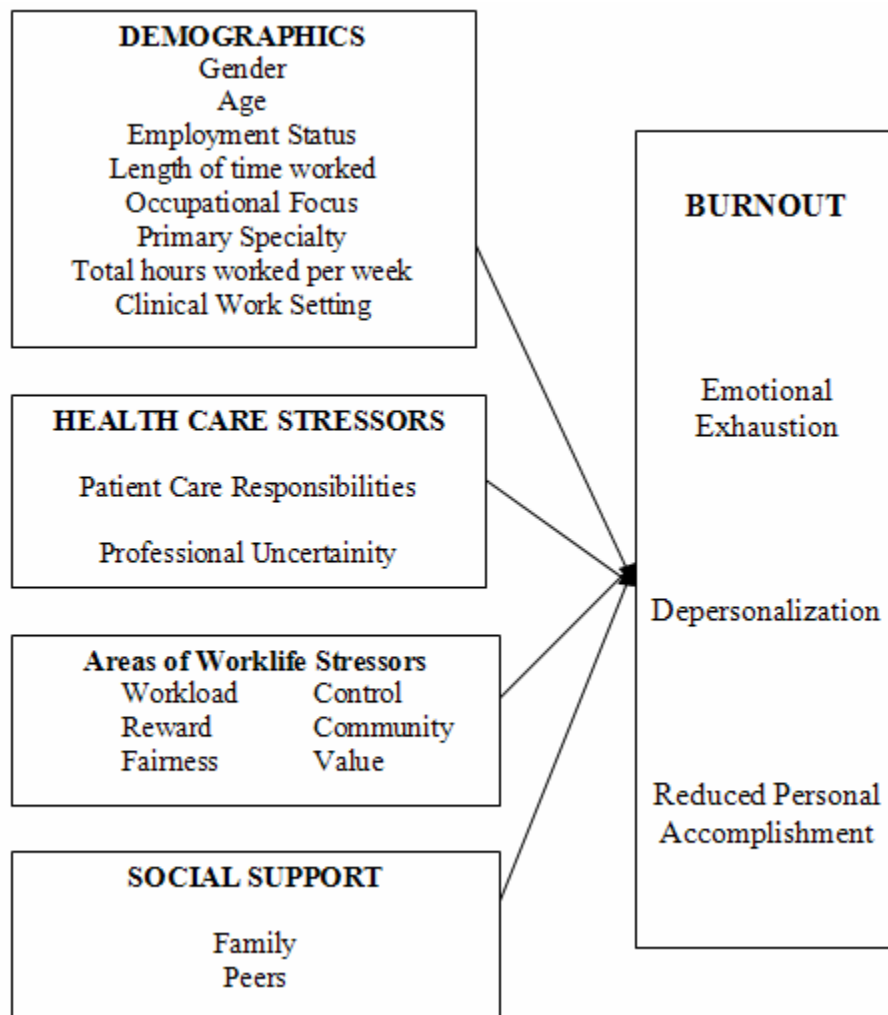
- worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 3c) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict reduced personal accomplishment (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 4) What is the ability of healthcare stressors, areas of worklife stressors (e.g., workloads, control, rewards, community, fairness, and value) and social support factors (e.g., attachment, reassurance of worth, reliability alliance, and guidance) to predict burnout in physician assistants?

#### Conceptual Model

A variety of definitions and several theories of burnout have been proposed from several different disciplines, including general stress theory, organizational theory, crisis theory, incentive theory, professional self-efficacy, occupational stress, and psychology of conflict. Unfortunately, many of the previous studies on burnout were not grounded in a theoretical framework. As a result, these studies did not develop a conceptual model of burnout to derive and test hypothesis. Today, research in the burnout concept is beginning to evolve as a theoretical framework. Maslach, Leiter, and Jackson have developed an operational definition of burnout by which to validate research measures and integrate the results into a conceptual model.

Previous conceptual models are helping researchers to guide their theoretical framework and develop theory driven research. The conceptual models of Cherniss, Golembiewski, and Maslach and constituents have been instrumental in the current research and development of theoretical models of burnout. Whether current models or reformulation of previous models the result of more theory driven research has resulted. Theory driven research must continue to develop models which analyze variables that impact burnout.

The aim of this research was to design a conceptual model to analyze the impact of various stress factors and social support factors identified in burnout of Physician Assistants. This model constructed the burnout process as a tripartite model (Maslach, 1982; Maslach and Jackson, 1981; and Maslach and Leiter, 1988) in which burnout was impacted by various stress factors and social support factors in Physician Assistants (see Figure 1.1).



**Figure 1. 1 Stress factors and Social Support as they impact each factor of burnout.**

### Significance of the Study

Although the medical profession has made strides to increase the presence of PA's in healthcare delivery, it has yet to implement the means either to recognize stress and burnout or to implement preventive measures. In short, the health professionals' training requires

them to be objective and professional, implying that their emotions are to be controlled. As a result, the ability to matriculate and retain healthcare providers is becoming more difficult.

In developing the desire and potential to grow professionally, PAs often do not settle in a clinical training environment of realism but one of simulation. Depending on the area of clinical practice, role ambiguity may occur, further distorting career expectations. Improved understanding of the correlates of the PA's role would allow educational programs and professional organizations to identify potential sources of dissatisfaction. Further, this improved understanding would assist PAs' realistic expectations in formulating and discussing the strengths and weaknesses regarding future employment in the profession in an informed manner (Baker, Oliver, Donahue, & Huckabee, 1989). In addition, Physician Assistants must be taught to accept and understand that simple academic solutions to problems may not occur or be evident.

The significance of this study became three-fold. The results of this study will help 1) Physician Assistants at any point in their career to understand and recognize negative stressors and seek intervention to prevent burnout; 2) Medical education to implement a curriculum that trains students in stress management to prevent burnout and maintain retention; and 3) healthcare organizations will recognize and implement support systems to direct stress prevention programs with the goal of preventing burnout. The choices the PA profession makes today, as well as the adherence to professional values of competence and caring, will determine the PA's professional world for years to come (Strand, 2002).

## Delimitations

The randomized sample was comprised of NCCPA (National Commission on the Certification of Physician Assistants) certified, State board licensed practicing physician assistants who specialized in specific areas of medicine. The focus of the questionnaire pertained to health care environment.

## Limitations of the Study

Stressors, other than those specifically chosen as predictor variables in this study, could have a significant prediction of burnout in physician assistants including, but not limited to, pre-diagnosis of dysfunctional mental health and education in addition to or beyond general physician assistant education (advanced degree or residency). The second limitation of this study was the assumption that the respondents answered each question truthfully. The third limitation was the sampling procedure decreased the generalizability of the research findings. The study was not a true random sample randomized to all physician assistants in healthcare because the recommended sample size was not obtained.

## Definition of Key Terms

**Burnout:** A reaction to chronic, job-related stress characterized by physical, emotional and mental exhaustion which results from conditions of work, job strain, worker strain, and/or defensive coping. A multidimensional syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment (Schaufeli & Enzmann, 1998).

**Stress:** An imbalance between current demands, abilities and psychological resources characterized by anxiety, tension, fatigue, and exhaustion (Schaufeli & Enzmann, 1998).

**Social Support:** The process by which resources in social structure are brought forth to meet functional needs (Lin, 1989).

**Physician Assistant:** A health professional licensed to practice medicine with physicians:

**Surgical PA:** A Physician Assistant formally trained in a structural surgical assistant program who has undergone on-the-job training, and completed requirements for a postgraduate training program.

**Emergency Room PA:** Graduate of a physician assistant program who is trained to work in the emergency room or urgent care. The Physician Assistant may, but is not required to, attend a post-graduate emergency medicine program.

**General Medicine (Family Medicine, Internal Medicine, and Pediatrics):** Primary care physician assistants who belong to a multi-specialty group that practices expanding primary care service delivery.

**Supervising Physician:** A physician who supervises a Physician Assistant. The physician must be licensed in the practicing state; the state medical board must be notified of his or her intent to supervise

a Physician Assistant; a statement must be submitted to the medical board notifying of supervision of a Physician Assistant in accordance with any rules adopted by the board; and the physician must agree to retain professional and legal responsibility for the care rendered by the Physician Assistant (Hooker & Cawley, 2003) .



## **CHAPTER II: REVIEW OF THE LITERATURE**

### **Review of the Pertinent Literature**

A review of the literature examined the research of a number of studies as they relate to occupational stress and burnout for the last thirty years. The literature review examined the history, conceptual models, and research on burnout, and why the work of Maslach and Jackson (Maslach Burnout Inventory) is regarded as the “gold standard of burnout measurement.” Second, the literature review will define stress and identify primary sources of occupational stress to include healthcare, individual, environmental, and organizational factors. Third, the literature review will analyze previous research related to the impact of stressors on burnout. Fourth, the literature review will examine the impact of the presence and/or absence of social support and its impact on burnout. Finally, the literature review will examine what changes in the medical education curriculum are needed to socialize the PA into the medical community while preventing the impact of burnout.

### **Historical Overview of Stress and Burnout**

In many areas of today’s workforce, the impact on the well being of an individual is being challenged by the demand for effective performance. According to Cherniss, clients, supervisors, colleagues, as well as oneself, communicate this demand. For helpers who feel they lack the resources necessary to meet this demand, the stress and potential for burnout would be high (Black, 1946; Cherniss, 1980). In fact, a large number of studies exist containing the term burnout. A search of the database by Schaufeli and Enzmann (1977) revealed 5500 entries in specialized bibliographies, 61% published in professional journals,

17% are dissertations, 10% are book chapters and 12% are research documents, conference papers or master's theses (Schaufeli & Enzmann, 1998).

In researching prior pertinent literature on burnout, the difficulty has been in defining the term and conceptualizing the concept. There have been many opinions on the concept of burnout within the confines of specific occupations. In healthcare, nurses have been the pioneers in research on burnout. Much of the research focused on emotional exhaustion and depersonalization. Nurses found either personal or organizational reasons affect their ability to meet organizational healthcare expectations, resulting in frustration and stress that may lead to burnout. The lack of social support in managing the stress of their jobs results in burnout. Research conducted by Starr (1987), Safran (1988), and Thompson (1989) identified emotional exhaustion, depersonalization and social support as key components of burnout.

Akroyd et al. (2002) examined patterns of burnout among U.S. Radiographers. Overall results comparing radiographers with several nursing studies found similar levels of burnout. Akroyd et al. (2002) used the Daily Stress Inventory to assess levels of stress, which did not address all of the levels of stress identified in healthcare. However, multiple tests were used to demonstrate comparable burnout results in nurses and overall results found similar levels of burnout. There was a difference between radiographers and nurses who worked with mentally retarded patients with significantly higher levels of emotional exhaustion and depersonalization than radiographers. Further research and the identification of specific healthcare stressors are needed.

Susan Mayor (2002) identified the link between emotional exhaustion and stress in physicians. Results showed a reciprocal causation between exhaustion and stress. Treating

patients as objects rather than as people lowered the stress level. According to Bakker, et al. (2000), the bulk of research evidence to date “suggests that client – or patient – contacts play a key role in the development of the burnout syndrome” (p.427). They point out that there is no theoretical explanation for this relationship. A five-year-long longitudinal study was conducted among general practitioners. This study predicted a positive relationship between emotional exhaustion and depersonalization, and a negative relationship between depersonalization and reduced personal accomplishment. Bell, Davison, and Sefcick (2002) have reported the first and only published survey to date on physician assistants. The study was limited to the comparison of emergency medicine physician assistants and emergency physicians. Unlike the previous studies, depersonalization scored higher than the other subscale. Emergency medicine healthcare providers may see patients by their cause or disease.

In review of the literature, the conceptualized models of burnout differed. In Bakker’s model (2000), the three dimensions of burnout were included as separate factors in the process model of burnout. The conclusion from the analysis was that emotional exhaustion plays a crucial role in the development of burnout, and emotional exhaustion is a precursor of depersonalization and a direct cause of reduced personal accomplishment (Bakker, et al.2000). Lack of reciprocity and the effect on emotional exhaustion have shown association in studies conducted on nurses. Bell et al. (2002) examined the constructs of burnout independently, finding that depersonalization was higher in emergency-care providers. However, different healthcare providers may not look for the same amount of reciprocity, so results directly pointing to emotional exhaustion cannot be considered

applicable to all healthcare professionals. Akroyd et al. (2002) examined burnout in radiation therapist and expanded the research using three multiple regression models for each of the three stages of burnout to analyze the impact of the independent stress variables. Results of the regression analysis indicated that the linear combination of independent variables all significantly predicted each of the three stages of burnout. Because the existing studies have been defined within specific areas of healthcare, the goal of this study is to find a conceptualized model that can be generalized to all healthcare providers, and produce results which may lead to a better understanding of the burnout process.

### Burnout

One of the earliest literary notations to burnout occurred in Thomas Mann's description of the protagonist in *Buddenbrooks* (1922). This work incorporates the essential feature of burnout, extreme fatigue and loss of passion for one's job (Schaufeli, Maslach, Marek, 1993). Graham Greene's literary work, *A Burn Out Case* (1960), is a story of an architect who quit his job and withdrew to the African jungle due to symptoms that fit the description of burnout. Bradley (1969) was the first writer to site burnout as a psychological phenomenon that occurred in the helping professions.

According to Maslach and Leiter (1997), burnout has reached increased proportions in North America due to fundamental changes in the workplace as well as the nature of the job. Burnout reflects a process that takes place in a variety of ways, proceeds at different rates, and depends on the nature of each individual's relationship with the total experienced world (Muldary, 1983). "Burnout is a unique multidimensional chronic stress reaction that goes beyond the experience of mere exhaustion" (Schaufeli & Enzmann, 1998, p. 31).

Burnout emerged in the 1970's when profound changes in the workplace occurred. Privatization of the public sector and the information technology revolution paved the way for workplace changes. Early research on burnout was grounded in speculative and eclectic borrowing of concepts. Burnout evolved from a grassroots, bottom-up path derived from people's workplace experiences rather than a top-down path (Maslach, 2001). The majority of burnout research is still descriptive and exploratory in nature because no one knows the exact etiology of burnout.

Burnout was not grounded in a theoretical framework because of the lack of supported theories to develop a theoretical framework. Assessing research findings become difficult if not analyzed within a conceptual framework. A shared theoretical framework would guide the choice of constructs and their operationalization that would introduce needed consistency in measurement practices. Understanding burnout is dependent on the development of a new, rather than traditional, theoretical perspectives. The approach to theory-driven research may be the analysis of the process of burnout rather than the end stage of burnout (Schaufeli et al., 1993a). To examine the process of burnout, the factors that impact the process of burnout must be studied. Stressors are factors that impact burnout, and are found within the three etiological factors of burnout distinguished as individual, interpersonal (environmental), and organizational. Social support is an additional factor that impacts burnout.

Today, many professionals see themselves as having to change their behavior to meet criteria set by their boards, clients and customers, staff members, and the state and federal governments (Cooper, 1995). Companies everywhere are downsizing, outsourcing, and

restructuring, leaving workers at all levels feeling stressed, insecure, misunderstood, undervalued, and alienated. The cost of unhappy employees is high both for the employee and the organization. In academic journals sociologists have reported on stress and burnout in a variety of service professions, including police officers, correctional teachers, child-protective service workers, wardens, physicians, and nurses.

One occupational boundary where burnout has become an important research topic is in the field of medicine. Technological advancements in healthcare have made the practice of medicine more efficient, sophisticated, and complex than ever before. Today, producing positive health outcomes for patients is more obtainable. Nevertheless, the organizational, or big business part of medicine, called managed-care, arrived with the advancements in medicine and technology. Managed-care not only dictates the type of care a patient is eligible to receive, but also dictates how the healthcare provider will deliver the care based on the number of patients, time spent with patients, tests to be performed, and medications to be prescribed. All these factors lead to stress. Even though healthcare providers are trained and conditioned to respond to acute stress, it is the exposure to chronic stress that becomes detrimental. For healthcare providers, whose central core of the job is stress, the chances of experiencing burnout greatly increases.

Since chronic stress produces a state of tension and irritability that is incompatible with performance, a chronically aroused, tense, irritable health professional may neglect patient care. Changes in job enthusiasm and commitment cause a decline in motivation to produce quality patient care. Prolonged stress that leads to the burnout syndrome may impair the ability to attend, concentrate and engage in complex thinking and problem solving.

Moreover, a decline in enthusiasm and satisfaction with one's work may cause the provider to develop a loss of empathy, caring, and respect for patients. As healthcare providers face burnout, they become more concerned with their own well-being and less about the welfare of others. As a result, healthcare organizations lose hundreds of their most competent and committed practitioners to burnout (Muldary, 1983, p.12-14). Some healthcare professionals who suffer from burnout and remain in the profession may engage in delinquent behavior, such as alcohol consumption or drug abuse, and become a liability to their patients.

Muldary (1983) defines burnout for the health professional as “the process by which a once-committed health professional becomes ineffective in managing the stress of frequent emotional contact with others in the helping context, experiences exhaustion, and, as a result, disengages from patients, colleagues, and the organization” (p.14). Alleviating burnout then, requires fundamental changes in job conditions and organizational environments. Researchers are recognizing that increasing the demand on productivity of healthcare professionals is increasing the vulnerability of burnout. The odds are that burnout will strike a healthcare professional at some point in his or her career. Today, mid-level healthcare providers, such as Physician Assistants (PAs) and Nurse Practitioners (NPs), are making a major impact in medicine. A reduction in the applicants to medical school and the current reduction in community physicians have expanded the role of the mid-level practitioner. Not only do mid-level practitioners experience the stress of patient care, but within the institution of medicine, organizational stress can induce hostile, resentful feelings of frustration and alienation.

In 1961, the concept of the Physician Assistant emerged to meet the staffing shortage of primary care physicians. Physician Assistants are health professionals licensed to practice medicine with physician supervision. The profession emerged as young physicians began entering medical specialties and gravitating toward technological advancements in medicine. Physician Assistants are now employed in many medical specialties, research, education and administration. As the medical marketplace for the Physician Assistant continues to grow, stressors remain instrumental in the match/mismatch between the organization of medicine and the PA -- resulting in burnout. In medicine, healthcare specific factors impact burnout. Those factors include the health of the patient, the healthcare provider, the healthcare environment, and the organization of health care. According to Holmes and Fasser (1993), Physician Assistants had significant increased stress from caring to the emotional needs of patients, dealing with difficult patients, poor opportunities for job advancement, feeling ultimately responsible for patient outcomes, staying abreast of new technologies, adequate reciprocity and meeting the expectations of managed care. To understand what impacts burnout in PA's, a theoretical model of burnout for Physician Assistants must be developed. Constructing a theoretical model of burnout for Physician Assistants means developing a multi-dimensional model that identifies stressors which might impact burnout in this healthcare profession. To maintain the quality of the PA profession, the identification of factors that impact burnout and the recognition of burnout must be implemented into the medical education curriculum.



### *Historical Background*

The first articles on burnout began to emerge in the 1970's. These articles provided the initial description of the burnout phenomenon. Freudenberger, the originator of the burnout syndrome and a psychiatrist in an alternative healthcare agency, noted that many of the volunteers of the agency were experiencing gradual emotional depletion and loss of motivation and commitment (Schaufeli et al., 1993b). To denote this observance of exhaustion, Freudenberger used a term colloquially to denote chronic drug abuse: *Burnout* (Schaufeli et al., 1993b). Maslach, a social psychology researcher, was investigating ways in which people cope with emotional arousal as an important implication for people's professional identity and job behavior (Schaufeli et al., 1993b). Later, this syndrome became known as "burnout".

"Burnout is a unique multi-dimensional chronic stress reaction that goes beyond the experience of mere exhaustion" (Schaufeli & Enzmann, 1998). The integrative model of burnout is described by Maslach and Jackson (1986) as a "syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment which may occur in individuals who do 'people work' of some kind (p.1). Emotional Exhaustion refers to the depletion or draining of emotional resources and the development of negative, callous and cynical attitudes toward the recipients of one's services. Likewise, reduced personal accomplishment is the tendency to evaluate one's work with recipients negatively (Maslach & Jackson, 1986). Finally, Depersonalization is a coping response that causes detachment and blunts feelings, thus preventing addressing others' needs. The validated instrument used to measure burnout is the Maslach Burnout Inventory (MBI).

“Burnout is a response to overload” (Maslach et al., 2001). Quantitative job demands defined as too much work for the available time and qualitative job demands focus primarily on role ambiguity which shows a moderate to high correlation with burnout (Maslach et al., 2001). Role conflict occurs when demands on the job have to be met; and role ambiguity occurs when there is a lack of adequate information to do the job well (Maslach et al., 2001). In fact, burnout can occur shortly after a person enters a job (Muldary, 1983). Burnout may claim human services professionals within less than two years after they begin a position. Freudenberger (1975) suggested that an individual may burnout in a short period of time, recover, and then burnout again.

Cherniss’s (1980a, 1980b) work examined people in “helping professions” in the public sector. He observed “the interaction of individual helpers: expectations and goals, their notions of a helping relationship, the institutional constraints of working in and for large bureaucracies and the public’s perception of the nature of such work entitled the ‘professional mystique’” (Cherniss 1980a, p.249-256). Cherniss (1980) hypothesized that burnout is a process that occurs in three general stages: impinging job stress, response, and psychological accommodation. Edelwich and Brodsky (1980) hypothesized that burnout occurs in four sequential stages: enthusiasm, stagnation, frustration, and apathy. In either number of stages, individuals undergo basic transformations during the development of burnout and become qualitatively different (Muldary, 1983).

Burnout reflects a process that takes place in a variety of ways, proceeds at different rates and depends on the nature of each individual’s relationship with the total experiential world. Schaufeli et al. (1993) contend that the etiology of burnout relates to the nature of the

job and the stressors associated with the job. Burnout then is a prolonged response to chronic job stressors. Researchers also view burnout as an intense and unique form of job related strain. Burnout is a response to overload when there is a mismatch between the job and the individual performing the job. During the development of burnout, individuals will undergo basic transformation and become qualitatively different (Muldary, 1983). When the demands of the job must be met, role conflict occurs. On the other hand, role ambiguity occurs when there is a lack of adequate information to do the job well (Maslach et al., 2001). “One can then assume that there will be considerable individual variability in response to job stress, and in the appearance of the burnout syndrome” (Muldary, 1983, p.4). Hence, this notion would explain why one healthcare group may or may not experience burnout levels in one domain more than another. Maslach (1978) states, “the search for causes of burnout is better directed away from identifying the bad people and toward uncovering the characteristics of the bad situations where many good people function” (Farber, 1983). This viewpoint emphasizes the central role of work-related stresses within organizational structures (Farber, 1983).

“Burnout first emerged as a social problem, not as a scholarly construct” (Schaufeli et al., 1993, p.2). The concept was shaped by pragmatic rather than academic concerns (Schaufeli et al., 1993). Burnout developed in three phases. The first phase is termed the *pioneering phase* of conceptual development. The focus was the clinical description of burnout. Second, the emphasis of the *empirical phase* of burnout shifted to systematic research and assessment of the phenomenon. Since the second phase, there has been

increasing theoretical development to integrate the evolving notion of burnout with other conceptual frameworks (Schaufeli et al., 1993).

### *Conceptual Models of Burnout*

Cherniss's *Model of Burnout* is one of the earliest theories of the developmental process of burnout. He suggested that aspects of the work environment and characteristics of the individual can both function as sources of stress (Aiken & Cooper, 2001). The limitation of his model is that the all inclusiveness of potential variables make the model too broad for burnout to be a separate construct (Cooper et al., 2001). Golembiewski's Phase Model is widely known as the theoretical development of burnout. Glombiewski adopted the *Three Construct Theory* of Maslach, but claimed depersonalization was the first, not second, construct in the model. The theory concludes that a certain degree of detachment is associated with a profession and the impact of specific stressors on the individual lead to depersonalization. However, since the individual may not proceed through all eight phases of the model, the model is inconsistent.

Maslach Burnout Inventory is considered the "gold standard" consisting of three constructs: *emotional exhaustion, depersonalization and a lack of personal accomplishment*. Maslach and colleagues argue that emotional exhaustion is the key component of burnout and should be the first construct in the model. The constructs in the model were correlates with each other. As a result, burnout is no longer recognized as a one-dimensional model, but instead, as a multidimensional model. Constructing a model of burnout for physician assistants will consist of constructing a multidimensional model that reflects the impact of identified stressors that cause this mismatch between the provider and the area of medicine.

The framework of the model must encompass changes in job structure to identify new stressors that impact the three constructs of burnout. The model must also identify the presence or lack of social support. The combination of each of these factors must allow a visible point of feedback permitting reassessment and correction of the job versus person mismatch.

### *Three Dimensions of Burnout*

*Emotional Exhaustion* is the central quality of burnout and the most “obvious manifestation” of burnout (Maslach et al., 2001). Emotional Exhaustion refers to the depletion or draining of emotional resources. It includes feelings of apathy, helplessness, hopelessness, dissatisfaction and entrapment. The burned-out individual experiences feelings of emotional depletion and often feels irritable and nervous (Pines et al., 1981). Lief and Fox (1963) noted that health professionals repeatedly encounter highly emotional situations in their daily work (Muldary, 1983). “Exploring, examining, and cutting into the human body; dealing with fears, anger, sense of helplessness, and despair of patients, meeting emergency situations; accepting the limitations of medical sciences in dealing with chronic or incurable disease; being confronted with death itself all lead to emotional exhaustion in healthcare professionals” (Muldary, 1983, p. 58). As researchers discovered, health professionals and others who serve in human service positions, can experience a range of disturbing emotions.

*Depersonalization* is directly related to self-esteem and most characteristic of persons with low self-esteem (Schaufeli et al., 1993b). Health professionals who strongly desire reciprocity in the relationships with their patients and who are responsive to patients’ needs are not in danger of developing feelings of depersonalization. Maslach and Leiter (1988)

state that depersonalization is essentially a “coping response that is called upon when other forms of coping (e.g. changing the demands from the job) have not succeeded in alleviating the amount of strain experienced” (Cooper et al., 2001). Researchers also believe that depersonalization mediates the relationship between emotional exhaustion and reduced personal accomplishment. “Instead of reaching a mid-point where emotional detachment is counter-balanced by empathetic concern, many health professionals progress toward an emotional numbness in which feelings are simply turned off” (Muldary, 1983). The health professional who becomes indifferent to the needs and care of the patient eventually leaves the profession. Blunted feelings and concern prevent adequate patient care.

*Lack of Personal Accomplishment* is the tendency to evaluate one’s work with recipients negatively (Cooper et al., 2001). This construct exists among individuals with low self-esteem. Providers have a gnawing sense of inadequacy about their relationship with recipients resulting in feelings of failure (Muldary, 1983).

#### Literature Related to the Impact of Stress on Burnout

##### *Correlates of Burnout*

Cooper et al. (2001) state there is difficulty in differentiating the stress variable as predictors (or causes) of burnout. For this reason, the variables associated with burnout will be referred to as correlates. Cordes and Dougherty (1993) grouped correlates of burnout into three major categories: individual (or personal), job (environment of the job), and organizational (Cooper et al.). Two other correlates should be included: demographics and social support. For the purpose of this research, individual, environmental, and organizational correlates will be examined under the Areas of Worklife survey. Maslach and

Leiter recognized that a mismatch of employees' expectations or aspirations with the reality of the work environment promoted burnout.

### *Individual Correlates*

Stressors have the potential to affect an individual's well-being; and if they persist they become built into the organization of people's daily existence (Pearlin et al., 1981). Leiter (1990, 1991, and 1992) studied control coping patterns that proved to be negatively correlated to burnout levels; whereas, escapist coping patterns showed a positive association with burnout levels.

In relation to burnout, these correlates focus primarily on role demands; including role ambiguity, role conflict, and role overload. Schaubrock et al. (1989) stated, "Role conflict reflects incompatible demands on the person (within a single role or between multiple roles occupied by the individual) which can induce negative emotional reactions due to perceived inability to be effective on the job" (Cooper et al., 2001, p. 38). Role ambiguity is the unpredictability of the consequences of one's role performance. Role overload reflects the number of different roles a person has to fulfill; which leads to excessive demands on an individual's time and may create uncertainty about his or her ability to perform these roles adequately. Studies show a positive correlation between these correlates and burnout, especially emotional exhaustion and depersonalization (Burke & Richardson, 1993).

### *Environmental (Job Related)/Organizational Correlates*

Today, medicine is viewed as an organizational system operationalized as a business. Medicine is being driven by issues related to access, cost, and quality requirements.

Systematic and persistent quality of work environments play a definitive role in the relationships people have at work. Environmental correlates affect work performance. Maslach and Leiter recognized that a mismatch of employees' expectations or aspirations with the reality of the work environment promoted burnout. Workload, Control, Reward, Community, Fairness, and Values impact role ambiguity, role conflict, and role overload. Leiter and Maslach (1998) found that interpersonal contact with clients, especially those with problems, is a potential source of burnout.

### *Demographic Correlates*

Gender studies have revealed that females may exhibit higher levels of burnout than males. The findings are compounded by the gender of the composition of the sample. Pines, Aronson, and Kafry (1981) suggested that women experience higher levels of burnout due to greater overload and inter-role conflict (e.g. work and family). Studies on age and burnout have shown that younger human service professionals may be more prone to burnout than older human service professionals (Schaufeli & Buunk, 1996). As with gender, the results must be examined by observing the composite of the sample. Personality issues have shown to be inconclusive. On the other hand, the attitudinal variables have demonstrated some correlation with the constructs of burnout.

### *Social Support*

Schaufeli and Buunk (1996) demonstrated the importance of a social environment in the workplace to determine the potential for burnout. Eastburg, Williamson, Grosuch, and Ridley (1994) determined that support from supervisors and peer cohesion contributed to a



decrease in emotional exhaustion. Lastly, Hobfoll and Freedy's (1993) Conservation of Resource (COR) theory suggests that support is a resource that enables individuals to deal with stressors in their work environment.

Areas of Worklife correlates (individual, environmental/job, organizational) significantly impact burnout levels. "For effective and long-term alleviation of burnout, fundamental changes in job conditions and organizational environments may be required to reduce the exhaustion encountered by individuals and to promote an expectancy that their efforts and performance will be successful and rewarded" (Cooper et al., 2001). The key to the etiology of burnout is theory-driven research. Prior to constructing research that examines a theoretical model of burnout, the historical methodological problems must be reviewed.

#### Problems in the Methodological Perspective of Burnout

The most serious methodological objection that can be raised against much of burnout research is the issue of causality. Many experiments and longitudinal studies allow hypotheses about causality to be tested instead of preferred cross-sectional studies. There is an urgent need for research that tests complex causal models of stress and move away from simplistic investigations of bivariate stress relationships. "Longitudinal approaches guarantee that the hypothesized cause-effect relationship satisfies the temporal order" (Guglielmi & Tatrow, 1998, p.89).

Both quantitative and qualitative studies have examined the relationship between stressors and burnout as one-dimensional. Prior studies looked at burnout as the relationship between two variables: stressor and burnout using bivariate correlational analysis. "The

predilection to describe burnout was in the assumption of a single, one-dimensional phenomenon (Freudenberger and Richelson, 1980; Pines and Aronson, 1988) reflected in the commonly expressed desire to be able to assess burnout with a measure that is short and produces a single score – a clearly defined cut-off point” (as cited in Schaufeli, et al., 1993, p.26). Empirical evidence provides support for a multifaceted conception of burnout rather than for a single, unitary one (Schaufeli, et al.).

Recent studies reveal that burnout is multi-dimensional consisting of three distinct components: emotional exhaustion, depersonalization, and reduced personal accomplishment impacted by different variables of stress. Lee and Ashforth (1996) found in their Meta-Correlations among the Burnout Dimensions that emotional exhaustion was strongly related to depersonalization ( $r=.64$ ); where as both dimensions were moderately negatively related to personal accomplishment ( $r=.33$  for emotional exhaustion and  $r = -.36$  for depersonalization). The individually corrected weighted mean correlation among the three dimensions for the intensity response format proved similar in magnitude. According to these studies, burnout is a complex multidimensional model that should articulate the interrelations among the three components rather than considering the components in isolation. Although the strength in correlation manifests among the burnout dimensions, there is still controversy regarding their sequential ordering (Lee & Ashforth, 1996). The multidimensional model is an important intervention reflecting different psychological reactions that serve as either a function of individual factors or situational factors (Schaufeli, et al., 1993).

Job burnout is a prolonged response to chronic interpersonal stressors on the job. Unlike one-dimensional models of stress, burnout is a multi-dimensional theory

conceptualizing burnout in terms of three score components (or constructs): emotional exhaustion, depersonalization, and lack of personal accomplishment. The theoretical foundation in burnout did not begin with a clearly defined theoretical model. Continued research addressing methodological problems provides the conceptualization of the burnout phenomena. New and developing methodological problems long recognized by researchers in the phenomena of burnout focus on two areas. The first area focuses on the contrasting, or opposite, state from burnout called *job engagement*. The second development involves a new framework for conceptualizing the key causal factors of burnout.

Burnout is one end of a continuum in the relationship individuals establish with their jobs that is in direct contrast to the energetic, involved, and effective state of engagement at work. Recently, the multidimensional theory of burnout has been expanded to engagement that falls at the other end of the continuum. Although the burnout concept describes a syndrome of distress that is precipitated by problems at work, engagement describes the positive state of fulfillment. Hence, a multidimensional conceptualization of burnout is necessary to understand the concept of a burnout-to-engagement continuum as well as causal factors of burnout. “The continuum enhances our understanding of how the organizational context of work can affect workers’ well-being” (Cooper, 1998, p.73). Strategies to promote engagement may be just as important for reduction in the risk or prevention of burnout.

Cross-sectional research provides information that conceptualizes burnout. However, most studies lack a theoretical framework. Developing a theoretical model/framework of burnout has been difficult. The various methodologies of burnout make developing one theoretical framework difficult. Shirom (1989) contended that burnout was a combination of

physical fatigue, emotional exhaustion, cognitive weariness, and the depletion of energy sources. From the beginning, the concept of burnout has been criticized for being descriptive, anecdotal, and vaguely defined (Farber, 1983a, Freudenberger, 1983a, Maslach, 1982c, & Meter, 1983). The argument is the etiology and distinguishing aspect of burnout is not specified. Initially, there was difficulty in distinguishing burnout from depression (Firth, McIntee, & McKeown, 1985; Meier, 1984). Many have debated using, “depression” as an indicator of burnout. Moreover, the relationship between burnout and depression has been debated. Hallsten proposed that burnout was a “special kind of depression” (Schaufeli, et al., 1993). On the other hand, Freudenberger maintained that there was a distinction between burnout and depression. He argued that burnout usually occurs in the context of anger, but that depression is accompanied by guilt.

Pearlin et al. (1981) state that when people experience intensified strains, they become more vulnerable to burnout. Cherniss (1980) hypothesized that burnout is a process that occurs in three general stages: impinging job stress, emotional response, and psychological accommodation. Edeswith and Brodsky (1980) hypothesized that burnout occurs in four sequential stages: enthusiasm, stagnation, frustration, and apathy. The predilection to describe burnout is to assess burnout with a single score measure (Schaufeli, et al., 1993). It is easier to hypothesize one dimension rather than several dimensions. Pines model consisted of two feedback loops. A positive loop represents expectations and experiences that match achievement and existential significance. A negative loop represents expectations that are frustrating, failure occurs, and burnout develops (Schaufeli & Enzmann, 1998, p.111).

In 1982, Brickman and associates “used the term *medical model* to describe a set of assumptions in which people are held not responsible for either their problems or the solutions to those problems” (Muldary, 1983, p.112). Further, individuals are respondents to environmental stimuli beyond their control. This model allows people to accept help without feeling responsible for their weakness. The theory’s basis is that health professionals who believe they can manage or reverse the effects of burnout, and are likely to maintain confidence and competence in the face of chronic stress, reduce their propensity for burnout. Nevertheless, the problem with this model is that it may cause the individual to become dependent on others for solutions (Muldary 1983, p.112).

The universal, most widely accepted model of burnout is that of Maslach. The Maslach Burnout Inventory is a three-dimensional model comprising three constructs: emotional exhaustion, depersonalization and lack of (reduced) personal accomplishment. In 1997, Maslach and Leiter expanded their view on burnout. They viewed burnout as occurring due to a mismatch between the job and the employee and is independent of the content of the job (Maslach & Leiter, 1997, p.17).

Schaufeli and Enzmann (1998) also defined the problem areas in research studies of stress and burnout that need to be identified. Empirical efforts to isolate the most important determinants and consequences of stress and burnout as well as the importance of causal relationships have appeared in the research with frequency. Studies have focused on the sources of stress and dissatisfaction that may produce burnout. Research in this area should focus on theory-based investigations that test measurements of stress, burnout, and social support with sophisticated research designs.

## Summarized Problems in the Methodological Perspective of Burnout

Schaufeli and Enzmann (1998) identified five problems in the methodological perspective of burnout.

### *Self Report*

Self-report information is widely used in the assessment of the predictor (job stress or burnout). The known limitations of self-report measures (common method variance, predictor-criterion dependence, and retrospective bias) present research with a difficult dilemma. The knowledge gathered by questionnaires or interviews is widely acknowledged, and reliance on this methodology is unavoidable due to the key role that cognitive appraisal plays in current definitions of stress (cited in Lazarus & Folkman, 1984). “If a stressor is whatever one perceives as stressful, and if what is stressful for one may not be for another, it follows that self-report becomes the only method that allows access into the subjective experience” (Guglielmi & Tatrow, 1998, p.83). Schaufeli and Enzmann (1998) describe self-reports as the “triviality trap” (p.73). Data are usually and exclusively based on self-reports falling into the “triviality trap,” especially when the self-report measures are used with overlapping item content (Schaufeli & Enzmann, 1998). To avoid the “triviality trap” (when workload is operationalized to correlate with emotional exhaustion), objective measures should be used to include performance appraisals, registered absenteeism, or physiological parameters.

The most effective way out of the single-method trap is the adoption of a multi-method approach. By defining burnout as one type of stress reaction, and based on the variety of variables significantly related to burnout, the implication is for a macro view of the

phenomenon. Methodologies used should include measures other than self-report, such as indices of job performance, turnover, and absenteeism rates. However, most self-report indicators of burnout do not have proof of these measures.

#### *Correlations Between Variables Measured at One Point in Time*

“Often correlations between variables measured at one point in time are used for causal inferences about the antecedents and/or consequences of burnout” (Schaufeli & Enzmann, 1998, p. 74). Causal effects can only be observed after a specified interval of time, so the influence on the cause may not be apparent. Therefore, deductive reasoning resulting from causal effects cannot be grounded in a theoretical framework (Schaufeli & Enzmann, 1998).

According to Beehr et al. (2000), self-report measures of chronic stressors do not provide respondents with a limited time reference when asked to describe their jobs. Despite the focus on chronic stressors, there have also been studies on shorter-term stressors referred to as events or acute stressors. Chronic stressors are usually conceptualized and measured generically (i.e., the same for all jobs), while measures of events or acute stressors tend to be more time-limited in their presentation as stimuli in the work environment. Their effects (strains) might last longer. There are four classifications of stressors: chronic generic, chronic job-specific, acute generic, and acute job-specific. Beehr, Jex, Stacy, and Murray (2000) state that the majority of studies focus only on one type of stressor. Differences between acute and chronic stressors may exist in their relation with individual strain and performance. Since they are salient to employees in a particular job, stressors that are more job-specific (chronic stressors) may exist in their relation with individual strains and

performance (Beehr et al., 2000). Studies looked at the link between stressors and job performance, but the results were weak or inconsistent.

When considering stressors in burnout research, the relation between stress and performance should be considered for two reasons: First, performance should be a criterion in stress studies. The literature has focused on physical, not psychosocial stressors, and thus may not generalize to white-collar workers. Secondly, job performance is multi-faceted; therefore, different stressors may have different effects, depending on the performance criterion measure employed. This fact is especially true in medicine. Surgical physician assistants have different stressors from physician assistants who are general practitioners. In a study done by Beehr et al. (2000), the findings suggested that future research should consider developing occupation-specific, chronic stressor measures to go along with the other popular generic measures. Acute events may occur with relatively great frequency causing the event to become a part of the work environment. Stressors can become stress-producing events and conditions, either short-term or long term, and this presents potential methodological problems in stress research (Beehr & McGrath, 1996).

Research indicates that when researchers use self-report to measure both criteria and predictor variables, common method variance will inflate the correlation between two variables. There is a conceptual dependence or overlap in the way the predictor and criterion variables are operationalized; thus causing the correlation to be inflated more.

#### *Ad Hoc Theories.*

Schaufeli and Enzmann (1998) found that traditional research is generally based on ad hoc theories that only take into account direct accounts (i.e. job demands) despite the fact



that burnout is much more complex, “assuming moderating and mediating factors with direct, indirect, reciprocal, immediate, or delayed effects” (p.75). Ad hoc theories re-emphasize the need for a multidimensional theory that illustrates causal relations. The following are several ad hoc theories as they relate to burnout.

*Burnout is Viewed as a Failure to Retain One’s Idealized Self-Image.*

Burnout can be high when people lack a sense of control over the care they provide (Christina Maslach, 1982). Burnout, then, is considered a lack of reciprocity. In medicine, high patient demands will increase the chance of imbalance in the doctor-patient relationship. “The reason for this is that higher demands by patients require higher investments by doctors” (Bakker et al., 2000). Hence, the lack of reciprocity in patient demands mediates the impact of emotional exhaustion.

*Burnout Can Be a Loss of Resources.*

Divorce, unemployment, failed promotion despite hard work, poor salaries, lack of job mobility, involuntary transfers, public pressure, and budget cuts can lead to burnout. Stress may result from little control over resource allocation for education. Johnson and Hall (1996) and Kristensen (1996) show there is evidence for within-occupation indifference in job pressure and decision latitude (cited in Guflielmi & Tatrow, 1998). In what appears to be a homogeneous population of college professors, the demand-control model suggests testable predictions (about the differential impact of demand and decision latitude on tenured and untenured faculty) cause stressors leading to burnout. Ayala Pines (1991) suggested,

“burnout can be understood at an instance in which one’s important work-related goals are frustrated and blocked by circumstances that cause failure” (cited in Densten, 2001, p. 834).

*Burnout Is Viewed as Progressive Disillusionment.*

The MBI defines the lack of personal accomplishment resulting from a lack of feelings regarding both job competence and achievements in one’s work (Maslach, 1999). This feeling is conceptually linked to phenomena termed by Bandura (1977) as “self-inefficacy” and “learned helplessness” (Seligman, 1975, cited in Densten, 2001). Self-inefficacy and learned helplessness are criteria fit into the category burnout as progressive disillusionment. Self-inefficacy refers to a lack of ability, while learned helplessness refers to the expectations that successful achievement is unlikely. Edelwich and Brodsky (1980) formulated a four-stage model. The basic tenet is that the initial idealistic expectations of the individual are frustrated by everyday reality, lack of criteria for measuring accomplishment, low pay, poor career perspectives, inadequate institutional support, and low social status (cited in Schaufeli & Enzmann, 1998). Learned helplessness results in the frustration stage when feelings of powerlessness occur. Self-inefficiency occurs in the apathy stage when the professional withdraws from the job physically and mentally.

*Burnout Can Be a Discrepancy Between Surface and Latent Functions of Organizations.*

There is perceived imbalance between organizational demands and individual response capabilities. These phenomena can result in the construct of burnout known as depersonalization. A lack of research exists regarding managerial or supervisory level positions in which individuals are role models.

“Theoretical models of burnout are complex with moderating and mediating factors, with direct, indirect, reciprocal, immediate, or delayed effects” (Schaufeli & Enzmann, 1998). A shared theoretical framework guides the choice of constructs and their operationalization resulting in urgently needed consistency in measurement practices.

*Burnout Research Requires Adequate Sampling.*

According to Schaufeli and Enzmann (1998) researchers investigate convenient samples rather than random and representative samples. Adequate sampling is necessary in order to generalize research findings. Usually sample populations will include the “healthy worker effect” (exclusively healthy working employees). Study populations may reflect those who are burning out versus those who are already in a state of burnout.

Guglielmi and Tatrow (1998) studied reverse causation. Instead of health problems resulting from stress and burnout, stress and burnout can present in individuals who have known health problems, referred to as *reverse causation*. Studies suggest that individuals who suffer from health problems are more likely than their healthier counterparts to overestimate their stress levels. Retrospective contamination, a type of recall bias, is a major threat to the validity of self-report measures in retrospective research -- a methodology that may be endemic in the literature (1998).

In a study of teacher stress, Guglielmi and Tatrow (1998) named selection bias as a variable. Selection bias occurs in questionnaire studies in which researchers only report the response rates. The researchers reported that individuals who experience high levels of stress and burnout are more likely to return the questionnaires since the research focus was salient

to them. Alternatively, those with high levels of stress or burnout might have been less likely to complete the questionnaire.

The literature sites convenient sampling in a study conducted on emergency medicine physician assistants (Bell et al., 2002). However, there has not been a random sample of PA's in all specialties of medicine. Adequate random sampling is necessary in order to generalize research findings beyond a specified specialty of PA's. An adequate random sample is necessary to ensure a significant response rate. Random sampling and a high quantitative response produce better internal validity.

#### *Response Rates Are Often Less Than Fifty Percent.*

Internal validity suffers impairment due to the self-selection of individuals who may obscure the importance of particular factors. As stated above, employees with high levels of stress and burnout may be less likely to fill out the questionnaire.

#### Current Research

Recent studies have concluded that a statistical tool of multiple regressions should be used to examine predictive relationships between variables. Multiple regression analysis augments the study of stressors and the effect on burnout as an analytical tool to demonstrate whether there is a significant relationship or significant amount of variance between the criterion variables (each construct of burnout) and the multiple predictor variables (stressors). Schaufeli and Enzmann (1998) present another methodological problem: "The multiple regression approach to control for the initial burnout status may be an inappropriate method to study predictors of change, especially if the stability of scores is high" (p.95).

The Maslach Burnout Inventory is the most widely used burnout instrument enabling measurement of multi-dimensional aspects of burnout. In this Inventory, burnout is not depression, dissatisfaction, tension, conflict, pressure nor particularly stress. As stated earlier, there is a distinction between burnout and stress, but there is also an interrelationship. Specific stressors (e.g., role conflict, ambiguity, and over stimulation) cause stress in the short term, while long-term these stressors have an accumulating effect which causes burnout. According to Densten (2001), there are two methodological problems with the MBI as identified in the literature. Densten describes three propositions to explain the problems in current methodology as they relate to the components of burnout. First, there is need for clarification of propositions that help clarify and differentiate any conceptually related or overlapping constructs. Secondly, few studies have investigated burnout at a managerial or supervisory level. The lack of research limits our understanding about emotional exhaustion, depersonalization, and reduced personal accomplishment at these critical positions or levels within an organization.

#### *Emotional Exhaustion (Proposition I)*

Emotional exhaustion consists of two aspects or factors, namely psychology and somatic strain. Burnout researchers (Buunk and Schaufeli, 1993; Cox et al., 1991-unpublished manuscript; Leiter, 1993; Shirom, 1989) considered the MBI factor of emotional exhaustion to be the central core symptom of burnout and the robust factor of burnout. Emotional exhaustion results from excessive stimulation without sufficient means for regulation and relates to the physical exhaustion associated with stress. Psychological and somatic-strain have an overlapping relationship in emotional exhaustion. The problem is that

current burnout methodology does not determine or clarify whether psychological and somatic strain components exist separately.

### *Reduced Personal Accomplishment (Proposition 2)*

Personal accomplishment consists of two aspects or factors, namely self and others. Leiter (1993) states personal accomplishment measures skill utilization, control, and coping with burnout (cited in Densten, 2001). Several researchers do not believe that a lack of personal accomplishment should be a part of the domain of burnout (Brookings et al., 1985; Gaines and Jermier, 1983; Jayaraine & Chess, 1984). Pines (1993) suggested, “burnout can be understood as an instance in which one’s important work-related goals are frustrated and blocked by circumstances that cause failure” (cited in Densten, 2001, p. 834).

Within the MBI, the lack of personal accomplishment is defined as a lack of feelings regarding both job competence and achievement in one’s work and is conceptually related to several phenomena such as self-inefficacy (Bandura, 1977) and learned helplessness (Seligman, 1975). Both phenomena are important to burnout. Self-inefficacy refers to a lack of ability, while learned helplessness refers to the expectation that successful achievement is unlikely. In burnout, self-inefficacy relates to personal or self-views. Learned helplessness should relate to external views from others. Both phenomena in this one construct raise concerns of content validity of personal accomplishment.

### *Depersonalization (Proposition 3)*

Historically, depersonalization has been viewed as a way of coping with exhaustion when workers attempt to gain emotional distance from their service recipients. Schaufeli et

al. (1993) asserted that depersonalization was an unstable dimension of burnout (cited in Densten, 2001). In addition, Iwanicki and Schwab (1981) concluded that there are two components of depersonalization--job-related and student-related. Further, depersonalization consists of two aspects or factors, namely, job and personal.

Densten used propositions to help differentiate and clarify any conceptually related or overlapping constructs in defending the validity of the MBI. In this study, one problem proposed in the methodology is the need for further confirmatory factor analysis to provide an appropriate vehicle to test the overall structural validity. The second problem in methodology presented in Densten's study is the need for an investigation of burnout at the managerial or supervisory level. The lack of research limits the understanding of emotional exhaustion, depersonalization, and the lack of personal accomplishment at these critical positions or levels in an organization. Individuals play important influential roles in their respective organizations. For instance, the workers' feelings of distress and discontent disseminate through the process of emotional contagion. Burnout in these individuals can also result in labeling them as incompetent or inept (cited in Shirom, 1989).

Clarifying the conceptual and empirical pedigree of each MBI burnout factor creates a more sensitive instrument in overcoming previous limitations by incorporating psychological and somatic strain (Densten, 2001, p.844). Further methodological research must address the expansion of the factor structure in longitudinal studies to overcome the limitations of cross-sectional studies. These studies must begin to look at the stressors that impact burnout. These stressors that impact burnout began to emerge with the development of technology forcing workplace changes which led to high levels of job stress (cited in

Shirom, 1989). Shirom (1989) states the burnout stress syndrome is a consequence of high levels of job stress, personal frustration, and inadequate coping skills which have significant personal, organizational, and social costs. Stress may not be the same for all individuals and may vary in different occupations. The key is to define and identify stress.

The concept of stress is not a new concept. Our ancestors experienced stress from disease, labor, and fear of the unknown. Through the years, professional literature has confused or equated stress and burnout. Stress and burnout are not synonymous; but are separate constructs. The constructs may be similar but not identical. According to Cedoline (1982), “*Job Burnout* is both an occupational hazard and a phenomenon induced by stress” (p.17).

### Stress

The difficulty in researching stress is that wide discrepancies exist in the way stress is defined and operationalized. In the past, the term stress has defined negative feelings and reactions that can threaten an individual’s well being. According to Cox (1978), the definition of stress is a stimulus, a response, or the result of an interaction between the two, resulting in an imbalance between the person and the environment. Lazarus and Lanier (1978) suggested that researchers think of stress as being relational or as a transaction between the individual and the environment. In this sense, transaction allows the researcher to identify processes that link the individual to the environment (Cooper, et al., 2001, p.3). The literature further defines stress as the ongoing process that involves the transaction of an individual with his or her environment in which the individual must appraise that environment to find mechanisms for coping.



Wide discrepancies exist in the definition of stress. Cox (1993) theorized that stress is rooted in an ongoing process that involved individuals interacting with their environment, and making appraisals of that interaction with the environment. According to Cherniss (1980), “the level of stress is a function of the perceived discrepancy between resource and demand, and the perceived degree of harm that would occur if the demand were not met” (p.45). Stress, then, becomes the gap between environmental demand and the person’s capability to respond, possibly causing a disruption of the natural homeostatic process of an organism that threatens its viability.

#### *Development of Models of Stress*

Historically, there have been many theoretical models of stress. Cooper, Dewe, and O’Driscoll (2001) considered critical issues in the debate over appropriate methodologies and examined arguments that have been proposed for broadening the approach taken in job stress research to include a larger range of assessment procedures and to adopt convergent methodologies. Researchers believe that stress and stressors develop from three distinct sources. One source of stress is within the individual; this source varies in degree in terms of tolerance for stress. The second source of stress is the socio-cultural environment. Social and cultural changes produce stressors for individuals and for organizations as they attempt to adapt to these changes. A third source of stress is the relationship between the individual and the organization that structures the work role (Farber, 1983). Beehr (1995) and Kahn and Byosiere (1992) found that “Work stressors are environmental factors at work that lead to individual strains – aversive and potentially harmful reactions of the individual (Beehr et al. 2000, p.391). Established job stressors that have been researched are considered

“chronic” (e.g. role conflict and role ambiguity). For this reason, the work of three researchers who developed models to illustrate the evaluation of stress on psychological and physiological health will be examined. These works include Pearlin – *The Sociological Model*; Seyle – *Biological Model*; and Holmes and Rahe – *Bio-Social Model*. Stressors are the events or properties of events (stimuli) encountered by individuals. Strain is the individual’s psychological, physical, and behavioral responses to stressors (Cooper et al., 2001).

Seyle (Biological Model) believed that the body goes through three stages in response to a stressor. The first stage, *Alarm*, is a brief period of high arousal of the sympathetic nervous system readying the body for vigorous activity. The second stage, *Resistance*, occurs when a stressor lasts longer than the body can maintain a high state of arousal then enters this stage of prolonged but moderate arousal. Finally, *Exhaustion* occurs when the stress becomes even more intense and long lasting. Prolonged and severe stress weakens the immune system and makes an individual vulnerable to stress.

Seyle (1976) emphasized that stress reactions are not automatically or necessarily bad. Variability, intolerance levels, and expectations may account for the difference when two individuals exposed to the same situation react differently. In some situations, including those of healthcare workers, stress may present as both negative and positive. For instance, a certain amount of stress is required for a high energy level task. In both training and in practice, healthcare providers are conditioned to expect stress “as a part of the job.” Moreover, the medical community has been associated with unquestioned social esteem, and

this high esteem, along with the high energy required to perform, may overshadow the effects of long exposures to stress.

Holmes and Rahe developed the bio-social model that uses a Social Readjustment Rating Scale (SRRS) consisting of 43 events to delineate social readjustments of life events. They defined stress in terms of the results from major life changes and the pressures to adapt to change in the social environment. The source of the stress can come from any social situation. Like the Sociological Model, this model incorporates social factors related to stress; but unlike this model, research supports a relationship to health. Holmes and Rahe recognize, as did Pearlin, that stress is not the same in different situations, unlike Seyle, who treated good and bad stressors the same. Holmes and Rahe considered only major life changes, whereas Pearlin considered eventful stressors and chronic stressors.

The historical section will focus on Pearlin's "Sociological Model" providing a framework in which to conceptualize stress, analyze the factors that affect stress, examine the impact of moderators (social support/resources) on stress, and investigate the outcomes based on the affect on an indicator. Pearlin's model, is referred to as an on-going process, described by two types of stressors: *eventful stressors* and *chronic stressors*. Eventful stressors describe the occurrence of discrete events and the presence of relatively continuous problems. These stressors can be scheduled events that overlap with those considered desirable, and are built into the life cycle. Likewise, unscheduled events may be highly disruptive. "Events are not only stressors to which people are exposed . . . they are stressors that tend to persist" (Pearlin, 1981, p.4). Chronic stressors can arise from stable circumstances of systems of inequality, such as class, institutionalized social roles, and the

activities and encounters within them (Pearlin, 1981, p.7). There are several types of chronic stressors: status strains, role strains, ambient contextual strains, and quotidian logistical strains. For the most part, status strains, role strains, and contextual strains impact the healthcare worker.

Status strains are problems and hardships that occur because of an individual's placement in stratified social structures. According to Pearlin (1981) "placement, in and by itself, may also act as a stressor directly leading to stress outcomes" (p.6). Status strain results from location in a hierarchy. The "professional mystique" that places the healthcare provider at an elevated public level, also produces stressors for that professional as he or she seeks to perform consistently as that caring and compassionate professional.

Role strain has the largest impact on healthcare. Role strain refers to enduring stressors that arise in the course of incumbency in major institutional roles, family, and occupational roles (Pearlin, 1983). Merton (1968) noted that status placement and role enactment might be closely related. Moreover, demanding, obnoxious patients cause health professionals to detach themselves from what is known as the unappreciative complaining patient (Muldary, 1983). In short, professionals who find success in one role find it comes at the expense of performance in the other role (Pearlin et al., 1981). Equally important, Pearlin (1981) noted, the "potential failure to satisfy the intricate reciprocities and expectations that develop in role sets can be the basis of stressful interpersonal conflicts" (p. 11). Accordingly, these types of stressors not only impinge on the individual, but also on the relationship out of which conflict has developed. Conflicts may result between members of the same role set, and role strains may result from intra-personal conflicts between incompatible demands.

Contextual strains may have an indirect impact on healthcare workers. Contextual strains arise from interactions of individuals with their proximal environments, such as the community and neighborhood (Pearlin et al., 1981). When analyzing types and range of stressors, researchers must take into consideration the environment and networks in which healthcare workers function. In the 1970's, McGrath (1987) urged researchers to investigate stress using theoretical models to reflect the sequence of events in stress transactions and their interrelationships. Research generally uses an interactional framework to study and assess work stress. Nonetheless, researchers have accepted the transactional nature of stress at the theoretical level, but the empirical research has predominantly been conducted from an interactional perspective (Cooper et al., 2001).

#### *Theoretical Models of Stress*

Theoretical models for investigating stress have included McGrath's (1976) *Stress Cycle Model*; the *P-E Fit Model* by French, Caplan, and Van Harrison (1982); Karasek's (1979) *Job Demands-Control Model*; the *General Systems Model* by Cox and McKay (1981); and Cummings and Cooper's (1979) *Cybernetic Model* for studying stress.

The *Stress Cycle Model* proposed that a sequence of events in which the demands of an encounter and its outcomes are "linked through three processes: appraisal, decision making, and performance (Cooper et al., 2001). Appraisal relates to the interpretation of the encounter. Decision-making is the selection of the response. Performance involves the management of the encounter. In addition, there is a feedback mechanism to reappraise the encounter. The model reflects an "imbalance" or "misfit" resulting from the individual's

appraisal of events occurring when the consequences of not meeting the demands are perceived as being insufficient (Cooper et al., 2001).

The *Jobs Demands-Control Model* examines the interaction between job demands and job control (job decision latitude), and is key in explaining strain-related outcomes. Strain occurs when high job demands combine with low decision latitude, which is a perceived inability to influence tasks and procedures at work.

The *General Systems Model* of stress reflects a significant imbalance or lack of fit between an individual's perception of environmental demands and his or her ability to cope with those demands. Imbalance occurs via a five-stage sequence that includes: "the source of the demand, the perception of that demand in relation to coping resources, the recognition of changes in well-being, the evaluation of coping activities, and the feedback or reappraisal of the event" (Cooper et al., 2001, p. 18). According to Cox (1993), "think of stress as embedded in an on-going process which involves individuals interacting with their environment, making appraisals of that interaction and attempting to cope with, and sometimes failing to cope with the problems that arise" (p.18).

The *Cybernetic Model* focuses on stress cycle events that represent the continuous interaction between a person and the environment (Cummings & Cooper, 1979). The premise of this model is "(a) the detection of strain through the presence of a perceived mismatch between the person's actual and preferred states; (b) the selection of an adjustment process; (c) the implementation of the adjustment process – coping behaviors; and (d) the effect of those coping behaviors on the stressful encounter" (Cooper et al. 2001, p. 18). Thus, this model draws attention to the temporal nature of the stressful encounter.

Edwards (1991) developed the *P-E Fit Model* of stress. This model proposes that strain occurs when the relationship between the person and the environment are out of equilibrium. A lack of fit occurs between the characteristics of the person (e.g. abilities, values) and the environment (e.g. demands, supplies); this can lead to unmet individual needs or unmet job demands. Finally, unmet needs can result in strain. Although this may be true, there is little empirical evidence to support this model.

Kahn and Byosiere (1992) noted a convergence of the various frameworks of stress that entails a sequence of events. These events include “(a) the presence of a demand; (b) a set of evaluative processes in which the demand is perceived as significant and taxing in terms of its impact on individual resources, or requires something from the individual other than normal functioning; and (c) the generation of a response that typically affects the well-being of the individual” (Cooper et al., 2001, p. 16). There is very little agreement on the conceptualization and measurement of well-established constructs. In contrast, there is agreement on the following: “(a) demands and responses can now be understood only within the context of the evaluative processes that give significance and meaning to encounters; (b) it is through these processes that the individual and the environment are linked; (c) it is these processes that best express the relational-transactional nature of work stress; and (d) strain occurs when there is an imbalance between the demands of the encounter and the resources of the individual to manage those demands” (Cooper et al., 2001,p.18).

### *Problems with the Theoretical Models of Stress*

The problem with previous research models is that there is a failure to identify those elements that characterize the nature of the misfit between the person and the environment.

Stressors do occur within the environment of the organization. Not all elements of strain produce chronic stressors in and across various occupations. The problem in methodology is establishing a united framework for determining stressors. Inconsistency in defining stressors occurs because people who find success in one role find it comes at the expense of performance in the other role (Pearlin et al. 1981). Chronic stressors that cause burnout develop from the role the individual assumes in a specific environment. Consequently, agreeing on the nature of the misfit persuades researchers to focus on process issues shifting attention to the evaluative-appraisal process to determine the significance of the encounter (primary appraisal) and the impact of dealing with the encounter (secondary appraisal) (Lazarus, 1990).

Most research on job stress has depicted an interactional model of stress in which the components (stressors, strain, and coping) have been treated as static constructs and have a unidirectional effect. In contrast, Cooper et al. (2001) state that research needs to explore the ongoing interplay among these components over time and to examine the possibility of a multidirectional effect. Other researchers have drawn distinctions between *variable-based* and *person-based* methods in the examination of stress. Spicer (1997) revealed that variable-based designs formulate research questions around a set of constructs that reflect certain aspects of how individuals function, but they tend to reduce the dynamics of the stress process to “patterns of empirical relationships (between variables) that can be accommodated in multivariate statistical analysis” (cited in Cooper et al., 2001, p. 213). Person-based methods position the individual, rather than variables, as the central focus of analysis. Methodologies using this approach can yield rich descriptive data relevant to individuals and



the way that they function (Cooper et al., 2001). At the same time, Rosenthal and Rosnow (1991) refer to methodological pluralism (cited in Cooper et al. 2001). Pluralism requires a review of both current methods and conceivable alternative methods. Secondly, a change in method will be applied only if there is an application of new approaches.

A number of methodological issues need review and attention by researchers in the field of job-related stress. Researchers are slowly accepting that stress should be defined as relational in nature, involving transactions between the person and the environment. Transactional frameworks provide an organizing concept for future theory and research. Most theoretical models of stress share the idea of a process and sequence of events in identifying a variety of ways to express the relational-transactional nature of work stress. Still, there is a need to adopt methods of research that are congruent with the theoretical platform on which the research is based. Conventional methods of analysis may limit the ability for validity to assess stress coping areas of social support. Reality of stress is a key component in research. Reality and relevance of stress are paramount when looking at the impact of stress on burnout. Further, a new conceptualization of the stress process must be implemented. Assumption of stressors is not valid. “New applications in the measure of stress should not be the ‘weight of dull and obvious conclusions’ ” (Coyne 1997, p.155).

The stress experienced by the professional worker is substantial. Fontana (1989) found that stress might be intrinsic to the profession itself when demands and pressure cannot be escaped. “The interactional definition of stress focuses on the structural features of the person’s interaction with his or her environment, whereas transactional definitions of stress are concerned with the dynamics of the psychological mechanisms of cognitive appraisal and

coping that underpin a stressful encounter” (Cooper et al., 2001, p. 11). Tetrick and LaRocco (1987) outlined a work stress model characterizing the interactional framework postulates, specifically, that the perceived presence of certain work conditions may be associated with specific work responses. This model produced three types of research applications (Dewe, 1991). The three research applications include (a) identifying, describing, and categorizing different stimuli; (b) demonstrating a relationship between the different categories of stimuli and responses; and (c) exploring the nature of that relationship by investigating the moderating effects of different organizational, job specific, and individual-difference variables (Cooper et al., 2001). Equally significant, the model itself exposed a number of limitations in its ability to explain the stress process. This is the reason further research should examine the relationship of occupational stress and burnout.

### Occupational Stress and Burnout

Through the years, professional literature has confused or equated stress and burnout. Stress and burnout are not synonymous, but are separate constructs. The constructs may be similar but not identical. According to Cedoline (1982), “*Job Burnout*” is both an occupational hazard and a phenomenon induced by stress” (p.17). Specific job stressors associated with specific job tasks are sometimes referred to as task content factors (Kahn & Byosier, 1990). These tasks or factors involve the job, work environment, and work-scheduling factors. The 1960’s “*white heat technology*” was the phrase used to describe a transformation in the workplace which produced a 20-hour work week (Cooper et al., 2001). In the 1970’s, Terkel (1972) observed that industrial strife and conflict resulted in the workplace becoming a battleground between employers and workers. The 1980’s proved to

be a decade of privatization, merger mania, joint ventures, and process engineering, transforming the workplace into “free-market, hothouse cultures” revealing the first signs of strain as “stress” and “burnout” (Cooper et al., 2001). From the 1980’s to the 1990’s recession, privatization of the public sector, and the information technology revolution laid the groundwork for the most profound changes in the workplace since the industrial revolution (Cooper et al., 2001). The 1990’s and an era of recession brought about organizational downsizing and “flattened structures” resulting in employees doing more work and, at the same time, experiencing more job insecurity. Instead technology accelerated the pace of work, demanding more productivity faster. Organizations downsized and changed their internal structure forcing workers to expand their job descriptions and experience new job pressures. These changes eventually led to high levels of job stress. Downsizing and the rapidity of change brought about a new focus on the future of the workplace. There was and remains a focus on the direction of organizational development, the role of the employee after restructuring, and the emergence of organizational stress. The new goal of organizational research includes identification of the stressors and the interventions needed to minimize or eliminate the source of stress.

Paine (1982) states that the burnout stress syndrome is a consequence of high levels of job stress, personal frustration, and inadequate coping skills that have significant personal, organizational, and social costs. Cooper et al. (2001) defined chronic burnout as the result of progressively worsening conditions at work. Expectations of employees have expanded in that they must give more in terms of time, skills, and flexibility without the rewards of career mobility and job security.

The stress experienced by the professional worker is substantial. Both lay and professional terminology treats the term stress in two different ways. On the one hand, the view of stress is external when problematic environmental conditions or force demand adaptation from the individual, and, on the other hand, stress may be a response inferred to be within the individual. “Therefore, a response to stress refers to an internal reaction to demanding environmental conditions” (Black, 1946 cited in Muldary, 1983, p.46). Lazarus defined stress in terms of “any event in which environmental demands, internal demands (or both) tax or exceed the adaptive resources of an individual, social system, or tissue system” (Monat & Lazarus, 1977). Cooper et al. (2001) define *stress* as an overall transactional process; *stressors* as the events or stimuli encountered by individuals; *strain* as the individual’s psychological, physical, and behavioral responses to stressors; and *outcomes* as the consequences of strain at both the individual and the organizational level. The study of stress deals with the adaptation of individuals to conditions of their environment that surpass their resources for coping (Muldary, 1983). In addition, definitions of stress provide researchers with theoretical boundaries that need to be continuously extended and reviewed to ensure what is defined reflects the nature of the experience (New, 1995).

An increase in occupational stressors required reviewing the situational context for burnout (Maslach, et al., 2001). In 1997, Maslach and Leiter rephrased burnout as “an erosion of engagement with the job.” This viewpoint led them to formulate a model that focused on the match/mismatch between the individual and the six domains of the job environment. Their research eventually demonstrated that the greater the mismatch between the person and the job, the greater the likelihood for burnout (Maslach, et al., 2001).

Accordingly, researchers discovered that individuals who experience burnout also might experience physical and mental illness. Effective organizational intervention lies in the identification of specific work-related stressors, and the implementation of managerial and educational strategies that may reduce the likelihood of burnout occurring in healthcare providers to give rise to better healthcare in America.

“Identifying chronic stressors depends on identifying how the organization of an individual’s life is integrated with the surrounding social organization” (Pearlin et al., 1981, p.7). Robbins, Cacioppe, and Waters-Marsh (1998) developed a model to detail three major categories of potential stressors: Individual (Personal), Environmental, and Organizational factors. The model of Organizational Stress and the Impact on Burnout (Figure I) will use this design model and the categorization of stressors as outlined by Maslach and Leiter (1997).

Maslach and Leiter (1997) developed the *Areas of Worklife Survey* to assess organizational environments from the perspective that systematic and persistent qualities of work environments played a definitive role in the relationships people develop with their work. Specifically, a match of employees’ expectations or aspirations within the reality of the work environment promoted engagement with work, a state characterized by energy, involvement, and effectiveness. In contrast, serious mismatches of employees’ expectations or aspirations within this reality of the work environment promote burnout.

Unfortunately, most studies of occupational stress focus on a particular professional group. The same problem occurs in research among health professionals. Research focuses on certain health professions making it difficult to assess the relative stress experienced by all

health professionals (Wolfgang, 1988). Generalization of research on health professionals is ineffective; and, due to practice guidelines, each health professional practices at a level based on his or her medical hierarchy. For example, in July 2003, new regulations from the Accreditation Council for Graduate Medical Education (ACGME) took effect, limiting medical residents to an 80-hour workweek. Lost hours and gap in care caused the immediate hiring of PAs and NPs as a cost-effective, reimbursable replacement. This new role has been plagued with feelings of overwork and exploitation by some hospital administrators (Herrick, 2004). Now, it is important to confront PA educators, professional organizations, supervising physicians, and health institutions to bring to the forefront the issue of stress and burnout. Identifying precise, stressful job situations in healthcare will distinguish the misfit between the health provider and problem-solving capabilities as well as delivery of quality healthcare. Moreover, using valid, reliable tools to identify specific stressors in the PA profession will provide a basis for the development of a strategic educational plan for implementing coping measures, and, in-turn, result in an overall improvement in healthcare delivery. Wolfgang (1988) developed the *Health Professions Stress Inventory* to measure perceptions of potentially stressful job situations common among health professionals: medicine, nursing, and pharmacy. Wolfgang (1988) identified areas of the healthcare professions including professional recognition, patient care responsibilities, job conflicts, and professional uncertainty.

Lavandero (1980) states, “Structural causes of burnout are those found within the organizational environment in which the health professional practices” (Muldary, 1983, p.83). In the medical community, the workplace has changed. According to Savicki and

Cooley (1982), “one of the built in causes of burnout includes the qualities of the work setting that affect the health professional’s interactions with clients and co-workers as well as the general stresses of patient care, staff conflicts, professional relations, and the overall social climate of the helping context” (Muldary, 1983, p.83). Furthermore, “there is increased penetration of profit-oriented organizations into medical services and healthcare organizations” (Akroyd et al., 2002, p. 816). The organization of medicine is cashing their intrinsic worth. There is a breakdown in community. According to Maslach and Leiter (1997), when people lose a positive connection with others within and outside the workplace, conflict erupts. Today, health organizations dictate that a patient must be seen in clinic every fifteen minutes. The media is quick to point out the way patients suffer when managed care limits the time spent with each individual (Sotile and Sotile, 2002). The burned out healthcare provider may turn to drug abuse, alcoholism, suicide, or may leave the profession of medicine. To date, there has been minimal research conducted on physician assistant stress and burnout. In the community, the “hurried physician assistant” creates a dangerous lack of reciprocity in the balance of the patient to healthcare provider relationship (Sotile and Sotile). In short, a lack of gratitude and rewards from the community for the health services may drain the emotional resources of the provider resulting in stress.

#### Definition and Primary Sources of Occupational Stress

There are two categories of stressors which affect the probability of burnout in physician assistants. These categories include *healthcare stressors*, *areas of worklife stressors (individual, environmental, organizational)*. “The quality of the work setting can affect the healthcare provider’s interactions with clients and co-workers (Savicki & Cooley,

1982) as well as the general stresses of patient care, staff conflicts, professional relations, and the social climate of the helping profession” (Muldary, 1983, p. 83). Moreover, chronic stress can cause a gradual state of tension and irritability that is incompatible with performance ability. A wane in enthusiasm and commitment can cause a decline in motivation to provide quality healthcare. In fact, prolonged stress can impair the ability to attend, concentrate, and engage in complex thinking, and problem solving. Decline in enthusiasm and disliking for one’s work can cause a loss of feeling of empathy, caring, and respect for patients.

Additional researchers produced similar categories of stressors. For example, Cordes and Dougherty (1993) grouped correlates of burnout into three major categories: *individual (or personal)*, *job (environmental)*, and *organizational (administrative person)*. Wolfgang (1988) noted a specific type of occupational stress with healthcare professionals that is part of the group of correlates and directly affects healthcare delivery.

### Tools of Stress Measurement

#### *Healthcare Stressors*

As a mass exodus of individuals from the health profession occurs and a small number of individuals enter the health profession, there is a greater workload of patient care responsibilities placed on the professionals remaining in the health profession. The ratio of providers to patients sometimes increases to the point where caregivers must provide care to an unmanageable number of patients (Muldary, 1983). As a result, their jobs become more and more stressful. In a study of physician assistants, Holmes and Fasser (1993) indicate that high levels of stress exist. Moreover, the study indicated that stress resulted from the PA’s



ability to deal with caring for the emotional needs of patients, difficult patients, and patient outcomes. Patient deterioration, increased emotional demands of patients, and the increased demand by supervising physicians of physician assistants to meet patient demands, results in the imbalance in the relationships and a greater risk of stress (Bakker et al., 2000). Healthcare professionals are regularly confronted with patients who “do not follow their advice, make impossible demands, resist change, and who sometimes even lie, cheat, and manipulate” (Bakker, et al., 2000, p. 425-426). Overall, health professionals experience various forms of occupational conflict.

Professional Uncertainty focuses on the ability for medical decision-making. Inadequate training can lead to stressful situations when making life or death decisions. Black (1946) states, “Problem-solving requires that a logical pattern of reasoning be applied to a situation in which an answer is required for a question and there is no immediate source of reliable information” (as cited in Muldary, 1983, p. 52). Health professionals routinely solve problems without much effort. Those under stress may have trouble in finding solutions to routine problem solving. A report by Kuttler (2004) found that the workload has doubled with less support and less staff, thus increasing the stress. Studies prove that PAs are capable of managing up to 80% of patients in a typical primary setting. The ability to deliver supervised care without patient-specific involvement is “negotiated performance autonomy.” If state or federal laws and institutions limit the ideal practice model, the efficiency of the PA may decrease. “When the mechanisms of problem solving – thinking, in particular – are not functioning properly, appraisal and coping are impaired and stress continues on the road to burnout” (Muldary, p. 53). As a result, PAs become less effective.

### *Individual Stressors*

It is important to look at an individual's source of stress in an organization. Stressors have the potential to affect an individual's well being if the stressors tend to persist because they become built into the organization of people's daily existence (Pearlin et al., 1981). To identify career stress, specific work stressors must be identified. Work stressors are defined as environmental factors at work that lead to individual strain (Beehr et al., 2000). Kahn, Wolfe, Quinn, and Snook (1964) provided a platform and framework for research on role strain. "Roles encompass the behaviors and demands that are associated with the job the individual performs" (Cooper et al., 2001, p. 37). The studies of Kahn et al. (1964) provide a framework for role-related strain. Dysfunction in roles occurs in three primary ways: role ambiguity (lack of clarity about the role), role conflict (competing or conflicting job demands) and role overload (the number of different roles a person has to fulfill).

Kahn et al. (1964) define role ambiguity as "the unpredictability of the consequences of one's role performance" (as cited in Cooper et al., 2001, p. 38). Role ambiguity can stem from a lack of information. The measure of this construct can lead to stress for the PA (Baker et al., 1989). The educational framework of the physician is a contributing factor to the PA's role ambiguity. PA's are transitioned into the medical community with the expectation of expanded role responsibilities. These expected role responsibilities may be a mismatch for the actual opportunities for expanded role responsibilities. When expanded role responsibilities and opportunities for advancement do not occur, then job dissatisfaction and stress may ensue. Holmes and Fasser (1993) point out that the trend toward graduate level programs among PA programs may produce unrealistic expectations.

Schaubrock et al. (1989) stated, “Role conflict reflects incompatible demands on the person within a single role or between multiple roles occupied by the individual, which can induce negative emotional reactions due to perceived inability to be effective on the job” (Cooper, et al., 2001, p. 38). Jackson and Schuler (1985) found that the association between role conflict and psychological strain is not as strong as it is between ambiguity and strain. Likewise, Quick and Quick (1984) found that role conflict is differentiated by four criteria: intrasender role conflict, intersender role conflict, person-role conflict and inter-role conflict.

Intrasender role conflict occurs when a supervisor or manager communicates expectations that are mutually incompatible. Previous research demonstrates that the frequency with which the supervising physician delegates inappropriate tasks is a major determinant of satisfaction and stress. Furthermore, intrasender conflict occurs more frequently among women health professionals.

Intersender role conflict occurs when two or more people (e.g. supervisors, managers, colleagues, and clients) communicate expectations that are incompatible. As stated earlier, healthcare professionals are regularly confronted with patients who “do not follow their advice, make impossible demands, resist change, and who sometimes even lie, cheat, and manipulate” (Bakker et al., 2000, p. 425-426). The research indicates that these demands and a lack of reciprocity result in stress; especially among general medicine practitioners. The increased emotional demands of patients, and the increased demand of supervising physicians for physician assistants to meet patient demands, results in an imbalance in the relationships and a greater risk of stress (Bakker et al., 2000). Holmes and Fasser (1993) stated that there were reported high levels of stress in a study of physician assistants; the

stress resulted from the PA's inability to deal with caring for the emotional needs of patients, difficult patients, and patient outcomes.

Person-role conflict occurs when an individual perceives a conflict between his or her expectations and the values of those of the organization or key people in the work environment. In fact, Holmes and Fasser (1993) found that the management style of the employer produced the greatest levels of dissatisfaction and stress. Physician Assistants understand that having few options for career mobility and control over income not only produces stress, but also, job dissatisfaction. "Limited early opportunities for employment and the viewed absence of a visible career ladder have long been identified in the literature as sources of job and role satisfaction among PAs" (Holmes & Fasser, 1993, p. 177). However, as opportunities for the PA increase, they produce a different set of stressors.

Inter-role conflict occurs when a person occupies two or more roles that may have conflicting expectations or requirements. The Graduate Medical Education Demonstration Project (MGMED) required hospitals to cut their number of residents by 25% over a six year period or cut residents by 20%, while either substantially increasing the proportion of primary care training, or coordinating their medical education program through a consortium involving a number of hospitals (Smith, 1997). However, the cost associated with resident duties still exists. Although the policy sounds good for opportunities for mid-level healthcare providers, caution must be used in using mid-levels (PAs) as residents. The physician assistant must practice medicine under the supervision of a physician. If lack of supervision produces stressors, changing roles by assuming a residents position, may result in role overload and significantly increase stress.

Role-overload reflects the number of different roles a person has to fulfill; this leads to excessive demands on an individual's time, and may create uncertainty about his or her ability to perform these roles adequately. With the cutbacks in healthcare today, mid-level practitioners now acquire different roles resulting in role overload. Changes are occurring in the professional status and social control of medicine (Hardy & Conway, 1988). Physician-nurse practitioner groups are favorable among patients as well as healthcare organizations as a more economical means of providing quality healthcare that is cost effective. When physician assistants are hired as an alternative to nurse practitioners, they may find themselves in dual roles, as an extender to the physician, as well as, performing nursing duties. These issues cause territorial and professional management conflicts between physicians, nurse practitioners, and physician assistants. Hence, role variables produce negative effects on an employee's physical and psychological well-being creating uncertainty. O'Driscoll and Beehr (1994) found that these forms of uncertainty were related to workers' affective experiences and could result in strain.

Soltile and Soltile (2002) state, "the 'road map' that prior generations of physicians and medical families used to determine what they needed to do in order to be successful at home and work are generally outdated" (p.103). Creative institutions, hospitals, medical practices, couples, and families of all forms are recognizing both the complexities and importance of attending to work-life issues (Soltile & Soltile, 2002). Many high-achieving people such as physicians tend to fill their days with self-denial then return home in the evening with a marked state of emotional and physical depletion.

Cooper et al. (2001) contend that, “To make informed judgment when selecting strain measures, it is also important to consider the context in which the stressor-strain process unfolds” (p.67). One must take into account the psychometric properties of different measures of psychological strain, and “researchers must conceptualize the types of strain that are anticipated to occur in the particular context and must select measures of strain that better match the type of work event under consideration” (Cooper et al., p. 68). As a result, “the way in which a helper chooses to cope with stress on the job also seems critical for the emergence of burnout” (Cherniss, 1980, p. 47).

#### *Environmental/Organizational Stressors*

Corporations no longer provide a foundation for research and long-term growth, instead, they are now cashing in their assets for short-term stock performance (Maslach & Leiter, 1997). There is enormous and constant pressure for organizations first, to generate cash flow to service their debts, not to create excellent products or build a stronger community, and, second, to address the fact that the absence of concern for product or people turns the “rationale for a corporation inside out” (Maslach & Leiter, 1997). The prevailing thought today is that work is an obligation rather than a resource.

To that end, medicine is viewed as a business. “Issues related to access, cost, and quality requirements are driving the need for organizational change at hospitals across the country” (Ziegenfuss et al., 1998). Stress arises from the qualities of the work setting that affect the health professional’s interactions with clients and co-workers (Savicki and Cooley, 1982). In addition, stress arises from general patient care, staff conflicts, professional relations, and the overall social climate of the helping environment (Muldary, 1983).

According to Muldary, research in industrial and organizational psychology has demonstrated repeatedly that the physical quality of the work environment has both direct and indirect effects on worker performance (p.84). In short, physical as well as interpersonal factors affect the environment of the healthcare provider.

Claus and Bailey found that overcrowded units, noise, poor lighting, poor ventilation, and malfunctioning equipment represented some of the physical stressors to which healthcare professionals are exposed (Muldary, 1983). Turner (1975) surveyed the ICU's of university teaching hospitals and found the average minimum noise levels in those units were two times greater than the noise level required to disturb average sleep (Muldary). Results of the study indicated that practitioners who are exposed to high levels of noise over a prolonged period begin to develop signs of stress. Bailey, Steffen, and Grout (1980) also found that stressors developed based on the quality of the physical work environment. Advances in healthcare technology have produced an ever-expanding range of complex and sophisticated equipment that healthcare professionals must learn to operate. This means that providers must learn quickly and efficiently acquire the skills not only to provide patient care, but also to manage extremely intricate, highly sophisticated, procedures and equipment. Veninga and Spradley (1981) found that the behavior of charge persons is one of the most frequent sources of stress (Muldary). Workers often experience pressures of dealing with their supervisors, managers, or bosses. Baldwin and Bailey (1980) argued that certain work site interventions help mediate stress experience by staff personnel. Managers in allied health seek to recognize stressors in the work environment, recognize signs and symptoms of stress burnout among staff, help in resolving the problem, and act on their commitment (Muldary, 1983). Pearlin

(1981) identified “environment” stressors as contextual strains that arise from interactions of individuals with their proximal environments. When analyzing types and ranges of stressors, consideration must be given to the environment and networks in which healthcare workers function.

The Areas of Worklife Survey was developed to assess organizational environments from the perspective developed in *The Truth About Burnout* (Maslach & Leiter, 1997). The basis of the principle of the Worklife indicator is that a systematic and persistent quality of work environments plays a definitive role in the relationships people develop with their work. For this purpose, Maslach and Leiter studied “a match of employees expectations or aspirations with the reality of the work environment . . . a state characterized by energy, involvement, and effectiveness” (Leiter, 2004, p. 2). The researchers concluded that there are “serious mismatches of employees’ expectations or aspirations with the reality of the work environment promoted burnout” (Leiter, 2004, p. 2).

The *Areas of Worklife* measures each focus of six qualities that have played a prominent role in organizational research by providing an economical and practical assessment of issues that are central to enhancing the quality of worklife (Leiter, 2004). Researchers designed the items used in the survey to apply to a wide range of work situations and have been tested in healthcare, education, and private sector business environments. By identifying the mismatch within the organization, researchers can design interventions to enhance the quality of worklife.

Maslach and Leiter (1997) began to address the need to formulate a model that focuses on the degree of match or mismatch between the person and six domains of his or her



job environment. The greater the gap, or mismatch, between the person and the job, the greater the likelihood of burnout. These six areas of worklife environment encompass the central relationship with burnout: workload, control, reward, community, fairness, and values. The hypothesis is that people are both the greatest source of stress and the greatest source of satisfaction in the practice of healthcare. Furthermore, there are varying amounts of contact built into the job tasks of healthcare (Muldary, 1983). A mismatch between workers and their work environment in the six areas of worklife reduces the capacity for energy, involvement, and sense of effectiveness. In contrast to this mismatch, matches in these areas enhance engagement.

### *Workload*

Workload refers to the amount of labor required within a specific period, which may be a stressor to individuals, and is the key dimension in organizational worklife (Maslach and Leiter, 1997). Workload is the most obvious indication of a mismatch between the person and the job. Workload is important because it is hard to find relief outside of work. Today, individuals are busier with every domain of their lives -- children, aging parents, houses, and other responsibilities that fill a day (Maslach and Leiter, 1997). This problem reflects having too much to do and too little time with too few resources. A manageable workload provides the opportunity to do what one enjoys, to pursue career objectives, and to develop professionally. A crisis in workload is not a matter of simply stretching to meet a new challenge, but of going beyond human limits (Leiter, 2004).

French and Kaplan (1973) identified overload as the key variable in the stress experienced by workers in various organizations. First, “objective overload is quantifiable in

that it pertains to the volume of information individuals are expected to process within specified time periods” (Muldary, 1983, p. 88). Objective overload may include the number of patient contacts, telephone calls, treatment/procedures/surgeries, and progress reports/dictations. Second, “subjective overload pertains to feelings that there is simply too much work to do or that the work is just too much to handle” (Muldary, 1983, p. 88). Third, “qualitative overload involves the discrepancy between the level of knowledge and skills required to do a job and the actual level of knowledge and skills possessed by the individual” (Muldary, 1983, p. 88). Accordingly, both qualitative and quantitative overload have been correlated with stress (Pines & Aronson, 1981; Pines et al., 1981). A breakdown in the relationship with work increases the work demands because individuals are attending more closely to their employment situation, not just their specific job. According to Physician Assistant Lou Falligant, Director of Mid-Level Providers at Dean Medical Center in Madison Wisconsin, a PA’s pressure to improve productivity has been building since the 1990s (Lane, 2003).

Work underload may be damaging if the person is not allowed to use acquired skills or to develop full potential ability. This results in job dissatisfaction, poor motivation, and high turnover. Work overload is associated with dissatisfaction, tension, and low self-esteem (Cooper et al., 2001). In addition, new technology coupled with an increase in an aging population can lead to the simplification of work and repetitive jobs that are potentially stressful in terms of work (Martin & Wall, 1989). Thus, it is important for the organization to determine whether the workload of the individual is perceived or actual. From an organizational intervention standpoint, it is relevant to determine whether certain

environmental factors are consistently reported by a large proportion of the work force as being stressful.

### *Control*

Control refers to the opportunity to make choices and decisions, to solve problems, and to contribute to the fulfillment of responsibilities. A good match occurs when there is a correspondence between control and accountability; on the other hand, a mismatch occurs when people lack sufficient control to fulfill the responsibilities for which they are accountable (Leiter, 2004). Some individuals have insufficient control over the resources needed to do their work or have insufficient authority to pursue the work in what they believe is the most effective manner (Maslach, et al., 2001, p. 414). Setting priorities for day-to-day work, selecting approaches to doing work and making decisions about the use of resources are central to becoming a professional (Maslach & Leiter, 1997).

Organizational policies that reduce work capacity result in individual autonomy. If individuals do not have control over important dimensions of their job, they cannot address problems that they identify effectively. When organizations will not tolerate any creative problem solving outside of the centralized control structure, individuals experience a sense of loss of control in making relevant decisions to perform the job. Since everything one does in an organization involves collaborating with other people, organizational control needs to be shared.

Unilateral control over every aspect of an individual's work is not a reasonable goal. Equally important, absolute control can produce a negative work environment. Whether control is individual or shared, people are vulnerable to the exhaustion, cynicism, and

ineffectiveness of burnout (Maslach & Leiter, 1997). Individuals who believe they have control over the outcomes of their actions are said to have *internal locus of control*; whereas, individuals who believe they have no control over the consequences of their actions are said to have an *external locus of control* (Muldary, 1983). Health professionals whose expectations are relatively objective and realistic tend to find congruency between performance and outcomes within the helping context. However, health professionals who believe they have total control of whatever happens may repeatedly encounter stressors and fail to distinguish between stressors that are within their power to control and those that are not (Muldary). “If an analogy is postulated between the physician assistant and the factory worker who experiences a reduction in work satisfaction due to a loss in autonomy and status it is feared that the dependent and lower status position of the physician’s assistant might have a similar deleterious effect” (Engel, 1981).

Thus, with physician assistants taking on positions formerly held by medical residents, PAs soon realized they had no “voice” or control, and in an attempt to regain some organizational control they unionized. Leadership style is a potential source of stress especially for the physician assistant who is under constant supervision of the physician. A lack of consideration for an employee’s needs, attitudes, and motivations characterize a task orientation at the expense of relationships resulting in stress (O’Driscoll & Beehr, 1994).

### *Reward*

Reward is recognition -- financial and social -- for contributions on the job. A meaningful reward system acknowledges contributions to work and provides clear indications of what the organization values. Employees translate lack of recognition as a devaluation of their

work and themselves (Leiter, 2004). When there are insufficient financial rewards, a social reward for one's hard work is ignored or not appreciated by others. The resulting lack of intrinsic rewards and feelings of inefficacy create stress. Workers hope that their jobs will bring them material rewards of money, prestige, and security. Increased workloads exacerbate the impact of reduced compensation, and many times, people are stuck in unrewarding jobs. This lack of rewards is not simply a consequence of tight money, but the scarcity of money forces individuals to look for material rewards. "This kind of environment also contributes to the exhaustion, cynicism, and lack of effectiveness that characterizes burnout" (Maslach & Leiter, 1997).

Correspondingly, there is a harsh realization for health professionals that not all their patients get better. Healthcare professionals are perplexed that low monetary value is associated with humanitarian function (Muldary, 1983). Society believes that reward comes from 'helping the needy' (Muldary, 1983). Holmes and Fasser's (1993) research concluded that issues of salary, opportunities for advancement, as well as management style of the employer produced stress in the physician assistant. There is a chronic disequilibrium because providers feel that they continuously have to put more into relationships with their patients, who do not always heed their advice, than they receive in return. Much of the research evidence to date suggests that client or patient contacts play a key role in the development of the burnout syndrome. "As work becomes more strained, less enjoyable, and less rewarding, people have less quality time with co-workers, and where they work becomes less of a community" (Maslach & Leiter, 1997, p. 48).

## *Community*

Community is representative of an organization's social environment. "People thrive in communities characterized by support, collaboration, and positive feelings" (Leiter, 2004, p.2). Mismatches occur when there is no sense of positive connection with others at work (Leiter, 2004). Individuals thrive in a community and function best when they share praise, comfort, happiness, and humor with people they like and respect. "Unfortunately, some jobs isolate people from each other, or make social contact impersonal" (Maslach et al., 2001, p.415). Feelings of frustration and hostility reduce the likelihood for social support. "When there is no job security, close personal links that are basic elements of community are fragmented" (Maslach et al., p.415). In the absence of community, organizations become vulnerable to conflict among members.

One of the most common sources of stress from interpersonal relationships is conflict (Muldary, 1983). "Some of the relationships among health professionals involve real or perceived differences in each other" (Muldary, 1983, p.95-96). Researchers have examined the quality of interpersonal relationships and lack of social support as potential sources of stress. Negative interpersonal relations as well as the absence of support from colleagues or superiors can be major stressors (Cooper et al. 2001). Supervision in terms of teaching, feedback from performance, and clarity moderate the relationship between role stressors and psychological strain (O'Driscoll & Beehr, 2000). Likewise, practice setting and medical specialty produced job security due to role satisfaction. Baker, Oliver, Donahue, Huckabee (1989) found that the non-primary-care PAs enjoy adequate promotions, adequate support staff, and increased patient compliance. Non-primary care positions are located within

larger, more bureaucratic organizations, which provide secure, stable employment within a well-defined system for career advancement (Baker et al., 1989).

### *Fairness*

Fairness is the extent to which the organization has consistent and equitable rules for everyone. An important element is the extent to which resources are allocated according to generally understood and consistent procedures . . . fairness communicates respect for the members of an organization's community. A lack of fairness indicates confusion in an organization's values and in its relationships with people (Leiter, 2004). Maslach et al. (2001), also contend that a workplace will be perceived as fair by employees when trust, openness, and respect exist. Furthermore, an organization achieves community when people trust one another to fulfill their roles in shared projects, to communicate openly about their intentions, and to demonstrate mutual respect (Maslach et al., 2001). Despite mechanisms to try to insure fairness and respect, many people are losing confidence in the willingness or ability of organizations to operate in this manner. In Vancevich and Power (1987) found that at-risk employees concentrated on surviving and maintaining status, prestige, power, and careers (McNally, 2000). In turn, destructive competition among employees greatly detracted from achieving organizational goals and requirements. Similarly, healthcare professionals become frustrated and angry when they cannot practice in the ways they have been taught because the healthcare organization functions differently from their expectations. According to Herrick (2004), the outcry of PAs across the country is consistent with being overworked and facing the unfairness of not having a voice in how they are being utilized.

## *Values*

Values are important to the organization and to its members. When organizational and personal values are congruent, there is a sharing of successes. Mismatches occur when differences exist between an organization's values and the values of its staff, or if the organization does not practice its shared values (Leiter, 2004). For those providers who cling to the values they internalized during training but now have to act in accordance with the values of the organization, they are forced to capitulate (Muldary, 1983). Even if they sell-out behaviorally, they verbalize their true values. This type of interpersonal conflict can create stress. One PA expressed the feelings of stress with increased pressure to produce and speed up patient appointments because "he always wanted to give Cadillac care" (Lane, 2003). Capozzi (1996) advocates assisting the supervising physician colleagues to understand and adjust managed care rules. PAs are generally creative problem solvers who use those skills to improve 'adaptation response' (Capozzi, 1996). Working with organized medicine will ensure that physician assistants have an adequate voice in decisions about care and maintain the values of healthcare while managed care struggles with the appropriation of funds for healthcare and the "medical loss ratio" (Capozzi, 1996).

### Impact of Social Support on Burnout

Lin and Ensel (1989) define social support as "a process by which resources in the social structure are brought to bear to meet functional needs" (p. 383). Sidney Cobb, M.D. of Brown University, further defines social support as "information leading subjects to believe that they are cared for and loved, esteemed, and valued, and that they belong to a network of communication and mutual obligation" (cited in Pines, Aronson, and Kafry, 1981, p. 123).



Consequently, the incidence of burnout is less for individuals who had effective social support networks. Burnout was also less severe in institutions where the staff was free to express ideas and receive feedback from others. Furthermore, social support facilitates problem solving and instrumental action (Ross & Sastry, 1999, p. 389). Thoits (1982) states, “An individual’s social support system may help moderate, or buffer the effects of life events (stressors) upon his or her psychological state” (p.145). “Social Support facilitates problem solving and instrumental action” (Ross & Sastry, 1999, p. 389). House, Landis, & Umberson (1998 ) state “it would be difficult to exaggerate the importance of social support as a resource; it has been consistently shown to be capable of easing what would otherwise be the burden of stressors and their impact on health and well being” (cited in Pearlin, 1983, p. 12).

Social Support mediates or buffers the effects of life events or illness (Lin & Ensel, 1989). The mediating effect, referred to as the intervening effect, occurs “when the intention of the social support factor reduces the direct effect of life events on physical or mental health” (Lin & Ensel, 1989, p.383). The purpose of the buffering effect is to interact when the presence of life events can exert a detrimental effect on physical health or mental health (Lin & Ensel, 1989). Social Support has been referred to as an external form of coping resources (1989). In Lin and Ensel’s study, the life stress process is complex because the social, psychological, and physiological environments interact with one another, thus affecting well-being. Social and psychological stresses can have an influential effect resulting in burnout unless social resources are present to buffer the detrimental effect.

Consequently, individuals who had effective social support networks were less likely to burnout. Moreover, burnout was less severe in institutions when the staff expressed ideas

and received feedback from others freely. The need for further research of social support in relation to burnout methodology is necessary to examine social support as multidimensional so the nature and sources within the organization can be analyzed. Studies that reveal high correlations between stressors and burnout should identify specific interventions that would include levels of social support.

Relationships with colleagues are necessary for teamwork and effort to succeed. A breakdown in the relationship between one's peers and/or coworkers on the job can be a source of emotional stress leading to emotional exhaustion. Second, the individual is deprived of a very valuable resource for coping (Maslach, 1982). The quality of interpersonal relationships and lack of social support from others in the workplace may produce job strain (Cooper et al., 2001). "The nature of the service institution – its goals, its resources, its operating policy – defines and constrains the contact that providers have with recipients – it determines what services will or will not be provided, what people are eligible for them, and what procedures must be followed in the delivery of these services" (Maslach, 1982).

In short, there is a need for further research of social support in relation to burnout methodology in order to examine social support as multidimensional. This, research in turn, will provide a basis for analysis of the nature and sources of support within the healthcare organization. The studies that reveal high correlations between stressors and burnout should then be able to identify specific interventions including levels of social support.

Researchers have failed to formulate a precise conceptual definition of social support or develop valid or reliable indicators of the concept. Lin et al. (1981) "suggest that social

support identifies resources available to the individual in crisis” (p.74). Kaplan et al. (1977) provided an operationalized definition suggesting that support is the degree to which an individual’s specific needs are met by significant others. House (1989) suggests that social support is “an interpersonal transaction involving one or more of the following: (1) emotional concern, (2) instrumental aid, (3) information, (4) appraisal” (p.39).

### Problems in the Methodology of Social Support

Social Support is a key construct in the model of burnout. Social Support has a crucial role in helping individuals cope with stress and stressors by functioning as a buffer that mediates the effects of stressful environmental conditions and burnout. Thoits (1982) suggests that social support can moderate the impact of life events. Research has documented that there is a positive relationship between major life events and psychological distress. The social support system of an individual can help moderate, or buffer, the effects of stressors (Thoits, 1982). There have been several problems with the empirical literature. There is an inadequate conceptualization and operationalization of social support, and the majority of studies have either theoretically or operationally confounded the direct effect of life events upon social support with the interactive (buffering) effect of events with support (Thoits). Finally, “most researchers have focused upon the buffering (interactive) effect of social support on distress, and have failed to examine the theoretically pertinent and practically significant main effect of social support” (Thoits, 1982, p. 146).

Schaufeli and Bunnk (1996) emphasized that the social environment of the workplace may be the core for the development or alleviation of burnout (as cited in Cooper et al., 2001, p. 106). The environment referred to consists of the recipients of services as well as

coworkers, supervisors, and subordinates. Eastburg, Williamson, Gorsuch, and Ridley (1994) found support from the supervisors and peer cohesion contributed to decrease in emotional exhaustion. Perry et al. (1992) linked a sense of community in the work setting with lower levels of exhaustion and depersonalization. Greenglass, Burke, and Konarski (1998) found that support from co-workers led to reduced emotional exhaustion, and both supervisor and co-worker support increased personal accomplishment. Hobfoll and Freedy's (1993) COR (conservation of resources) theory suggests support is a resource that energizes individuals and enables them to deal with stressors in the work environment. Evans and Schneider (1991) found that social support may exert buffering effects but the effects can be "eroded" by continuation of the stressors.

Thoughts are that studies which measure social support at a single point in time provide inadequate tests of the buffering hypothesis: "The effects of support and events on one another are contaminated" (Thoits, 1982, p. 148). Social Support is negatively related to strain. Researchers believe that stressors cause less strain for individuals who have social support available. Thoits (1982) describes numerous methodological problems when analyzing social support. A conceptual problem in the methodology is the distinct definition of social support: Instrumental Support and/or Emotional Support. First, most studies suffer from inadequate conceptualization and operationalization of social support (Thoits, 1982). Second, studies have either theoretically or operationally confounded the direct effect of life events upon social support with the interactive or buffering effect of events with support. Researchers have focused upon the buffering effect of social support on distress, and have

failed to examine the theoretically pertinent and practical significant main effect of social support upon distress (Thoits, 1982, p. 145-146).

Current methodological problems identified in social support include the identity of potential moderators of the relationship. To resolve methodology problems, better match making must accompany the types of support and particular stressors. In addition, resolution to the level of specificity of support needs to occur. Studies need to describe support as actually used. There also needs to be an assessment of clarity regarding the debate in the literature on the distinction between perceived support and objective support.

Few studies have investigated the relevance of social support for the experience of burnout. Hierarchical regression demonstrates linkages between sources of support and burnout. Fenlason and Beehr found that support had both buffering and reverse buffering effects (Cooper, et al., 2001, p. 147). Future research might focus on specific activities or events that define social support in relation to strain reduction and burnout (Beehr, et al., 2000, p. 403).

The confirmation of the buffering hypothesis occurs when the support is measured after the events have occurred. Therefore, a longitudinal design is necessary to test the buffering hypothesis. Michael Jahn (1997) found that some group medical practices have developed programs designed to help physicians and staff members manage stress. As mentioned earlier, medicine has become a stressful profession. As the growth of managed care is threatened, practitioners are raising concerns about losing their independence, income, and job security (Jahn, 1997). Statistics demonstrate doctors have a suicide rate nearly three

times that of the general public, their disability rate has soared thirty-five percent since 1993, and as many as half of all physicians regret choosing medicine (Jahn).

#### Medical Education and Socialization of the Physician Assistant

Today, PAs state that in some hospitals and clinics they have no representation and are joining labor unions for social support. First, the specific dimensions of support that reduce stressors' impact on burnout have yet to be identified. Secondly, the theoretical relationship between social support and stressors predisposing PAs to burnout has not been explicated. Social Support research requires (1) a closer matching between the types of support and the particular stressors encountered by individuals; (2) level of specificity of support, (3) determine support available, support received or used, and support effectiveness; and (4) distinction between perceived support and objective support from others (Cooper et al., 2001). Further research requires that the conceptual model of burnout integrates social support within the framework of stress and burnout.

#### Healthcare Provider

##### *Physician Assistant and Burnout*

Today, the role of the physician assistant continues to evolve. During the 1980's, the utilization of the PA began extending beyond primary care into inpatient hospital settings and specialty areas. Physician Assistants work in primary care (family practice, general internal medicine, and general pediatrics), surgery, research, and administration. Autonomy, salary discrepancies, workload, work hours, and most importantly, responsibility for human life can be very demanding and stressful for the PA.

As a result, medicine has introduced additional causes of stress and burnout among physician assistants. These include: (1) The downsizing of general surgery residency programs for physicians requiring physician assistants to supplement care and hours; (2) The lines of command for supervising physicians are not clearly established, so the role and liability risks of the PA are assumed; (3) Using PAs as house officers to fill residency voids is cost-effective for the organization increasing autonomy of the PA, but must be comparable with current physician assistant training; (4) Primary care physician residencies have had difficulty filling positions and are requesting physician assistants to fill these roles; (5) Providers are retiring before traditional retirement age due to dissatisfaction with the profession; and (6) More women (physician and physician assistants) are entering medicine who do not want to work the traditional long hours with large workloads (Strand, 2002).

Physician Assistants demonstrate their ability to modify elements of education and practice quickly in response to social needs (Fowkes, Hafferty, & Goldberg, 1983). Long hours, large patient loads, changes in autonomy, and a lack of supervised training are a few factors causing healthcare to remain a labor-intensive enterprise. Variation in practice and delineation of the provider role is confusing for the PA, physician, and the patient. Role depends on the supervising physician's need, PA's confidence, as well as the patient's trust. Feeling alienated, hostile, resentful, frustrated, unable to give anymore, and powerless to change may cause physician assistants to leave their profession forever (Muldary, 1983, p.xii). As the medical marketplace for the physician assistant continues to grow, these stressors remain instrumental in the match/mismatch between the organization of medicine and the PA. Bringing to the forefront the issue of stress and burnout to confront PA

educators, professional organizations, supervising physicians, and health institutions is imperative for successful healthcare delivery today.

Professionals within an institution perform toward a goal, but, at times, will experience negative interactions with the institution's management when deciding how to reach those goals (Maslach, 1982). Relationships with supervisors and the feedback regarding on- the-job performance remain subjective in terms of the amount required for a good relationship. Many professionals in medicine are labeled as having abrasive personalities. Levinson (1978) describes those with abrasive personalities as achievement oriented, hard driving, and intelligent, but they function less well at an emotional level. They have a need for perfection, a preoccupation with self, and a condescending, critical style. When an individual has to interact with a peer with an abrasive personality, it may induce feelings of inadequacy. In the same manner, leadership style is a potential source of stress when there is a lack of consideration of employee needs, attitudes, and motivations that are characterized as task oriented. Further work may be necessary to tease out the complexity of relationships between social support and worker affective experiences, including strain (Cooper & Williams, 1998).

#### *Problems in Methodology of Burnout in Healthcare Providers*

The qualities of the work setting can affect the healthcare providers' interactions with clients and co-workers (Savicki & Cooley, 1982). The general stresses of patient care, staff conflicts, professional relations, and the social climate of the helping profession also affect the quality of work (Muldary, 1983, p. 83). In recent years, the turnover rate for healthcare



providers leaving the profession has increased the expenditure of training and produced disruption in patient services (Muldary, 1983, p. 13).

Research has tried to determine what it is about health professionals that predispose them to burnout. Furthermore, when looking at methodology, stress, social support, and socialization constructs that impact burnout in PAs cannot be assumed to be the same or congruent with other health professionals. Researchers have yet to identify specific stressors within the various medical specialties that predispose the health professionals to burnout. Due to practice guidelines, each health professional practices at a level based on his or her medical hierarchy. Thus, the variation in practice and delineation of provider role is confusing for not only the PA, physician, and patient, but also for the researcher.

Once the stressors are identified among the various specialties of PA's, there is a need for studies to use a conceptual theoretical framework of burnout that utilizes psychometric sound measurement and sound theory with advanced analytical techniques to recognize specific stressors that conceptualize the distinct features of each component of burnout. Although there are individualized variables, there are also similarities within the profession. The goal is to uncover the behavioral similarities inducing the stressors, implement social support systems to reduce the impact of burnout, and decrease the negative outcomes in order to continue the strong institution of medicine.

The profession has made strides to increase the presence of PA's in healthcare delivery, but has not implemented the means to recognize stress and burnout or implement preventive measures. The educational training of the physician assistant is unique because it incorporates into the curriculum communication skills, accessibility to patients, and

socialization as team members. The PA program views learning as a reciprocal, collaborative interaction between faculty and students. These abilities and views help acclimate the PA to newly developing healthcare roles. Goals of the curriculum are to educate physician assistants to recognize, treat, and manage primary care problems; to demonstrate awareness of social, legal, and ethical issues; and to develop the desire and potential to grow professionally to enrich the profession. In developing the desire and potential to grow professionally, PAs do not always work in clinical training environments of realism, but those of simulation. Depending on their area of clinical practice, role ambiguity may occur to distort further their career expectations. Improved understanding of the correlates of the PA role satisfaction would allow educational programs and professional organizations to identify potential sources of dissatisfaction. Likewise, an improved understanding would assist PA's realistic expectations in formulating and discussing the strengths and weaknesses as regarding future employment of the profession in an informed manner (Baker et al., 1989). In brief, PAs need to be taught to accept and understand that there are not always simple academic solutions to problems.

#### Socialization of the Healthcare Provider

“Socialization is the process by which individuals learn the values, attitudes, beliefs, and standards of behavior of a particular culture or subculture of which they are becoming members” (Muldary, 1983, p. 190). Training in the health professions has not addressed instruction on stress management, but as stated, training often depersonalizes healthcare by focusing on the mechanical aspects of the job, while de-emphasizing its interpersonal aspects (Muldary, 1983). Health professionals receive the implicit message that emotions are to be

controlled. Although health professionals have a certain tolerance for functioning without activating emergency stress reactions, they are expected to “handle it” and “get over it.” In short, health professionals continually make adaptations to stressors each day. According to Muldary, the number of adaptations to stress that are made on a continual basis is limited. Researchers have theorized that it is at the point that health providers reach the limit of this adaptation that burnout may begin to manifest.

“When individuals are socialized into the helping professions, they learn formal and informal values, beliefs, attitudes, standards of practice, modes of interaction, and styles of communication specific to their chosen profession” (Muldary, 1983, p. 190). It cannot be assumed that burnout in physician assistants is the same within the profession or in other healthcare groups. Differentiation in scope of practice prevents external or internal generalization of burnout within the specialties/subspecialties of medicine. Humanitarian orientation, a high degree of empathy, a need to make a difference, expectations and stereotypes of the health professionals, and personal expectations may predispose the health professional toward burnout (Muldary, 1983, p. 104).

Kramer (1974) developed a socialization program aimed at helping new graduates anticipate job conflicts and stress through socialization. The purpose of the analysis of stressors that affect burnout is to identify the specific areas in which physician assistants require further training for the early detection of stressors and prevention treatment of burnout. Once these stressors manifest, a training program can be designed to transfer the necessary skills and knowledge to enable physician assistants to perform their job more effectively, thereby decreasing the chances of morbidity and mortality from burnout. These

training programs can ensue within the educational departments of physician assistant programs and healthcare organizations. Training in burnout intervention will aid in decreasing the morbidity and mortality of the patient and the PA. Using the medical center programming model, the analysis phase for a curriculum on burnout will develop within the conceptual didactic and clinical framework of adult medical education.

Through collaborative efforts with the stakeholders, the organization must map the target public to identify the social, cultural, economic, political, human, and health sanctions of the learner. Based on these sanctions, change can then occur in response to need. To date, changes in managed care and resident hours have caused a change in the demand and function of PAs. In organizations, change takes place when conditions demand new adaptive responses that will ensue continuity, survival, and service or product capabilities of a system. Development of burnout in healthcare demands a reassessment of the needs to identify the stressors that impact burnout.

Thus the needs of the learner, organization, environment, and patient must be analyzed. The characteristics of the learner will incorporate the educational and personal background of the learner that has been collected from educational records and employment files. Learners will be evaluated based on their concern for human and social needs. Next, a questionnaire will be distributed to identify the stressors. Finally, the analysis process will entail a statement of need, broad focus of the content of the training program, recommendations, resource and time requirements for the assessment, and a proposal for the training interventions of stress and burnout.

Design and delivery of a curriculum or workshop will motivate and educate healthcare providers to recognize and provide immediate assistance in response to signs of chronic stress and burnout within the scope of their practice. Experts, referred to as organizational change agents, will design and develop knowledge and skills in the treatment of stress and burnout. The primary focus of the content areas derives from the answered questionnaires. The assessment will include analyzed content, the analyzed change expected, the performance, and environmental training conditions and learning tools. Evaluation of the learner will consist of oral and written evaluations conducted by the learner and organization. Training can then be designed for the healthcare learner.

Teaching the knowledge and skills of practice-based learning and improvement is the foundation for improving patient care (Orgrinic et al., 2003). Plans that medical schools have implemented include didactic instruction in the principles of improvement science such as change in theory, interdisciplinary approaches to healthcare, the structure of health systems, and the link of quality of cost. This instruction allows students to have patient care experience, reflect healthcare from a patient's point of view reducing the need for patient reciprocity, map a process of care, and decide upon appropriate measures. Hopefully, the practice-based learning will be the framework that "serves as a blueprint to bridge the gap between current knowledge and future practice needs" (Orgrinic et al., p.748). A push for more lifelong, self-directed learning must accompany this learning (Harvey et al., 2003). Finally, the hope is that meeting future practice needs will reduce stress leading to burnout.

### *Methodological Problems in the Study of Socialization*

Much attention has been given in research to what is referred to as “attitudinal variables”. These attitudinal variables develop out of a socialization process of the neophyte health professional. Muldary (1983) states that health professionals, especially new graduates, often experience burnout within two years of beginning their job. Many professionals enter into the healthcare profession with a preconceived idea of preparedness only to confront the problems of real life health environment. Healthcare professionals are socialized into the helping profession where they learn “formal and informal values, beliefs, attitudes, standards of practice, modes of interaction, and styles of communication specific to their chosen profession” (Muldary, 1983, p. 190). This socialization becomes the indoctrination to the professional being. The difference in the simulated culture and culture of the reality in which they are becoming a member is referred to as *biculturalism* (Muldary,p.190). The ideals that stem from biculturalism can present when entering into healthcare practice.

Much of medical training focuses on the mechanical and technical aspect of practice. There is no instruction implemented into the career on stress management, and healthcare providers are trained to “handle it”. Despite the struggle to learn the skills to perform the job competently, there is a realization of the lack of skills to be learned and information to be obtained. However, in time the provider becomes more independent and self-confident. During this developmental phase, the health professional is also learning to function within the organization of medicine. The health organization consists of administrators, health providers, government organizations, and insurance and pharmaceutical companies.

Eventually, the professional becomes frustrated and outraged with the bureaucracy and hierarchical structure of organized medicine that is perceived as being different from the simulated training environment. Perhaps dissatisfaction is stimulated by the role socialization process students undergo (Holmes & Fasser, 1993). Medical education programs encourage their students to expect expanded role responsibilities and opportunities for advancement. Perry (1978) speculated, “achievement may increase employee expectations such that satisfaction may actually be reduced should these expectations not be met” (Holmes & Fasser, 1993, p. 177). Frustration and outrage can lead to burnout resulting in attitudinal outcomes of job satisfaction and lack of commitment to healthcare.

#### Specific Methodologies –What is Needed?

In general, Schaufeli et al. (1993) identified problems in the research literature on stress-burnout methodology. Highlights of specific problem areas as well as an in-depth look at the categorical areas of problems, as described by Schaufeli and Enzmann (1998), will be expounded upon.

#### *Theory-Driven Research*

Theory-Driven Research is needed in the area of stress and burnout. Historically, burnout has been integrated into large conceptual frameworks that include social comparison theory, general stress theory, occupational stress theory, and motivational theory (Schaufeli, et al. 1993). Today, burnout is moving toward a broader theoretical context. Research must look at burnout as problem-oriented which involves the etiology of burnout. Etiological factors identified include interpersonal, individual, and organizational (Schaufeli et al., 1993,

p. 256). One of the most important aspects of theory-driven research, including etiological studies, is the examination of the process of burnout as opposed to the end-stage of burnout.

#### *Different Assessment Methods*

Different Assessment Methods must be incorporated and should include methods other than self-report. Measures that need to be included are indices of job performance; turnover and absenteeism rates; ratings by others (clients, supervisors, peers, and family); and physiological assessments of health. Many of the self-report indicators of burnout have previously lacked validation.

#### *Base Rate Information*

Base Rate Information measures are needed to determine the frequency of burnout, the percentage of people who experience burnout, the variation in burnout rate by occupation, the duration of burnout, the frequency of individuals to have repeated episodes of burnout, and the presence of a recovery period from burnout. Speculations have been made about these assumptions, and various percentages have been proposed; however, a need for validated statistical information persists.

#### *Cross-National Research*

Cross-National Research is needed now that research has spread outside English-speaking countries. The Maslach Burnout Inventory (MBI) is used for cross-national settings, but the levels of correlates may not be comparable.



### *Criterion Levels*

Criterion Levels are needed for burnout. The unanswered question is at what level of experience does burnout occur? To answer this question, burnout must be causally related to specific outcomes of consequence and importance. Secondly, the seriousness of burnout as a social problem would have to be recognized.

### *Longitudinal Research Designs*

Longitudinal Research Designs establish causal relationships between the precipitating factors or stressors and outcomes. In much of the literature, burnout data are based on correlational, cross-sectional designs that do not permit causal inferences. Hence, longitudinal studies will provide valuable information about the development and successive phases of burnout.

### *Evaluation Research*

Evaluation Research is necessary to provide adequate information on positive interventions to burnout. Social Support has been identified as an important construct in the conceptual model of stress and burnout. The long-term impact of interventions and social support will provide strategies for possible burnout resolution.

### Summary

A healthy society is a prosperous society. Poor health breeds an unhealthy, uneducated, community that, in turn, increases the morbidity and mortality of a society. Lack of access to quality healthcare, and the dismantling of healthcare organizations are detrimental to our society. Presently, healthcare in the United States equates the quality of

care with an insurance card. United States citizens should concentrate on innovative healthcare policies and medical technology. Healthcare insurance is the tip of the iceberg; the dedication to the profession of medicine is the key to healthcare worldwide. Innovations in healthcare have increased the size and age of the population, thus placing an increased demand on healthcare providers. At the same time, the organization of medicine has failed to address adequately the demands placed on providers. Providers complain of increased stress and burnout. As a result, the ability to matriculate and retain healthcare providers is becoming more difficult. The significance of this research study is three-fold. The results of the study will (1) help physician assistants at any point in their career to understand and recognize the impact of stress and seek interventions to prevent burnout; (2) allow medical education institutions to implement a curriculum that provides course work in stress management; and (3) teach healthcare organizations to recognize and implement interventions reducing stress and alleviating the risk of burnout. According to Justine Strand (2002), the director of the Physician Assistant Program at Duke University, “the choices that the profession makes today, as well as the adherence to professional values of competence and caring, will determine PA’s professional world for years to come” (p.14).

## CHAPTER III: METHODOLOGY

### Introduction

Stress factors and social support which impact burnout among physician assistants is of notable interest in the healthcare profession. As the demand and professional interest for physician assistants grow in the United States, as well as abroad, the propensity for burnout increases. Earlier research on burnout among health professionals has examined stress in relation to burnout primarily among physicians and nurses. Given the limited research on burnout among physician assistants, this study will obtain data from a random national sample of PA's on stress and burnout, and the implication for social support.

### Research Design

The study design for this research is cross sectional (data collected at a certain point in time) using standard survey methodology. The purpose for using this design was to obtain responses from a representative population of practicing physician assistants (PA's). Data extracted from responses to the questionnaire were used to identify the impact of specific stress factors and social support on burnout within the general population of physician assistants.

The research design depicted in Figure 2 demonstrates the conceptual model for this research which is used to describe the impact of the independent variables on the dependent variable. The independent variables (predictor variables) consist of demographic factors, health-care stressors, areas of worklife (*personal stressors, work/environmental /organizational stressors*), and social support. The dependent variable is burnout.

Burnout is depicted as a tripartite model with the following components: emotional exhaustion, depersonalization, and reduced personal accomplishment. The first construct, emotional exhaustion, primarily occurs among service workers who have high interpersonal contact with clients and reduced resources and social support. Because it is the most widely reported and most thoroughly analyzed, the emotional exhaustion construct is considered the “central quality of burnout” (Maslach, Schaufeli, & Leiter, 2001, p. 34). The second component of burnout is depersonalization, which is an attempt to place distance between oneself and the service recipient. Distancing occurs as an immediate response to exhaustion. For example, exhausted employees may develop an indifferent or cynical attitude. The third component is reduced personal accomplishment. Although it follows depersonalization, this component appears to result from exhaustion, but it does not occur until after the observation of depersonalization. That is, chronic demands and exhaustion will erode one’s sense of effectiveness.

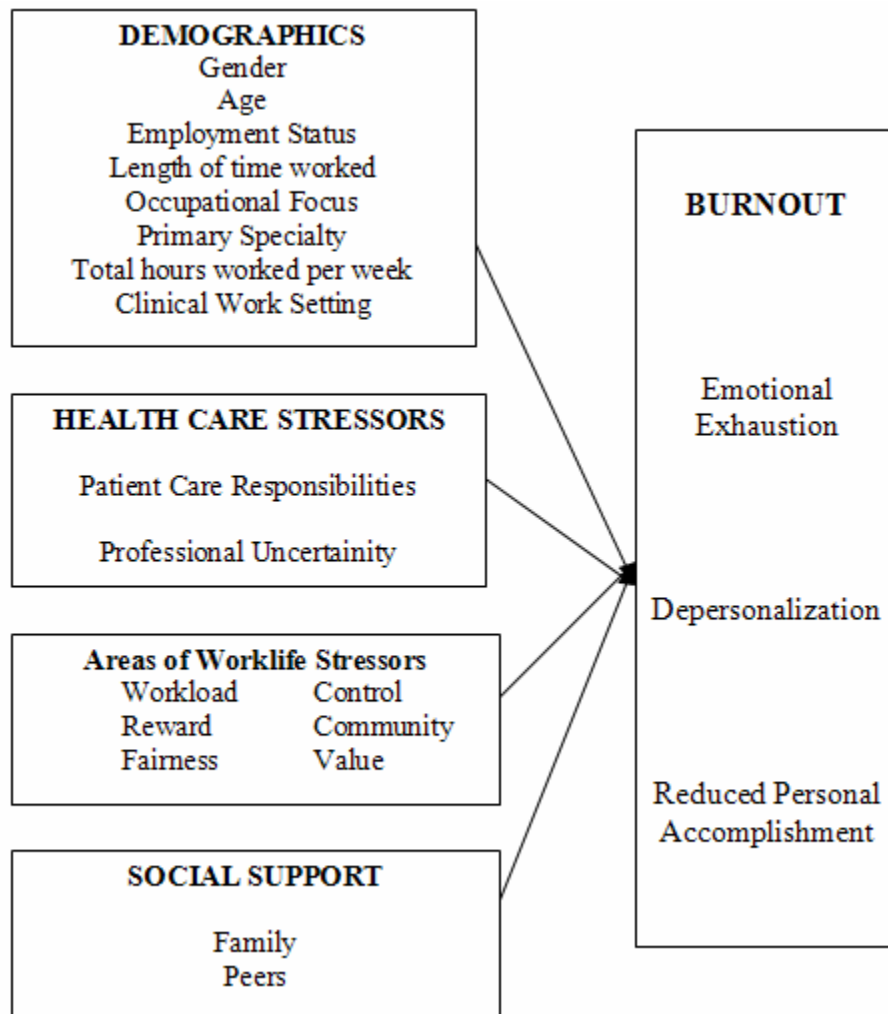
The literature on stress and burnout suggest that minimal methodological research is available for health-care professionals. There have been two published articles regarding burnout in physician assistants. To conduct global research, the conceptualization of a theoretical model is required that encompasses all health-care professionals. Medicine suggests there is a decrease in the retention of personnel secondary to stress and burnout. This theory will be investigated through the following research questions and conceptual model:

- 1) Is there a significant difference between the levels of burnout, healthcare stressors, areas of worklife stressors, and social support among the various demographic groups

- in this study (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 2) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict burnout in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)? (a global model with all demographic questions included)
  - 3a) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict emotional exhaustion (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
  - 3b) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict depersonalization (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
  - 3c) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict reduced personal accomplishment (a

component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?

- 4) What is the ability of healthcare stressors, areas of worklife stressors (e.g., workloads, control, rewards, community, fairness, and value) and social support factors (e.g., attachment, reassurance of worth, reliability alliance, and guidance) to predict burnout in physician assistants?



**Figure 3. 1 Stress factors and Social Support as they impact each factor of burnout.**

### Sample

Physician assistants comprised the target population for this research. Physician assistants were recruited from the annual census provided by the American Academy of Physician Assistants (AAPA). The total United States population of physician assistants is 70,612 as reported by the AAPA 2006 census. At a confidence interval of 95% and error of 4%, a sample of 595 PA's was needed for this study to generalize the results for the sample to the accessible population from which the sample was selected. Previous experience by the

AAPA in surveying this population suggests an expected response rate of 35% (K. Kraditor, personal communication, July 10, 2007). Thus the survey was sent to 1700 physician assistants randomly selected by the American Academy of Physician Assistants.

#### Instrument

The survey questionnaire consisted of five sections. Section one of the questionnaire included sociodemographic information. Section two of the questionnaire examined stress factors using the Health Professions Stress Inventory, a Likert-type instrument designed by Alan Wolfgang (1988) to measure perceptions of stressful job situations common to a variety of health professionals. Section three used the Areas of Worklife Survey, a Likert-type instrument designed by Michael Leiter (1997) to measure stressors in the work/environment that may cause stress and promote burnout. Section four consisted of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), a Likert-type instrument designed by Maslach and Jackson (1981, 1986) to examine the three constructs of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. Section five consisted of the Social Provisions Scale, a Likert-type instrument designed by Cutrona and Russell (1987), that examined social relationships and various dimensions of social support as they impact burnout (see Appendix II and Table 3.1).



**Table 3. 1. Independent Variables**

<b>Independent</b>	<b>Type of Variable</b>	<b>Type of Data</b>
Independent	Healthcare Stress Factors Areas of Worklife Stress Factors Social Support	Continuous
Dependent	Burnout: Emotional Exhaustion Depersonalization Reduced Personal Accomplish	Continuous
Independent Covariates	Age Gender Employment Status Total years worked for Pri. Empl. Practice Site of Prim. Empl. Total hours work/week Pri. Empl. Primary Specialty Occupational Focus	Continuous

*Sociodemographic Information*

The sociodemographic information section of the questionnaire included items relating to gender, age, employment status, total number of years worked as a physician assistant, occupational focus, primary specialty, total hours worked per week for the primary employer, and primary work setting for the primary employer (see Table 3.2).

**Table 3. 2. Demographics**

<b>Demographics</b>	<b>Variable Names</b>
Gender	GENDER
Age	AGE
Employment	EMPSTAT
Total number of years worked as a PA	PAYRS
Occupational Focus	OCCUP
Primary Specialty	SPECIALTY
Total hours worked per week for the primary employer	TOTHR
Primary work setting for the primary employer	SETTING

### Measurement in Research

Characteristics of a good test are the measurement of the validity and the reliability of results. Validity measures the appropriateness, meaningfulness, and usefulness of the specific inferences made from results. A test is neither valid nor invalid, but the inferences we make about the results are either valid or invalid. The instruments used in this research demonstrate two types of validity: construct validity and predictive validity. Construct validity is the extent to which a particular test can be shown to assess the construct that it purports to measure. The researcher begins with a general expectation: Stress Factors and Social Support impact Burnout in physician assistants, which demonstrates how individuals who have various degrees of stress are likely to behave (burnout). Predictive validity (criterion-related) is the degree to which the predictions (levels of stress) are confirmed by

the later behavior (burnout) of the physician assistants to whom the questionnaire was administered (Gall et al., 1996).

Reliability refers to how much measurement error is present in the scores yielded by the test. The reliability coefficient represents the percent of variance in an observed variable that is accounted for by the true scores on the underlying construct (Hatcher & Stepanski, 1994). Internal consistency is the extent to which the individual items that constitute a test correlated with one another or with the test total (Hatcher & Stepanski, 1994). Internal consistency was the method used in this research to estimate the questionnaire results reliability in which the individual items of the test are examined. Cronbach's coefficient alpha ( $\alpha$ ) is a general form of the Kuder-Richardson 20 formula that can be used on a measure not scored dichotomously. The accepted rule for research is a reliability coefficient of .70 (Nunnally, 1978). Reliability is essential to validity, but test results with good reliability do not always yield good validity.

#### Health Professions Stress Inventory

The Health Professions Stress Inventory is a 30-item inventory developed by Alan Wolfgang (1988). The current study used two constructs from this inventory, Patient Care Responsibilities and Professional Uncertainty, consisting of fourteen items (see Table 3.3). These items were selected because of the specificity for physician assistants as health professionals. The subscale identified the sources and consequences of job stress among health professionals, resulting in decreased problem solving capabilities, and lessened quality of care provided to patients. Each construct serves as an independent (predictor) variable in the study in order to answer the research question of how stress factors of health

professionals impact burnout. The questionnaire will be scored using a 5-point Likert-type scale. Responses will range from 0 (Never) to 4 (Very Often) (see Appendix II). The answer chosen for each question represents a value (or score) in the distribution which contributes to the mean. The factor variable was obtained by taking the mean of the component questions. Then the average mean of all the items were obtained to produce the construct variable healthcare stress.

**Table 3. 3. Healthcare Stress Factors**

Healthcare Stress Factors	14 Questions	Variable Name
Patient Care Responsibilities	Question 1-7	HSPCR
Professional Uncertainty	Question 1-7	HSPU

*Reliability*

Gupchup and Wolfgang (1994) completed a study analyzing factors of stress identified in pharmacists. Reliability coefficients for the factors of the inventory—professional recognition, patient care responsibilities, job conflicts, and professional uncertainty—were indicated by Cronbach’s coefficient alpha, ranging from 0.74 to 0.84. The scores were based on the factors with scales from collected data. The factors correlated moderately, significantly, and in the expected directions with scores on the social support, career commitment, organizational commitment, and the job satisfaction scale. For this research, Cronbach’s alpha coefficients, assessing internal consistency, were comparable at 0.89, 0.89, and 0.70, respectively, indicating good to very good internal consistency (see Table 3.4).

**Table 3. 4. Data Comparison of Cronbach Coefficients. Pearson Product-Moment Correlations Between Four Stress Factors and Coworkers' Social Support, Career Commitment, Organizational Commitment, and Job Dissatisfaction (N=573)**

<b>Factor</b>	<b>Cronbach's Alpha</b>
<b>Professional Recognition</b>	<b>.84</b>
<b>Patient Care Responsibilities</b>	<b>.74</b>
<b>Job Conflicts</b>	<b>.76</b>
<b>Professional Uncertainty</b>	<b>.77</b>
<b>Coworkers' Social Support</b>	<b>.85</b>
<b>Career Commitment</b>	<b>.94</b>
<b>Organizational Commitment</b>	<b>.92</b>
<b>Job Dissatisfaction</b>	<b>.84</b>

*Note.* Cronbach coefficients alpha are given on the diagonals. From the "Health Professions Stress Inventory: factor structures for pharmacists," by Gupchup and Wolfgang, 1994, *Perceptual and Motor Skills*, 79(1Pt2), p.517. In Wolfgang's study in 1988 of various health professionals, internal consistency was estimate by Cronbach's coefficient alpha (n =1242) Wolfgang, 1988.

### *Validity*

In the same study conducted by Gupchup and Wolfgang (1994), interfactor total score correlations, as well as correlations of total scores on the factors with other scales on which the data had been collected, provided evidence of construct validity. Confirmatory factory analysis provided support to the generalizability of Gupchup and Wolfgang's factor structure of the Health Professions Stress Inventory (Gupchup & Wolfgang, 1994). Akhtar and Lee (2002) considered all of the factors of the Stress Inventory had moderate correlations with emotional exhaustion, depersonalization, and reduced personal accomplishment except for patient care responsibilities. Professional Recognition (and Professional Uncertainty

demonstrated high coefficient alphas. The factors also had “moderate” positive correlation with emotional exhaustion and depersonalization, but “weak” negative statistically significant correlations with reduced personal accomplishment (Gupchup and Wolfgang, 1994) (See Table 3.5).

**Table 3. 5. Pearson Correlations Between The Dimensions of Health Professional Stress Inventory and Job Burnout.**

Factor	1	2	3	4	5	6	7
<b>Professional Recognition</b>	<b>.78</b>						
<b>Patient Care</b>	.40	<b>.61</b>					
<b>Responsibilities</b>							
<b>Job Conflicts</b>	.65	.47	<b>.70</b>				
<b>Professional Uncertainty</b>	.65	.33	.62	<b>.80</b>			
<b>Emotional Exhaustion</b>	.51	.28	.53	.50	<b>.90</b>		
<b>Reduced</b>	-.20	.13	-.08	-.25	-.08	<b>.78</b>	
<b>Personal</b>							
<b>Accomplishment</b>							
<b>Depersonalization</b>	.48	.19	.44	.52	.68	-.12	<b>.82</b>

All correlation coefficients are significant at  $p \leq .01$ . Scores were anchored by 0; never and 4; very often for the factors of the Stress Inventory and by 0; never and 6; always for the job burnout dimensions. Coefficient alpha's are given on the diagonal, by Akhtar and Lee, 2002, *Confirmatory Factor Analysis and Job Burnout Correlates of the Health Professions Stress Inventory*, 90, p.249.

*Reliability and Validity Retest for this Research*

The reliability for Patient Care Responsibilities demonstrated a Cronbach's Alpha of .50 (see Table 3.6), and Professional Uncertainty demonstrated a Cronbach's Alpha of .64 (see Table 3.7). A Cronbach's Alpha of .70 or higher is considered in research to be sufficiently reliable for most research purposes (Hatcher & Stepanski, 1994). Since the factor analysis for the Patient Care Responsibilities and the Professional Uncertainty scales demonstrated Cronbach Alpha's < .70, these two scales were considered non-reliable and therefore not valid. The Healthcare Stressors Inventory was therefore omitted from the conceptual model and research questions.

**Table 3. 6. Reliability Statistics for Patient Care Responsibilities**

<b>Reliability Statistics</b>		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.483	.503	7

**Table 3. 7. Reliability Statistics for Professional Uncertainty**

<b>Reliability Statistics</b>		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.611	.648	7

The Areas of Worklife Survey

The Areas of Worklife Survey identifies six areas of the work environment as the most relevant to the relationships people develop with their work. A mismatch between people and their work environments in these areas reduces capacity for energy, involvement, and sense of effectiveness. Matches in these areas enhance engagement, and reducing

engagement increases burnout (Leiter, 2003). This indicator is used to identify stress factors in the work/environment that impact burnout. The Areas of Worklife Survey contains 38 items that create six factors: Workload, Control, Reward, Community, Fairness, and Values (see Table 3.8). Each item is measured using a 6-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree; see Appendix II). The answer chosen for each question represents a value (or score) in the distribution which contributes to the mean. The factor variable was obtained by taking the mean of the component questions. Then the average mean of all the items were obtained to produce the construct variable worklife stress.

**Table 3. 8. Work/Environment Stress Factors**

<b>Work/Environment Stress Factors</b>	<b>29 Questions</b>	<b>Variable Name</b>
Workload	6 Questions	WEW
Control	3 Questions	WEC
Reward	4 Questions	WER
Community	5 Questions	WECOM
Fairness	6 Questions	WEF
Values	5 Questions	WEV

Leiter performed a comparison of Descriptive Statistics on the Areas of Worklife Survey (see Table 3.9). Descriptive Statistics are mathematical techniques for organizing and summarizing a set of numerical data. The mean is defined as the numerical average which provides the best measure of central tendency, the median is the middle point in a distribution of scores, and the mode is the most frequently occurring score in a distribution. When a distribution of scores is symmetrical, the mean and the median are located at the same point in the distribution. When the distribution has more extreme scores at one end than at the other it is considered skewed. The mean will always be in the direction of the



extreme scores, and in a skewed situation the median will reflect more accurately the average performance of the sample. The standard deviation demonstrates there is a very small deviation from the mean (Munro, 2005).

**Table 3. 9. Comparison of Descriptive Statistics of the Six Subscales of the Areas of Worklife Survey**

	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>Cronbach's Alpha</b>
<b>Workload</b>	8301	2.87	0.84	-0.02	-0.61	0.76
<b>Control</b>	8464	3.36	0.89	-0.47	-0.16	0.69
<b>Reward</b>	8456	3.20	0.93	-0.37	-0.35	0.82
<b>Community</b>	8123	3.46	0.84	-0.51	-0.12	0.82
<b>Fairness</b>	8309	2.84	0.83	-0.22	-0.41	0.82
<b>Values</b>	8084	3.42	0.74	-0.33	0.01	0.72

*Note.* Correlations were conducted among the six areas of worklife and their correlations with the MBI-GS for a normative sample of over 8600 respondents. Note. All correlations were significant  $p < 0.01$ . From Areas of Worklife Survey Manual by Michael Leiter, 2003, p. 4 (3<sup>rd</sup> ed.). Copyright 2003 by The Centre for Organizational Research & Development.

In the current study, reliability for each construct was determined for the Areas of Worklife. Cronbach's Alpha values were calculated from this research study (see Table 3.10). The values were almost identical to the Cronbach Alpha values calculated by Leiter demonstrating good reliability and therefore validity. Leiter conducted factor analysis (see Table 3.11) and a correlation matrix for this indicator (see Table 3.12).

**Table 3. 10. Cronbach's Alpha for the Areas of Worklife Survey for this Research**

<b>Areas of Worklife Survey:</b>	<b><math>\alpha</math></b>
Workload	0.78
Control	0.67
Reward	0.87
Community	0.82
Fairness	0.81
Value	0.77

**Table 3. 11. Principal Components Factor Analysis**

	<b>Fairness</b>	<b>Community</b>	<b>Workload</b>	<b>Reward</b>	<b>Value</b>	<b>Control</b>
Fairness 5	-0.70					
Fairness 4	0.70					
Fairness 6	-0.67					
Fairness 3	0.65					
Fairness 1	0.64					
Fairness2	0.54					
Community 3		0.84				
Community 4		0.80				
Community 2		0.74				
Community 1		0.61				
Community 5		0.57				
Workload 4			0.78			
Workload 1			0.76			
Workload 3			0.70			
Workload 5			-0.63			
Workload 2			0.62			
Workload 6			-0.46			
Reward 3				-0.78		
Reward 4				-0.73		
Reward 1				0.72		
Reward 2				0.69		
Values 1					0.78	
Values 3					0.77	
Values 4					0.67	
Values 2					0.60	
Values 5					-0.44	
Control 3						0.73
Control 1						0.72
Control 2						0.57

*Note.* All correlations were significant  $p < 0.01$ . . From Areas of Worklife Survey Manual by Michael Leiter00, p.13, (3<sup>rd</sup> ed.). Copyright 2003 by The Centre for Organizational Research & Development

**Table 3. 12. Correlations Among Measures. Correlations among the six areas of work life and their correlations with the MBI-GS.**

	Control	Reward	Community	Fairness	Values	Exhaustion	Cynicism	Efficacy
<b>Workload</b>	0.28	0.26	0.22	0.28	0.14	-0.53	-0.21	0.05
<b>Control</b>		0.45	0.40	0.46	0.34	-0.32	-0.30	0.23
<b>Reward</b>			0.44	0.50	0.33	-0.30	-0.34	0.21
<b>Community</b>				0.48	0.36	-0.28	-0.30	0.17
<b>Fairness</b>					0.48	-0.32	-0.34	0.13
<b>Values</b>						-0.22	-0.35	0.20
<b>Exhaustion</b>							0.55	-0.15
<b>Cynicism</b>								-0.31
<b>Efficacy</b>								

*Note.* All correlations were significant  $p < 0.01$ . From Areas of Worklife Survey Manual by Michael Leiter, 2003, p.6, (3<sup>rd</sup> ed.). Copyright 2003 by The Centre for Organizational Research & Development.

#### Maslach Burnout Inventory (Human Services Survey)

The Maslach Burnout Inventory (MBI-HSS) is a 22-item, self-report instrument developed by Maslach and Jackson (1986). The MBI-HSS is appropriate for this study because of the specificity for physician assistants as human service providers. This subscale assesses the three aspects of the burnout constructs. The multidimensional constructs include emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment. The answers chosen for each question of the scale represents a value (or score) in the distribution which contributes to the mean. The factor variable was obtained by taking the

mean of the component questions, and the average mean of all the items were obtained to produce a Burnout variable.

**Table 3. 13. Three Components of Burnout**

<b>Burnout</b>	<b>Question</b>	<b>Variable</b>
Emotional Exhaustion	1-9	EE
Depersonalization	0-14	DEP
Reduced Personal Accomplishment	14-22	RPA

*Note.* The constructs are used as the dependent (criterion) variable of burnout.

Each of the three continuous dependent variables was measured by combining the constructs related to perceived burnout in the sample of physician assistants (see Table 3.13). The nine items in the emotional exhaustion subscale assessed feelings of emotional over-exhaustion by one’s work (Maslach et al., 1997). Five items in the depersonalization subscale assessed impersonal responses and detachment towards recipients of one’s service care, or treatment (Maslach et al., 1997). The eight items of Reduced Personal Accomplishment assessed feelings of competence and career achievement, and were independent of the other subscales. In measuring this construct, lower degree scores should correspond to higher levels of burnout (see Appendix II). The three constructs of burnout were used to determine the predictive value of stress factors, social support, and demographics on burnout in Physician Assistants.

## Reliability

Internal consistency was estimated by Cronbach's coefficient alpha. The reliability coefficients for the subscales were the following: 0.90 for Emotional Exhaustion, 0.79 for Depersonalization, and 0.71 for Personal Accomplishment (see Table 3.14).

**Table 3. 14. Data Comparison of Factors of the MBI demonstrating Internal Consistency.**

Factors	Description	Survey Question Numbers	Coefficient Alpha
Emotional exhaustion	Emotionally overextended and exhausted by one's work	1-9	0.90
Depersonalization	Unfeeling and impersonal toward recipients of one's service, care, treatment or instruction	10-14	0.79
Reduced personal accomplishment	Assess feelings of competence and successful achievement in one's work with people	14-22	0.71

*Note.* Evaluating Stress, by Zalaquett & Wood, 1997, Lanham, Maryland: The Scarecrow Press, Inc.

Data on the test-retest of the MBI were reported for two samples. The results of both tests demonstrated coefficients were significant because they were beyond 0.001. In further studies, the MBI proved to be stable over time with correlations in the 0.50 to 0.82 range. Emotional exhaustion appeared to be the most stable burnout dimension and depersonalization was the least stable (Schaufeli & Enzmann, 1998). According to Maslach, subsequent studies were needed to determine the MBI subscales over time with correlation.

Convergent reliability was demonstrated in three ways. First, the MBI's score was correlated with behavioral ratings made independently by an individual who knew the coworker well. Second, the MBI scores were correlated with the presence of job characteristics contributing to burnout. Third, MBI scores were correlated with measures of outcomes related to burnout. Each of the three correlations provided evidence for the

validity of the MBI (Maslach et al., 1997). The values for Cronbach's Alpha conducted in this research were very similar to those found in the literature. Once again demonstrating the reliability and validity of the Burnout scale (see Table 3.15).

**Table 3. 15. Internal Consistency using Cronbach's Alpha Determined for this Research**

<b>MBI Human Services Survey: Burnout</b>	<b><math>\alpha</math></b>
Emotional Exhaustion	0.91
Depersonalization	0.77
Reduced Personal Accomplishment	0.73

### *Validity*

MBI subscales measure hypothetical aspects of burnout (Maslach et al., 1997). A set of selection criteria was applied to reduce the number of items to 25, and the form was administered to obtain confirmatory factor data. The results of the first data analysis were compared to the second data analysis, and the samples were combined. Ten factors accounted for more than three fourths of the variance yielding a four-factor analysis. Factor analysis used principal factoring with iteration and an orthogonal (varimax) rotation (1997). Selection criteria yielded the total number of 22 items.

Sixma, Bakker, Bosveld, Lobach, Groenewegen, and Schaufeli (1999) presented predictive validity demonstrating that the sufficient levels of emotional exhaustion was predictive of professional attrition. The MBI must be distinguished from measures of other psychological constructs such as job satisfaction and depression. Burnout was confirmed by discriminate validity as a complex three-factor syndrome in which each construct was interrelated to job satisfaction, distress syndrome, and depression. Cronbach and Meehl

(1955) suggested that to provide evidence of construct validity, a nomological network would have to be created. This network provided a linkage between the theoretical framework that was attempting to be measured and the empirical framework that was actually being measured. Their attempt was to find a means to link the conceptual/theoretical realm with the observable one, but this did not provide methodology for construct validity.

#### *Factor Analysis:*

Factor analysis is defined as a statistical tool used to analyze variables to observe any covariation among variables, and provide evidence of validity concerning the structure of the instruments used in the study. Factor analysis reduces data by seeking underlying unobservable (latent) variables that are reflected in the observed variables (manifest variables) (Munro, 2005).

#### *Factor Analysis of the MBI*

In the published literature, factor analysis has been examined on all 22 MBI-HSS items and consistently found cross-loadings for item 12 and item 16 (Byrne, 1993; Leiter & Durup, 1994; Schaufeli & Van Dierendonck, 1993). The other 20 items of the MBI- HSS load consistently and exclusively on the appropriate subscale. Confirmatory factor analysis using linear structural equations modeling confirms the MBI-HSS (Gold, Bachelor and Michael, 1989). The MBI Human Services Survey (HSS) completed by Maslach, Leiter, and Jackson (1996), demonstrated the three constructs of burnout were interrelated; thus, a multidimensional model fits better to the data than a one-dimensional model as reported by Schaufeli and Enzmann (1998).



*Factor Analysis for this Research Study*

Item number 20 was unintentionally omitted from the MBI: Human Services Survey used for this study. Factor analysis was performed on the remaining items to confirm the three constructs remained interrelated, and the multidimensional model fit to data rather than a one -dimensional model (see Table 3.16).

**Table 3. 16. Factor Analysis of Modified Maslach Burnout Inventory-HSS for this Research as Compared to Prior Factor Loading Values**

	<b>Factor Loading This Research</b>	<b>Factor Loading MBI-HSS</b>
<b>Emotional Exhaustion</b>		
I feel emotionally drained from my work	.84	.74
I feel used up at the end of the workday	.83	.73
I feel fatigued when I get up in the morning and have to face another day on the job	.81	.66
Working with people all day is really a strain for me	.55	.61
I feel burned out from my work	.83	.84
I feel frustrated by my job	.72	.65
I feel I'm working too hard on my job	.76	.56
Working with people directly puts too much stress on me	.47	.54
<b>Depersonalization</b>		
I feel I treat some recipients as if they were impersonal objects	.72	.67
I've become more callous toward people since I took this job	.78	.66
I worry that this job is hardening me emotionally	.72	.55
I don't really care what happens to some recipients	.63	.62
I feel recipients blame me for some of their problems	.56	.41
<b>Personal Accomplishment</b>		
I can easily understand how my recipients feel about things	.74	.50
I deal very effectively with the problems of my recipients	.56	.54
I feel I'm positively influencing other people's lives through my work	.67	.58
I feel very energetic	.40	.43
I can easily create a relaxed atmosphere with my recipients	.70	.51
I feel exhilarated after working closely with my recipients	.66	.55
I have accomplished many worthwhile things in this job	.69	.57
In my work, I deal with emotional problems very calmly	.56	.59

Factor loading for the MBI-HSS. Note: question #20 "I'm at the end of my rope" was unintentionally omitted from the research model. Comparisons in factor loading were made with the factor analysis per the literature. From the Maslach Burnout Inventory Manual (p.43), by C. Maslach, S. Jackson, and M. Leiter, 1996

**Social Provisions Scale (SPS)**

The Social Provisions Scale developed by Cutrona and Russell (1987) is an instrument used to measure two constructs of social support: peer and organizational. The

design of the scale includes twelve items which describe the presence of a type of support (Cutrona & Russell, 1987), and twelve items which describe the absence of a type of support. Items were based on the six social provisions identified by Weiss (1974). Each instrument contains 24 items, four for each of the following social provisions: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance (see Table 3.17). The answer chosen for each question represents a value (or score) in the distribution which contributes to the mean. The factor variable was obtained by taking the mean of the component questions, and the average mean of all the items to obtain the construct variable social support.

**Table 3. 17. Social Support Factors**

<b>Social Support Factors</b>	<b>Questions 1-24</b>	<b>Variable Name</b>
Attachment	11, 14, 17, 21	SSA
Social Integration	2,5, 8, 22	SSSI
Reassurance of Worth	6, 9, 13, 20	SSRW
Reliable Alliance	1, 10, 18, 23	SSRA
Guidance	3, 12, 16, 19	SSG
Opportunity of Nurturance	4, 7, 15, 24	SSON

The individual item selection for each provision was based on factor analysis (Russell & Cutrona, 1984). The questionnaire's scoring used a 4-point Likert-type scale in which each statement describes a current social network. Responses ranged from 1 (strongly disagree) to 4 (strongly agree). The SPS (Social Provisions Scale) was used as one independent variable in the present study to answer the question: What is the impact of social support factors on burnout (see Appendix II)?

### *Reliability*

The internal consistency of the subscale was acceptable. A study of 100 elderly subjects using the SPS (Social Provisions Scale) revealed internal consistency values above 0.70. A study of 300 teachers revealed internal consistencies above 0.60 (Russell, Cutrona, Rose, & Yurko, 1984). The studies reported test-retest reliability coefficients ranging from .37 to .66 (see Table 3.18).

**Table 3. 18. Data Comparison of Test-Retest Reliability Coefficients**

<b>Attachment</b>	2R, 11, 17, and 21R	$\alpha=.53$
<b>Social Integration</b>	5,8,14R, and 22R	$\alpha=.93$
<b>Reassurance of Worth</b>	6R, 9R, 13, and 20	$\alpha=.33$
<b>Reliable Alliance</b>	1,10R, 18R, and 23	$\alpha=.56$
<b>Guidance</b>	3R, 12, 16, and 19R	$\alpha=.78$
<b>Opportunity for Nurturance</b>	4, 7, 15R, and 24R	$\alpha=.59$

*Note.* R = Reversed items. From The provisions of social relationship and adaptation to stress by C. Cutrona and D. Russell, 1987, p. 473. In W.H. Jones & D. Perlman (Eds.) Advances in personal relationships (Vol. 1, pp 37-67). Greenwich, CT.

### *Validity*

Predictive validity was confirmed by a study of first-time mothers which found that the provisions of reliable alliance, reassurance of worth, social integration, and guidance were predictive of postpartum depression (Cutrona et al., 1984). Convergent validity was demonstrated using the results of a study of the elderly in which the loneliness total score correlated from 0.28 to 0.31 ( $p<0.05$ ) with life satisfaction, loneliness, and depression (Cutrona et al., 1984). Attachment correlated most highly with satisfying romantic or marital relations  $r = 0.53$  (Russell et al., 1984). Discriminant validity was confirmed using

intercorrelations among the six provisions ranging from 0.10 to 0.51 with mean intercorrelation of 0.27.

*Reliability and Validity for this Research*

Cronbach alpha's obtained for the social provision scales were  $<.70$  for social integration ( $\alpha = .60$ ) and opportunity for nurturance ( $\alpha = .57$ ). Therefore, social integration and opportunity for nurturance were eliminated from the final research questions and regression analysis (see Table 3.19). The remaining constructs of Social Support remained as part of the conceptual model.

**Table 3. 19. Internal Consistency using Cronbach's Alpha**

<b>Social Support Provisions Scale: Social Support</b>	<b><math>\alpha</math></b>
Attachment	0.82
Social Integration	0.60
Reassurance of Worth	0.70
Reliable Alliance	0.75
Guidance	0.86
Opportunity for Nurturance	0.57

### *Factor Analysis*

Factor analysis of the social provisions scale was conducted in the research study of the physical activity among black and white girls (Motle et al., 2004). The results initially demonstrated a poor fit of the six-factor measurement model. The model was retested using reverse-coded questions. The covariances among the six substantive first-order factors on the social provisions scale, which included an orthogonal method factor for negatively worded items, produced an acceptable fit. There was evidence for the invariance in first and second order factor loadings (Motle et al., 2004). The weakest factor loadings were found in the component, nurturance (0.55). The authors retained nurturance in the scale because it was representative of the reciprocal nature of social support (Cobb, 1976, Cutrona & Russell, 1987, & Weiss, 1974).

### Data Collection

This quantitative study focused on surveying participants who have completed training at an accredited physician assistant program, passed the national certifying /or recertifying examination (NCCPA), and were licensed to practice medicine. The AAPA systematically selected a random sample from a national roster of physician assistants. From a total population of approximately 70,612 physician assistants, 1700 physician assistants were randomly selected. The names and addresses were placed in an excel file to generate mailing labels. The mailing labels were placed on the packets to be mailed to each sample participant. Enclosed in the packet were the following: a cover letter asking the sample member to participate in the survey, the consent form, a printed copy of the questionnaire, and a postage paid envelope addressed to the researcher. Upon receipt of the returned

packets, the consent forms were separated from the questionnaires to prevent linking the questionnaire with the subject. One signed consent form was randomly selected on November 12, 2007 (deadline date for the questionnaire), for a free one-year AAPA membership. The one-year membership was mailed to the selected subject by matching the name on the consent form with the mailing label in the excel file supplied by the AAPA. The questionnaire did not contain a name or number that could be linked to the sample participant in the study at the time of analysis. This ensured that all sample participants completing the survey remained anonymous.

### Data Analysis

After the respondents completed the survey, the analysis was conducted using standard research practices. The data obtained from the survey was compiled. There were 345 respondents in the study, and the amount of missing data varied depending on the answers from the questionnaire. Missing data could be the result of the subject or item level. Missing data from an item was found to be common on a survey or questionnaire where respondents did not complete the instrument. Missing data could present a statistical problem because all standard statistical techniques presume that the data set has the information on all of the variables to be included in the analysis. The respondent's questionnaire was omitted from further analysis if the majority of the responses were missing for a scale, or if the participant did not complete an entire instrument of the questionnaire.

A spread sheet of the data was imported into SPSS, version 16.0 Graduate Pack. The raw data was screened to ensure there were no keying errors. Screening included investigating any outliers or invalid responses for correction by a second review of the

original survey instrument. In order to answer the research questions the following statistical analyses were computed.

The first step in analyses of the data was to report the descriptive information on all the variables to be used in the regression model. Descriptive statistics were used to assess each of the variables of the population and arrive at summary values. The descriptive statistics section observed the frequency of categorical data; and the measures of central tendency (mean, median, and mode) and measures of variability (standard deviation, variance, and range) used to describe continuous data. Descriptive statistics were obtained for each independent demographic variable: gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting. Descriptive statistics were obtained for each component of the independent variables: Areas of Worklife Stressors (workload, reward, control, community, fairness, and values) and Social Support (attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance). Descriptive statistics were obtained for each construct of the dependent variable burnout: emotional exhaustion, depersonalization, reduced personal accomplishment.

Frequency is a distribution of the individual values or ranges of values used to examine the relationship between the categorical variables in the research study (gender, employment status, occupational focus, specialty, and primary practice setting). Measures of central tendency were used to report the descriptive statistic of continuous variables (Areas of Worklife Survey, Social Support, and the Maslach Burnout Inventory).

The second step in the analyses was to confirm reliability of the factors used in this research study. Cronbach's Alphas were computed for each of the variables. The scales that achieved a Cronbach's alpha of .70 or higher were kept intact, which is sufficient reliability estimates. The scales that achieved Cronbach's alpha below the recommended .70 had items omitted to increase the alpha to .70 or higher. Question #20 of the Maslach Burnout Inventory was unintentionally omitted when the questionnaire was graphically constructed. A factor analysis was conducted on the Maslach Burnout Inventory-HSS to confirm the factors were loading accurately. In the literature, factor analysis was conducted for the Areas of Worklife Survey and Social Provisions Scale.

In order to answer Research Questions 1 through 4 of the research study, it was appropriate to begin the analysis by computing all possible correlations between the studies independent variables (stress factors and social support), and one dependent variable (burnout) to determine which independent variables would be included in the model. Reviewing the correlation provided understanding of the relationship between the criterion variables and the two predictor variables (stated above).

Included in Research Question 1 was an independent samples *t*- test. A *t*-test explores whether there is a significant *t* difference between the means of the two values of the dichotomous categorical variable. The *t* test was conducted to examine the correlation between burnout and certain demographics (categorical variables): gender, employment status, and occupational focus. One-Way ANOVA (analysis of variance) is a more robust *t* test which involves a comparison of several groups on a particular measure (Munro, 2005).



ANOVA asks the question, is there a difference between three or more groups of subjects with respect to their scores on an interval-or ratio scale (continuous).

The final step in the analysis of this data was to conduct multiple linear regression. Once the bivariate scales were amended for question 2a, bivariate correlation techniques, and multiple linear regression were conducted to answer questions 2, 2a, 3a, 3b, 3c, and 4. Significance of the regression coefficients was viewed as evidence that the corresponding predictor variables are important predictors of the criterion. The p-values  $<.0001$  verified the probability that the null hypothesis was rejected and R-squared was statistically significant. Multiple regression investigated the relations between a single criterion variable (burnout) and an optimally weighted linear combination of predictor variables (demographics, work stressors, and social support) when taken as a group; whether the multiple regression coefficient for a given predictor variable is statistically significant (the coefficient represents the amount of weight given to a specific predictor), while holding constant the other predictors; and whether a predictor accounts for a significant amount of variance in the criterion beyond the variance accounted for by the other predictors.

The variables were tested for multicollinearity in questions 3a, 3b, 3c, and 4. Multicollinearity occurs when one independent variable is very highly correlated with another independent variable. However, if the VIF for the variables does not exceed ten, and the tolerance was not less than 0.20, then multicollinearity did not exist (Allison, 1999).

The analysis techniques described above provided evidence of a correlation among demographics, worklife stressors, and social support. Further description of the analysis and results of the following research questions will be presented in chapter 4.

## Research Questions

Through consideration of the literature the following research questions were developed:

- 1) Is there a significant difference between the levels of burnout, healthcare stressors, areas of worklife stressors, and social support among the various demographic groups in this study (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 2) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict burnout in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)? (a global model with all demographic questions included)
- 3a) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict emotional exhaustion (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 3b) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict depersonalization (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time

- worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 3c) What is the ability of healthcare stressors, areas of worklife stressors, social support, and the various demographic variables to predict reduced personal accomplishment (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 4) What is the ability of healthcare stressors, areas of worklife stressors (e.g., workloads, control, rewards, community, fairness, and value) and social support factors (e.g., attachment, reassurance of worth, reliability alliance, and guidance) to predict burnout in physician assistants?

Based upon preliminary analysis of the independent variables (see Chapter 4), the research questions were revised to be the following:

- 1) Is there a significant difference between the levels of burnout, areas of worklife stressors, and social support among the various demographic groups in this study (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 2) What is the ability of areas of worklife stressors, social support, and the various demographic variables to predict burnout in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as

a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)? (a global model with all demographic questions included)

- 2a) What is the ability of areas of worklife stressors, social support, and the various demographic variables to predict emotional exhaustion (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 3b) What is the ability of areas of worklife stressors, social support, and the various demographic variables to predict depersonalization (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 3c) What is the ability of areas of worklife stressors, social support, and the various demographic variables to predict reduced personal accomplishment (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 4) What is the ability of healthcare stressors, areas of worklife stressors (e.g., workloads, control, rewards, community, fairness, and value) and social support factors (e.g., attachment, reassurance of worth, reliability alliance, and guidance) to predict burnout in physician assistants?

The revision of the questions based on preliminary analysis, therefore led to the revision of the conceptual model to reflect these changes.

New Conceptual Model I

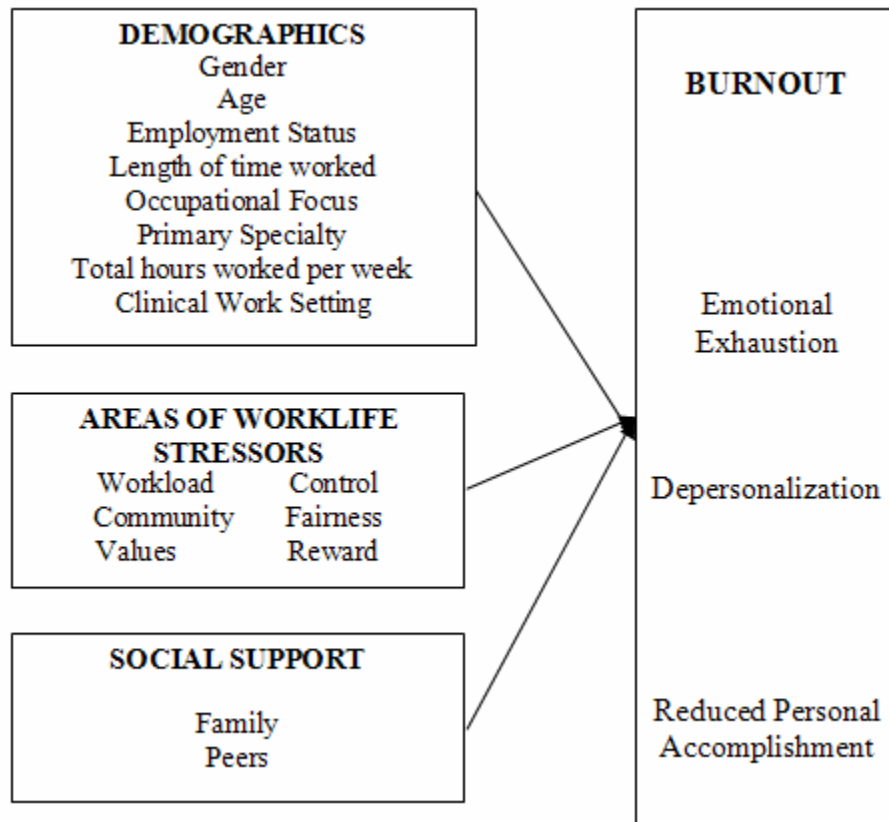


Figure 3. 2 Stress factors and Social Support as they impact each factor of burnout.

## Delimitations

The randomized sample was comprised of NCCPA (National Commission on the Certification of Physician Assistants) certified, State board licensed practicing physician assistants who specialized in specific areas of medicine. The focus of the questionnaire pertained to health care environment.

## Limitations of the Study

Stressors, other than those specifically chosen as predictor variables in this study, could have a significant prediction of burnout in physician assistants including, but not limited to, pre-diagnosis of dysfunctional mental health and education in addition to or beyond general physician assistant education (advanced degree or residency). The second limitation of this study was the assumption that the respondents answered each question truthfully. The third limitation was the sampling procedure decreased the generalizability of the research findings. The study was not a true random sample randomized to all physician assistants in healthcare because the recommended sample size was not obtained.

## Conclusion

This research provides knowledge and insight as to which stress and social support factors impact burnout. There is very limited research on burnout in physician assistants. The effort of the research study is to contribute understanding of burnout in this population and support additional research on this topic. The model used for this research will hopefully provide a standard medical education model to identify stress factors to prevent burnout. Ultimately, this research may contribute to the implementation of strategies to reduce the

impact of burnout in this population. A direct benefit may be gained by physician assistant educators and practitioners to understand how burnout affects their career performance and the impact on overall health-care. The results of this research will be used to preserve the quality and excellence of the health-care profession to achieve higher levels of job satisfaction and commitment.

## **CHAPTER IV: RESULTS**

### Introduction

The purpose of this study was to investigate the impact of various demographic factors, areas of worklife stressors, and social support on burnout in physician assistants. Knowing the stressors that impact the development of burnout in physician assistants may predict the retention of the physician assistant in the field of medicine. Generally, the literature has shown that certain stressors among medical personal may have a significant impact on burnout. Identifying and educating physician assistants regarding these stress factors may prevent burnout, and significantly increase productivity and commitment to the field of medicine.

In this chapter, the results of the statistical analyses to answer the research questions were presented. All data analyses for this paper were generated using SPSS Graduate Pack – 16.0 software, copyright © 2007 SPSS Inc. SPSS is a registered trademark and the other product names are the trademarks of SPSS Inc. for its proprietary computer software, Chicago, Illinois, USA.

The American Academy of Physician Assistants was enlisted to systematically select a random sample from a national roster of physician assistants used for this quantitative research. From a total population of approximately 70,612 physician assistants, 1700 physician assistants were randomly selected to complete the survey questionnaire. There were 360 respondents, but questionnaires from 345 respondents were selected. The other 15 questionnaires were eliminated from the analyses secondary to missing data, and receipt of the questionnaire after the date of November 12, 2007.



The independent (predictor) variables needed to answer the research questions were as follows: healthcare stressors, areas of worklife stressors and social support to answer the research question are as follows: healthcare (patient care responsibilities, professional uncertainty), areas of worklife (workload, control, reward, community, fairness, values) and social support (attachment, social integration, reassurance of worth, reliable alliance items, guidance, and opportunity for nurturance). These multiple continuous independent (predictor) variables measured on an interval scale, were measured by combining the responses to the Likert-type questions related to perceived work-related stressors and social support. The authors of the Areas of Worklife Survey and Social Provisions Scale reverse coded some of the questions to reflect the actual responses. The Health Professions Survey instrument was eliminated from this research due to non-reliable scales demonstrated by low Cronbach's Alpha  $< .70$ . The continuous dependent (criterion) variable was measured on an interval scale by averaging the responses to the questions related to Burnout (Emotional Exhaustion, Depersonalization, and Reduced Personal Accomplishment). Therefore, the responses to the independent variables and the dependent variable were used to examine the predictive ability of stressors and social support to impact burnout.

### Analysis

This chapter presents the analytical results of this research using the SPSS statistical program. The first step in analyses of the data was to report the descriptive information on all the variables to be used in the regression model. Descriptive statistics were used to assess each of the variables of the population and arrive at summary values.

The second step in the analysis was to confirm reliability of the factors used in this research study. Cronbach's Alphas were computed for each of the variables. Question #20 of the Maslach Burnout Inventory was unintentionally omitted when the questionnaire was graphically constructed. A factor analysis was conducted on the Maslach Burnout Inventory-HSS to confirm the factors were loading accurately. In the literature, factor analysis was conducted by Leiter (2003) on the Areas of Worklife Survey, and by Motl, Dishman, Saunders, Dowda, and Daniel Russell (2004) for the Social Provisions Scale.

The third step in the analysis was to compute bivariate correlations to determine which independent variables would be included in the model. It was appropriate to begin the analysis by computing all possible correlations between the studies independent variables (stress factors and social support) and burnout. Reviewing the correlation helps to understand the relationship between the dependent variable and the independent variables (stated above). A Pearson correlation matrix (interval variables) was appropriate to begin the analysis for research questions 1 through 4 by computing all possible correlations between the studies independent variables (stress factors and social support), and one dependent variable (burnout) to determine which independent variables were not bivariately correlated with the dependent variable. Those variables which did not correlate with burnout were omitted from the models. In Research Question 1, an independent-samples *t* test and One-Way ANOVA was conducted to examine the correlation between burnout and certain (nominal and categorical) demographics.

The final step in the analysis of this data used the SPSS program to perform a multiple regression analysis. The final step in the analysis of this data was to conduct

multiple linear regression analysis. First, the bivariate scales were amended for question 2a, bivariate correlation techniques, and multiple linear regression were conducted to answer questions 2, 2a, 3a, 3b, 3c, and 4. Multiple regression investigated the relationship between a single criterion variable (burnout) and optimally weighted linear combination predictor variables (work stressors and social support). The variables were tested for multicollinearity in questions 3a, 3b, 3c, and 4 to examine any intercorrelation between independent variables. Therefore, to obtain the data for the purpose of this research, the major research questions were as follows:

- 1) Was there a significant difference between the levels of burnout, in areas of worklife stressors, and social support among the various demographic groups in this study (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 2) What was the ability of areas of worklife stressors, social support, and the various demographic variables to predict burnout in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)? (a global model with all demographic questions included).
- 2a) What was the ability of areas of worklife stressors, social support, gender, occupational focus as a physician assistant, total number of hours worked in a week, and age, to predict burnout in physician assistants? (a reduced model based upon results from research questions 1 and 2).

- 3a) What was the ability of areas of worklife stressors, social support, and the various demographic variables to predict emotional exhaustion (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 3b) What was the ability of areas of worklife stressors, social support, and the various demographic variables to predict depersonalization (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 3c) What was the ability of areas of worklife stressors, social support, and the various demographic variables to predict reduced personal accomplishment (a component of burnout) in physician assistants (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?
- 4). What is the ability of areas of worklife stressors (e.g., workloads, control, rewards, community, fairness, and value) and social support factors (e.g., attachment, social integration, reassurance of worth, reliability alliance, guidance, and opportunity for nurturance) to predict burnout in physician assistants?

## Descriptive Statistics of the Physician Assistant Population

### *Demographic Data*

The demographic data for this study was collected from the administration of the questionnaire to a random sampling of 1700 physician assistants in the United States. The number of questionnaires returned was 360; however, 345 were used in the survey, and the others were excluded secondary to 1) incomplete data and 2) time frame received. A pervasive problem in data analysis is the accountability for missing data. There were 345 respondents in this study, and the amount of missing data varied depending on the answers from the questionnaire (see Table 4.1).

**Table 4. 1. Demographic Data**

		Gender	Age	EMPSTAT	PAYRS	OCCUP	SPECIALTY
N	Valid	341	341	340	336	338	337
	Missing	4	4	5	9	7	8

### *Descriptive Statistics*

The raw data was screened to ensure there were no keying errors. The shape of the data was determined by investigating any outliers or invalid responses for correction by a second review of the original survey instrument. The descriptive statistics section observed the frequency of categorical data, the measures of central tendency (mean, median, and mode), and measures of variability (standard deviation, variance, and range) used to describe continuous data. Descriptive statistics were obtained for each independent demographic variables: *gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked*

*in a week, and clinical work setting.* Descriptive statistics were obtained for each component of the independent variables: *Areas of Worklife Stressors (workload, reward, control, community, fairness, and values)* and *Social Support (Attachment, Social Integration, Reassurance of Worth, Reliable Alliance, Guidance, and Opportunity for Nurturance)*. Descriptive statistics were obtained for each construct of the dependent variable Burnout: *emotional exhaustion, depersonalization, reduced personal accomplishment.*

#### *Descriptive Statistics for Categorical Variables*

Frequency was defined as a distribution of the individual values or ranges of values for a variable (Trochim, 2006). The valid crosstabulation (frequencies) was the technique used to examine the relationship between the categorical variables in this study, and provide summary formation regarding relationships in the data.

#### *Gender*

The number of observations for gender are  $n = 345$ . Data from the frequency table demonstrated 62.5% of the surveyed population were females, and 37.5% are males. The data indicated the majority of physician assistants completing the survey were females (see Table 4.2).

**Table 4. 2. Frequency Table for Gender**

		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
<b>Valid</b>	<b>Male</b>	128	37.1	37.5	37.5
	<b>Female</b>	213	61.7	62.5	100.0
	<b>Total</b>	341	98.8	100.0	
<b>Missing</b>	<b>System</b>	4	1.2		
<b>Total</b>		345	100.0		

*Employment Status*

The number of observations for employment status was n=340 with n=5 missing data. The majority of physician assistants (82.6%) were employed full-time, and 15.9% of Physician Assistants were employed part-time (see Table 4.3).

**Table 4. 3. Frequency Table of Employment**

		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
<b>Valid</b>	<b>Full-time</b>	285	82.6	83.8	83.8
	<b>Part-time</b>	55	15.9	16.2	100.0
	<b>Total</b>	340	98.6	100.0	
<b>Missing</b>	<b>System</b>	5	1.4		
<b>Total</b>		345	100.0		

*Occupational Focus*

The number of observations for occupational focus was n =338 with n = 7 missing data. The results demonstrated that 89.1 % of physician assistants work in a clinical practice, and 10.9 % were employed in other areas: educators, researchers, and administrators (see Table 4.4).

**Table 4. 4: Frequency Table of Occupation**

		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
<b>Valid</b>	<b>Internal Medicine</b>	160	46.4	47.5	47.5
	<b>Pediatrics</b>	10	2.9	3.0	50.4
	<b>Surgery</b>	45	13.0	13.4	63.8
	<b>Emergency Medicine</b>	26	7.5	7.7	71.5
	<b>Other Specialties</b>	96	27.8	28.5	100.0
	<b>Total</b>	337	97.7	100.0	
	<b>Missing</b>	<b>System</b>	8	2.3	
<b>Total</b>		345	100.0		

*Specialty*

The number of observations for specialty was n=337 with n=8 missing data. The majority of physician assistants were employed in the field of Internal Medicine (47.5%), Pediatrics 3.0%, Surgery 13.4 %, Emergency Medicine 7.7%, and Other specialties 28.5% (see Table 4.5).



**Table 4. 5: Frequency table for Practice Specialty**

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	<b>Clinically Practicing Physician Assistant</b>	301	87.2	89.1	89.1
	<b>Other (educator, administrator, researcher)</b>	37	10.7	10.9	100.0
	<b>Total</b>	338	98.0	100.0	
<b>Missing</b>	<b>System</b>	7	2.0		
<b>Total</b>		345	100.0		

*Primary Practice Setting*

The number of observations for Primary Practice Setting was n=335 with n=10 missing data. The results revealed the majority of PAs practice in a hospital 28.4%. Other PAs practice in Outpatient Hospital Clinic 16.1%, Freestanding Standing Facility (clinic, urgent care, etc) 35.5%, Correctional Facility 1.5%, Nursing Home 2.1%, both Hospital/Outpatient Clinic 1.5%, Hospital/Freestanding Clinic 9.3%, and Other Facility (office, research lab, etc.) 5.7% (see Table 4.6).

**Table 4. 6. Frequency Table of the Primary Practice Setting for PA's**

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	<b>Hospital</b>	95	27.5	28.4	28.4
	<b>Outpatient Hospital Clinic</b>	54	15.7	16.1	44.5
	<b>Freestanding Facility</b>	119	34.5	35.5	80.0
	<b>Correctional Facility</b>	5	1.4	1.5	81.5
	<b>Nursing Home</b>	7	2.0	2.1	83.6
	<b>Other</b>	19	5.5	5.7	89.3
	<b>Hospital / Outpatient Clinic</b>	5	1.4	1.5	90.7
	<b>Hospital / Freestanding Clinic</b>	31	9.0	9.3	100.0
	<b>Total</b>	335	97.1	100.0	
	<b>Missing</b>	<b>System</b>	10	2.9	
<b>Total</b>		345	100.0		

*Measures of Central Tendency*

According to Munro (2005), the value of a variable is summarized using the measures of central tendency: *mean, median, and mode*. Central tendency was used to report the descriptive statistic of continuous variables. Other information obtained includes the maximum, minimum, and standard deviation.

Descriptive statistics were obtained for each subscale of the Maslach Burnout Inventory which constituted the dependent variable, and each subscale of Areas of Worklife Stress Survey and Social Provisions Scale which constituted the independent variables. The *mean* was used to describe the center of a frequency distribution. In definition, when a sample is randomized there is less variation from the true population. The *median* demonstrated the mid value below which 50% of the population fell regardless of the shape

of the distribution. The *mode* was the most frequent value in the distribution and was determined by inspecting the distribution (Munro, 2005).

*Descriptive Statistics for Continuous Variables*

The descriptive statistics demonstrated the average age of the population of physician assistants in this study was 42.24, the mean years in practice was 11.65, and the average hours worked was 40.78. There was not much variability in age, years practiced as a PA, and total number of years employed (see Table 4.7).

**Table 4. 7. Descriptive Statistics for Continuous Variables – Demographics**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Age</b>	341	23	72	42.24	10.946
<b>PAYRS</b>	336	0	45	11.65	9.528
<b>TOTHRS</b>	339	4	80	40.78	10.783
<b>Valid N (listwise)</b>	334				

The mean of burnout was 2.13 indicating that physician assistants experienced feelings of burnout once a month or less. The mean of emotional exhaustion, a component of burnout, was 2.16 indicating that physician assistants experience feelings of burnout once a month. Depersonalization (1.49) and Reduced Personal Accomplishment (1.93), two other components of burnout, demonstrated PAs in this sample experienced these feelings a few times a year. The means demonstrated here indicate low levels of burnout in this population (see Table 4.8).

The mean of worklife stress was 3.43 indicating that physician assistants had difficulty deciding whether they experienced work stress. The mean demonstrated for each component of stress: workload (mean = 3.07), control (mean = 3.61), rewards (mean = 3.61), community (mean = 3.64), fairness (mean = 3.15), and value (mean = 3.71). PAs varied in their responses demonstrating indecisiveness as to the presence or absence of work-related stress with mean scores centering around 3.0 (see Table 2.8). The Likert scale value of 3 represented “hard to decide.” However, the means of control, rewards, and value were very close to the scale of “agree” (Likert score of 4 represented “agree”). These results may indicate the presence of social support.

With regard to social support, which had a mean of 3.55, the results indicate the presence of social support. Physician assistants were found to have attachments with others (mean = 3.57), reliable alliance (mean = 3.63), and guidance (mean = 3.60). However, they disagreed that they have reassurance of worth (mean = 2.98) (see Table 2.8). A Likert score of 3 means PAs agree to the presence of social support. The presence of social support explains the low mean for burnout.

The degree of skewness was not obtained for either construct. The Central Limit Theorem states that if there is a sampling distribution with a sample size of 30 or more, each  $n$  in this study was  $>300$ , so the distribution (shape) of the sampling distribution would be approximately normal regardless of the distribution of the population. (see Table 4.8)

**Table 4. 8. Descriptive Statistics of Continuous Variables: Burnout, Worklife Stressors, Social Support**

	N	Minimum	Maximum	Mean	Std. Deviation
BO	338	.23	5.00	2.1369	.97363
EE	338	.00	5.75	2.6168	1.26486
DP	338	.00	5.60	1.4990	1.15898
RPA	150	1.00	4.00	1.9332	.61978
WES	345	1.90	4.69	3.4374	.50838
Wew	345	1.17	5.00	3.0826	.76083
Wec	345	1.33	5.00	3.6179	.74533
Wer	345	1.00	5.00	3.6268	.79495
Wecom	345	1.00	5.00	3.6654	.68876
Wef	345	1.00	5.00	3.1572	.71071
Wev	345	1.00	5.00	3.7086	.64735
Ss	338	1.83	4.00	3.5518	.38254
Ssa	338	1.00	4.00	3.5759	.53672
Ssrw	338	1.75	3.75	2.9840	.31667
Ssra	338	1.00	4.00	3.6400	.46016
Ssg	338	1.00	4.00	3.6018	.52498
Valid N (listwise)	150				

#### Cronbach's Coefficient Alpha

The accepted rule for research is that an accepted reliability coefficient is .70 (Nunnally, 1978). For reliability testing, Cronbach's alpha was conducted on each measurement scale of the conceptual model to test for internal consistency. The scales that achieved a Cronbach's alpha of .70 or higher, were considered adequate. The scales that

achieved a Cronbach's alpha of less than .70 were considered inadequate, and the scale was reduced or eliminated from the conceptual model. As noted in the previous chapter, the entire instrument entitled healthcare stress factors was eliminated because of inadequate Cronbach's alphas (see Table 4.9).

**Table 4. 9. Reliability Statistics for Patient Care Responsibilities and Professional Uncertainty.**

<b>Reliability Statistics</b>		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.483	.503	7
<b>Reliability Statistics</b>		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.61	.648	7

The Cronbach alpha coefficients for the current study (see Table 4.10) were very similar to those in the published literature of Leiter (2003), Maslach and Jackson (1997), and Cutrona and Russell (1987). In the Areas of Worklife Survey by Leiter, there were two factors in this study which received higher Cronbach alphas: rewards (difference of .03) and values (difference of .04). Three factors received lower coefficient alphas: control (difference of .03), community (difference of .01), and fairness (difference .03). Workload was found to have the same Cronbach's alpha of .78. control received a Cronbach's alpha of .67, and was not omitted from the instrument. The Maslach Burnout Inventory demonstrated Cronbach's alphas within .01 to .02 of the published values. The only factor in the Social Support Scale which received a higher coefficient alpha was attachment ( $\alpha = .82$ ). Lower Cronbach's alphas  $<.70$  were noted with the social integration ( $\alpha = .60$ ) and opportunity for

nurturance ( $\alpha = .57$ ). Social integration and opportunity for nurturance were removed from the final conceptual model to prevent limitations of the instrument (see Table 4.10)

**Table 4. 10. Cronbach’s Alpha Estimates of Internal Reliability for this Research Study**

Scale	$\alpha$	$\alpha$	$\alpha$	A
Domain		Leiter	Maslach	Cutrona/Russell
<b>Areas of Worklife Survey: Work Environment</b>				
<b>Stressors</b>				
Workloads	0.78	.78		
Control	0.67*	.70		
Rewards	0.87	.84		
Community	0.82	.83		
Fairness	0.81	.84		
Value	0.77	.73		
<b>MBI Human Services Survey: Burnout</b>				
Emotional Exhaustion	0.91		.90	
Depersonalization	0.77		.79	
Personal Accomplishment	0.73		.71	
<b>Social Provisions Scale: Social Support</b>				
Attachment	.82			.75
Social Integration	.60			.68
Reassurance of Worth	.70			.72
Reliable Alliance	.75			.74
Guidance	.86			.78
Opportunity for Nurturance	.57			.59

### *Factor Analysis*

Since item #20, “I feel like I’m at the end of my rope” was unintentionally eliminated from the MBI-HSS, a factor analysis was performed on the remaining twenty-one items. From the results (see Table 4.11), consistency was maintained as compared to item factor loadings for the Maslach Burnout Inventory.

**Table 4. 11. Factor Analysis of Modified Maslach Burnout Inventory-HSS for this Research as Compared to Prior Factor Loading Values**

	<b>Factor Loading this research</b>	<b>Factor Loading MBI</b>
<b>Emotional Exhaustion</b>		
I feel emotionally drained from my work	.84	.74
I feel used up at the end of the workday	.83	.73
I feel fatigued when I get up in the morning and have to face another day on the job	.81	.66
Working with people all day is really a strain for me	.55	.61
I feel burned out from my work	.83	.84
I feel frustrated by my job	.72	.65
I feel I'm working too hard on my job	.76	.56
Working with people directly puts too much stress on me	.47	.54
<b>Depersonalization</b>		
I feel I treat some recipients as if they were impersonal objects	.72	.67
I've become more callous toward people since I took this job	.78	.66
I worry that this job is hardening me emotionally	.72	.55
I don't really care what happens to some recipients	.63	.62
I feel recipients blame me for some of their problems	.56	.41
<b>Personal Accomplishment</b>		
I can easily understand how my recipients feel about things	.74	.50
I deal very effectively with the problems of my recipients	.56	.54
I feel I'm positively influencing other people's lives through my work	.67	.58
I feel very energetic	.40	.43
I can easily create a relaxed atmosphere with my recipients	.70	.51
I feel exhilarated after working closely with my recipients	.66	.55
I have accomplished many worthwhile things in this job	.69	.57
In my work, I deal with emotional problems very calmly	.56	.59

Note: the factor loadings of the MBI-HSS in the left column were conducted for this research, and factor loadings in the right column were conducted by C. Maslach and S. Jackson, Maslach Burnout Inventory, 1997, p.43.

The Areas of Worklife Survey was previous validated in the literature by Leiter who performed factor analysis on the Areas of Worklife Survey using the extraction method -- principal component analysis, and rotation method--varimax and Kaiser normalization. The Social Provisions Scale was validated in the literature (Chapter 3, see Table 3.1). For both instruments factors of .40 and above were retained.



## Analysis of the Research Questions

### *Research Question I:*

RQ 1: Was there a significant difference between the levels of burnout, areas of worklife stressors, and social support among the various demographic groups in this study (i.e., gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)?

#### *Pearson's Correlation*

Pearson product moment correlation coefficient ( $r$ ) was the method by which the relation between two variables was quantified in this research question (Munro, 2005). Asterisks were used in the table to indicate values significant at the 0.01 and 0.05 levels. The actual p value was stated right below the correlation coefficient. The values in the table were based on a two-tailed level and one-tailed level of significance. The third number in the box indicated the number of subjects included in each analysis, which will varied because of a pairwise deletion used by SPSS.

Note: For the purpose of this study, when examining the strength of the correlation ( $rs$ ) the following scale was used: .00-.25, little if any; .26-.49, low; .50-.69, moderate; 70-.89, high; and .90-1.00, very high (Munro,2005).

The Pearson Correlation Matrix (see Table 4.12) revealed age had a strong positive correlation with the number of years worked as a physician assistant (0.745). There was an inverse (negative) correlation with burnout (-.140) and social support (-.167). There was significant correlation with worklife stressors and total hours worked as a PA. The number

of years employed as a PA has a small significant negative correlation with burnout. An increase in the employment years as a PA correlated with the less likelihood for burnout. This result may imply that no matter how many years worked as a physician assistant, the stressors and support symptoms of this profession do not have a significant impact on how many years in the profession, but has a correlation with burnout. The number of hours worked as a PA had a significant positive very small impact on burnout (.117). An increase in the hours a PA worked correlated with burnout. The results implied that as a physician assistant ages, and remains in this profession, the number of stressors and social support did not have a significant correlation on burnout, but the number of hours worked increased the propensity for burnout.

**Table 4. 12. Correlations between the Independent Variables: Areas of Worklife Stressors and Social Support and the Dependent Variable: Burnout**

		Age	PAYRS	TOTHRS	BO	WES	Ss
Age	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	341					
PAYRS	Pearson Correlation	.745**	1				
	Sig. (2-tailed)	.000					
	N	336	336				
TOTHRS	Pearson Correlation	.003	.009	1			
	Sig. (2-tailed)	.949	.872				
	N	339	334	339			
BO	Pearson Correlation	-.140*	-.181**	.117*	1		
	Sig. (2-tailed)	.010	.001	.033			
	N	335	330	333	338		
WES	Pearson Correlation	-.027	.046	-.021	-.582**	1	
	Sig. (2-tailed)	.624	.405	.699	.000		
	N	341	336	339	338	345	
SS	Pearson Correlation	-.167**	-.078	-.058	-.327**	.459**	1
	Sig. (2-tailed)	.002	.159	.294	.000	.000	
	N	335	330	333	337	338	338

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

### *Independent Sample t-test*

The *t*-tests were used to explore the difference in means for the dichotomous demographic variables.

#### *Gender*

The mean of 3.6 (females) for social support (see Table 4.13), demonstrated that women had a significantly higher presence of social support than men (3.4). Gender had no significant impact on worklife stressors (.168) or burnout (.088), but women there was a statistically significant difference between mean than men ( $t = -3.53$ ,  $df = 218.6$ ,  $p = .001$ ) for social support (see Table 4.14).

**Table 4. 13. Descriptive Statistics for Gender**

	<b>Gender</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>
<b>WES</b>	Male	128	3.4338	.51720	.04571
	Female	213	3.4412	.49569	.03396
<b>BO</b>	Male	125	2.0843	1.00917	.09026
	Female	210	2.1656	.95807	.06611
<b>SS</b>	Male	125	3.4506	.42638	.03814
	Female	210	3.6091	.34295	.02367

**Table 4. 14. Independent Sample t-test for Gender.**

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
WES	.168	.682	-131	339	.895	-.00741	.05635	-.11825	.10343
			-130	258.681	.897	-.00741	.05695	-.11955	.10474
BO	.088	.767	-736	333	.462	-.08130	.11042	-.29850	.13590
			-727	250.039	.468	-.08130	.11189	-.30166	.13906
ss	11.146	.001	-3.729	333	.000	-.15848	.04250	-.24208	-.07488
			-3.531	218.655	.001	-.15848	.04488	-.24694	-.07002

*Employment status*

The employment status mean of 3.6 indicated part-time employees had a statistically higher score for social support (see Table 4.15). The analysis using the independent samples t-test demonstrated  $p > .05$  assuming equal variance among the factors. Therefore, the level of employment status (Full-time/Part-time) had no significant impact on worklife stressors, social support, or burnout (see Table 4.16).

**Table 4. 15. Descriptive Statistics for Employment Status**

<b>Group Statistics</b>					
	<b>EMPSTAT</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>
<b>WES</b>	Full-time	285	3.4435	.48367	.02865
	Part-time	55	3.4319	.58453	.07882
<b>BO</b>	Full-time	280	2.1446	.95810	.05726
	Part-time	54	2.0456	1.03719	.14114
<b>SS</b>	Full-time	281	3.5386	.38841	.02317
	Part-time	53	3.6197	.34803	.04781

**Table 4. 16. Independent Samples t-Test for Employment Status**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
WES	Equal variances assumed	1.509	.220	.157	338	.875	.01157	.07381	-.13360	.15675
	Equal variances not assumed			.138	68.983	.891	.01157	.08386	-.15573	.17888
BO	Equal variances assumed	1.472	.226	.686	332	.493	.09895	.14434	-.18499	.38289
	Equal variances not assumed			.650	71.511	.518	.09895	.15232	-.20472	.40262
SS	Equal variances assumed	2.775	.097	-1.417	332	.157	-.08115	.05726	-.19379	.03149
	Equal variances not assumed			-1.527	78.496	.131	-.08115	.05313	-.18690	.02461

*Occupation*

Clinically practicing physician assistants, with a mean of 3.46 experience a higher level of work-related stress than PAs practicing in other occupations including educators, administrators, and researchers (see Table 4.17). There was a significant difference between worklife stressors and the type of occupation of the PA ( $t = 2.138$ ,  $df = 41.74$ ,  $p = .038$ ), but there was no significant correlation between the type of occupation and burnout or social support. (see Table 4.18).

**Table 4. 17. Descriptive Statistics for Occupational Focus**

	OCCUP	N	Mean	Std. Deviation	Std. Error Mean
<b>WES</b>	Clinically Practicing Physician Assistant	301	3.4633	.48438	.02792
	Other (educator, administrator, researcher)	37	3.2403	.61125	.10049
<b>BO</b>	Clinically Practicing Physician Assistant	296	2.1355	.94263	.05479
	Other (educator, administrator, researcher)	36	2.1037	1.26432	.21072
<b>SS</b>	Clinically Practicing Physician Assistant	296	3.5547	.37788	.02196
	Other (educator, administrator, researcher)	36	3.5012	.43977	.07330

**Table 4. 18. Independent Sample t-Test for Occupational Focus**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
<b>WES</b>	Equal variances assumed	5.939	.015	2.563	336	.011	.22303	.08702	.05185	.39420
	Equal variances not assumed			2.138	41.743	.038	.22303	.10430	.01251	.43354
<b>BO</b>	Equal variances assumed	4.859	.028	.184	330	.854	.03185	.17329	-.30905	.37274
	Equal variances not assumed			.146	39.871	.884	.03185	.21773	-.40824	.47193
<b>SS</b>	Equal variances assumed	1.723	.190	.788	330	.431	.05353	.06794	-.08012	.18719
	Equal variances not assumed			.700	41.528	.488	.05353	.07652	-.10093	.20800

*One-Way ANOVA*

*Specialty*

Specialty refers to the clinical area the physician assistant practices. The p values were all > .05 demonstrating no significant difference among the specialty of practice and the impact on burnout, social support, or worklife stressors (see Table 4.19). Since there was no significant difference between specialty and worklife stressors, social support, and burnout, specialty was omitted from this conceptual model.



**Table 4. 19. ANOVA for Specialty**

		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>BO</b>	Between Groups	3.720	4	.930	.995	.410
	Within Groups	304.682	326	.935		
	Total	308.402	330			
<b>SS</b>	Between Groups	.239	4	.060	.410	.801
	Within Groups	47.433	326	.146		
	Total	47.672	330			
<b>WES</b>	Between Groups	.770	4	.193	.767	.547
	Within Groups	83.324	332	.251		
	Total	84.094	336			

*Setting*

Setting referred to the type of facility where the physician assistant practiced. The p values were all  $> .05$ . There was no significant difference between where the PA practiced (setting) and worklife stressors, social support, and burnout (see Table 4.20). Since setting did not significantly correlate with the other factors, it was eliminated from the conceptual model.

**Table 4. 20. ANOVA for Setting**

		<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>BO</b>	Between Groups	1.826	7	.261	.272	.965
	Within Groups	308.094	321	.960		
	Total	309.920	328			
<b>SS</b>	Between Groups	.737	7	.105	.722	.654
	Within Groups	46.811	321	.146		
	Total	47.548	328			
<b>WES</b>	Between Groups	1.062	7	.152	.594	.761
	Within Groups	83.465	327	.255		
	Total	84.527	334			

*Summary of Research Question I*

Results for question one were analyzed using a Pearson Correlation Matrix, Independent Sample t-test, and ANOVA based on the type of variable for analysis. The analysis demonstrated women scored significantly higher than men on the social support scale. There was no significant difference between men and women for work stressors and burnout. Part-time employed PAs scored significantly higher than full-time employees on the social support scale. There was no significant difference between part-time and fulltime employed PAs for worklife stressors, social support, and burnout. Clinically practicing PAs scored significantly higher than PAs with other occupational focus on worklife stressors. There was no significant difference between occupational focus for social support and burnout. However, there was a significant difference between the PA's occupation and worklife stressors. There was no significant difference between the specialty of the PA and burnout, worklife stressors, or social support. The setting (hospital, clinic correctional

facility, etc.) in which the PA practices demonstrated no significant difference with worklife stressors, social support, or burnout. However, there was a significant difference of the mean within the groups of PAs practicing within certain settings.

### *Research Question Two*

RQ 2: What was the ability of area of worklife stressors, social support, and the various demographic variables to predict burnout in physician assistants (i.e. gender, age, employment status, length of time worked as a physician assistant, occupational focus as a physician assistant, primary specialty, total number of hours worked in a week, and clinical work setting)? (a global model with all demographic questions included).

In this study (question 2), multiple regression was used to determine whether the multiple regression coefficient for a given predictor (areas of worklife stressor – wes, social support – ss, and demographics) variable was statistically significant (this coefficient represents the amount of weight given a specific predictor) on (while holding constant) burnout (criterion variable). Two types of multiple regression coefficients were produced in the course of analysis: Nonstandardized (which were produced when the data analyzed are in raw score form – **b**), and Standardized (coefficients that would be produced if the data analyzed were in standard score form – **STB**). The interpretation of beta scores for work stressors were reversed based on the 5-point Likert scale: high scores = low stress, and low scores = high stress. The beta scores for burnout were linear: high scores = high burnout, and low scores = low burnout. Beta scores for social support were linear: high scores = increased social support, and low scores = decreased social support.

The formula used for this multiple regression analysis was as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4$$

**BO = wes + ss + gender + age + emstat + payrs + tothrs + special + setting + occupation**

Where **Y** = the independent variables predicted scores on burnout; **bk** = the nonstandardized multiple regression coefficient for the kth predictor variable; **Xk** = the kth predictor variables (wes, ss, occupation, setting); and **a** = intercept constant.

*Model Summary*

R-squared demonstrated that 38% of the variance in burnout was accounted for by the linear combination of the independent variables: gender, age, tothrs, occup, specialty, setting, and payrs (see Table 4.21). This means that the combination of all the demographic factors, worklife stressors, and social support predicted 38% of the variance in burnout.

**Table 4. 21. Model Summary R- Squared**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.617 <sup>a</sup>	.381	.361	.77014

a. Predictors: (Constant), SETTING, EMPSTAT, WES, AGE, OCCUP, SPECIALTY, GENDER, SS, TOTHRs, PAYRS

P-values <.0001 (0.00) for the regression model verified the probability that the null hypothesis could be rejected and R-squared was statistically significant. ANOVA (see Table 4.22) showed the overall model was significant at p < 0.00, demonstrating a significant difference between burnout (dependent variable) and the predictor variables (setting, emstat, wes, age, occup, specialty, gender, ss, tothrs, and payrs). However, the ANOVA analysis did not reveal which groups were significantly different from one another.

**Table 4. 22. ANOVA for Significance**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	110.651	10	11.065	18.656	.000 <sup>a</sup>
	Residual	179.714	303	.593		
	Total	290.365	313			

a. Predictors: (Constant), SETTING, EMPSTAT, WES, AGE, OCCUP, SPECIALTY, GENDER SS, TOTHR, PAYRS  
b. Dependent Variable: BO

*Regression*

Using multiple regression, burnout scores were then regressed on the linear combination of demographics, worklife stressors, and social support. Using SPSS, unstandardized coefficients were used to calculate the predicted values from the regression equation (see Table 4.23). The signs of the coefficients indicated the direction of the relationships between the independent variables and the dependent variable. Worklife stressors with high scores in actuality equaled low scores / low scores equal high scores. Social Support high scores equaled high scores / low scores equaled low scores. The regression equation for this model:

$$BO = -1.017 (\text{wes}) + -0.261 (\text{ss}) + .131 (\text{gender}) + -.007 (\text{age}) + .103 (\text{empstat}) + -.007 (\text{pays}) + -.079 (\text{occup}) + .017 (\text{specialty}) + .012 (\text{tothrs}) + .009 (\text{setting}) - 6.218.$$

Based on this result employment status (EMPSTAT), years worked as a PA (PAYRS), total hours worked as a PA (TOTHR), Specialty (SPECIALT), and Setting (SETTING) in combination with previous ANOVA and correlation analysis were omitted from the conceptual model because they were found to have no significant relationship with the dependent variable. The measure for each of the following variables contributed

significantly to the analysis: WES, SS, OCCUP, TOTHR. Gender correlated with social support, but Age demonstrated little statistical significance. However, gender and age remained in the model for standard informational purposes.

The following interpretation of the regression coefficients represents the revised model only. Controlling for the other independent variables, the relationship between work stress was negative ( $b_1 = -1.017$ ). There was a -1.017 unit decrease in burnout for every 1-unit increase in work stressors while controlling for the other independent variables. Keep in mind that the score is reversed, so the low score for worklife stressors are actually equal to high stress and increased burnout.

Controlling for the other variables, the relationship between burnout and social support is negative ( $b_1 = -.261$ ). There is a -.261 decrease in burnout for every 1-unit increase in social support.

Controlling for the other variables, the relationship between burnout and occupation was negative ( $b_1 = -.079$ ). There was a -.079 decrease in burnout for every 1-unit increase in the occupation of the physician assistant. PAs in non-clinical occupations demonstrated a .079 decrease in burnout. Controlling for the other variables, the relationship between burnout and total hours was positive ( $b_1 = .012$ ). There was a .012 unit increase in burnout for every 1 unit increase in the total number of hours worked in a week.

Controlling for the other independent variables, the relationship between burnout and gender was positive ( $b_1 = .131$ ). There was a .131 unit increase in burnout for every one unit increase in gender. This means by being female, there was a .131 unit increase in burnout, controlling for the other independent variables.

Controlling for the other independent variables, the relationship between age and burnout was negative ( $b_1 = -.007$ ). There was a  $-.007$  unit decrease in burnout for every 1-unit increase in age. The 95% confidence interval for  $\beta$  in the regression model means there was 95% confidence that the mean burnout per 1-unit increase or decrease in an independent variable was between the lower and upper bound limits of the Confidence Interval.

**Table 4. 23. Regression Model for Question #2**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	6.218	.637		9.769	.000					
WES	-1.017	.099	-.531	-10.257	.000	-.571	-.508	-.464	.761	1.314
SS	-.261	.132	-.104	-1.977	.049	-.316	-.113	-.089	.734	1.363
Gender	.131	.102	.066	1.292	.197	.063	.074	.058	.793	1.262
Age	-.007	.006	-.074	-1.035	.301	-.138	-.059	-.047	.395	2.533
EMPSTAT	.103	.155	.038	.666	.506	-.039	.038	.030	.629	1.591
PAYRS	-.007	.007	-.069	-.994	.321	-.171	-.057	-.045	.421	2.375
OCCUP	-.079	.038	-.095	-2.048	.041	-.050	-.117	-.093	.957	1.045
SPECIALTY	-.017	.026	-.030	-.651	.515	-.013	-.037	-.029	.954	1.049
TOTHRS	.012	.005	.130	2.258	.025	.114	.129	.102	.620	1.614
SETTING	.009	.021	.020	.434	.665	-.010	.025	.020	.976	1.024

a. Dependent Variable: BO

### *Summary of Question 2*

The analysis was significant, and  $R^2$  demonstrated that 38% of the variance in burnout was accounted for by the linear combination of the independent variables. The regression model demonstrated that employment status, number of years worked as a physician assistant, specialty, and setting did not have a significant correlation with burnout. The model demonstrated as work stressors and the number of hours worked in a week

increased, there was an increase in burnout. As burnout decreased, social support increased. Females tended to demonstrate an increase in burnout. As the PA got older, burnout decreased. PAs who work in non-clinical medical areas had a decrease in burnout. These findings changed the components of the model and the research questions.

*Research Question 2a*

RQ2a: What was the ability of *areas of worklife stressors, social support, gender, age, occupational focus, and total number of hours worked in a week* to predict burnout in physician assistants? (a reduced model based upon the results obtained from questions 1 and 2).

*Variables for Question 2a (New Model for question 2A)*

The following variables were used in the regression model: Independent Variables (Age, Gender, TOTHRs, OCCUP, WES, SS), and the Dependent Variable (BURNOUT).

**Table 4. 24. Variables for Revised Model**

Mode	Variables	Variables	Method
1	Entered	Removed	
1	TOTHRs, OCCUP, SS, AGE, GENDER, WES <sup>a</sup>		Enter

a. All requested variables entered.

b. Dependent Variable: BO

The P-values <.0001 (0.00) for the revised regression model verified the probability that the null hypothesis could be rejected and R-squared was statistically significant. R-squared demonstrated that the conceptual model accounted for 38% of the variance in



burnout, as was found in the first model. This means that the combination of the specific demographic factors, worklife stressors, and social support predicted 38% of the variance in burnout (see Table 4.25). ANOVA analysis demonstrated the overall model was significant, and there was a significant ( $p < 0.00$ ) difference between burnout (dependent variable) and the predictor variables (age, occup, gender, ss, tothrs, and wes) (see Table 4.26).

**Table 4. 25. R Squared Table**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.620 <sup>a</sup>	.384	.373	.77273

a. Predictors: (Constant), TOTHRs, OCCUP, ss, Age, Gender, WES  
 b. Dependent: Burnout

**Table 4. 26. ANOVA for Question 2a**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	120.003	6	20.001	33.495	.000 <sup>a</sup>
	Residual	192.271	322	.597		
	Total	312.274	328			

a. Predictors: (Constant), TOTHRs, OCCUP, SS, Age, Gender, WES  
 b. Dependent: Burnout

### *Regression*

Using multiple regression, burnout scores were then regressed on the linear combination of demographics, worklife stressors, and social support. Using SPSS unstandardized coefficients were used to calculate the predicted values from the regression equation (see Table 4.27). The signs of the coefficients indicated the direction of the

relationships between the independent variables and the dependent variables. The regression equation for this model:

$$BO = WES + SS + TOTHRs + OCCUP + AGE + GENDER$$

The following data were the interpretations of the regression coefficients for the revised model. Controlling for the other independent variables, the relationship between work stress was negative ( $b_1 = -1.045$ ). There was a -1.045-unit decrease in burnout for every 1-unit increase in work stressors while controlling for the other independent variable. Keep in mind that the score was reversed, so the low score for worklife stressors was actually equal to a high stress score which correlated with increased burnout.

Controlling for the other variables, the relationship between burnout and social support was negative ( $b_1 = -.276$ ). There was a -.276 decrease in burnout for every 1-unit increase in social support.

Controlling for the other variables, the relationship between burnout and occupation was positive ( $b_1 = -.051$ ). There was a -.051 decrease in burnout for every 1-unit increase in the occupation of the physician assistant. As the physician entered into another occupation outside of clinical practice there was a .051 decrease in burnout.

Controlling for other the variables, the relationship between burnout and total hours was positive ( $b_1 = .009$ ). There was a .009 unit increase in burnout for every 1 unit increase in the total number of hours worked in a week.

Controlling for the other independent variables, the relationship between age and burnout was negative ( $b_1 = -.012$ ). There was a -.012 unit decrease in burnout for every one unit increase in age. As the PA got older, the level of burnout decreased.

Controlling for the other independent variables, the relationship between burnout and gender was positive ( $b_1 = .096$ ). There was a .096 unit increase in burnout for every one unit increase in gender. This means by being female, there was a .096 unit increase in burnout, controlling for the other independent variables.

The 95% confidence interval for  $\beta$  in the regression model indicated there was 95% confidence that the mean burnout per 1-unit increase or decrease in an independent variable was between the lower and upper bound limits of the Confidence Interval.

**Table 4. 27. Regression Model for Question 2a**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	6.774	.548		12.356	.000					
<b>WES</b>	-1.045	.097	-.542	-10.822	.000	-.584	-.516	-.473	.762	1.312
<b>SS</b>	-.276	.129	-.109	-2.137	.033	-.331	-.118	-.093	.734	1.363
<b>Gender</b>	.096	.098	.048	.979	.328	.045	.054	.043	.810	1.234
<b>Age</b>	-.012	.004	-.139	-2.950	.003	-.128	-.162	-.129	.857	1.167
<b>OCCUP</b>	-.051	.036	-.064	-1.439	.151	-.005	-.080	-.063	.961	1.040
<b>TOTHRS</b>	.009	.004	.101	2.237	.026	.113	.124	.098	.938	1.066

a. Dependent Variable: BO

Multicollinearity occurs when one independent variable is very highly correlated with another independent variable. Multicollinearity did not occur. The VIF for both variables did not exceed ten, and the tolerance was not less than 0.20. The condition index for total hours worked in a week was (37.96) and occupation was (26.90). The revised model was used to examine the correlation between each independent variable and each dependent factor of

burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment (see Table 4.28).

**Table 4. 28. Collinearity Diagnostics for Question 2a**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	WES	ss	Gender	Age	OCCUP	TOTHR
1	1	6.401	1.000	.00	.00	.00	.00	.00	.01	.00
	2	.387	4.067	.00	.00	.00	.00	.00	.95	.00
	3	.104	7.859	.00	.00	.00	.39	.12	.00	.09
	4	.063	10.112	.00	.00	.00	.00	.36	.01	.56
	5	.033	13.956	.00	.18	.04	.40	.29	.02	.17
	6	.009	26.902	.11	.82	.34	.16	.04	.01	.07
	7	.004	37.961	.89	.00	.62	.05	.19	.00	.10

a. Dependent Variable: BO

*Summary of Question 2a*

Multiple regression analysis demonstrated the analysis was significant, and 38% of the variance in burnout was accounted for by the linear combination of the independent variables. An increase in work stressors, and total hours worked in a week correlated with an increase in burnout. A decrease in burnout correlated with an increase in social support. Physician assistants working outside clinical practice experienced higher levels of burnout than PAs working in non-clinical medical areas (i.e. administrator, educator, researcher, etc.). Females correlated with higher levels of burnout. As PA’s aged there was a correlation with lower levels of burnout. There was no evidence of multicollinearity. The VIF and tolerance were within normal limits. The current model was then correlated with each factor of burnout (Emotional Exhaustion, Depersonalization, and Reduced Personal Accomplishment).

*Research Question 3a:*

RQ3a : What was the ability of areas of worklife stressors, social support, and the various demographic variables (i.e. age, gender, occupational focus as a physician assistant, and total hours worked in a week) to predict emotional exhaustion (a component of burnout) in physician assistants?

The integrative model of burnout as described by Maslach and Jackson (1986) is a “syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment . . . .”(p.1). Schaufeli and Enzmann (1998) described burnout as a multi-dimensional chronic stress reaction. Emotional exhaustion refers to the depletion or draining of emotional resources and the development of negative, callous, and cynical attitudes toward the recipients of one’s services. Likewise, reduced personal accomplishment is the tendency to evaluate one’s work with recipients’ negatively (Maslach & Jackson, 1986). Finally, depersonalization is a coping response that causes detachment and blunts feelings, thus preventing addressing others’ needs. Using SPSS to conduct multiple regression, each factor of the Maslach Burnout Inventory-HSS: *emotional exhaustion, depersonalization, and reduced personal accomplishment* was analyzed with the revised model. Variables to be used in the model are shown in Table 4.29.

*Variables:*

The variables in Table 4.29 were used in the regression model of Emotional Exhaustion.

**Table 4. 29. Variables for Question 3a: EE**

<b>Model</b>	<b>Variables Entered</b>	<b>Variables Removed</b>	<b>Method</b>
1	Age, TOTHR, WES, OCCUP, GENDER, SS <sup>a</sup>	.	Enter

a. All requested variables entered

b. Dependent Variable: EE

*Descriptive Statistics:*

Analysis demonstrated that work stressors (mean = 3.43), social support (mean = 3.54), total hours worked in a week (40.73), and age (42.25) impacted significantly higher levels of emotional exhaustion than gender (mean = 1.63) and occupation (mean = 1.41). Occupation and gender may have had higher levels in the other factors of burnout (depersonalization, reduced personal accomplishment).

**Table 4. 30. Descriptive Statistics for EE**

---

	<b>Mean</b>	<b>Std. Deviation</b>	<b>N</b>
<b>EE</b>	2.6113	1.26221	329
<b>WES</b>	3.4368	.50633	329
<b>SS</b>	3.5469	.38573	329
<b>GENDER</b>	1.63	.485	329
<b>OCCUP</b>	1.41	1.219	329
<b>TOTHR</b>	40.73	10.777	329
<b>AGE</b>	42.25	10.967	329

---

*Pearson Correlation*

The first step in the analysis of this data was to conduct a Pearson Correlation Matrix to determine the nature of the relationship between emotional exhaustion (a factor of the tripartite model of burnout (dependent variable) and work stressors, social support, gender, age, occupation of the PA, and total hours worked in a week of PA's (all independent variables). A Pearson's Correlation (symbolized by  $r$ ) was performed to determine if there was a linear relationship among the variables (see Table 4.31). The range was from -1 to 1, and the greater the absolute value of the correlation coefficient, the stronger the relationship. For the purpose of this study, when examining the strength of the correlation ( $rs$ ), the following scale was used: .00-.25, little if any; .26, -.49, low; .50-.69, moderate; .70-.89, high; and .90-1.00, very high (Munro, 2005).

The results of the Pearson Correlation revealed occupation did not appear to be significant,  $p = .316$  at  $r = .026$ . Work stress had a moderate to high correlation between emotional exhaustion and burnout ( $r = -.598$ ). Note the direction was opposite, so an

increase in work stress correlated with a moderate increase in emotional exhaustion. There was a negative correlation between social support ( $r = -.281$ ) and emotional exhaustion. As emotional exhaustion increased, social support decreased. There was a negative correlation between age ( $r = -.097$ ) and emotional exhaustion. As the PA aged, emotional exhaustion decreased. Gender ( $r = .073$ ) had a positive correlation with burnout. Total hours worked in a week ( $r = .187$ ) had a positive correlation with emotional exhaustion. Emotional exhaustion was increased in females with an increase in work hours during a week.

**Table 4. 31. Pearson Correlation Matrix for Question 3a: Emotional Exhaustion**

		<b>EE</b>	<b>WES</b>	<b>Ss</b>	<b>Gender</b>	<b>OCCUP</b>	<b>TOTHRS</b>	<b>Age</b>
Pearson Correlation	<b>EE</b>	1.000						
	<b>WES</b>	-.598	1.000					
	<b>SS</b>	-.281	.465	1.000				
	<b>GENDER</b>	.073	.004	.202	1.000			
	<b>OCCUP</b>	.026	-.130	-.050	.015	1.000		
	<b>TOTHRS</b>	.187	-.036	-.062	-.236	.010	1.000	
	<b>AGE</b>	-.097	-.030	-.171	-.329	.135	.015	1.000
	Sig. (1-tailed)	<b>EE</b>	.	.000	.000	.094	.316	.000
<b>WES</b>		.000	.	.000	.473	.009	.260	.297
<b>SS</b>		.000	.000	.	.000	.183	.131	.001
<b>GENDER</b>		.094	.473	.000	.	.395	.000	.000
<b>OCCUP</b>		.316	.009	.183	.395	.	.431	.007
<b>TOTHRS</b>		.000	.260	.131	.000	.431	.	.396
<b>AGE</b>		.040	.297	.001	.000	.007	.396	.
N		<b>EE</b>	329	329	329	329	329	329
	<b>WES</b>	329	329	329	329	329	329	329
	<b>SS</b>	329	329	329	329	329	329	329
	<b>GENDER</b>	329	329	329	329	329	329	329
	<b>OCCUP</b>	329	329	329	329	329	329	329
	<b>TOTHRS</b>	329	329	329	329	329	329	329
	<b>AGE</b>	329	329	329	329	329	329	329



### *Model for Emotional Exhaustion*

R<sup>2</sup> refers to the amount of variance in the dependent variable accounted for by the independent variable. The higher the R<sup>2</sup>, the better was the fit of the model. The model summary indicated that R<sup>2</sup> equals .408. The interpretation of R<sup>2</sup> as 40.8% of the variance in the emotional exhaustion component of burnout was accounted for by the linear combination of the independent variables: work stressors, social support, occupational focus, total hours worked in a week, age, and gender (see Table 4.32). There was not much difference in the variance as compared to the model of burnout with an R<sup>2</sup> of 38%.

**Table 4. 32. Model Summary for Question 3a: Emotional Exhaustion**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.639	.408	.397	.98004

a. Predictors: (Constant), Age, TOTHR, WES, OCCUP, Gender, SS

### *ANOVA*

A One-Way ANOVA (Analysis of Variance) was used to reveal if there was a significant difference among the various groups (independent variables) with respect to their scores on a continuous dependent variable (emotional exhaustion). The ANOVA (see Table 4.33) indicated that the means of the different groups were significantly different (.000). The P-values <.0001 (0.00) and the revised regression model verified the probability that the null hypothesis was rejected and R-squared was statistically significant.

**Table 4. 33. ANOVA for Question 3a: EE**

---

<b>Model</b>		<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	213.291	6	35.548	37.011	.000 <sup>a</sup>
	Residual	309.273	322	.960		
	Total	522.563	328			

---

a. Predictors: (Constant), Age, TOTHRs, WES, OCCUP, Gender, SS

b. Dependent Variable: Emotional Exhaustion

*Regression*

Using multiple regression, emotional exhaustion scores were then regressed on the linear combination of demographics, worklife stressors, and social support (see Table 4.34). Using SPSS unstandardized coefficients were used to calculate the predicted values from the regression equation. The signs of the coefficients indicated the direction of the relationships among the independent variables and the dependent variables. The regression equation for this model:

$$EE = WES + SS + TOTHRs + OCCUP + AGE + GENDER$$

Controlling for the other independent variables, the relationship between work stress is negative ( $b_1 = -1.4555$ ). There was a -1.455–unit decrease in emotional exhaustion for every 1-unit increase in work stressors while controlling for the other independent variable. Keep in mind that the score is reversed, so the low score for worklife stressors is actually equal to high stress which correlates with increased emotional exhaustion.

Controlling for the other variables, the relationship between emotional exhaustion and social support was negative ( $b_1 = -.113$ ). There was a .113 decrease in emotional exhaustion for every 1-unit increase in social support.

Controlling for the other variables, the relationship between emotional exhaustion and occupation was negative ( $b_1 = -.045$ ). There was a .045 decrease in emotional exhaustion for every 1-unit increase in the occupation of the physician assistant. As the physician assistant entered into another occupation outside of clinical practice, there was a .045 decrease in emotional exhaustion.

Controlling for other variables, the relationship between emotional exhaustion and total hours was positive ( $b_1 = .022$ ). There was a .022 unit increase in emotional exhaustion for every 1 unit increase in the total number of hours worked in a week.

Controlling for the other independent variables, the relationship between age and emotional exhaustion was negative ( $b_1 = -.010$ ). There was a -.010 unit decrease in emotional exhaustion for every one unit increase in age.

Controlling for the other independent variables, the relationship between emotional exhaustion and gender was positive ( $b_1 = .259$ ). There was a .259 unit increase in emotional exhaustion for every one unit increase in gender. This means by being female, there was a .259 unit increase in burnout, controlling for the other independent variables.

**Table 4. 34. Coefficients for Multiple Regression Model of Emotional Exhaustion**

	Model	Unstandar- dized Coeffi- cients	Standar- dized Coeffi- cients	t	Sig.	Correla- tions	Collinea- rity Statist- ics	Part	Toler- ance	VIF
1 (Constant)	7.157	.695		10.294	.000					
WES	-1.455	.122	-.583	-11.880	.000	-.598	-.552	-.509	.762	1.312
SS	-.113	.164	-.034	-.689	.492	-.281	-.038	-.030	.734	1.363
Gender	.259	.124	.099	2.087	.038	.073	.116	.089	.810	1.234
OCCUP	-.045	.045	-.043	-.984	.326	.026	-.055	-.042	.961	1.040
TOTHRS	.022	.005	.189	4.280	.000	.187	.232	.183	.938	1.066
Age	-.010	.005	-.084	-1.815	.070	-.097	-.101	-.078	.857	1.167

a. Dependent Variable: EE

Multicollinearity did not occur in this analysis. According to Hatcher and Stepanski (1994), the values for multicollinearity include VIF greater than ten, and tolerance greater than 0.02 (see Table 4.35). In this analysis, the VIF for the variables did not exceed ten, and the tolerance for the variables was not less than 0.20.

**Table 4. 35. Collinearity Diagnostics for Regression Model EE**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	WES	SS	GENDER	OCCUP	TOTHR	AGE
1	1	6.401	1.000	.00	.00	.00	.00	.01	.00	.00
	2	.387	4.067	.00	.00	.00	.00	.95	.00	.00
	3	.104	7.859	.00	.00	.00	.39	.00	.09	.12
	4	.063	10.112	.00	.00	.00	.00	.01	.56	.36
	5	.033	13.956	.00	.18	.04	.40	.02	.17	.29
	6	.009	26.902	.11	.82	.34	.16	.01	.07	.04
	7	.004	37.961	.89	.00	.62	.05	.00	.10	.19

a. Dependent Variable: EE

*Summary 3a*

Multiple Regression analysis demonstrated the means were statistically significant, and 40.8% of the variance in burnout was counted for by the linear combination of the independent variables. An increase in work stressors, and total hours worked in a week correlated with an increase in emotional exhaustion. Physician assistants working in clinical practice experienced higher levels of emotional exhaustion than PAs working in other non-clinical medical areas (i.e. administrator, educator, researcher, etc.). Females correlated with higher levels of burnout. As the PA aged, there was a correlation with lower levels of burnout. Multicollinearity was not evident in the model.

*Research Question 3b*

RQ3b: What was the ability of areas of worklife stressors, social support, and the various demographic variables (gender, age, total hours worked in a week, and occupation) to predict depersonalization (a component of burnout) in physician assistants?

*Variables:*

The following variables in Table 4.36 were used in the regression model of Depersonalization.

**Table 4. 36. Variables for Question 3a Depersonalization**

Mode	Variables	Variables	Method
1	Entered	Removed	
1	AGE, TOTHRs, WES, OCCUP, GENDERr, SS		Enter

a. All requested variables entered  
b. b. Dependent Variable: DP

*Descriptive Statistics:*

The means of the independent variables, *work stressors* (mean = 3.43), *social support* (mean = 3.54), *total hours worked in a week* (40.73), and *age* (42.25), impacted significantly higher levels of depersonalization than *gender* (mean = 1.63) and *occupation* (mean = 1.41). Occupation and gender may have had higher levels in the other factor of burnout. The means were the same as stated for emotional exhaustion (see Table 4.37).

**Table 4. 37. Descriptive Statistics for Depersonalization**

	Mean	Std.	Deviation	N
<b>DP</b>	1.5023		1.16736	329
<b>WES</b>	3.4368		.50633	329
<b>SS</b>	3.5469		.38573	329
<b>GENDER</b>	1.63		.485	329
<b>OCCUP</b>	1.41		1.219	329
<b>TOTHS</b>	40.73		10.777	329
<b>AGE</b>	42.25		10.967	329

*Pearson Correlation*

The first step in the analysis of this data was to conduct a correlation to determine the nature of the relationship between depersonalization (a factor of the tripartite model of burnout, dependent variable) and work stressors, *social support, gender age, occupation of the PA, and total hours worked in a week of PA's* (all independent variables). A Pearson's Correlation (symbolized by r) was performed to determine if there was a linear relationship between the variables (see Table 4.38). The range was from -1 to 1, and the greater the absolute value of the correlation coefficient, the stronger the relationship. For the purpose of this study, when examining the strength of the correlation (*rs*), the following scale was used: .00-.25, little if any; .26-.49, low; .50-.69, moderate; .70-.89, high; and .90-1.00, very high (Munro,2005).

The results of the Pearson correlation revealed two demographic factors in this model that did not correlate with depersonalization. Total hours worked in a week were not significant  $p = .442$  at  $r = -.008$ , and occupation was not significant  $p = .264$  at  $r = -.035$ . Work stress had a moderate to low correlation between depersonalization ( $r = -.366$ ). Note the direction was opposite, so an increase in work stress correlated with a decrease in

depersonalization. There was a negative relationship between social support (-.265) and depersonalization. As depersonalization decreased, social support increased. There was a negative relationship between age ( $r = .104$ ) and depersonalization. Gender ( $r = -.054$ ) had a negative relationship with depersonalization indicating that males may experience more feelings of depersonalization. Total hours a week ( $r = -.008$ ) had a very low negative relationship with depersonalization. Depersonalization (or detachment) decreased with an increase in total hours.



**Table 4. 38. Pearson Correlation Matrix for Question 3b: Depersonalization**

		DP	WES	SS	GENDER	OCCUP	TOTHR	AGE
Pearson Correlation	DP	1.000						
	WES	-.366	1.000					
	SS	-.265	.465	1.000				
	GENDER	-.054	.004	.202	1.000			
	OCCUP	-.035	-.130	-.050	.015	1.000		
	TOTHR	-.008	-.036	-.062	-.236	.010	1.000	
	AGE	-.104	-.030	-.171	-.329	.135	.015	1.000
Sig. (1-tailed)	DP	.	.000	.000	.163	.264	.442	.029
	WES	.000	.	.000	.473	.009	.260	.297
	SS	.000	.000	.	.000	.183	.131	.001
	GENDER	.163	.473	.000	.	.395	.000	.000
	OCCUP	.264	.009	.183	.395	.	.431	.007
	TOTHR	.442	.260	.131	.000	.431	.	.396
	AGE	.029	.297	.001	.000	.007	.396	.
N	DP	329	329	329	329	329	329	329
	WES	329	329	329	329	329	329	329
	SS	329	329	329	329	329	329	329
	GENDER	329	329	329	329	329	329	329
	OCCUP	329	329	329	329	329	329	329
	TOTHR	329	329	329	329	329	329	329
	AGE	329	329	329	329	329	329	329

### *Model Summary*

The R<sup>2</sup> refers to the amount of variance in the dependent variable (depersonalization) accounted for by the independent variables (age, gender, total hours, occupation, work stressors, and social support) (see Table 4.39). The higher the R<sup>2</sup>, the better was a fit of the model. The R<sup>2</sup> of .175 was interpreted as 17.5% of the variance in the depersonalization component of burnout (dependent variable) and was accounted for by the linear combination of work stressors, social support, occupational focus, total hours worked in a week, age, and gender (independent variables). The variance of 17.5% is half of the difference as compared to the model of emotional exhaustion (40.8%), and overall burnout at 38%. Depersonalization is not as significant to burnout in relation to the independent variables as emotional exhaustion.

**Table 4. 39. Model Summary for Question 3b: Depersonalization**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.418	.175	.160	1.07009

a. Predictors: (Constant), AGE, TOTHR, WES, OCCUP, GENDER, SS

### *ANOVA*

ANOVA (Table 4.40) indicated that the means of the different groups were significantly different (.000). The P-values <.0001 (0.00) and the revised regression model verified the probability that the null hypothesis was rejected and R-squared was statistically significant.

**Table 4. 40. ANOVA for Depersonalization**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	78.258	6	13.043	11.390	.000 <sup>a</sup>
	Residual	368.719	322	1.145		
	Total	446.978	328			

a. Predictors: (Constant), AGE, TOTHR, WES, OCCUP, GENDER, SS

b. Dependent Variable: DP

### *Regression*

Using multiple regression, depersonalization scores were then regressed on the linear combination of demographics, worklife stressors, and social support. Using SPSS, unstandardized coefficients were used to calculate the predicted values from the regression equation (see Table 4.41). The signs of the coefficients indicated the direction of the relationships between the independent variables and the dependent variables. The regression equation for this model:

$$\mathbf{DP = WES + SS + TOTHR + OCCUP + AGE + GENDER}$$

Controlling for the other independent variables, the relationship between depersonalization and work stress appeared to be negative ( $b_1 = -.736$ ). There was a -.736–unit decrease in depersonalization for every 1-unit increase in work stressors while controlling for the other independent variable. Keep in mind that the score was reversed, so the low score for worklife stressors was actually equal to high stress which correlated with increased depersonalization.

Controlling for the other variables, the relationship between depersonalization and social support was negative ( $b_1 = -.396$ ). There was a .396 decrease in depersonalization for every 1-unit increase in social support.

Controlling for the other variables, the relationship between depersonalization and occupation was negative ( $b_1 = -.058$ ). There was a -.058 decrease in depersonalization for every 1-unit increase in the occupation of the physician assistant. A physician assistant who worked in a non-clinical medical area demonstrated .058 decrease in depersonalization.

Controlling for other variables, the relationship between depersonalization and total hours worked in a week was negative ( $b_1 = -.005$ ). There was a -.005 unit decrease in depersonalization for every 1 unit increase in the total number of hours worked in a week.

Controlling for the other independent variables, the relationship between age and depersonalization was negative ( $b_1 = -.017$ ). There was a -.017 unit decrease in depersonalization for every one unit increase in age.

Controlling for the other independent variables, the relationship between depersonalization and gender was negative ( $b_1 = -.211$ ). There was a -.211 unit decrease in depersonalization for every one unit increase in gender. This result meant females were less likely than males to experience depersonalization.

**Table 4. 41. Coefficients for Multiple Regression Model for Depersonalization**

Model	Unstandardized Coefficients		Standar-dized Coeffi-cients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Toler-ance	VIF
1 (Constant)	6.764	.759		8.909	.000					
<b>WES</b>	-.736	.134	-.319	-5.505	.000	-.366	-.293	-.279	.762	1.312
<b>SS</b>	-.396	.179	-.131	-2.214	.028	-.265	-.122	-.112	.734	1.363
<b>GENDER</b>	-.211	.135	-.088	-1.561	.120	-.054	-.087	-.079	.810	1.234
<b>OCCUP</b>	-.058	.049	-.060	-1.167	.244	-.035	-.065	-.059	.961	1.040
<b>TOTHRs</b>	-.005	.006	-.045	-.869	.385	-.008	-.048	-.044	.938	1.066
<b>AGE</b>	-.017	.006	-.156	-2.854	.005	-.104	-.157	-.144	.857	1.167

Dependent Variable: DP

Multicollinearity did not occur in this analysis. According to Hatcher and Stepanski (1994), the values for multicollinearity include VIF greater than ten, and tolerance greater than 0.02. In this analysis, the VIF for the variables did not exceed ten, and the tolerance for the variables was not less than 0.20.

**Table 4. 42. Collinearity Diagnostics for Depersonalization**

Model Dimension		Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	WES	SS	GENDER	OCCUP	TOTHR	AGE
1	1	6.401	1.000	.00	.00	.00	.00	.01	.00	.00
	2	.387	4.067	.00	.00	.00	.00	.95	.00	.00
	3	.104	7.859	.00	.00	.00	.39	.00	.09	.12
	4	.063	10.112	.00	.00	.00	.00	.01	.56	.36
	5	.033	13.956	.00	.18	.04	.40	.02	.17	.29
	6	.009	26.902	.11	.82	.34	.16	.01	.07	.04
	7	.004	37.961	.89	.00	.62	.05	.00	.10	.19

a. Dependent Variable: DP

*Summary of Question 3b:*

Multiple regression analysis demonstrated the means were statistically significant, and 17.5% of the variance in burnout was accounted for by the linear combination of the independent variables. An increase in work stressors correlated with an increase in depersonalization. A decrease in depersonalization correlated with a non-clinical medical occupation. The PA detached from patients but not research or administrative duties. An increase in the total number of hours worked in a week correlated with a decrease in depersonalization. The more hours a PA worked in a clinical practice, the less detachment from the patient. The older the age of the PA, correlated with less likeliness to experience depersonalization. Feelings of depersonalization were less likely among females than males. There was no evidence of multicollinearity. The VIF and tolerance were within normal limits. The current model was then correlated with reduced personal accomplishment.

*Research Question 3c*

RQ#3c:

What was the ability of areas of worklife stressors, social support, and various demographic variables (age, gender, total hours, and occupation) to predict reduced personal accomplishment (a component of burnout) in physician assistants?

*Variables:*

The variables in Table 4.43 were used in the regression model of Reduced Personal Accomplishment.

**Table 4. 43. Variables for Question 3c Reduced Personal Accomplishment**

<b>Model</b>	<b>Variables Entered</b>	<b>Variables Removed</b>	<b>Method</b>
1	AGE, TOTHRS, WES, OCCUP, GENDER, SS	.	Enter

- a. All requested variables entered.
- b. Department Variable: RPA

*Descriptive Statistics:*

The mean demonstrated that work stressors (mean = 3.44), social support (mean = 3.56), total hours worked in a week (40.14), and age (41.71) impacted significantly higher levels of reduced personal accomplishment than gender (mean = 1.59) and occupation (mean = 1.38).

**Table 4. 44. Descriptive Statistics**

	Mean	Std. Deviation	N
<b>RPA</b>	1.9353	.62315	147
<b>WES</b>	3.4404	.50037	147
<b>SS</b>	3.5618	.39468	147
<b>GENDER</b>	1.59	.494	147
<b>OCCUP</b>	1.38	1.178	147
<b>TOTHRS</b>	40.14	11.592	147
<b>AGE</b>	41.71	11.001	147

*Pearson Correlation*

The first step in the analysis of this data was to conduct a correlation to determine the nature of the relationship between reduced personal accomplishment (a factor of the tripartite model of burnout, dependent variable) and work stressors, social support, gender age, occupation focus, and total hours worked in a week (all independent variables). A Pearson's Correlation (symbolized by  $r$ ) was performed to determine if there was a linear relationship among the variables (see Table 4.45). The range is from -1 to 1, and the greater the absolute value of the correlation coefficient, the stronger the relationship. For the purpose of this study, when examining the strength of the correlation ( $rs$ ), the following scale was used: .00-.25, little if any; .26-.49, low; .50-.69, moderate; .70-.89, high; and .90-1.00, very high (Munro, 2005).

There was a negative correlation between worklife stress and reduced personal accomplishment ( $r = .424$ ). There were two demographic factors in this model that did not correlate with reduced personal accomplishment. The results of the Pearson correlation revealed gender did not appear significant  $p = .254$  at  $r = -.055$ , and occupation was not



significant  $p = .237$  at  $r = -.050$ . Social Support had a negative correlation ( $r = -.299$ ) with reduced personal accomplishment. As reduced personal accomplishment increased, social support decreased. There was a negative relationship between age ( $r = -.091$ ) and reduced personal accomplishment. Gender ( $r = -.055$ ) had a negative correlation with reduced personal accomplishment indicating that males may experience more feelings of reduced personal accomplishment. Total hours worked in a week ( $r = -.133$ ) had a negative correlation with reduced personal accomplishment. As reduced personal accomplishment increased, there was a decrease in the total hours worked in a week on the job.

**Table 4. 45. Pearson Correlation Matrix for Question 3c: Reduced Personal Accomplishment**

		RPA	WES	Ss	Gender	OCCUP	TOTHRS	Age
Pearson Correlation	RPA	1.000						
	WES	-.424	1.000					
	SS	-.299	.395	1.000				
	GENDER	-.055	.042	.242	1.000			
	OCCUP	-.059	-.181	.094	.038	1.000		
	TOTHRS	-.133	-.023	-.018	-.250	-.022	1.000	
	AGE	-.091	-.111	-.260	-.249	.114	-.032	1.000
Sig. (1-tailed)	RPA	.	.000	.000	.254	.237	.054	.137
	WES	.000	.	.000	.307	.014	.392	.090
	SS	.000	.000	.	.002	.129	.416	.001
	GENDER	.254	.307	.002	.	.324	.001	.001
	OCCUP	.237	.014	.129	.324	.	.395	.084
	TOTHRS	.054	.392	.416	.001	.395	.	.349
	AGE	.137	.090	.001	.001	.084	.349	.
N	RPA	147	147	147	147	147	147	147
	WES	147	147	147	147	147	147	147
	SS	147	147	147	147	147	147	147
	GENDER	147	147	147	147	147	147	147
	OCCUP	147	147	147	147	147	147	147
	TOTHRS	147	147	147	147	147	147	147
	AGE	147	147	147	147	147	147	147

*Model Summary*

The R<sup>2</sup> referred to the amount of variance in the dependent variable (reduced personal accomplishment) accounted for by the independent variables (age, gender, total hours, occupation, work stressors, and social support). The higher the R<sup>2</sup>, the better was a fit of the

model. The  $R^2$  of .270 was interpreted as 27.0% of the variance in the reduced personal accomplishment component of burnout (dependent variable) and was accounted for by the linear combination of work stressors, social support, occupational focus, total hours worked in a week, age, and gender (independent variables) (see Table 4.46). There was a small difference in the variance as compared to the model of emotional exhaustion. There was not much difference from overall burnout at 38%.

**Table 4. 46. Model Summary for Question 3c: Reduced Personal Accomplishment**

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.519	.270	.239	.54376

a. Predictors: (Constant), Age, TOTHRs, WES, OCCUP, Gender, SS

#### *ANOVA*

The ANOVA (see Table 4.47) indicated that the means of the different groups were significantly different (.000). The p-values <.0001 (0.00) and the revised regression model verified the probability that the null hypothesis was rejected and R-squared was statistically significant.

**Table 4. 47. ANOVA for Reduced Personal Accomplishment**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.299	6	2.550	8.624	.000 <sup>a</sup>
	Residual	41.395	140	.296		
	Total	56.694	146			

a. Predictors: (Constant), Age, TOTHRs, WES, OCCUP, Gender, SS

*Regression*

Using multiple regression, reduced personal accomplishment scores were then regressed on the linear combination of demographics, worklife stressors, and social support (Table 4.48). Using SPSS, unstandardized coefficients were used to calculate the predicted values from the regression equation (see Table 4.48). The signs of the coefficients indicated the direction of the relationships between the independent variables and the dependent variables. The regression equation for this model:

$$\mathbf{RPA = WES + SS + TOTHRs + OCCUP + AGE + GENDER -5.653}$$

Controlling for the other independent variables, the relationship between work stress was negative ( $b_1 = -.496$ ). There was a -.496–unit decrease in reduced personal accomplishment for every 1-unit increase in work stressors while controlling for the other independent variable. Keep in mind that the score was reversed, so the low score for worklife stressors was actually equal to high work stress which correlated with increased reduced personal accomplishment.

Controlling for the other variables, the relationship between reduced personal accomplishment and social support was negative ( $b_1 = -.261$ ). There was a -.261 decrease in reduced personalization for every 1-unit increase in social support.

Controlling for the other variables, the relationship between reduced personal accomplishment and occupation was negative ( $b_1 = -.050$ ). There was a -.050 decrease in reduced personal accomplishment for every 1-unit increase in the occupation (field outside of clinical medicine) of the physician assistant. A physician assistant who worked in a non-clinical environment demonstrated a .050 decrease in depersonalization.

Controlling for other variables, the relationship between reduced personal accomplishment and total hours worked in a week was negative ( $b_1 = -.009$ ). There was a -.009 unit decrease in reduced personal accomplishment for every 1 unit increase in the total number of hours worked in a week. The more hours worked during the week, the PA was more likely to feel accomplishments.

Controlling for the other independent variables, the relationship between age and reduced personal accomplishment was negative ( $b_1 = -.011$ ). There was a -.011 unit decrease in reduced personal accomplishment for every one unit increase in age. As the PA got older, the feelings of reduced personal accomplishment seemed to be reduced.

Controlling for the other independent variables, the relationship between reduced personal accomplishment and gender was negative ( $b_1 = -.110$ ). There was a -.011 unit decrease in reduced personal accomplishment for every one unit increase in gender. The presence of reduced personal accomplishment correlated more in males than females.

**Table 4. 48. Coefficients for Multiple Regression Model for Reduced Personal Accomplishment**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	5.653	.580		9.742	.000					
WES	-.496	.101	-.398	-4.906	.000	-.424	-.383	-.354	.792	1.262
Ss	-.261	.133	-.166	-1.962	.052	-.299	-.164	-.142	.732	1.365
Gender	-.110	.100	-.087	-1.101	.273	-.055	-.093	-.080	.835	1.197
OCCUP	-.050	.040	-.094	-1.247	.214	-.059	-.105	-.090	.914	1.094
TOTHRS	-.009	.004	-.175	-2.336	.021	-.133	-.194	-.169	.926	1.080
Age	-.011	.004	-.195	-2.511	.013	-.091	-.208	-.181	.868	1.152

a. Dependent Variable: RPA

*Multicollinearity*

There was no evidence of multicollinearity in this analysis. The VIF for both variables did not exceed ten, and the tolerance was not less than 0.20.

**Table 4. 49. Collinearity Diagnostics for Reduced Personal Accomplishment**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	WES	SS	GENDER	OCCUP	TOTHR	AGE
1	1	6.390	1.000	.00	.00	.00	.00	.01	.00	.00
	2	.381	4.096	.00	.00	.00	.00	.90	.00	.00
	3	.109	7.654	.00	.00	.00	.41	.00	.17	.06
	4	.072	9.444	.00	.00	.00	.01	.01	.41	.44
	5	.035	13.435	.00	.16	.04	.44	.01	.27	.21
	6	.009	26.409	.08	.83	.37	.11	.07	.06	.02
	7	.004	38.074	.91	.01	.60	.02	.00	.07	.26

a. Dependent Variable: RPA

*Summary of Question 3c*

Multiple Regression analysis demonstrated the means were statistically significant, and 27.0% of the variance in burnout was accounted for by combination of the linear independent variables. An increase in work stressors correlated with an increase in reduced personal accomplishment. A decrease in reduced personal accomplishment correlated with an increase in social support. A decrease in reduced personal accomplishment correlated with the occupation of clinical practice. An increase in the total number of hours worked in a week correlated with a decrease in reduced personal accomplishment. The more hours a PA worked in a clinical practice, the less likely of not feeling personal accomplishment. The

older the age of the PA, correlated with the less likeliness to experience reduced personal accomplishment. Feelings of reduced personal accomplishment were less likely among females than males. The VIF and tolerance were within normal limits. The current model had now been correlated with each component of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment.

The revised model regression models (3a, 3b, 3c) were used to examine the correlation between each independent variable while holding the other variables constant and each dependent factor of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. Multiple regression was then used to determine if there was a significant correlation between the independent variables and burnout as a tripartite model.



*Research Question 4*

RQ#4: What was the ability of areas of worklife stressors (e.g., workload, control, reward, community, fairness, and value) and social support factors (e.g. attachment, reassurance of worth, reliability alliance, and guidance) to predict burnout in physician assistants?

*Variables:*

The variables in Table 4.50 were used in the regression model of Burnout.

**Table 4. 50. Variables for Question 4**

Model	Variables Entered	Variables Removed	Method
1	WEW, WEC, WER, WECOM, WEF, WEV, SSA, SSRW, SSRA SSG,		. Enter

a. All requested variables entered.

b. Dependent Variable: BO

*Descriptive Statistics:*

The number of observations for all of the variables was 337. The mean for each variable was as follows (see Table 4.51): WEW (mean 3.07), WEC (mean 3.6), WER (mean 3.61), WECOM (mean 3.64), WEF (mean 3.15), WEV (3.71), SS (mean 3.57), SSRW (mean 2.98), SSRA (mean 3.63), and SSG (mean 3.60).

**Table 4. 51. Descriptive Statistics for Question 4**

	Mean	Std. Deviation	N
<b>BO</b>	2.1392	.97409	337
<b>WEW</b>	3.0791	.76065	337
<b>WEC</b>	3.6187	.74807	337
<b>WER</b>	3.6150	.79896	337
<b>WECOM</b>	3.6491	.68245	337
<b>WEF</b>	3.1515	.71273	337
<b>WEV</b>	3.7182	.64547	337
<b>SSA</b>	3.5747	.53702	337
<b>SSRW</b>	2.9832	.31681	337
<b>SSRA</b>	3.6390	.46042	337
<b>SSG</b>	3.6006	.52531	337

*Model Summary*

The  $R^2$  referred to the amount of variance in the dependent variable (burnout) accounted for by the independent variables (age, gender, total hours, occupation, work stressors, and social support). The higher the  $R^2$ , the better was a fit of the model. The  $R^2$  of .439 (see Table 4.52) was interpreted as 43.9% of the variance in burnout (dependent variable) was accounted for by the linear combination of work stressors, social support, occupational focus, total hours worked in a week, age, and gender (independent variables).

**Table 4. 52. Model Summary for R-Square**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.662 <sup>a</sup>	.439	.422	.74084

a. Predictors: (Constant), ssg, wev, wew, ssw, wec, wer, wef, wecom, ssra, SS

*ANOVA*

The ANOVA (see Table 4.53) indicated that the means of the different groups were significantly different (.000). The P-values <.0001 (0.00) and the revised regression model verified the probability that the null hypothesis was rejected and R<sup>2</sup> was statistically significant.

**Table 4. 53. ANOVA for Question 4**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	139.890	10	13.989	25.488	.000 <sup>a</sup>
	Residual	178.921	326	.549		
	Total	318.811	336			

a. Predictors: (Constant), ssg, wev, wew, ssw, wec, wer, wef, wecom, ssra, SS

*Regression*

Using multiple regression, burnout was then regressed on the linear combination of worklife stressors, and social support (see Table 4.54). Using SPSS, unstandardized coefficients were used to calculate the predicted values from the regression equation. The signs of the coefficients indicated the direction of the relationships between the independent variables and the dependent variables. The regression equation for this model:

$$\mathbf{BO = WEW + WEC + WER + WECOMM + WEF + WEV + SSA + SSRW + SSRA + SSRG - 6.659}$$

Controlling for the other independent variables, the relationship between workload and burnout was negative ( $b_1 = -.552$ ). There was a -.552 unit decrease in burnout for every 1-unit increase in workload while controlling for the other independent variables.

Controlling for the other independent variables, the relationship between control and burnout was negative ( $b_1 = -.159$ ). There was a -.159 unit decrease in burnout for every 1-unit increase in control. An increase in the perception of sufficient autonomy or influence correlated with a reduction in burnout.

Controlling for the other independent variables, the relationship between reward and burnout was negative ( $b_1 = -.174$ ). There was a -.174 unit decrease in burnout for every 1-unit increase in reward. When PAs feel they are being recognized and rewarded for their work, they were less likely to experience burnout.

Controlling for the other independent variables, the relationship between community and burnout was positive ( $b_1 = .024$ ). There was a .024 unit increase in burnout for every 1-unit increase in community. The score demonstrated that as the level of burnout increased, PAs began to feel isolated or in conflict with their work community. Controlling for the other independent variables, the relationship between fairness and burnout was negative ( $b_1 = -.065$ ). There was a -.065 unit decrease in burnout for every 1-unit increase in fairness.

Controlling for the other independent variables, the relationship between value and burnout was negative ( $b_1 = -.192$ ). There was a -.192 unit decrease in burnout for every 1 unit increase in value. The reverse score indicated a correlation between PAs who identify

with the mission and objectives of their organization; they were less likely to experience burnout.

Social Integration and Opportunity for Nurturance were eliminated from the model based on the Cronbach Alpha scores (see Table 4.10). The independent variables for social support used in this model were: attachment = SS, reassurance of worth = ssrw, reliable alliance = ssra, and guidance = ssg. The scores for social support were linear. A high recorded score on the Likert scale was equal to a high level of social support, and a low score on the Likert scale was equal to a low level of social support. These questions were also reverse coded. When analyzing one of the independent variables, the other independent variables were held constant. For every -.179 decrease in burnout, there was a 1-unit decrease in attachment. A decrease in burnout correlated with a decrease in the need for attachment. For every -.132 decrease in burnout, there was a 1-unit decrease in reassurance of worth. A decrease in the need for reassurance of worth correlated with a decrease in burnout. For every .251 increase in burnout, there was a 1-unit increase in reliable alliance. An increase in burnout correlated with the need for reliable alliance. For every -.184 decrease in burnout, there was a 1-unit decrease in guidance. A decrease in the need for guidance correlated with a decrease in the level of burnout.

**Table 4. 54. Multiple Regression Coefficients for Questions 4**

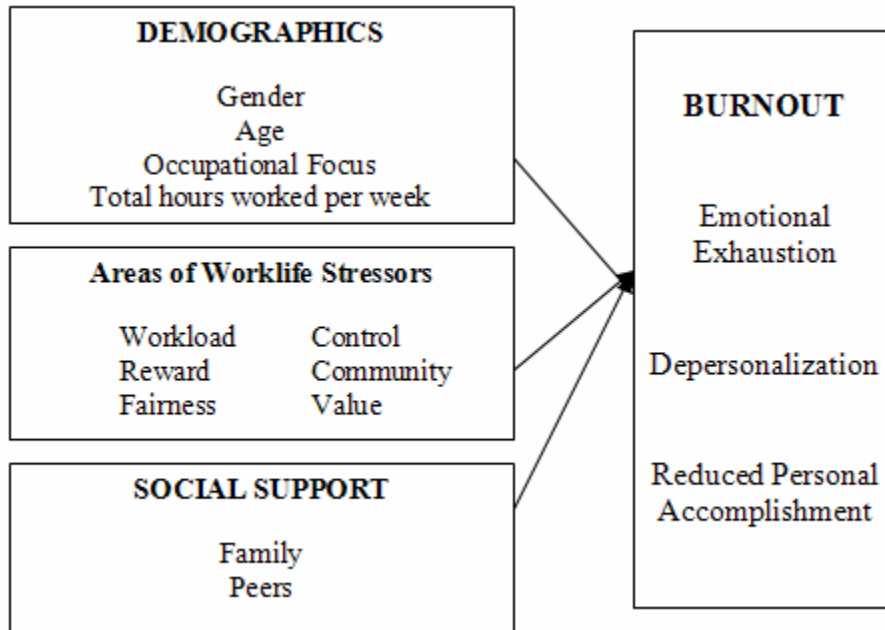
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	6.659	.464		14.366	.000					
WEW	-.552	.057	-.431	-9.614	.000	-.555	-.470	-.399	.855	1.169
WEC	-.159	.068	-.122	-2.338	.020	-.410	-.128	-.097	.631	1.584
WER	-.174	.071	-.143	-2.443	.015	-.419	-.134	-.101	.506	1.978
WECOM	.024	.085	.017	.287	.775	-.341	.016	.012	.490	2.039
WEF	-.065	.080	-.047	-.806	.421	-.356	-.045	-.033	.497	2.011
WEV	-.192	.077	-.127	-2.483	.014	-.343	-.136	-.103	.654	1.529
SSA	-.179	.146	-.099	-1.227	.221	-.268	-.068	-.051	.266	3.765
SSRW	-.132	.151	-.043	-.871	.384	-.260	-.048	-.036	.711	1.406
SSRA	.251	.147	.119	1.709	.088	-.242	.094	.071	.358	2.794
SSG	-.184	.157	-.099	-1.174	.241	-.260	-.065	-.049	.240	4.166

a. Dependent Variable: BO

*Summary*

All of the components of the Areas of Worklife (stressors) correlated with burnout. In the presence of social support, there was a decrease in the presence of burnout. The analysis rejected the null hypothesis, and demonstrated that stressors and social support impact burnout.

## New Conceptual Model II



**Figure 4. 1 Stress factors and Social Support as they impact each factor of burnout.**

## Conclusion

The results of this research produced numerous observations regarding the impact of stress factors and social support on burnout in physician assistants. The Areas of Worklife Survey demonstrated that work stressors impacted burnout in physician assistants including all three components of burnout. Burnout appeared to have the highest linear correlation with worklife stressors. Burnout had an inverse correlation with social support. The presence of social support correlated with a decrease in the likelihood of developing burnout. Based on the correlation analysis, many of the demographics were removed from the model. Gender, Age, total number of hours a PA worked in a week, and occupation of the PA had the strongest correlation with burnout. Chapter V will discuss the results of these findings, the

conclusions in terms of their implication for future physician assistant education, and provide additional recommendations for further research.



## **CHAPTER V: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

### Summary

This chapter summarizes the results of the analysis, discussion of pertinent information from the data, implications for changing the educational model of physician assistants, and recommendations for future research. The primary purpose of this study was to identify the impact of stress factors and social support on burnout in physician assistants. The information obtained from the literature review provided the foundation for the conceptual framework. Participants in this study were enlisted through a systematic random sample provided by the American Academy of Physician Assistants. The data acquired from the questionnaire were analyzed using standard quantitative methodology. Correlation and multiple regression techniques were used to examine the relationship between each component of the demographics, stressors, and social support factors and each component of the tripartite model of burnout (emotional exhaustion, depersonalization, and reduced personal accomplishment).

### Research Conclusions

The Healthcare stress instrument was omitted from the model because of invalid reliability demonstrated by a Cronbach's alpha of the variables  $<.70$ . Descriptive statistics were performed on each variable in the model. The results indicated that there was evidence of work stress, but a low presence of burnout in this sample of physician assistants. The level of burnout was higher for emotional exhaustion. Social support was evident in the model. Although there was evidence of work stress, there was a low level of burnout correlated with an increased presence of social support. Factors of the variable social

support, guidance and reliable alliance, demonstrated higher levels as compared to the other factors of social support. Physician assistants were supervised and supported by their supervising physicians. The presence of social support indicated that the AAPA, state, and local PA organizations presently provide support and guidance to this profession.

A Pearson correlation matrix was conducted to determine which independent variables would be included in the model. Reviewing the results of the correlation matrix provided an understanding of the relationship between the independent variables and the dependent variable.

Independent sample *t*-test and ANOVA revealed which specific demographic components did not correlate with burnout. Employment status, specialty, clinical setting, and number of years in clinical practice, did not correlate with burnout, and some factors did not correlate with stress or social support. Gender and Age remained in the analysis primarily for standard informational purposes. Bivariate correlation and multiple regression analysis demonstrated the variables, total number of hours worked in a week and the occupational focus of the physician assistant, had an impact on burnout, and remained as part of the conceptual model.

The conceptual model was then modified, and multiple regression analysis performed to determine if the independent variables accounted for a significant amount of variance in the dependent variable (burnout). Multiple regression analysis was performed for each component of the tripartite model to determine whether the independent variables had more impact on a specific component of burnout. A VIF <10 and tolerance <0.20 confirmed multicollinearity did not occur.

Multiple regression analysis of the independent variables and emotional exhaustion demonstrated expected results. The evidence of levels of emotional exhaustion in this research confirmed the documentation in the literature regarding emotional exhaustion in health-care professionals. This research study found emotional exhaustion more prevalent among females than males. Work stress, the total number of hours worked in a week, and working in a clinical practice (occupational focus) correlated with the presence of burnout. An increase in social support demonstrated a decrease in emotional exhaustion. However, this research found that as the physician assistant got older, the less likely to develop burnout.

Multiple regression analysis of the independent variables and depersonalization demonstrated interesting information. Depersonalization refers to detachment from the patient. The more hours the physician assistant works, the less detachment from the patient. Physician Assistants working outside clinical practice experienced less detachment to people because of their limited or non-contact with patients. Of interest, males experienced more detachment than females, and the older the physician assistant, the less likely to experience detachment. An increase in social support demonstrated a decrease in depersonalization. Of question is the finding of increased work hours correlated with less detachment, but working in a clinical practice increased detachment. Physician assistants may want to detach from the organization of clinical practice, but not the patient.

Multiple regression analysis of the independent variables and reduced personal accomplishment demonstrated an increase in work stressors. Employment in a clinical practice correlated with an increase in reduced personal accomplishment. Social support

correlated with a decrease in feelings of reduced personal accomplishment. As with depersonalization, males experienced higher levels of reduced personal accomplishment than females. The older the physician assistant, the less likely to experience reduced personal accomplishment. Reduced personal accomplishment was similar to depersonalization demonstrating the more hours the physician assistant worked, the less likely to experience reduced personal accomplishment. This finding is questionable, because working in a clinical practice increased reduced personal accomplishment, yet the more hours the PA worked the less likely to experience reduced personal accomplishment. There is a possibility that resilience developed by the PA to accept long hours implied dedication. However, the presence of managed care rules in a clinical setting may increase reduced personal accomplishment.

Overall, the analysis provided theoretical evidence that work-related stressors impacted burnout, and the presence of social support decreased the propensity for burnout. The number of hours worked in a week correlated with an increase in emotional exhaustion among females, but feelings of depersonalization and reduced personal accomplishment correlated with males the more hours they worked. The occupational focus of the physician assistant demonstrated that those in clinical practice correlated more with burnout. Those who practiced in a non-clinical health-care environment had less correlation with burnout. As the physician assistant matured, the less evidence of stress and burnout.

### Discussion

Approximately 1700 surveys were needed for an approximate representation of the overall population of physician assistants. The total number of participants in this study was

345. Although this was a statistically significant sample size, recruitment measures to increase the population sample size would provide more data representative of the total population of physician assistants.

The primary stressors chosen for this study were taken from the literature on reports of burnout in various populations. At the time of development of the research questionnaire, there was one published article on burnout in emergency medical physician assistants. Continued research on burnout will hopefully expand the accessibility of all possible stress factors of the PA population.

Physician assistant programs are expanding beyond the bachelor degree. Standard education of the physician assistant includes a bachelor's degree. Today, many physician assistants have a master's degree and/or doctoral degree. The variability in stress and burnout levels may have been influenced by knowledge and the degree of skill training.

The AAPA was enlisted to provide the random sample for this research. Gender difference was evident in the levels of burnout. In this study, there were more female PA's, with higher levels of emotional exhaustion, but more social support. Men reported higher correlations with depersonalization and reduced personal accomplishment. These findings may have cultural and ethnic inferences based on societal norms.

Actual responses, missing information, and additional non-requested data added to the questionnaire raised the issue as to the PA's clarity of stress, social support, and burnout. Through written comments on the questionnaire, some PAs stated they were unsure of the presence or absence of stress and burnout in their lives.

The issues stated in the discussion can be addressed in a two-fold manner. First, education is required to present awareness of the phenomenon of burnout. Second, further research is needed to address the unanswered theoretical questions.

### Educational Implications

The data from this research demonstrated that levels of stress and burnout do exist. These findings suggest a need for educational programs regarding stress and burnout in the physician assistant community. In review of curriculum outlines from various national physician assistant programs, and under the Standards and Guidelines for an Accreditation Review Committee for the Physician Assistant revised in 2005 and updated in 2008, there have been no recommendations for evaluation of programs regarding stress, social support, or burnout (ARC-PA, 2008).

The data provided from this research can be used to provide a foundation for the education of the physician assistant community regarding stress and burnout. There is a need for the information to be implemented into the curriculum, but may require changes in the method of curriculum delivery. The goal is to provide educational programs that will educate and socialize the PA into a changing medical community.

Health education was defined by Green (1980, p.7) as “any combination of learning experiences designed to facilitate voluntary adaptations of behavior conducive to health.” Health education reinforces the technical aspect of traditional medicine, but does not reinforce the social environment of medical practice. To reinforce the social environment of medicine, the needs of the health-care system must be addressed. The methodology of teaching adults is very dependent on the needs and experience of the learner and the

capabilities of the educator. The educator must be able to employ those methods and theories which are applicable to the information the learner is expected to retain. Pratt (1998) recognized there is no single perspective for teaching adults. He defines five different perspectives on teaching adults. Educators can facilitate the learning on stress, burnout, and social support through these five educational perspectives.

The transmission perspective relies on the educator to structure the content and create the educational materials to transfer the information to the PA. One concern for the transmission perspective is the teacher's knowledge of subject matter to be able to structure a course on stress and burnout to make it comprehensible to the student. Requirements necessary for the transmission perspective include appropriate teaching techniques, gauging student comprehension, and re-teaching concepts that need clarity (Boldt, 1998).

Developmental perspective cultivates ways of thinking in critical situations (Arseneau & Rodenburg, 1998). The daily focus of the health-care provider is on providing medical care which can block the recognition of everyday experiences and exposure to stress. The purpose of the developmental educator is to lead the learner to understanding and reasoning in the prevention of stress and burnout.

From the nurturing perspective, the educator faces a profession which engages in resilience when facing the medical issues of daily practice. The nurturing educator must recognize the learning is individualized (T'Kenye, 1998). Through observation, reflection, and discussion, the educator is able to receive information to facilitate healthy intrapersonal development in stressful situations and recognize the nurturing of social support.

Social Reform (radical education) takes a problem-posing approach to learning (Nesbitt, 1998). Constant mediation with the PAs will allow them to describe and personalize the feelings of stress and burnout experienced in their jobs. While some educators might feel uncomfortable with this, the stressful environment of a PA gives reason to include encouraging PAs to take a critical look at their environment, recognize what may be “oppressive” about that environment, and take “action” to make positive changes. Radical education hopes the PAs will come to ask what causes stress and burnout for them, and through education find a personal means for managing these feelings.

The apprenticeship perspective places the learner (PA) and mentor (various health-care practicing providers) in real clinical environments. Apprenticeship is implemented in medicine to mentor the health-care learners by placing them in actual clinical environments during their training. Stressors that are experienced in these clinical environments can be discussed with the mentor to develop preventive measures. The concepts and context of learning during an apprenticeship is based on the concept of situated learning (Johnson & Pratt, 1998).

Traditional education is thought to be an applied science. There are methods of didactic education which assume a separation exists between knowing and doing. Today, there are those who argue that learning and cognition are fundamentally situated. Situated cognition is, “a spread across mind, body, activity, setting, and culture” (Wilson, 1993, p.72). Activities and situations are integral to cognition and learning. In situated learning, the learner integrates their skills into their work within the community. Acquired knowledge transfers from the classroom to clinical practice. The educator is responsible for providing a



classroom environment which allows the learner to experience the complexity and ambiguity of the medical environment in which they practice.

The PA will create their knowledge from experience, environmental cues, activities, and the community to manage stress, prevent burnout and implement social support (Stein, 1998). Through educational programs, the PA can engage in discussions, simulated group activities, and articulation-reflection to obtain the acquired skills and knowledge to prevent stress and burnout. The research demonstrated, as the PA got older the less likely to experience burnout. These findings may be due to the knowledge and social support obtained the longer the PA works in medicine. The hope is that the more knowledge obtained on burnout and social support by the PA, the less likely to experience burnout.

Learning is effective when the adult educator understands the learning needs of the adult participant. By knowing the needs of the learner, the educator can effectively structure the learning experience to fit the educational needs of the learner. The data from this research can be a resource of needs necessary to accomplish educational goals. First and foremost, the conceptual model is a foundation on which to build more research. In order to attain more information on burnout in this profession, research should be conducted to identify additional stressors. This process can begin at enrollment in the physician assistant program, at the end of the clinical year, and during the course of the PA career. Identification of additional stressors will provide the data to develop an educational needs analysis. The needs will then be used to design and implement practice-based learning and interventions to prevent stress and burnout.

Second, this research has shown that clinical practice and working long hours correlated with stress and the propensity for burnout. Design and implementation of programs to prevent burnout involve instruction on expediting patient care without compromising the health of the patient. The design would include, developing programs which increase proficiency in obtaining history and physical examinations in a shorter time frame. Workshops, continuing medical education courses, small group sessions which include role play can be used to present stressors and preventive measures for burnout. These changes will decrease the number of working hours and improve clinical practice.

Third, this research revealed the age of the physician assistant influenced the level of stress and burnout. The data demonstrated as the physician assistant got older, the lower the level of burnout. There may be two possibilities for this result. One possibility is that as the PAs' career continues, the more knowledge they attain, and the less stress to perform. The second possibility is the presence of social support as PAs' continue in their careers. From the data, as the level of burnout decreased, the level of social support increased. PAs continue their education in medicine through the provision of continuing medical education (CME). The goal would be to have affordable available CME for all physician assistants in practice. The educational program design should include practice-based interventional courses on managing stress and burnout. PAs are faced with traumatic life changing challenges in their work environment. Educational programming would include practice-based scenarios of stressful clinical-based events, which would provide interventional recommendations for coping with the stress during these events. Based on the data demonstrating females exhibited more emotional exhaustion, and males exhibited

depersonalization and reduced personal accomplishment, the interventional programs will require gender sensitivity.

Finally, this research revealed physician assistants who practiced in a clinical setting demonstrated an increased level of stress and burnout. Those who practiced in administration, research, or education, demonstrated low levels of burnout. As noted in the data on depersonalization and reduced personal accomplishment, burnout was not all due to the number of hours worked in a week. To reduce the stress of clinical practice, health-care administrators should receive education on the demands, constraints, and effects of health-care on today's providers. From the knowledge obtained, administrators need to identify the different sources of resilience and social support and implement continued educational programming. Continual advances in medicine and technology require evaluation of the PA education to meet the challenges and means of adaptation to a changing medical environment.

#### Recommendations for Future Research

The demand to see more patients, health-care expenditures, and managed care have placed a burden on provisional health-care. Our medical system has implemented huge costs to educate the provider, and resulting huge health-care costs to treat the patient have now placed a burden on health-care expenditures. With the reduction in young adults entering the health-care profession, a burden has now been placed on those remaining in the profession to expand the hours of health-care delivery. The result is a tired, stressed health-care professional who experiences burnout. There is a need for an expanded conceptual model

which includes stress, burnout, and social support that takes into account the occupational and training demands of the health-care professional.

#### Future Research in Environment/Organization

Medicine has become a marketplace through which medical services are sold. We now advertise and promote facilities, doctors, and interventions. The rising cost in health-care and the decrease in accessibility have put a strain on our overall health-care system. This strain is spread over an entire health-care system. Research should be conducted that includes evaluation of stress, burnout and social support within the controlling medical bodies of State Medical Boards, local hospital boards, and human resource departments. The results can be used to implement policies and business proposals regarding health care.

#### *Individual*

According to the literature, type “A” behavior and resilience appear to be common traits among health-care professionals including physician assistants. Future research studies should interpolate questions regarding type “A” behavior and resilience to stress and burnout. If these characteristics are extrapolated from the data as a cause for burnout, then interventions can be implemented for prevention training.

There are gender, cultural, and ethnic characteristics that make for a diverse medical society.

The way a health-care provider cares for patients is not all based on clinical training, but also on how the individual is culturally integrated into society and medicine. Therefore, research on stress, burnout, and social support should include diversity.

Levels of education have a direct effect on the way an individual functions. Advanced education provides increased career opportunities and development. As the physician

assistant aged, the levels of stress decreased. This phenomenon could be secondary to the acquisition of knowledge providing more qualification for the job. Future research should include educational levels.

### *Social Support*

This analysis indicated that an increase in social support correlated with a decrease in burnout. Thoits (1982) presented evidence that social support can act as a buffer to help moderate the effects of life events on individuals. Individuals with a strong support system were better able to cope with life changes. Trauma, death, and social concerns are some of the major issues faced by health-care personnel. Add these components to extended work hours and home/work balance, and individuals need support for daily coping. It is when these support factors are not present, that life events become stressful and lead to burnout. Studies on social support suffer from inadequate conceptualization and operationalization (Thoits, 1982). Future research demands analysis of social support factors in health-care that will make a major impact on stress and burnout.

### Final Comments

Health-care reform has dominated major government platforms. Individuals want major changes in the present health-care system. The inaccessibility to adequate health-care for many people has placed a major strain on this society. Major strain has affected the organization of medicine comprised of administrators, researchers, educators, health-care providers and patients. The goal of this study was (and should be for future research as well) to develop a means for evaluating stress and implementing educational resources to improve social support and prevent burnout. The choices health-care professionals, including

Physician Assistants, make today will determine the medical profession for future generations.

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## APPENDICES

## Appendix AI: IRB Approval for the Research Study

North Carolina State University is a land-grant university and a constituent institution of The University of North Carolina  
Office of Research and Graduate Studies

### NC STATE UNIVERSITY

Sponsored Programs and  
Regulatory Compliance  
Campus Box 7514  
1 Leazar Hall  
Raleigh, NC 27695-7514  
919.515.7200  
919.515.7721 (fax)

From: Debra A. Paxton, IRB Administrator

North Carolina State University  
Institutional Review Board

Date: September 20, 2007

Project Title: The Impact of Stress Factors and Social Support on Burnout in Physician Assistants

IRB#:342-07-9

Dear Mrs. McDonald-Fletcher;

The project listed above has been reviewed in accordance with expedited review procedures under Addendum 46 FR8392 of 45 CFR 46 and is approved for one year from its date of review. **This protocol expires on September 20, 2008 and will need continuing review before that date.**

NOTE:

1. This board complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU the Assurance Number is: FWA00003429..
2. The IRB must be notified of any changes that are made to this study.
3. Your approval for this study lasts for one year from the review date. If your study extends beyond that time, including data analysis, you must obtain continuing review from the IRB.

Please provide a copy of this letter to your faculty sponsor. Thank you.

Sincerely,

Debra Paxton

NCSU IRB

## Appendix AII: Recruitment Letter

Dear Physician Assistant Colleague:

I need your assistance, as a participant in this research study, to help preserve the quality and excellence of our profession. According to the literature many individuals' are leaving or simply not entering the health care profession. I anticipate the results of this research will provide a direct benefit to Physician Assistant educators and practitioners in understanding how burnout may impact career performance and ultimately, the health care profession. The purpose of this study is to determine the predictive value of selected stressors and social support factors on burnout identified in Physician Assistants. The data extracted from responses to the questionnaire will hopefully be used to develop and implement an educational curriculum. The curriculum will be designed to teach the recognition of stress factors and methods to prevent burnout within the general population of Physician Assistants.

As a participant in this study, you are asked to complete a Questionnaire and a Consent Form. Please place the Consent Form and Questionnaire in the enclosed pre-addressed envelope. Your responses will remain completely confidential. The AAPA will provide the mailing labels for the questionnaire. Each questionnaire will be coded, analyzed, and stored in a data base on my computer. No reference will be made in oral or written report which could link you to the research. Any records that could identify you will be destroyed after the research study is concluded.

One signed consent form will be randomly selected from the **signed** consent forms returned with the questionnaire, and the participant selected will receive a paid one-year membership to the AAPA. The gift certificate containing the name and address of the recipient for membership will be submitted to the AAPA. There will be no connection between the AAPA and the individuals' participation in the research.

As a graduate student in Adult and Higher Education at North Carolina State University in Raleigh, North Carolina and a Physician Assistant at Duke University Medical Center I am requesting your participation in this research study. Approximately twenty (20) minutes will be required to complete this questionnaire. Your time and effort in participating in this research endeavor are extremely important and sincerely appreciated. Completed surveys must be returned by November 12, 2007.

Thank you for your support of this research project.

Sincerely,

**Varnell D. McDonald-Fletcher, PA-C, MHS**

Varnell D. McDonald-Fletcher, PA-C, MHS  
Principle Investigator of the Study  
Box 3624  
Duke University Medical Center  
Durham, North Carolina 27710  
919-668-2328  
mcdon029@mc.duke.edu

Appendix AIII: Questionnaire remainder

Dear Physician Assistant Colleague,  
Hello again from Varnell D. McDonald-Fletcher, PA-C, MHS, Graduate Student, North Carolina State University. I hope you responded to my survey on Stress and Burnout mailed approximately two weeks ago . . . if not, there is still time! Please respond if I haven't heard from you. You are still eligible for the drawing of a one-year AAPA membership, and the research is very important to our profession.

Thanks,  
Varnell D. McDonald-Fletcher, PA-C, MHS  
Duke University Medical Center  
Box 3624  
Durham, North Carolina 27710  
Mcdon029@mc.duke.edu

## Appendix AIV: Informed Consent

### North Carolina State University INFORMED CONSENT FORM for RESEARCH

Title of Study: **The Impact of Stress Factors and Social Support on Burnout in Physician Assistants**

Principal Investigator: **Varnell D. McDonald-Fletcher, PA-C, MHS**      Faculty Sponsor (if applicable):

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**We are asking you to participate in a research study.** This study will address the impact of stress factors and social support factors on burnout in Physician Assistants. The research uses survey methodology to explore these issues. The purpose of this study is to test a hypothesized model of burnout, which will relate the physician assistants' perceived importance of the impact of stress and social support variables on burnout.

#### **INFORMATION**

As a physician assistant who has passed the national certifying/or recertifying examination (NCCPA), and is licensed to practice medicine, you have received this packet containing a letter explaining the intent of the study, the consent form, the questionnaire, and a pre-paid postage envelope addressed to the researcher to return the documents. The raw data will be analyzed using standard research practices. A total of 15-20 minutes will be required to complete the questionnaire.

#### **RISKS**

There is some potential for a degree of emotional risk in regard to answering the questions on stress and burnout. If at any time you do not feel comfortable answering the questions, you are free to cease completing the instrument. There is no foreseeable risk of criminal, social, or professional harm. There is no permanent foreseeable stress, anxiety, or psychological harm to subjects. Appropriate contact information is included on the consent form. All data will be reported in aggregate form so as to protect your identity. The information in this research will be kept strictly confidential.

#### **BENEFITS**

This research will provide knowledge and insight as to which stress and social support factors impact burnout. Despite the gap in the literature, a direct benefit may be gained by physician assistant educators and practitioners to understand how burnout affects career performance and, ultimately, the impact on overall health care.

#### **CONFIDENTIALITY**

The information in the research data will be kept strictly confidential. The questionnaire will not contain your name or a number that will link you with the questionnaire. The survey data will be coded, analyzed, and stored in a database on the researcher's computer. No reference will be made in oral or written reports which could link individuals to the research. Any records that could identify any individual will be destroyed after the study is concluded.

#### **COMPENSATION** *(if applicable)*

This study is 100 % voluntary. One signed consent form will be randomly selected from the **signed** consent forms returned with the questionnaires, and the participant selected will receive a paid one-year membership to the AAPA. The gift certificate containing the name of the recipient for membership will be submitted to the AAPA. There will be no connection between the AAPA and the individual's participation in the research study. Participants may withdraw at any time, without penalty, and there is no obligation to complete the study.

#### **EMERGENCY MEDICAL TREATMENT** *(if applicable)*

#### **CONTACT**

If you have questions at any time about the study or the procedures, you may contact the researcher, **Varnell D. McDonald-Fletcher, PA-C, MHS, Principal Investigator of the Study, Duke University Medical Center, Box 3624, Durham, North Carolina 27710, or 919/668-2328** or via email at **mcdon029@mc.duke.edu**. If you feel you

have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. David Kaber, Chair of the NCSU IRB for the Use of Human Subjects in Research Committee, Box 7514, NCSU Campus (919/515-3086) or Mr. Matthew Ronning, Assistant Vice Chancellor, Research Administration, Box 7514, NCSU Campus (919/513-2148).

**PARTICIPATION**

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide not to participate, you do not have to complete the questionnaire. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed at your request.

**CONSENT**

“I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may withdraw at any time.”

**Subject's Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**Investigator's Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

Appendix AV: Questionnaire

THE IMPACT OF STRESS FACTORS AND SOCIAL SUPPORT ON BURNOUT  
IN PHYSICIAN ASSISTANTS

QUESTIONNAIRE

Varnell D. McDonald-Fletcher, PA-C, MHS  
Post Office Box 3624  
Duke University Medical Center  
Durham, North Carolina 27710



## PHYSICIAN ASSISTANT STRESS AND BURNOUT QUESTIONNAIRE

1. Gender
  - Male
  - Female
2. Age \_\_\_\_\_
3. Employment Status with Primary Employer
  - Full-time
  - Part-time
4. Please indicate the total number of years you have worked as a Physician Assistant.  
\_\_\_\_\_
5. Please indicate your current occupation (check all that apply)
  - Clinically practicing physician assistant
  - Healthcare professional – educator
  - Healthcare professional – administrator
  - Healthcare professional - researcher
6. Please indicate your primary specialty
  - Internal Medicine (general medicine, cardiology, gastroenterology, oncology, endocrinology, neurology, infectious disease, pulmonology, rheumatology, nephrology, immunology, critical care, hematology, other)
  - Pediatrics
  - Surgery
  - Emergency Medicine
  - Other specialties
7. Please indicate the total hours you usually work in a single week for your Primary Employer.  
\_\_\_\_\_
8. Please indicate the setting where you provide clinical services for your primary employer
  - Hospital
  - Outpatient Hospital Clinic
  - Freestanding facility
  - Correctional facility
  - Nursing Home
  - Other

Healthcare Stressor – Health Professions Stress Inventory

Please use the following rating scale to indicate the extent in which you agree with the following statements.

Never	Rarely	Sometimes	Often	Very Often
0	1	2	3	4

Patient Care Responsibilities					
1. I am dealing with “difficult patients”.	0	1	2	3	4
2. I am keeping up with new developments in order to maintain professional competence.	0	1	2	3	4
3. I am trying to meet society’s expectations for high-quality medical care.	0	1	2	3	4
4. I care for the emotional needs of patients.	0	1	2	3	4
5. I have disagreement with other health professionals concerning the treatment of a patient.	0	1	2	3	4
6. I care for terminally ill patients.	0	1	2	3	4
7. I feel ultimately responsible for patient outcomes.	0	1	2	3	4
Professional Uncertainty					
1. I obtain inadequate information regarding a patient’s medical condition.	0	1	2	3	4
2. I feel inadequately prepared to meet the needs of patients.	0	1	2	3	4
3. I do not know what type of job performance is expected.	0	1	2	3	4
4. I am not recognized or accepted as a true health care professional by other health professionals.	0	1	2	3	4
5. I do not allow personal feelings/emotions to interfere with the care of patients.	0	1	2	3	4
6. I am uncertain about what to tell a patient and family about the patient’s condition and/or treatment.	0	1	2	3	4
7. I fear that a mistake will be made in the treatment of a patient.	0	1	2	3	4

## Work Environment Stressors – Areas of Worklife Survey

**Please use the following rating scale to indicate the extent in which you agree with the following statements.**

Strongly Disagree	Disagree	Hard to Decide	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

Workloads					
1. I do not have the time to do the work that must be done.	1	2	3	4	5
2. I work intensely for prolonged periods of time.	1	2	3	4	5
3. After work I come home too tired to do the things I like to do.	1	2	3	4	5
4. I have so much work to do on the job that it takes me away from me personal interests.	1	2	3	4	5
5. I have enough time to do what's important in my job.	1	2	3	4	5
6. I leave my work behind when I go home at the end of the workday.	1	2	3	4	5
Control					
1. I have control over how I do my work.	1	2	3	4	5
2. I can influence management to obtain the equipment and space I need for my work.	1	2	3	4	5
3. I have professional autonomy/independence in my work.	1	2	3	4	5
Rewards					
1. I receive recognition from others for my work.	1	2	3	4	5
2. My work is appreciated.	1	2	3	4	5
3. My efforts usually go unnoticed.	1	2	3	4	5
4. I do not get recognized for all the thinks I contribute.	1	2	3	4	5
Community					
1. People trust one another to fulfill their roles.	1	2	3	4	5
2. I am a member of a supportive work group.	1	2	3	4	5
3. Members of my work group cooperate with one another.	1	2	3	4	5
4. Members of my work group communicate openly.	1	2	3	4	5
5. I don't feel close to my colleagues.	1	2	3	4	5

Fairness					
1. Resources are allocated fairly here.	1	2	3	4	5
2. Opportunities are decided solely on merit.	1	2	3	4	5
3. There are effective appeal procedures available when I question the fairness of a decision.	1	2	3	4	5
4. Management treats all employees fairly.	1	2	3	4	5
5. Favoritism determines how decisions are made at work.	1	2	3	4	5
6. It's not what you know but whom you know that determines a career here.	1	2	3	4	5
Value					
1. My values and the organization's values are alike.	1	2	3	4	5
2. The organization's goals influence my day-to-day work activities.	1	2	3	4	5
3. My personal career goals are consistent with the organization's stated goals.	1	2	3	4	5
4. This organization is committed to quality.	1	2	3	4	5
5. Working here forces me to compromise my values.	1	2	3	4	5

## Burnout – MBI Human Services Survey

How Often	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday

### How Often

#### 0 – 6 Statements:

1. \_\_\_\_\_ I feel emotionally drained from my work.
2. \_\_\_\_\_ I feel used up at the end of the workday.
3. \_\_\_\_\_ I feel fatigued when I get up in the morning and have to face another day on the job.
4. \_\_\_\_\_ I can easily understand how my recipients feel about things.
5. \_\_\_\_\_ I feel I treat some recipients as if they were impersonal objects.
6. \_\_\_\_\_ Working with people all day is really a strain for me.
7. \_\_\_\_\_ I deal very effectively with the problems of my recipients.
8. \_\_\_\_\_ I feel burned out from my work.
9. \_\_\_\_\_ I feel I'm positively influencing other people's lives through my work.
10. \_\_\_\_\_ I've become more callous toward people since I took this job.
11. \_\_\_\_\_ I worry that this job is hardening me emotionally.
12. \_\_\_\_\_ I feel very energetic.
13. \_\_\_\_\_ I feel frustrated by my job.
14. \_\_\_\_\_ I feel I'm working too hard on my job.
15. \_\_\_\_\_ I don't really care what happens to some recipients.
16. \_\_\_\_\_ Working with people directly puts too much stress on me.
17. \_\_\_\_\_ I can easily create a relaxed atmosphere with my recipients.
18. \_\_\_\_\_ I feel exhilarated after working closely with my recipients.
19. \_\_\_\_\_ I have accomplished many worthwhile things in this job.
20. \_\_\_\_\_ In my work, I deal with emotional problems very calmly.
21. \_\_\_\_\_ I feel recipients blame me for some of their problems.

Social Support – Social Provisions Scale

If a statement is very true respond with **Strongly Agree**. If the statement clearly does not describe your relationship answer **Strongly Disagree**.

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

1. There are people I know will help me if I really need it.	1	2	3	4
2. I do not have close relationships with other people.	1	2	3	4
3. There is no one I can turn to in times of stress.	1	2	3	4
4. There are people who can call on me to help them.	1	2	3	4
5. There are people who like the same social activities that I do.	1	2	3	4
6. Other people do not think I am good at what I do.	1	2	3	4
7. I feel responsible for taking care of someone else.	1	2	3	4
8. I am with a group of people who think the same way that I do about things.	1	2	3	4
9. I do not think that other people respect what I do.	1	2	3	4
10. If something went wrong, no one would help me.	1	2	3	4
11. I have close relationships that make me feel good.	1	2	3	4
12. I have someone to talk to about decisions in my life.	1	2	3	4
13. There are people who value my skills and abilities.	1	2	3	4
14. There is no one who has the same interests and concerns as me.	1	2	3	4
15. There is no one who needs me to take care of them.	1	2	3	4
16. I have a trustworthy person to turn to if I have problems.	1	2	3	4
17. I feel a strong emotional tie with at least one other person.	1	2	3	4
18. There is no one I can count on for help if I really need it.	1	2	3	4
19. There is no one I feel comfortable talking about problems with.	1	2	3	4
20. There are people who admire my talents and abilities.	1	2	3	4
21. I do not have a feeling of closeness with anyone.	1	2	3	4
22. There is no one who likes to do the things that I do.	1	2	3	4
23. There are people I can count on in an emergency.	1	2	3	4
24. No one needs me to take care of them.	1	2	3	4