

PERCEPTIONS OF WELLNESS AND BURNOUT AMONG CERTIFIED ATHLETIC
TRAINERS: CONTRIBUTIONS OF THE WELLNESS DOMAINS

By

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To my family and friends, for all their prayers and support

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LIST OF ABBREVIATIONS

Allied Health Care Professional	Educated, certified or licensed professional who works within the American Medical Association medical fields
American College of Sports Medicine (ACSM)	Organization that researches and determines appropriate fitness and health standards in the United States.
American Medical Association (AMA)	Governing body of American Professionals
Athletic Trainer: (ATC):	Allied health care professional that works with athletes and active individuals
Athletic Training profession (AT)	The profession itself will be referred to as AT in the writing of the paper
Baecke Physical Activity Questionnaire	Measurement of habitual physical activity at work, recreational and leisure times.
Body Mass Index (BMI)	Ratio of weight to height commonly used to determine healthy levels of body weight
Burnout	Physical and emotional/mental exhaustion from work environments that are physically and emotionally demanding.*
CAATE	Commission on Accreditation of Athletic Training Education
Copenhagen Burnout Inventory (CBI)	Measurement of burnout for work, client and personal
Medical Outcomes Study (MOS)	Social Support Survey Measurement of social support
Mental health	Possession of self efficacy and emotional stability in daily living
Mental Health Inventory (MHI)	Measurement of mental health
NATA	National Athletic Training Association
Perceived Wellness Survey (PWS)	Measurement of perceived wellness
Physical activity	Activity that takes place either as leisure time activity or work related activity.**

Physical health	Physical properties of good body measurements (BP, Cholesterol et.) due to a sufficient amount of physical activity
Social support	The availability of someone to provide or exchange resources that are perceived as a way to enhance one's wellness.***
Southeast Athletic Training Association: (SEATA)	SEATA is one geographic district of the National Athletic Training Associations and is also called District 9.
Stressor	Job characteristic or personal characteristic that causes negative outcomes on a person's health or wellness
Wellness	Objective and subjective balance between the domains of physical, mental and social health

* Maslach (2001)

** Cuppett (2002)

***Sherbourne (1991), Callaghan (1993)

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Burnout increases the prevalence of disease and dictates the severity of illness. Stressful job settings, long hours, and an increased number of stressors are mechanisms of professional burnout. These demands may cause a decline in health as time commitments generate imbalances between personal and professional lives. Furthermore, no information regarding the domains of wellness and their role in preventing burnout in AT is available. To better understand how the domains of wellness can reduce burnout and improve the health of the AT profession, the following hypotheses have been proposed; (Hypothesis 1): That burnout susceptible AT professionals (high burnout scores) will have decreased social, mental, and physical health. This result would suggest that these domains of wellness are part of a multi-factorial mechanism that leads to burnout. (Hypothesis 2): That disconnect (lack of a relationship) between the wellness domains and perceived wellness exists. A cross sectional design was used to compare perceived wellness, burnout, and wellness domain (social support, mental health, and physical activity) scores among certified athletic trainers employed in the southeastern district of the NATA (District 9). Variables include: demographics (hours worked, years of experience), Copenhagen Burnout Inventory (CBI), Perceived Wellness Survey (PWS), Baecke Physical Activity Questionnaire, Mental Health Inventory-5, and the Medical Outcomes

Study (MOS) Social Support Survey. The mean scores for the CBI and the PWS were 41.81 ± 17.44 and 16.5 ± 2.8 respectively. A burnout score of 50 is considered high, and a PWS score closer to 29 is considered healthy. Four hundred and twelve members responded (response rate 26.4 %) of which 59 % were male. Pearson correlations showed significant negative relationships between burnout and years of job experience ($r = -0.173, p < 0.001$), social support ($r = -0.265, p < 0.001$), perceived wellness ($r = -0.515, p < 0.001$), mental health ($r = -0.265, p < 0.001$), and physical activity ($r = -0.123, p < 0.001$). Additionally, a significantly positive correlation was revealed between burnout and hours worked ($r = 0.124, p < 0.01$), between perceived wellness and social support ($r = 0.388, p < 0.001$), mental health ($r = 0.486, p < 0.001$) and physical activity ($r = 0.200, p < 0.001$). A regression analysis revealed that mental health, physical activity and social support directly contributed to perceived wellness ($r^2 = 0.579, p < 0.001$). A regression analysis also revealed that perceived wellness, hours worked per week and mental health contributed to burnout ($r^2 = 0.32, p < 0.01$). Based on these results, increased levels of social support, physical activity and mental health are associated with perceived wellness. Higher perceived wellness and fewer hours worked per week could lower burnout. Path analysis models were used to determine direct and indirect effects of the previous variables. The path model provided adequate fit and shows that hours worked per week, years of experience, physical activity, and mental health were causes of burnout. The three domains of health, social support, mental health and physical activity were causes of perceived wellness. By knowing potential causes of burnout and decreased wellness in athletic trainers, future research can work to decrease burnout by educating ATCs and employers about reducing work hours, increasing levels of physical activity and mental health, possibly causing less diseases and severity of illnesses.

CHAPTER 1 INTRODUCTION

Athletic training is a service profession dedicated to the care and prevention of injuries for clients ranging from high school, college or professional athletes to elderly patients and industrial workers.¹ Long work hours and high job stress situations can lead to job burnout and a decline in health and the quality of life of athletic trainers (ATC).^{2, 3} ATCs typically put in long hours at work, working with injured individuals, spending large amounts of time traveling with sports teams or providing coverage to teams during practice and competition. These work related factors often create an imbalance between work and personal life. An imbalance of work and personal life can result in decreased healthy activities such as exercise or socialization with friends and families and social support.^{2, 4-8} Research has shown that ATCs are susceptible to burnout.^{2, 4, 5, 9, 10} As a result of the intensity of their work roles, some athletic trainers do not have the availability of leisure time as do other athletic trainers.^{2, 5, 6, 9} Other health care professionals such as physical therapists, nurses, social workers, physicians, physicians' assistants, teachers and coaches are also susceptible to high levels of stress and burnout.^{2, 4-6, 9, 11-}

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As a profession, athletic training has been in existence for over fifty years and may have began as early as 1917.¹ The American Medical Association recognizes the athletic training profession as an allied health care profession.¹⁶ Athletic trainers (ATC) are certified by the Independent Board of Certification (BOC),¹⁶ licensed or registered in 44 states in the United States, and must maintain strict continuing education credits to keep their certification and license.¹⁷ Educational levels among ATCs vary from a bachelor's degree to those individuals holding an MD or PhD. More than 70 % of ATCs hold at least a master's degree.¹⁷

Certified athletic trainers specialize in the prevention, recognition, management and rehabilitation of injuries resulting from physical activity.¹ The ATC works in a variety of settings that include: high school, college and professional sports as well as in corporate, hospital and clinical settings. Certified athletic trainers work with other health care professionals including physical therapists and physicians. They also interact with parents, coaches and athletic administrators. Because ATCs spend countless hours on injury evaluations, developing treatment plans and preparing for activities, in addition to educating athletes, coaches and parents about injury time lines and rehabilitation processes, they need crucial time management skills. Athletic trainers have stressful day-to-day duties that over time (spanning from mere months to many years) can lead to burnout, decreased physical vigor and decreased social support from friends and family.³

Significance

Burnout has been shown to increase the incidence of disease and dictate the severity of illness.¹⁸ Athletic training professionals are not exempt from the chronic illnesses and health problems that commonly plague society as a byproduct of burnout.² Research indicates that AT professionals or ATCs, like other health care professionals, have decreased job satisfaction, increased job turnover, and high incidence of physical and mental health problems.^{3-6, 8, 9, 11, 13-15,}
¹⁹ Determining the impact of burnout and perceived wellness has the potential to dictate policy changes by the NATA or the governing body of athletic trainers and can reduce the potential for future health related problems, as well as promote job and life satisfaction in certified athletic trainers.^{8, 20} Understanding the determinants of burnout and their effects on perceived wellness among ATCs hold promise for creating effective interventions for ATCs and those in other professions as well.

Early burnout discussions in athletic training focused on both physical and psychological signs and symptoms including: headaches, gastrointestinal or cardiovascular disturbances, fatigue, anxiety, depression, sleeplessness, and even sexual dysfunction.^{4,5} Furthermore, lack of knowledge regarding burnout and the accompanying symptoms, caused many individuals to turn to drugs, tobacco and/or alcohol, and as a result, compounded their own health problems.^{4,5} Certain job characteristics (e.g. >40 hour work weeks, multiple areas of focus) were suggested to predispose AT professionals to burnout.^{2,21} While this information is informative, it typifies the current understanding of professional burnout in AT professionals, as anecdotal, and lacking of evidence.² In the most recent peer reviewed article on burnout, the author also suggests role conflict and ambiguity as well as organizational demands as factors that contribute to burnout.⁹ Although the actual incidence of burnout among athletic trainers is unknown, researchers have shown that athletic training professionals experience burnout and are susceptible to burnout because of job demands.³⁻⁶

To elucidate the mechanisms of professional burnout, valid and reliable instruments must be used. Previously, the Maslach Burnout Inventory (MBI)³ and more recently the Copenhagen Burnout Inventory, have examined burnout in non AT professionals and non-service oriented professionals respectively.²² The most recent attempt at assessing athletic training burnout used the instrument called the Athletic Training Burnout Inventory (ATBI). This instrument was based on the MBI and uses the addition of more items to make it more specific to athletic training, using constructs like time commitment and organizational support.⁹ Additionally, accurate and consistent measures of the wellness domains should be used. Physical activity is known to increase overall health and quality of life, but little information is known regarding the fitness and activity levels of AT professionals.⁶ Previous research has indicated which job

settings allow AT professionals to be the most active (clinical setting) however, no burnout data was collected.⁶ Athletic trainers who work in traditional sport settings may find participating in physical activity difficult due to travel requirements and team coverage which tends to create a lack of control over one's work schedules.⁶ Furthermore, minimal research is available on social support and mental health in AT professionals. This lack of research demonstrates the need to determine the overall perception of health and wellness in the athletic training profession, as well as the current levels of social support and mental health.

Limited research may be due to the handling of the burnout syndrome by AT professionals. For example, many AT professionals are able to "recharge" during the off season. By refocusing the approach on the profession and interacting in positive ways to improve the relationships with staff and clients, the athletic trainer is able to reexamine the time allotments and daily job duties, and learn to delegate responsibility to other staff and students during the off season.⁴ *These types of coping mechanisms have allowed AT professionals to survive!* If the AT profession is to continue to grow, AT professionals must do more than survive especially in a cultural environment that is placing an increased priority on high school athletics and year round competition at all levels . AT professionals will continue to face greater challenges and threats to their physical, social, and mental health unless the mechanisms of burnout can be elucidated and evidence based interventions are designed to increase overall wellness or well being.

Burnout is thought to be preventable by consciously scheduling leisure time and pleasurable activities even if the activities are physical in nature.⁴ Additionally, several studies have discussed coping methods or personality traits that may aid in the reduction of job burnout.^{3, 20} However, the current lack of literature on AT burnout and wellness prohibits a clear understanding of the causes and consequences of burnout and decreased wellness.

Statement of the Problem

Burnout increases the prevalence of disease and dictates the severity of illness in health care professionals.¹⁸ Stressful job settings, long hours, and an increased number of stressors are mechanisms of professional burnout.^{2-5, 18} The professional requirements of athletic training inherently demand a significant time commitment and personal sacrifice. These demands may cause a decline in health as time commitments generate imbalances between personal and professional lives.^{2, 3, 10, 23, 24} Furthermore, the imbalances are believed to cause a cascade of behavioral changes which contribute to a decrease in one's physical, social and mental health domains, thereby leading to changes in physical activity, group socialization/support and mental well being.³⁻⁶ Unfortunately, little is understood about the mechanisms of professional burnout within the field of AT. Furthermore, no information exists regarding associations between the domains of wellness and burnout prevention in AT or their perceived levels of wellness. Based on these observations, it is evident that the mechanisms preventing and leading to professional burnout and decreased levels of wellness are unclear and need to be explored. Until these mechanisms are elucidated, professional burnout and morbidity will be common place within the field of athletic training.

Research Questions

1. To determine the impact or roles that the wellness domains (physical, mental, social) have on burnout in AT professionals. The hypothesis states that wellness domain scores will differ between AT professionals with high and low burnout scores. Specifically, predicting that burnout susceptible AT professionals (high burnout scores) will report decreased levels of social, mental, and physical health. This result would suggest that these domains of wellness are part of a multi-factorial mechanism leading to burnout.

2. To determine the impact or roles that wellness domains (physical, mental, social) have on perceived wellness in AT professionals. The hypothesis states that wellness domain scores will differ from the scores of perceived wellness in the AT professionals. Specifically, predicting a disconnect (lack of a correlation) between wellness domain scores and perceived wellness in AT professionals. This result would suggest that AT professionals can not accurately determine their health and represents a component of a multi-factorial mechanism leading to burnout and decreased perceptions in wellness.

3. To determine the impact or roles that demographic factors have on the burnout and the perception of wellness in AT professionals. The hypothesis states that hours worked, work experience, and job setting will account for the variance in burnout and perceived wellness scores in AT professionals. Specifically, predicting that those with more hours worked and less work experience working in high level college or professional sports will have higher burnout scores and lower perceived wellness scores.

Operational Definitions

Perceived Wellness: Measured with the items from the six subscale (health: physical, spiritual, psychological, social, emotional, and intellectual) of the Perceived Wellness Survey instrument

Burnout: Measured with the items from the three subscales (work, client and personal burnout) of the Copenhagen Burnout Inventory instrument

Mental health: Measured with the Mental Health Inventory-5 Instrument

Physical health: Measured with the items from the three indices (work index, sport index, leisure time index) from the Baecke Physical Activity questionnaire

Social health: Measured with the subscale items (emotion, tangible, affectionate, and positive social) from the MOS Social Support Survey instrument

Interventions

Upon determining the levels of burnout, wellness, and the levels of the health domains, possible policy changes or interventions can become available to those workers (athletic trainers) that are experiencing burnout or decreased wellness or perceived wellness. The knowledge of the relationships and ability to predict burnout and decreased wellness through either demographic variables or health domain scores will allow for entering and established professionals to improve both their general health and quality of life.

Assumptions

1. All participants will accurately report their perceptions of wellness, burnout and wellness domain levels.
2. The instrument used is appropriate for collecting the intended information.
3. The instrument is appropriate to collect information to answer the proposed research questions.

Delimitations

1. The participants are from only one section of the National Athletic Trainers' Association.
2. The study is delimited to the specific items and subscales of the currently used instrument.
3. The instrument is a computer accessible tool and data is gathered only through this medium.
4. The data is dependent on subject recall and subject interpretation of the instrument questions.

Methodological Limitations

1. The results of this study depend upon receiving an adequate response rate.
2. Response bias from the subjects can have effects on the survey outcomes.
3. The use of computer based instruments may not allow access to all of the population.
4. Results will not be generalizable to all athletic trainers, only those in the southeast United States.

CHAPTER 2 LITERATURE REVIEW

Burnout

The condition known as burnout first appeared in the 1970s in workers who were involved in human service professions or health care workers.^{25, 26} These workers were thought to experience an overwhelming exhaustion from the work environment, a detachment from the job and finally a decrease in personal accomplishment.^{25, 26} The condition called burnout is thought to be caused by working to provide services or aid to people in need and is characterized by stressors that deplete emotional health and create a decrease in motivation and commitment.^{25,}
²⁶ Thus the core of burnout in past research is job related and specifically the relationship between the client and the provider. Burnout has been attributed to many factors from role conflict, role ambiguity,^{9, 25} low social support from coworkers,^{3, 27} guidance, organizational stress, work load^{3, 9, 28-30} perceived lack of control, satisfaction with resources,²⁹ and even different personality traits.³ With so many different factors determined by a variety of researchers, the cause of burnout still remains a huge mystery

While the factors causing burnout are many and still yet to be determined, what is known about burnout is that global outcomes like decreased overall health and job satisfaction, increased job turnover, decreased quality of care, and even substance abuse problems do occur in helping professions such as physicians and athletic trainers.^{3-5, 9, 25, 26} And even more specific outcomes of burnout in these professions are physical and emotional exhaustion, fatigue, anxiety, depression, sleeplessness, insomnia, depression, anxiety, irritability, alcohol and drug use ,and even marital problems and sexual dysfunction.^{4, 5, 13, 26} Because burnout has many potential causes and just as many harmful outcomes, the ability to measure burnout is still being dissected and discussed at great lengths by many researchers.

The prevention of burnout is just as mystifying. Many researchers believe burnout is work related, or specifically work role related. Other researchers believe that burnout is personality related and yet other researchers conclude burnout to be a combination of many factors. With the different potential causes, diverse possible ways to prevent burnout are scattered throughout the literature. The main burnout researchers Maslach and Schaufeli believe that prevention should be focused on the individual, and one's capacity to cope in the workplace.^{25, 31} Their other component of prevention is to make changes or interventions in the organization and the organizational environment.²⁵ Other researchers suggest educating the individual and teaching specific coping strategies that promote good work-life balance and skills like time management.²³ Several authors discuss coping mechanisms and personality traits that can also be shown to prevent burnout.^{25, 32} One author mentions the focus on the prevention of burnout through the use of, or the promotion of personal health and professional well being in physicians. This includes all levels of health: physical, emotional, psychological and spiritual.²⁹ As more research shows the causal links of burnout and other factors, more and more potential prevention interventions can be used for all levels and types of workers.

In past research one measure has been used primarily to determine burnout and is considered by many as the "gold standard" of measuring burnout. This gold standard is called the Maslach Burnout Inventory (MBI) and it measures the three constructs defined in the burnout syndrome: emotional exhaustion, depersonalization or cynicism and decreases in personal accomplishment.^{25, 26} The MBI instrument was designed to look at the attitudes and feelings of workers who were experiencing burnout and was originally measured by frequency and intensity.²⁶ The MBI's original populations included nurses, probation officers, mental health workers, counselors, teachers, police officers and social workers, but has since expanded to

physicians, physical therapists and athletic trainers^{2, 4, 5, 9, 13-15, 20, 29, 33-37} By using spousal and work evaluations, the MBI was shown to have convergent, and discriminant validity.²⁶

Test/retest reliability and internal consistency was also determined for the MBI.²⁶

In more recent research by Kristensen, the author discusses three subdivisions of burnout: personal, work and client related, which is different from the three levels of burnout that Maslach describes as emotional exhaustion, cynicism or depersonalization and decreased self accomplishment or self efficacy.^{22, 25} This study was part of a bigger project called the Project on Burnout, Motivation, and Job Satisfaction (PUMA). The PUMA study was a five-year prospective study on employees working in the human service sectors, with a variety of workers including those that work in state psychiatric facilities, welfare offices, and home care services.²² The PUMA study looked at a large variety of both general and specific health outcomes and included questionnaires like the Short Form 36 for general health and other mental health questionnaires.²² Within the PUMA study, the Copenhagen Burnout Inventory (CBI) was designed by Kristensen et al., and was used to measure the one concept of burnout. The CBI used three measures separate or totaled to determine burnout which differed from the MBI, which had three measures each used independently.²² The CBI and the authors of the CBI proposed that these subdivisions focus on only fatigue and exhaustion as its core and remove the personal accomplishment that the MBI measures.²² However, the authors don't rely only on these two core ideas, but also include the idea of different domains of a person's life, hence the inclusion of personal, work and client burnout.²²

The CBI showed both validity and reliability as part of the PUMA study. The internal consistency or reliability was high at 0.85 to 0.87. The validity was shown with correlations from the Short Form 36 or SF 36 instrument. The highest correlation was between the personal

burnout subdivision and the vitality part of the SF 36 (-0.75). The lowest correlation was between client burnout and general health (-0.34).²² The CBI was also directly compared to the MBI and found that both are equal when determining high burnout levels.³⁸ The most recent article using the CBI showed that there was a relationship between sickness absence days (days missed at work), and sickness absence spells per year (groups of days missed from work).³⁹ These findings are part of the results from the PUMA study mentioned earlier in the text. The findings include some other interesting outcomes. The number of people who had moderate alcohol consumption were less burned out than those with lower levels of alcohol consumption. Those that consumed heavy amounts of alcohol were more burned out than those that drank moderately or not at all. The result of drinking more alcohol was also found to be the same the study follow-up. Those that did not drink alcohol reported an increase in burnout at follow-up.³⁹

Another recent tool used for measuring burnout in athletic trainers is the Athletic Training Burnout Inventory (ATBI).⁹ This instrument is a modified version of the MBI, and included three constructs called emotional exhaustion and depersonalization, level of stress, and level of organizational support. This instrument then eliminated the personal accomplishment construct from the MBI.⁹ The scale for recording information was also amended from the MBI and then changed to use a consistent scale throughout the entire instrument. The instrument was field tested and sent to five experts for face validity and was returned with few amendments.⁹ The one main amendment was to modify the scoring scale and avoid comparing the ATBI to the MBI. Content validity was determined with feedback from ten ATCs currently employed in large Midwestern NCAA DI universities.⁹

Reliability of the ATBI was accomplished through a first mailing to 50 ATCs in the four NCAA universities. The first construct, emotional exhaustion and depersonalization, has been

shown to have a Cronbach's Alpha of 0.87, the second construct, level of stress, had a Cronbach's Alpha of 0.57 and the third construct, organizational support, had an alpha of 0.7. The a priori alpha value was set at 0.7.⁹ Since the second construct did not meet this criteria several items were suspect and then the construct was split into two more constructs called administration responsibility and time commitment, which had Cronbach's alphas of 0.74 and 0.60 respectively.⁹ Even though these separate constructs did not meet the a priori 0.7, the items were not changed and researchers rationalized that if a bigger population were used this might produce better results.⁹ Since the split of the level of stress construct, into the administration responsibility and time commitment, a four construct instrument was created with a total of 50 items.⁹ This particular instrument (ATBI) is based on the MBI, but has been modified in several ways specific to the athletic training professional job roles and shows promise in the research areas of burnout and may produce similar results when compared to the other burnout instruments used in current research.⁹

Another group of researchers have cast speculation on the MBI and its ability to measure burnout. A conflict exists in that the MBI involves measuring the concept of burnout with three constructs in the MBI. The concept of depersonalization defined by Maslach may not be part of the burnout concept.²² The CBI developed by Kristensen uses three sub dimensions for personal, work-related and client-related burnout. This instrument focuses on fatigue and exhaustion, which might be more of an accurate measurement of burnout.²²

This discussion or debate over the two main burnout inventories put forth by Kristensen and Maslach involves the functionality or appropriateness in each instruments' specific usage. The first discussion is the circularity of burnout and the MBI. According to Kristensen, the MBI measured only burnout in human services professions, thus only allowing those professionals

working within an area related to human services as possible subjects of MBI studies.²²

However, according to Schaufeli, a general version of the MBI has been developed to address this possible discrepancy.⁴⁰ Another discussion point is the ability to combine the subscale scores from the MBI, because the first two scales are scored high and when the subscale of personal accomplishment is decreased, it is difficult to combine and have a total burnout score because personal accomplishment works differently than the other scales in the MBI.^{22, 40} The CBI has the three subdivisions that can be measured both separately and then combined for a total score.²² The MBI has questions that can be extreme and trigger hostile responses, where the CBI is straightforward and lacks any possible hostile responses.^{22, 40} Another difference between the two measures is the defining of burnout itself. The MBI defines the burnout term as one's relationship with work and not with people at work, and therefore refers to only the job stresses or stressors as causes of burnout.

These instruments are trying to determine what levels of burnout are occurring in working professionals and people in general. Other outcomes of burnout research are to determine factors that impact or lead to burnout. Many factors have been suggested in past research and some researchers are still looking for more factors. Some of the factors that past research found include: long work hours, travel schedule, limited personal resources, difficult workloads, multiple job demands,^{3, 20, 21, 25} and some demographic and personal factors may play a role in burnout, such as gender, marital status and personality characteristics like, hardiness and coping styles.^{3, 20, 21, 25}

Another area of research for burnout that is currently under review is the coping strategy employed by workers that survive high burnout jobs.^{32, 34} Active, adaptive and problem based focuses are more often used than any type of passive or emotional focus and reveal that job

burnout can be reduced with active interventions.³⁴ An article on athletic trainers looked at the coping responses of certified athletic trainers in graduate schools. This article found that burnout was reported from sources of stress at work and found that two of the people interviewed intended to leave the profession.³² Aside from coping, another interesting factor that might affect burnout is whether the person is a paid professional or a volunteer.⁴¹ In a study by Gabassi, the researcher looked at volunteers versus paid hospital workers and found that those who performed the same jobs, but were volunteers, were less burned out than the paid professionals.⁴¹ The volunteers had a mean score lower than those of paid professionals leading to the conclusion that volunteers seemed to be less emotionally exhausted than paid professionals. This difference in scores could be a result of the motivation that exists between volunteers and paid professionals.⁴¹ Volunteers have the ability to control when to leave or to appear for a job. Volunteers also have no financial attachment to the job and thus fewer expectations than paid professionals.

A key aspect of burnout that affects everyone is the amount of or quality of care that is given to patients or clients. In a study by Calzi, the researcher found decreased quality of care in relation to middle levels of burnout scores.⁴² A decrease in quality of services then would reduce the effectiveness of the system believed to help the patients or clients. This study looked at several different health care providers including: physicians, nurses, therapists and technicians.⁴² The author believed that the nature and possible causes of burnout or what was called 'psychological distress', emerged from the work that each different provider carried out during the daily routines.⁴²

The issue of burnout not only causes problems for those workers that experience the burnout syndrome, but also causes problems for the clients and/or patients seen by the health care worker. The ability to determine factors that cause burnout and managing those factors and

preventing them from occurring, could lead to healthier workers and potentially safer health care environments for patients and clients. Accordingly, Calzi suggests that monitoring for high levels of personal accomplishment and decreasing the emotional exhaustion scores simultaneously could allow for the prevention of burnout reaching high levels.⁴² The inclusion of multiple areas of workers shows that many aspects of burnout and exhaustion exist in different positions.⁴²

Social Support and Burnout

Social support has been reported as a factor in job stress but is not well specified in conceptual models.⁴³ Social support has a complex definition and there are a variety of different types that lead to the definition of social support. Many researchers incorporate a variety of different types of support such as: emotional, esteem, tangible or affectionate.^{43,44} Another problem existing with social support is that social support can be defined as support outside the workplace and at the workplace (work versus non-work).⁴⁵ A study by Bradley showed that those that received support in a work environment were in better health but the evidence doesn't show that the management and coworkers were the reason for the increased health.⁴³ This outcome adds more to the confusion on where social support and the perception of social support actually helps a person's health in regards to levels of burnout.

Another type of social support, which is found in person-to-person support or those that exchange resources, plays a key role in maintaining health and prevention of destructive effects from environment and social stress.⁴⁶ This type of perceived social support can function as an individual's buffer from stressful life events.⁴⁶ These stressful life events include job stressors and work related incidents. Either aspect of social support can be important, and both play important roles in regards to burnout and health. However, the facet of social support found at work has shown to be more closely related to emotional exhaustion and a thought exists that burnout and social support are reciprocal in their relationship.⁴⁵ Overall, a lack of social support

has been eluded to as fatal for the person lacking perceived social support,⁴⁶ and can possibly exacerbate burnout, depression and inability to cope with work demands.³⁰ Current research shows the role of social support or perceived social support is still in development and needs to be further discussed in the literature.

Health and Burnout

Burnout has severe effects on a person's work life, but minimal research shows exactly the outcomes burnout has on overall health and wellness. One study by Honkonen discussed the relationship between burnout and musculoskeletal diseases among women and cardiovascular diseases in men.¹⁸ This study used some 8000 30 plus year old subjects living in Finland to secure a total of 3470 participants who completed a health questionnaire and a clinical health exam. The study found that those women who experienced burnout experienced musculoskeletal disease which included: chronic lower back pain, chronic neck pain and hip and knee osteoarthritis.¹⁸ Although men experienced burnout and cardiovascular disease as a possible outcome from job strains, this result wasn't shown in women.¹⁸ Chronic fatigue syndrome or CFS is another possible outcome from burnout in professionals.¹⁸ With so many instances of health issues involving burnout as a leading cause, there is a combined thought of burnout's effect on health and the inverse relationship of wellness or lack of leading to burnout.

Health and Wellness

Several definitions of health exist among healthcare professionals within the country. As stated by the World Health Organization, the three main aspects of health are mental or emotional well being, social well being, and physical well being.^{47, 48} Most people have a picture of health as being only about the physical health or just being absent of illness.⁴⁸ However, in order to maintain a good quality of life or well being, an individual needs to balance all the different aspects of health. While most people only consider physical health, overall health

incorporates mental or emotional health as well as social health. Each health category plays a very important role in maintaining balance and well being.

Health category measurements occur several ways, by using reliable and valid self reports or with concrete, objective lab testing. The latter being much more intensive and time consuming, as well as difficult in getting the appropriate number of subjects in adequate amounts of time. According to Healthy People 2010, health status can be measured not only by quality of life but also by variables such as birth rates, death rates, life expectancy, morbidity and risk factors for disease, as well as the current status of things like health care and health insurance.⁴⁹

Healthy People 2010 mentions three top or leading health indicators: level of physical activity, overweight and obesity, and mental health levels.⁴⁹ Although Healthy People 2010 talks about the general population, many health care providers are overworked and do not present a healthy balance between work and personal life leading them to fall into the realm of decreased activity, overweight/obesity and decreased mental health levels. The imbalance may be linked to several detrimental outcomes such as: decreased physical or social health, which in turn can possibly lead to professional burnout and other health concerns.

Allied Healthcare Provider's Burnout

Many professions experience some type of burnout and ultimately a decrease in one of the health domains. The following allied healthcare professionals compare similarly to athletic trainers in their job descriptions and job settings as well as similarities in education and job roles. A brief description of physicians, physicians' assistants and physical therapy burnout and wellness is included to give a basic background of the current literature in other professions outside of athletic training

Physician Burnout

Many health care professionals including physicians face job stresses that lead to burnout.^{12, 13, 35, 36, 50} The physician has a life filled with many factors related to burnout, which leads to decreases in mental health and related declines in physical health. The gold standard for measuring burnout, the Maslach Burnout Inventory or MBI measures burnout in physicians.^{12, 35, 36, 50} Physicians, like other health care professionals, are in a unique and critical situation in regards to burnout. Their decisions or reactions could have devastating consequences for those patients who are in contact with them for their services.¹³ The burnout of physicians relates to patient care and health of the physician. The decrease in mental health as a result of burnout affects physical and social health.

In the studies on physician burnout the authors use several different characteristics to define specifics of physicians, such as specialization and geography. One study by Ozyurt et al. looks at predictors of burnout in Turkish physicians.³⁶ The instruments for this study included the MBI and the Minnesota Satisfaction Questionnaire (MSQ). The MBI was a reliable measure of burnout with Cronbach's Alpha coefficients at 0.81, 0.70 and 0.73 for the three subsections of the MBI.³⁶ The three respective subsections include: emotional exhaustion, depersonalization and personal accomplishments. The Cronbach's coefficient for the MSQ showed reliability with a score of 0.88.³⁶ The results showed those with higher number of shifts had significantly higher scores on emotional exhaustion and depersonalization and lower scores on personal accomplishment or satisfaction.³⁶ In the Ozyurt study, the number of vacations taken per year was found to be significant as a variable for every subscale of the MBI.³⁶ According to this study, the authors found similar findings. Other studies state that insufficient personal time or vacation were predictors of burnout, as well as, working in the public sector and higher number of shifts.³⁶ Shanafelt et al. used the MBI to measure burnout in internal medicine residents.¹²

The author found that 76 % of the sample was found to meet the criteria for burnout. The associated stresses that lead to burnout were similar to the Ozyurt study, such as inadequate sleep, lack of leisure time, and long shifts over 24 hours.¹² According to Ozyurt, all of these results are consistent with other studies conducted internationally. Due to the stresses physicians experience, burnout occurs in many settings and in many countries, but is measured with the same instrument, the MBI.^{12, 13, 36}

Secondary to burnout, exercise plays a pivotal role in health and wellness. Primary care physicians who performed aerobic exercise regularly were more likely to counsel their patients about aerobic exercise.⁵¹ Those physicians that performed resistance training program were also more likely to counsel patients about participating in resistance training.⁵¹ According to a study by Peterson et al. current medical students are already falling behind in health levels while attending medical school.⁵² When medical students do not participate in exercise or activity, burnout can begin early and cause detrimental effects on physician as well as client health.

Physician Assistant Burnout

The physician assistant (PA) is another health care professional that faces the same burnout syndrome as physicians and athletic trainers. These health care providers work alongside doctors performing many of the same tasks and dealing with the same types of job related pressures. Minimal research exists on physician assistant burnout. The only study done by Bell et al. in 2002, used the MBI to determine the levels of burnout in emergency room PAs (EMPA).¹⁵ Specifically, 66 % of EMPAs showed moderate or high depersonalization and 59 % showed high emotional exhaustion.¹⁵ In the study, burnout was found to be a problem among emergency room PAs, but not as significant as in ER doctors.¹⁵ Literature states the problems of burnout in physicians occur due to certain stresses. PAs experience some of the same stressors as do other health care professions, leading to a decrease in well being.

Physical Therapist Burnout

Physical therapists (PTs), a third health care profession that provides orthopedic care for patients, can be exposed to the stresses that cause burnout syndrome and problems in well being. PTs work in a variety of settings including hospitals and clinics. A 1983 study stated that 53 % of PTs reported burnout.³⁷ In this decade, the current literature of physical therapy burnout rates increased drastically. A study conducted by Balogun in 2002 revealed that the percent of moderate and high emotional exhaustion found when using the MBI rose to 88 % of the sample.¹⁴ Balogun stated that the emotional burden of health care can possibly lead the health care provider to become frustrated causing them to develop negative attitudes towards their clients and the work environment itself.¹¹ Of the therapists listed in the study, over 50 % felt highly emotionally overextended and most felt negative attitudes towards both work and clients.¹⁴ The studies by Balogun and Shuster used the gold standard of burnout, the MBI as the valid instrument.^{14,37} As a result of understaffing in clinics and hospitals due to the shrinking health care dollar which allows for more patients needing to be seen by fewer PTs, burnout continues to be a problem.^{11,33} According to the study done by Donahue et al., the physical therapists in their sample showed a moderate level of burnout in only four years of working in the profession.³³ Donahue et al. reported that 45 % of respondents scored in the high range for emotional exhaustion, 20 % high on the depersonalization and then 60 % in the low of personal accomplishment.³³ These numbers reveal that a higher number of PTs feel burnout in their current lives. Like physicians and physician assistants a level of burnout creates a decrease in the quality of care and well being.^{14,33}

Physical therapists and athletic trainers experience similar job characteristics and play similar roles that can lead to burnout. The roles of PTs and athletic trainers mimic each other in the clinical interactions of clients with orthopedic injuries and the goal of returning them to their

functional levels prior to injury. Client work, especially those that need to return to work or even participate in daily life normal activities can be extremely stressful for the healthcare professional, particularly when coaches, parents or even insurance companies are pressuring for the patient to return to full function.

Athletic Trainers' Burnout and Wellness

Burnout in the Athletic Trainer

Athletic trainers (ATC), also listed as allied health professionals, practice in an intensely stressful medical setting, working long hours often under stressful conditions.²⁻⁵ The exact number of ATCs experiencing burnout is unknown; what is known is that ATCs do experience burnout syndrome and a few studies have discussed possible coping methods or personality traits that have allowed ATCs to continue to function in their work environments.^{3,32} Athletic trainers in particular, work in very stressful, and life threatening situations, sometimes under coaches and athletic departments that place unnecessary pressure on the athletic trainer to return key athletes to play.¹⁰ Athletic trainers interact with a number of other professionals in addition to a number of injured athletes, leading to more potentially stressful interactions.³ With the amount of stresses and the number of hours worked there is little confusion as to why burnout exists in the profession of athletic training.

The original burnout/stress management articles in athletic training originate from the early 1980s and from the same author. Geick began studying the burnout syndrome in athletic trainers in 1982. Geick's first article was a collection of case reports that exhibited some of the early warning signs and symptoms of the burnout syndrome.⁴ According to Geick, signs and symptoms can be physiological, psychological and behavioral in nature. Physiological signs include: increased pulse rate, headaches, gastrointestinal or cardiovascular disturbances and fatigue. Psychological signs include: anxiety, depression, sleeplessness, and even sexual

dysfunction.⁴ These signs and symptoms may result in the athletic trainer turning to drugs, alcohol or tobacco as a reaction to the burnout.⁴

A study by Hendrix et al. used several instruments such as the MBI, the Hardiness test and the Perceived Stress Scale to determine burnout and other personality traits that lead to or decrease burnout.³ Hendrix et al. studied 118 certified athletic trainers working in NCAA universities that sponsored football, with approximately 50 % of the sample population being male.³ The study results disclosed that perceived stress was a predictor of emotional exhaustion. Specifically, those with decreased hardiness scores and low social support reported higher levels of perceived stress and developed poor lifestyle behaviors.³ A more recent study on AT burnout by Clapper et al. found the Athletic Training Burnout Inventory (ATBI) to be reliable, but did not report the actual burnout scores.⁹ The information that was reported stated that the burnout results were similar to past research and that ATCs experienced higher perceived stress and therefore higher emotional exhaustion and depersonalization scores.^{3,9} Clapper reported that age was a significant variable for organizational support.⁹ However, neither marital status nor gender showed any significant differences in regards to organizational support.⁹

The most recent burnout article by Kania et al. discusses the personal and environmental characteristics that predict burnout in NCAA athletic trainers. The researchers contacted 600 NCAA collegiate athletic trainers working as clinical athletic trainers. Burnout was measured using the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), which is a modified version of the original MBI.¹⁰ Subscales for this instrument are the same as the MBI in regards to emotional exhaustion, depersonalization and personal accomplishment. Of the 600 contacted ATCs, 206 of them participated in the study. Fifty two percent of the participants were male, 95

% were Caucasian and 47 % were married. Interestingly, 80 % of the sample held at least a master's degree.¹⁰

Information from the MBI-HSS brought to light different results in comparisons to other research findings. Overall burnout scores for this population were considered low with only 66 of the 206 falling in the high, average or low burnout score ranges.¹⁰ Researchers found that personal characteristics such as highest degree attained, race, years certified and gender and environmental characteristics like injury type frequency and pressure from coaches can possibly predict burnout.¹⁰ Specifically, personal characteristics were able to account for 45 % of the variance in emotional exhaustion, 21 % in depersonalization and 25 % in personal accomplishment. The stress level was the significant predictor of burnout in athletic trainers. Environmental characteristics accounted for much less of the variance and the highest portion of the variance was 17 % for emotional exhaustion. Specifically, coach pressure, number of athletes and injury type, and frequency were the environmental characteristics that were significant predictors.¹⁰

In the November 2000 Hunt article from the NATA (National Athletic Training Association) news, the author writes about the topic of burnout. Key points associated with burnout among athletic trainers were discussed. Those points being the number of work weeks spent working more than 40 hours per week, and focusing on athletes and administrators, parents, coaches and colleagues. With so many roles and responsibilities, the author points out the “dwindle” in family and personal time for hobbies and other activities.²

In Geick's article, the author discusses ways to manage the burnout syndrome including things like the ability to recharge at the end of a season, refocusing on the humanistic approach of the job, interacting in positive ways to ensure positive relationships with staff and clients,

reexamining time allotments and daily job duties, and learning to delegate responsibility to other staff and students.⁴ All of these things can and have allowed the athletic trainer to survive the stressful profession.

Burnout syndrome is a preventable issue that requires a conscious effort. The ways that Geick suggested to handle burnout include: an active outside life, proper health habits, restructuring of behaviors, and analyzing job stresses.⁴ The author states that the control of one's environment allows for control over one's job. The successful ATC has a mixture of variables that give him or her the ability to avoid burnout. Some of those variables fall into a spiritual or moral realm. Other variables are as simple as scheduling leisure time and pleasurable activities even if the activities are physical in nature.⁴ Athletic training involves many stressful situations and a need exists for stress management within the profession.

Mental Health in Athletic Trainers

Many circumstances and situations lead to burnout in athletic training. After having discussed some of the causes of burnout that cross most medical professions, the focus turns to those factors that cause burnout, and ways to eliminate or reduce these contributors to burnout in athletic trainers. One of the first articles on athletic trainer burnout discusses poor or negative relationships within the work place, be it athletes or athletic directors.⁵ This is only one aspect of what causes burnout and decreases mental health in the athletic training profession. Other factors that contribute to burnout are the number of athletes that the athletic trainer is in contact with daily, the total number of hours worked in the training room, and the relationships that develop within the work place.³ A key concept to remember is that different stressors occur in different settings and preparing an athletic trainer for each setting's different work dimensions may be instrumental in reducing the burnout that some athletic trainers experience in the workplace.

Physical Activity in the Athletic Trainer

Athletic trainers are no different than other samples of the population and should be monitored for obesity and decreased well being. The current research on athletic trainers' fitness and activity levels is minimal. To date, only one study discusses the fitness levels of athletic trainers.⁶ The ATC needs not only the minimal levels of activity for health, but their job roles and responsibilities require them to have at least some level of fitness.⁶ The literature states that those athletic trainers working in clinical settings are more likely to be physically active outside of the workplace.⁶ This is most likely due to the decreased number of hours clinical athletic trainers work. Athletic trainers that work in sport settings may find it difficult to have a regular exercise routine due to the travel hours and lack of control over their work schedules.⁶ The study conducted by Cuppett and Latin included 636 athletic trainers in the Midwest region, and showed that male ATCs were no higher in physical activity levels than those of the general population. However, female athletic trainers did show more activity than the general population.⁶ Since the athletic training student is exposed to all of the benefits of physical activity in their education curriculums as mandated by the National Athletic Trainers' Association Educational competencies, it is of grave concern as to why more athletic trainers are not physically active.⁵³

Recently, a second study was conducted to determine the health and fitness habits of athletic trainers. The author contacted 1000 athletic trainers randomly throughout District 4 of the NATA. Only 275 athletic trainers responded, yielding a 27 % response rate.¹⁰ Approximately 50 % were females and the mean age was 34. Interestingly, the authors found that BMI or Body Mass Index in this sample was high for females; 47 % were considered overweight or obese and 74 % of males either reported being obese or overweight.¹⁰ BMI numbers that high reveal that

athletic trainers are currently not in a healthy weight range and are predisposing themselves to a variety of diseases.

The amount of hours worked for athletic trainers change in regards to whether a sports team is in-season or out-of-season. Those athletic trainers who are considered in-season tend to work more hours due to practice, travel and increased number of competitions. The authors found a small difference in health habits in regards to in-season versus out-of-season time frames.¹⁰ Forty five percent of the athletic trainers in the sample who reported being in-season reported healthier habits during their out-of-season time period. Forty seven percent of those who reported being out-of-season reported no difference between seasons.¹⁰ The BMI results show that ATCs who are not in-season are still not able to maintain a healthy weight. In the sample only 41 % met the ACSM recommended guidelines for exercise (30 minutes of exercise, 5 days per week).¹⁰

Another interesting finding from Kania et al. was the lack of nutritional health and the use of alcohol and tobacco from respondents. The author found that in general, certified athletic trainers did not meet the recommended guidelines for nutrition as recommended by the USDA's Dietary Reference Intake (DRI) for individual food groups.¹⁰ Approximately, 7 % of female ATCs and 3 % of male ATCs reported consuming more than the USDA recommended amount of alcohol (0-1 drinks for females and 1-2 drinks for males).¹⁰ Eleven percent of the total sample reported not consuming alcohol at all, and a very small percentage (1%) reported any type of tobacco use. It seems that use of tobacco and alcohol products among athletic trainers is lower than the general population. The author suggests the time commitments as possible reasons for higher BMI, and lower nutritional intakes among ATCs.

Barriers to Physical Health in Athletic Trainers

Healthy People 2010 cites lack of time, lack of access to facilities, and lack of safe areas to be active as main reasons or barriers to physical activity.⁴⁹ In Cuppett's study, the author attributes the barriers to activity in athletic trainers as a lack of control over work schedule, citing specifically barriers like team travel time and practice times. Cuppett also mentions responsibilities of teaching as another possible barrier.⁶ In general, most if not all, health care professionals work in some type of stressful environment and work long shifts, which contribute to a lack of time for physical activity. These factors lead to obesity and morbidity, as well as decreased family and social interaction opportunities.

Social Support Levels of the Athletic Trainer

The current literature on social support relating to athletic trainers is minimal. The literature in athletic training offers a look at social support and perceived stress.³ The conclusion of the study by Hendrix revealed that decreased social support combined with decreased hardiness showed greater levels of perceived stresses.³ The specific social support instrument used by Hendrix was the Social Support Questionnaire, and was a section of a burnout study in athletic training. To date, this is the only study to look at social support in athletic training.³

Domains of Health and Wellness

Physical Health

Physical activity is a key component in reducing many chronic illnesses and conditions such as diabetes, cardiovascular problems and obesity. The total medical costs and loss of productivity as a result of obesity was an estimated 99 billion dollars in 1995.⁴⁹ Physical activity plays a role in enhancing psychological well being and prevention of premature mortality.⁴⁹ Activity levels of 20-30 minutes per day can reduce the chances of these conditions and illnesses. In fact, according to the CDC, the majority of people in the United States do not do enough

physical activity to ward off such conditions and illnesses.⁵⁴ Health care professionals, who promote health and well being in their professional careers, are part of the this majority.⁶

Physical health can be measured in several ways; including the use of surveys that are a form of self rated health measure or self reported instruments.⁵⁵ Other ways include taking actual health measurements like blood pressure, height and weight and using those measurements to determine BMI, cholesterol levels or even through the use of job stress and burnout surveys. A measure like the Behavioral Risk Factor Surveillance System asks participants about physical activity levels along with health status and health related quality of life, hypertensive awareness and cholesterol awareness in order to determine an overall health level.⁵⁴ There exists many different self reported fitness instruments. Some commonly used valid and reliable tools for measuring fitness levels include: the International Physical Activity Questionnaire and the Baecke Questionnaire on Habitual Physical Activity. 6, 56-58 The Baecke questionnaire has been proven valid and reliable in several studies (see Appendix A).⁶, 56-58 A concern with these survey tools stems from the specific attention it pays to one area of well being over another. Many instruments choose to focus on one aspect of health or even one particular aspect of activity, like work related activity versus actual leisure time activity.⁵⁹

Mental Health

Physical health is not the only part of wellness or well being. Mental health plays a vital role in wellness. According to some research, mental health can have more than one construct with a breakdown in psychological, emotional or intellectual wellness levels.⁶⁰ Mental health encompasses direct illnesses such as depression, anxiety, autism and schizophrenia. Another important contributing factor to mental health measure associated with many health care professionals is the condition known as burnout.²⁵

Burnout is comprised of three core dimensions and defined as a prolonged response to stressors on the job.²⁵ Those dimensions according to Maslach include: emotional exhaustion, depersonalization, and reduced personal accomplishment.²⁵ Burnout occurs as the result of quantitative job demands, such as the number of clients or hours worked. Another factor is the actual job itself, including coworkers, client selection or role conflicts.²⁵ A final category is the organization of the job including things such as downsizing or mergers which can contribute to job burnout.²⁵

Personality characteristics contribute to burnout. Demographics such as age and educational levels have been found to relate to burnout. Other factors associated with the individual include personality characteristics, such as hardiness or attitudes related to work.^{3, 25} Another aspect that may lead to burnout and decreased mental health is inadequate levels of social support levels.²⁵

Social Health

Social health is one domain of overall health or wellness. Social health or wellness can be defined as the perception of having social support.⁶⁰ Social support is found in relationships with family and friends, not just coworkers. Social support is believed to positively impact a person's mental and emotional wellness⁴⁴ and should be studied along with the physical and mental domains, as well as the impact social support has on burnout and perceived wellness. Social support can be broken into two approaches: 1) the functional support or help one receives from interpersonal relationships, and 2) the structure of the interpersonal relationships.⁴⁴ These approaches of social support are part of the overall concept of whole health or wellness and relate to other health problems. Social support and the social networks or relationships associated with social support can be an important factor in avoiding things like burnout or decreased wellness.

Theoretical Framework

'Theory of Action' is a theory that proposes actions determine all deliberate human behaviors. The Theory of Action is actually two separate theories called the 'Theory in Use' and the 'Espoused Theory'. The Theory of Use is defined as what the person actually does, whereas the Espoused Theory is what the person thinks he or she does.^{61, 62} These theories serve as mechanisms to link thought and action together. The use of these two theories can bring to light what one thinks when actually describing health and what one actually does towards health or wellness.^{61, 62} Many health care providers such as physicians, physical therapists and athletic trainers promote health or well being to their clients and athletes. Health care professions worry about client well being, but are proven to neglect the undertaking of proper steps for their own well being by being the target and at the forefront of many burnout and health studies.^{3, 4, 6, 11-15} Recently, an article discussed the habits of athletic trainers and showed that many certified athletic trainers had better health and fitness habits than the general population, but still did not meet recommended times and intensities by the ACSM.⁶³

Summary

In summary, all of the previously mentioned health care professions have some type of burnout present in their daily lives.^{3-5, 9, 11-15} No empirical instrument takes into account the burnout syndrome or mental health state and combines the data from the MBI and other measures of well being, such as social and physical well being. As an athletic trainer, each area of well being is important to measure as well as determining barriers or related problems to the various aspects of well being. An instrument that would incorporate the multiple aspects of health while determining burnout levels would help with creating an overall measure of well being of the athletic trainer. With such an instrument, the potential of looking at the well being of other allied healthcare professionals is also increased. Measurements of well being in the athletic

training profession and understanding the potential barriers of wellness and attitudes of athletic trainers can lead to reductions in chronic health issues and lead to an athletic training profession that presents decreased levels of burnout and increases in overall health or wellness.

CHAPTER 3 METHODS

Study Setting and Participants

There are approximately 30,000 athletic trainers working in the United States. The athletic training population spans the entire United States as well as other countries throughout Europe and Asia. Within the United States, members of the National Athletic Trainers' Association (NATA) are split into 10 districts. Data was collected from one of the districts (District 9). There are approximately 3000 members in the Southeastern Athletic Training Association (District 9). Of these 3000 members, approximately 1400 (~46 %) have opted out of being contacted about survey instruments. Members of the NATA have the option to maintain privacy from solicitors or marketers, and thus only 1600 members from District 9 were contacted in this study. ATCs in District 9 were contacted from different job settings constituting a purposeful convenience sample. Students of any standing were excluded from the sample because they did not work full time, due to their lack of awareness and inexperience with certain aspects of the profession. This population may be studied in future projects. The selection of participants for this study encompasses settings where certified athletic trainers work with some clientele such as, student, athlete or other type of patient. These settings include: professional sports, high schools, community colleges, universities' sports and educational settings, industrial jobs and clinical work performed within District 9.

Study Design

A cross sectional web based survey design was used to determine the relationships between the measures of perceived wellness and burnout, including the three domains of health: social support, mental health, and physical activity levels among athletic trainers. The goal was to determine the relationship between social support, physical activity, mental health and

perceived wellness and burnout levels as well as the direct and indirect effects on perceived wellness and burnout. Demographic data including age, gender, years of work experience, hours worked per week, and job settings was collected and the hours worked and years experience was included in the structural equation model path analysis.

Materials

A survey instrument was developed from existing valid and reliable instruments to measure perceived wellness, burnout, physical activity, mental health and social support in athletic trainers (See Appendix A). The instrument took approximately 15 minutes to complete and was emailed to each participant with a direct link to the survey website, SurveyMonkey.com (Survey Monkey Portland, OR).

Instrumentation

Valid and reliable survey instruments were selected from the literature to measure the domains of wellness (mental, physical, social), burnout, and perceived wellness in AT professionals^{22, 38, 44, 56-60, 64-69} The following instruments were combined and used in their entirety: Baecke Physical Activity Questionnaire (BPAQ), Mental Health Inventory-5 (MHI-5)*, Medical Outcome Study: Social Support Survey (MOS-SSS)*, Copenhagen Burnout Inventory (CBI), and Perceived Wellness Survey. The final instrument contained 95 closed ended Likert-type items. The survey was organized so that each instrument formed a distinct subscale intended to measure constructs of interest. Oblique principal component cluster analysis was performed All items loaded on the appropriate subscale. The measurements of the wellness domain constructs were used to determine predictive and causal relationships to the variables of perceived wellness and burnout. The instrument's scale and subscale validity and reliability have been previously established.^{22, 38, 44, 56-60, 64-69} See Appendix B for a copy of the survey and Table A-1 in Appendix A for validity and reliability scores. Cronbach's Alpha was used to

determine the internal consistency of each separate instrument. It must be noted that establishing survey reliability and validity is critical to advancing this line of inquiry. Continued work in defining an appropriate instrument predicting burnout and wellness among athletic trainers is essential.

Demographics

General demographic questions included information such as: gender, age, years of job experience, job setting, primary job title, and at the average number of hours worked per week over the last month. Means, standard deviations and frequencies were reported for these variables.

Physical Activity

Physical activity was assessed with the Baecke Physical Activity Questionnaire (BPAQ). This instrument measured the perceived physical activity over the past 12 months.⁵⁷⁻⁵⁹ The Baecke Questionnaire contains three parts or indices.⁵⁹ This instrument was able to report total physical activity levels for the athletic trainer as well as subscale scores for work, sport/exercise and leisure time activity.

The first index (subscale) is the Work Index and that measures the amount of physical activity that a person engages in during the work day at their place of employment. Item 1 asks the person what is the main occupation. For Item 1 the investigator had to determine the category of job reported by the participant for the question. Based on the article by Baecke, the job categories are low level (clerical, driving, teaching etc.), middle levels (factory work, plumbing, carpentry etc), and high level (dock work, construction work and sports).⁵⁹ The athletic trainer was determined to be part of the middle level (due to the physical nature of the job, carting coolers, kits etc.) and those that held academic or administrative positions were predetermined to be a low level. This determination for athletic trainers was based on the examples given by

Baecke et al, for teachers at the low level and factory/carpentry work for the middle level.⁵⁹ The other seven items in the work index were computed by questions about body position at work (e.g. at work I sit, or at work I stand, with the answers: never/seldom/often/very often) and items about loads lifted and tiredness (e.g. at work I lift heavy loads, or at work I am tired). Item 2 was first subtracted from six and then items 1 through 8 were totaled and finally divided by eight to give the work index.⁵⁹ This subscale was calculated according to Baecke's calculation of scores of the indices of physical activity.⁵⁹

The next subscale, the Sport Index, asked each participant, do you exercise? (If answered yes, the respondent was asked what do you do and how often?). This question measured the amount of intensity, time (How many hours per week) and amount of time during the year (How many months per year). (The investigator determined the intensity of the sport based on Baecke's guidelines; low level (billiards, bowling, golf etc.), middle level (badminton, cycling, dancing swimming etc.), and high level (basketball, rugby, rowing etc.).⁵⁹ Once intensity level was complete, the amount of time per week was coded as such (<1/1-2/2-3/3-4/>4 with the corresponding scores, .5-1.5-2.5-3.5-4.5). The number of months per year was coded as follows (<1/1-3/3-6/7-9/>10 with the corresponding scores .04-.17-.42-.67-.92). This item was asked twice, calculated twice, and coded as a score between 1 and 5. The highest score was reported as the item score for this specific item. Four other items asked about the comparison to others and exercise as part of leisure time (e.g. During leisure time I sweat, and during leisure time I play a sport, with the answers: never/seldom/often/very often).⁵⁹ Items 9 through 12 were summed and divided by 4 according to Baecke's calculation of scores of the indices of physical activity.⁵⁹

The final index or subscale is the Leisure-time Index, which asks four items on leisure time activities like television watching, and questions about leisure walks or cycling (e.g. During

leisure time I watch TV or during leisure time I walk or cycle, with the answers: never/seldom/often/very often).⁵⁹ Item 13 was subtracted from 6 and then items 13 through 16 were summed and divided by 4 according to Baecke's calculation of scores of the indices of physical activity.⁵⁹

Upon completion of the subscales, a total activity score was calculated by summing the items on each index for that index's total score. Each subscale had a max possible score of five, with five being high physical activity. The total score was calculated as a sum of the three indices or subscales and a max score was 15. See the complete instrument in Appendix B.

Mental Health

The Mental Health Inventory-5 (MHI-5), a subscale of the Short Form -36 (SF-36), was used to measure overall quality of life and more specifically, feelings of depression and the presence of self-efficacy and self-worth. The instrument uses items that have a six point Likert scale (e.g. How much time during the past month have you been a very nervous person?).^{64, 65} The items scores are: (6)=All of the time, (5)=Most of the time, (4)=A good bit of the time, (3)=Some of the time, (2)=A little of the time, and (1)=None of the time. For items 3 and 4, the scoring is reverse scored. The total score is determined by totaling the five scores and dividing by 25 and then multiplying by 100. This gives a maximum score of 100 and according to the study by Hoeymans et al., a cut-off score of less than 72 was considered unhealthy or presenting with anxiety, depression behavioral or emotional problems and psychological well being.^{70, 71} See Appendix B for the instrument.

Social Support

The Medical Outcome Study: Social Support Survey (MOS-SSS) is an instrument that was developed as part of the Medical Outcome Study (MOS). The MOS was an observational study that examined variations in patient outcomes and doctor practice styles.⁶⁷ The MOS-SSS

measures the perceived amount of social support in the forms of companionship, assistance or support received by family, friends and coworkers on a five point Likert scale (e.g. How often is each of the following kinds of support available? Is there someone you can count on to listen to you when you need to talk?).^{44, 66, 67, 72} The response items are: (1)=None of the time, (2)=A little of the time, (3)=Some of the time, (4)=Most of the time, and (5)=All of the time. There are four possible subscale totals, and one overall support total. The overall support total was calculated according to the RAND health website and the Sherbourne article as the scores of all the items, minus the minimum score divided by the maximum score minus the minimum score all multiplied by 100.^{44, 67, 72} The total score computation allows for comparison to other research with this instrument and to the scores from the 18 item version and the 4 item version. Scores were calculated for all subscales including: emotion, tangible, affectionate, and positive social.

Burnout (Professional and Personal)

Burnout (physical and psychological exhaustion that results from work or other life situations) is measured with The Copenhagen Burnout Inventory (CBI).²² The CBI has a total number of 19 items and is used to determine the total level of burnout including the three areas of burnout (personal, work and client burnout).²² The total score is a total average of the three subscales.

The items for the first section of the CBI instrument focus on personal burnout (e. g. How often do you feel tired? and How often are you physically exhausted?). The responses to this part of the instrument uses a five point Likert scale with the answers of (100)=Always, (75)=Often, (50)=Sometimes, (25)=Seldom, (0)=Never/almost never.^{22, 38} This section can be subtotaled into an average score between 0 and 100.

The second part of the instrument focuses on work burnout items (e.g. Is your work emotionally exhausting? and Do you feel worn out at the end of the working day?).²² These

items are answered with a five point Likert scale with the answers of (100)=Always, (75)=Often, (50)=Sometimes, (25)=Seldom, (0)=Never/almost never or the following answers: (100)=To a very high degree, (75)=To a high degree, (50)=Somewhat, (25)=To a low degree and (0)=To a very low degree.²² This section can be subtotaled into an average score between 0 and 100.

The final section of the CBI focuses on the aspect of client burnout (e.g. Do you find it hard to work with clients? and Do you feel that you give more than you get back when you work with clients?). These items are answered with a five point Likert scale with the answers of (100)=Always, (75)=Often, (50)=Sometimes, (25)=Seldom, (0)=Never/almost never or the following answers: (100)=To a very high degree, (75)=To a high degree, (50)=Somewhat, (25)=To a low degree and (0)=To a very low degree.²² This section can be subtotaled into an average score between 0 and 100.

Perceived Wellness

Perceived wellness is multidimensional and is derived from the combination of many construct or subcategories that include but are not limited to physical indicators of health, such as blood pressure and cholesterol, and psychological constructs like mental well being and life satisfaction. The Perceived Wellness Survey follows the multidimensional approach and incorporates the following constructs or parts of health: physical, spiritual, psychological, social, emotional, and intellectual.⁶⁰

Similar to the previously described survey instruments, a six point Likert scale for the Perceived Wellness Survey (PWS) measures the perception of wellness in the participants. The PWS is comprised of 36 items that are split into six items per construct of health. Sample items for each section are as follows: psychological (e.g. I am always optimistic about my future), emotional (e.g. I sometimes think I am a worthless individual), social (e.g. My friends will be there for me when I need help), physical (e.g. I expect my physical health to get worse), spiritual

(e.g. I believe that there is a real purpose for my life), and intellectual (e.g. I avoid activities that require me to concentrate).^{60, 68} The items for this instrument are answered using a five point Likert scale with the following answers: (1) Very strongly agree to (6) Very strongly disagree. Scoring for this instrument is somewhat complicated. Please see Appendix B which presents the instrument and Table A-2 for specifics to scoring.⁶⁰

Scoring of Instruments

Each instrument has a total index or composite score that can be used to determine overall outcomes for each instrument. Most of the instruments have specific subscales within the overall index or composite score and can be further broken down into components of each particular area of the instrument. The composite scoring methods can be found in Table 2 (See Table A-2 in Appendix A for index and composite scores).^{22, 44, 59, 60, 67, 68, 70-72}

Pilot Data Collection

A pilot sample consisting of 23 ATCs outside the NATA District 9 were contacted through email to inquire about participating in the pilot study. Fourteen certified athletic trainers from outside the NATA District 9 completed the survey instrument twice, and approximately one week apart. Nine of the original 23 ATCs either did not complete the second collection or did not complete any of the instruments. A Pearson Correlation was used to determine test-retest reliability for this data and instrument. The test-retest results revealed that the instruments had repeatability.

Data Collection

Each of the surveys was used unchanged and entered into Survey Monkey for Web-based access. All Survey Monkey usage fees and sampling fees were paid through a grant received from the Southeast Athletic Training Association (SEATA). The NATA was contacted in order to supply the email addresses for the members of District 9. The cost per email address was \$.09.

Those members of District 9 willing to participate in survey research received an email during the fall semester sports season on Wednesday, Sept. 3, 2008, from the researcher. To ensure duplicate surveys were not distributed to the same individuals, the confidential email survey linked to the participants' email address so that each participant could only participate in the survey once. No incentives were provided to the participants for taking the survey. The District 9 members were emailed with explicit instructions, and participants were given six weeks to complete the survey. Follow up requests were made to the targeted individuals one, three and five weeks after the original request.⁷³ See appendix C for a copy of the institutional IRB and Consent forms. See appendix D for a copy of the letter sent to each athletic trainer prior to answering the survey.

Data Analysis

Participants' survey responses were automatically entered into a Microsoft Excel database (Excel 2003 Microsoft Redmond, WA) from a SurveyMonkey.com administrator (Survey Monkey Portland, OR). The data in the excel file were checked for missing data. Composite scores and subscales were calculated and then imported into Statistical Package for the Social Sciences or SPSS (Version 16.0 SPSS INC. Chicago, IL) database. Missing data were replaced using the SPSS replace missing values function, which replaces the missing value with a mean score calculated by SPSS for that item from all other participants. Subject demographics were calculated including: descriptive statistics of central tendency and frequencies were conducted on the demographic data. A correlation analysis was run to determine relationships between burnout, perceived wellness and the wellness domains. Subsequent analysis based upon subject demographics (i.e. job title, age, gender, education level, etc.) were conducted accordingly to determine factors of covariance. Significance was set at $p < .05$. A Structural Equation Modeling technique or path analysis, using the SAS statistical program 9.2 (SAS

Corporate Statistics, Cary, NC) determined the extent to which each variable is associated with the outcome measures of burnout and perceived wellness (Please see figure 3.2 for the anticipated path associations). All path analysis and goodness-of-fit statistics were run with the consultation of a statistics consultant located in the Collaborative Assessment and Program Evaluation Services (CAPES) of the University of Florida, located in Gainesville FL and paid for through a research grant received from SEATA.

Descriptive Statistics

Descriptive statistics of central tendency and frequency were determined for all of the variables including the demographics of age, gender, job title, job setting, hours worked per week, and years experience, as well as for perceived wellness (PW), burnout (BO), physical activity (PA), social support (SS) and mental health (MH).

Coefficient Alpha

Cronbach's Alpha (α) was used to determine the reliability of the items of each separate instrument in the total instrument using SPSS (Version 16.0 SPSS INC. Chicago, IL). A perfect alpha score is 1 and the closer the score is to 1, the better the internal consistence. Although there is no set level that is acceptable, 0.7 or better is considered sufficient. See results for internal consistence reliability and test-retest reliability.

Pearson Correlations

Pearson correlations were run to determine the positive or negative relationships between the following variables: years of experience, hours worked per week, physical activity (PA), mental health (MH), social support (SS), burnout (BO), and perceived wellness (PW). Overall scores for each variable were used to determine the correlations. Correlations analysis was used to determine what relationships existed and to what extent these relationships occurred among the variables.

Multiple Regressions

Multiple regressions analysis was calculated to determine the predictability of select variables in this study. The first regression model used the outcome or dependent variable of burnout with the explanatory or independent variables of gender, job title, job setting, age, hours worked per week, years experience, mental health, social support, physical activity and perceived wellness. The second regression model used the outcome or dependent variable of perceived wellness with the explanatory or independent variables of gender, job title, job setting, age, hours worked per week, years experience, mental health, social support, burnout and physical activity. The regressions analysis was used to determine variables that could predict both burnout and perceived wellness in athletic trainers

Path Analysis (SEM)

Upon completion of the covariance matrix, a path analysis was run using the SAS statistical program 9.2 (SAS Corporate Statistics, Cary, NC) to determine effects of the following independent variables of social support, mental health, physical activity, years of experience and hours worked per week on burnout and perceived wellness. A two step approach to structural equation modeling recommended by Kline was used.⁷⁴ The first step was to test the fit of the measurement model. Once the measurement model was solidified, a structural model was tested. A model was solidified based upon appropriate goodness-of-fit indices. The path models were run on the covariance matrix of the variables. Based on theoretical considerations, four latent variables (perceived wellness, burnout, physical activity, social support), one observed endogenous variable (mental health) and two exogenous observed variables (years experience and hours worked per week) were considered in the path model. In the original measurement model the subscales for each latent variable served as the indicators or observed variables for each of those latent variables. Mental health did not have subscales and therefore was

considered an observed variable without indicators in the model. See Figure 3.2 for the proposed path model.

Maximum likelihood estimation was used to estimate the model and to determine the goodness-of-fit of the model by simultaneously analyzing all the endogenous variables.⁷⁴ Goodness-of-fit indices were calculated to determine the extent to which correlations from data match the outcomes from the SEM. Overall fit of the models was tested using the goodness-of-fit index (GFI), comparative fit index (CFI), adjusted goodness-of-fit index (AGFI), standardized root mean square residual (SRMR), norm fit index (NFI), parsimonious NFI (PNFI), and the minimum Chi-square fit index.^{74, 75} Acceptable standards of fit are $GFI \geq 0.90$, $AGFI \geq 0.90$, $CFI \geq 0.90$, $NNFI \geq 0.90$, and $SRMR \leq 0.10$.^{74, 75} Path coefficients (β), structural residuals, and squared multiple correlations were calculated for each structural pathway. Significance was set at $p < .05$ for all statistical analysis.

T test/ANOVA

A bivariate analysis or independent t test was used to determine the effect of gender on burnout, perceived wellness, social support, physical activity, mental health, hours worked per week, and years of experience. One-way ANOVAs were used to determine the effects of job setting and job title on the dependent variables of burnout, perceived wellness, mental health, physical activity and social support. The Bonferroni post hoc test was used as the follow up tests for the significant One-way ANOVAs. All analyses were run with the SPSS statistical software program (Version 16.0 SPSS INC. Chicago, IL).

Permission Notes

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Methodological Figures and Tables

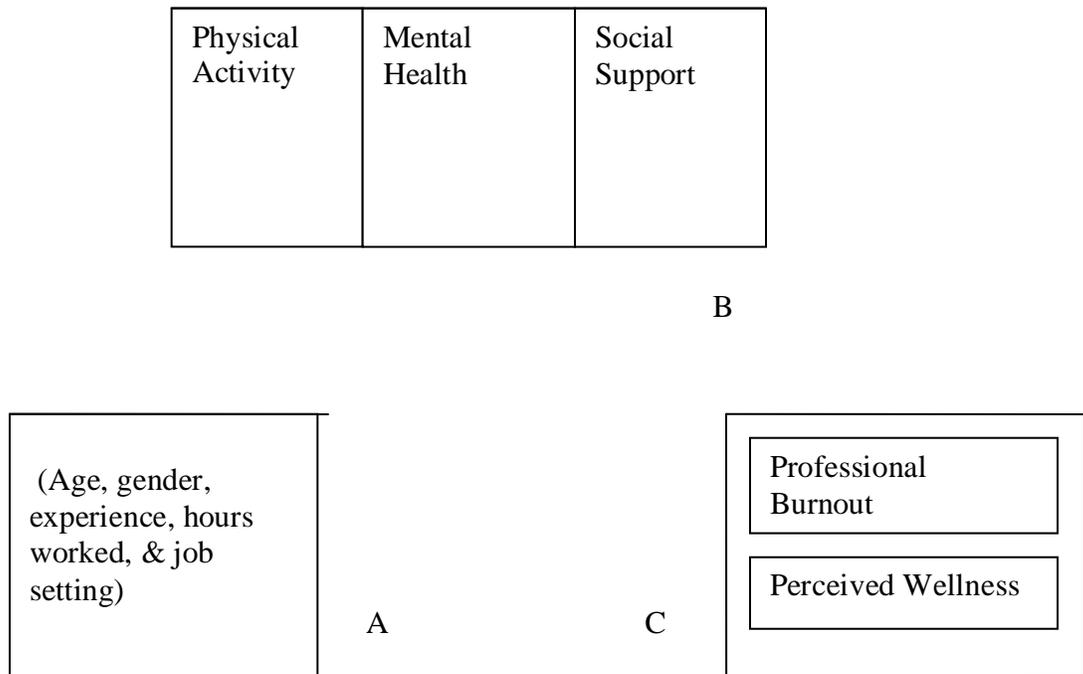


Figure 3-1. Variables of Importance and outcome measures for Athletic Trainer's Burnout. (a)Demographics, (b)Wellness domains, (c) Outcome measures

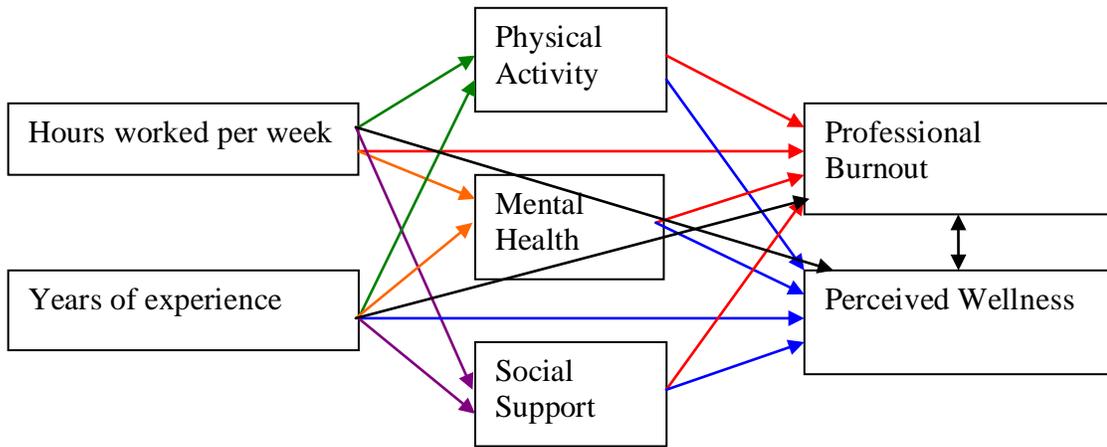


Figure 3-2. Causal Model: Factors that determine Professional Burnout and Perceived Wellness

CHAPTER 4 RESULTS

Pilot Data

Twenty three ATCs outside the NATA District 9 sampling frame were asked to complete the instrument. Fourteen certified athletic trainers completed the survey instrument twice, approximately one week apart. All test retest correlations were greater than 0.6 which is considered the minimum for an instrument to show adequate test-retest validity.⁷⁶ Using SPSS 16.0 (Version 16.0 SPSS INC. Chicago, IL), test-retest correlations for each of the instrument scales were calculated as: Perceived Wellness Survey ($r=0.763$), Copenhagen Burnout Inventory ($r=0.924$), Mental Health Inventory-5 ($r=0.938$), Baecke Physical Activity Questionnaire ($r=0.924$), and MOS Social Support Survey ($r=0.924$), also included in Table 4-1. The test-retest correlations for each instrument are statistically significant ($p<0.0001$) for each scale and demonstrate that the current survey instrument has comparable test-retest reliability relative to previous investigations.^{22, 44, 59, 64, 69} See Appendix A for the full specifics on each instrument's validity and reliability in past research.

Internal Consistency

Internal consistency for the main data collection was calculated for each composite score using Cronbach's Alpha, see Table 4-2. The Perceived Wellness Survey instrument revealed a coefficient alpha or internal consistency of 0.937, the Copenhagen Burnout Inventory instrument alpha was 0.944, the Baecke Physical Activity Questionnaire alpha was 0.620, the Mental Health Inventory-5 alpha was 0.848 and the MOS Social Support Survey alpha was 0.950. Although there is no gold standard, a score of 0.7 or greater is considered acceptable. All the instruments exhibited sufficient internal consistency reliability, except the Baecke Questionnaire, and therefore this questionnaire might be considered suspect in this instrument since the alpha did not

meet the acceptable level of 0.07. Although this is suspect at 0.620, the instrument is still reliable and according to past research and current pilot data, the questionnaire has acceptable alpha and test-retest reliability.⁵⁷⁻⁵⁹

Data Management

The primary mailing list of ATCs in District 9 consisted of 1,596 members who were willing to be contacted for survey research purposes. Fourteen athletic trainers were removed from the list by Survey Monkey because they opted out of surveys sent through SurveyMonkey.com, and 48 athletic trainer e-mail addresses were returned as undeliverable. From the 1,434 remaining respondents, a total of 447 (31.3% response rate) participants responded to the survey instrument. Eight percent ($n=35$) of the participants failed to complete the instrument in the collection time frame of six weeks, leaving a total of 412 (28.7 % response rate) who completed the instrument items. Subjects were excluded if more than 15 % of the total instrument or 15 % of any single instrument was left incomplete. Missing data below the 15 % level was replaced using the SPSS replace missing values function.⁷⁷ Specific item mean scores were used to generate replacement values for missing data points.^{76,77} Several subjects reported working more than 120 hours per week, which suggests data entry errors on the part of the participants. Therefore, a Winsorize technique, as suggested by the statistical consultant, was used to limit the extreme values for the hours worked per week variable. The Winsorize technique is a technique used to limit the influence of the extreme values due to recording errors of the subjects. The Winsorize percentage was set at 3.88 %.

Demographics and Descriptive Analysis

Frequency analyses were conducted to determine the number of participants' job titles and job employment settings, see Tables 4-3 and 4-4. Those participants that listed a job in the 'other' category were placed in a separate category or placed into the category that best fit the

job title description or job setting by the primary researcher. Of the 404 participants completing the job setting item, 33.9 % work in the high school setting (139), 22 % in the DI college setting (91), and 12 % in the clinic setting (51). See Table 4-4 for all job setting frequencies. The job title data in Table 4-3 revealed that a majority of the participants were either a head (172, or 42%), assistant (88, or 21.5%), or clinical athletic trainer (66, or 16.1%). Although these are the job titles with highest percentages, a variety of other categories are present including academic areas, hospital and/or community colleges. Upon further examination of the job setting and job title variables and due to the lower number of respondents in several job setting and job title categories, both variables were collapsed into fewer categories by the primary researcher to provide better statistical analysis. See the collapsed job settings and job titles in Tables 4-5 and 4-6.

The central tendency and reliability measures were calculated using the SPSS 16.0 (i.e. means, standard deviations and Cronbach's Alpha for the scales and subscales). The means of the different independent variables provided important information. In this sample, the hours worked per week variable (50.64 ± 16.93 hrs) exceeds the traditional 40 hour work week and demonstrates large variability within each job setting in the field of athletic training. The results indicate that for the years of job experience, the average years of experience was only 12.63, showing that not many of the participants had been in the profession for an extensive period of time, demonstrating a relatively young population.

Each variable was calculated as a comprehensive or total score and as a sub-score or subscale where applicable. These results can be found in Table 4-7. The means for each instrument can be compared to the norms or set values that determine if the scores from the

subjects are considered high or low. See Appendix B for subscales and scoring. The means of those variables by gender can be found in Table 4-8.

Perceived Wellness. The scores for the Perceived Wellness Survey range from three to 29 and the higher the score the greater the individual's perceived wellness.⁶⁹ The overall mean of the study was 16.57 ± 2.72 , showing a lower level of perceived wellness among athletic trainers. The subscales for physical and psychological wellness had the lowest means ($4.43 \pm .78$, $4.49 \pm .69$), with a maximum score being a six, see Table 4-7 for complete means and standard deviations of each subscale. See Table 4-9 for means and standard deviations for each job setting and job title.

Burnout. Burnout scores from the Copenhagen Burnout Inventory range from 0 to 100, with a score greater than 50 being considered a high burnout score.²² This range and scoring applies to each of the subscales in the instrument. Participants in this project had a mean score of 41.72 ± 17.1 for the total burnout score and had the following mean scores for each of the three burnout subscales of personal, work, and client respectively: (44.88 ± 17.79 , 42.09 ± 17.96 , 38.18 ± 16.89). See Table 4-9 for complete means and standard deviations, for each setting and job title. Importantly, approximately 30 % (126) of the athletic trainers in this study were in the high burnout category (>50).

Mental Health. Mental health scores from the Mental Health Inventory-5 range from 0 to 100 with cut points ranging from 68 to 76. Points below this range can determine the presence of mental health problems like anxiety disorders and depression.^{70, 78} The sample of athletic trainers in this study had a mean total score of 73.8 ± 15.88 . Interestingly, there were a wide range of scores ranging from 12 to 100. See Table 4-9 for means and standard deviations for each setting and title.

Physical Activity. Physical activity scores from the Baecke Questionnaire of Physical Activity have a total score range from 1 to 15, with a score close to 15 indicating more physical activity.⁵⁹ Athletic trainers in this study had a total mean physical activity score of 8.55 ± 1.35 . The subscales have a score range between 1 and 5, with 5 being very active for that subscale. The subscale mean for work index was 3.12 ± 0.51 , for sport index 2.95 ± 0.76 , and for leisure time index 2.46 ± 0.62 . See Table 4-9 for means and standard deviations for each job setting and title.

Social Support. The final part of the instrument is the Medical Outcomes Study (MOS) Social Support Survey, which has four subscales associated with a total score range of 1 to 100.⁴⁴ Higher scores on the total item indicate higher levels of social support. The four subscales that totaled for the composite score include: 1) emotional, 2) tangible, 3) affectionate and 4) positive social and have score ranges from 1-5, with scores close to 5 showing more social support. Athletic trainers in the study have a mean total social support score of $74.52 (\pm 23.02)$. The subscale mean scores are as follows: emotional 3.88 ± 1.09 , tangible 3.89 ± 1.2 , affectionate 4.09 ± 1.16 , and positive social $4.04 \pm .97$. See Table 4-9 for means and standard deviations for each job setting and title.

Primary Analysis

Correlations Between Variables

Pearson Correlations coefficients were determined between the variables. Significant relationships were present between several demographic and independent variables and the outcome or dependent variables. Pearson Correlations demonstrated significant negative relationships between age and burnout ($r = -0.188$ $p < 0.0001$), and years experience and burnout ($r = -0.173$ $p < 0.0001$). A positive relationship was found between hours worked per week and burnout ($r = 0.124$ $p < 0.01$). The Pearson Correlation also revealed a negative relationship

between burnout and the following variables: 1) social support ($r = -0.265$ $p < 0.0001$), 2) mental health ($r = -0.704$ $p < 0.0001$), 3) physical activity ($r = -0.123$ $p < 0.01$) and 4) perceived wellness ($r = -0.515$ $p < 0.0001$). All the variables showed significant negative relationships leading the researcher to believe that decreases in the amounts of social support, mental health, physical activity and perceived wellness are associated with higher burnout scores. All correlations are reported in Table 4-10.

The perceived wellness variable was not correlated with any of the demographic variables of age, hours worked per week or years experience. Perceived wellness was significantly correlated with social support, mental health and physical activity. A positive relationship exists between perceived wellness and the variables of 1) social support ($r = 0.388$ $p < 0.0001$), 2) mental health ($r = 0.486$ $p < 0.0001$) and 3) physical activity ($r = 0.200$ $p < 0.0001$). These results suggest athletic trainers with higher levels of social support, mental health and physical activity may have greater perceived wellness scores.

Regression Analysis

A multiple regression analysis was conducted to determine which of the demographics variables i.e. job title, job setting, age, hours worked per week, years of experience, and outcome variables of mental health, social support, physical activity and perceived wellness (independent variables) would be predictors of burnout (dependent variable). The first regression relating to burnout showed a significant overall multivariate effect ($r = 0.760$, $R^2 = 0.579$, $F_{17, 375} = 30.40$, $p < 0.0001$) and explained 57 % of the variance. The independent variables included: age, gender, job title, job setting, hour worked per week, years of experience, mental health, social support, physical activity and perceived wellness. The significant predictors for this regression model with the dependent variable of burnout were perceived wellness, hours worked per week and mental health. See Table 4-11 for Beta coefficients.

A second multiple regression analysis was conducted to determine which of the demographics variables i.e. job title, job setting, age, hours worked per week, years of experience, and outcome variables of mental health, social support, physical activity, and burnout (independent variables) would be predictors of perceived wellness (dependent variable). The second regression analysis examining perceived wellness showed a significant overall multivariate effect ($r= 0.61$, $R^2=0.376$, $F_{17, 375}=13.30$, $p<0.0001$) and explained 37 % of the variance. The independent variables included: age, gender, job title, job setting, hours worked per week, years of experience, mental health, social support, physical activity and perceived wellness. The significant predictors for the dependent variable of perceived wellness were mental health, physical activity, social support, and burnout. See Table 4-12 for Beta coefficients.

Path Analysis for Burnout and Perceived Wellness

A Structural Equation Modeling technique of path analysis was used to determine relationships between exogenous or independent variables and endogenous or dependent variables and to answer the research questions 1-3. Research question 1 was to determine the effects of the exogenous variables of hours worked per week, years of experience and their effects on the endogenous variables which included: burnout, mental health, physical activity and social support. Research question 2 was to determine the effects of the exogenous variables of hours worked per week, years of experience and their effects on the endogenous variables which included: perceived wellness, mental health, physical activity and social support.

A covariance matrix for the variables and their subscales or composite scores was used to determine each variable's casual relationship in the proposed path model or diagram. Covariance results reported in Table 4-13 were used to determine direct and indirect effects for the outcome variables of burnout and perceived wellness.

A two step approach recommended by Kline was used for this structural equation modeling.⁷⁴ The first step was to test the fit of the measurement model based on appropriate goodness of fit indices. Overall fit of the measurement model was tested using Maximum Likelihood Estimation to determine the goodness-of-fit of the model by simultaneously analyzing all the endogenous variables.⁷⁴ The goodness-of-fit index (GFI), comparative fit index (CFI), adjusted goodness-of-fit index (AGFI), standardized root mean square residual (SRMR), norm fit index (NFI), parsimonious NFI (PNFI), and the minimum Chi-square fit index were determined in step one of the measurement model.^{74, 75} Acceptable standards of fit are $GFI \geq 0.90$, $AGFI \geq 0.90$, $CFI \geq 0.90$, $NNFI \geq 0.90$, and $SRMR \leq 0.10$.^{74, 75} The measurement model had the following Maximum Likelihood Estimation results: $GFI = 0.916$, $AGFI = 0.875$, $SRMR = 0.060$, $NNFI = 0.88$, $CFI = 0.91$ and Chi Square 328.210 (DF 102, $p < 0.001$) and was acceptable.

The original proposed model, shown in figure 3.2, did not provide adequate fit. The goodness-of-fit indices provided mixed results. The CFI value ($CFI = 0.9134$) indicated adequate fit, while the RMR value ($RMR = 2.93$), GFI ($GFI = 0.879$), adjusted GFI ($GFI = 0.833$), standardized root mean square ($SRMR = 0.1149$) and NFI ($NFI = 0.887$) indicated poor fit to the data. Modifications to the model were guided by hypothetical considerations and suggestions from the statistical consultant. Upon examination of the indicators of physical activity, the work index subscale appeared to represent a different physical activity construct relative to the sport index and leisure index. Thus, the work index was removed as an indicator of physical activity and no longer included in the model. In the new model, the latent variable of physical activity was conceptualized with the two subscales representing only physical activity outside of work (leisure and sport). The second modification was to specify burnout as an observed variable, in

which the total burnout score, and not the subscale scores, were used in the model. This modification was made because the results of the original model estimated a negative eigenvalue, indicating that the subscales of burnout were too highly correlated. The new path model provided adequate fit to the data. The CFI value (CFI = 0.937) indicated adequate fit, while the RMR value (RMR = .694), GFI (GFI=0.933), adjusted GFI (GFI= 0.898), standardized root mean square (SRMR= 0.053) and NFI (NFI = 0.906) indicated adequate fit to the data. The final and full hypothesized model including significant and non-significant pathways and completely standardized estimates is presented in Figure 4.1. See Figure 4.2 for the final path model with only the significant paths. See Table 4-14 for Beta estimates and *t* values and Table 14.5 for the factor loadings. Additionally, each observed variable has an error variance reported in Table 4-16.

Perceived wellness The largest effect on Perceived Wellness was the level of mental health, which had a direct effect of 0.41, therefore for every 1.0 increase in SD of perceived wellness mental health will increase 0.41 SD. Physical Activity and social support had smaller (0.17, 0.31, respectively), but significant total effects on perceived wellness and thus a 1.0 increase in SD for perceived wellness a 0.17 and 0.31 increase in SD for physical activity and social support, respectively. Thus, higher levels of physical activity, social support, and mental health resulted in greater perceptions of wellness in ATCs. The exogenous variables, which were years of experience and hours worked per week, did not significantly affect perceived wellness. The variance accounted for in perceived wellness by the variables of hours worked per week, years of experience, physical activity, mental health and social support was substantial at 42 %. The results show that research question 2 was not supported, since all three domains of health are causal of the perceived wellness.

Burnout As hypothesized in research question 1, burnout was directly affected by physical activity, mental health, years of experience, and hours worked. Mental health had the largest effect on burnout, at -0.64, and therefore a 1.0 increase in SD in burnout leads to a -0.64 decrease in SD of mental health. According to the model, as ATCs' mental health decreases, the levels of burnout increase substantially. Physical activity had a direct effect on burnout of -0.013 and a 1.0 SD increase in burnout, decreased -0.13 SD for physical activity. Thus, increased levels of physical activity lead to lower levels of burnout. The exogenous variable years of experience had a total effect of -0.18 with a direct effect of -0.09 and an indirect effect of -0.09 on burnout through mental health ($0.14 \times -0.64 = -0.09$). The longer an individual stays in the athletic training field, the lower their level of burnout. Likely, those ATCs with high levels of burnout leave the field earlier in their career. As expected, the exogenous variable of hours worked per week had a direct effect on burnout of 0.11 and therefore, for every 1.0 SD increase in burnout, there was a 0.11 SD increase in hours per week. Hours worked per week also had a small indirect effect (0.02) on burnout through physical activity. Thus, according to the model, working more hours per week leads to higher levels of burnout. The path model with the variables of hours worked per week, years of experience, physical activity, mental health and social support accounted for 53 % of the variance in burnout.

Mental health, social support, and physical activity: The model specifies that mental health is directly affected by years of experience (0.14), therefore a 1.0 SD increase in mental health had a 0.14 SD increase in years of experience. Thus, more years experience, can lead to higher levels of mental health. The path model accounted for the variables of hours worked per week, years of experience, physical activity, and social support for 2 % of the variance in mental health. Physical Activity was significantly affected by hours worked per week with a direct

effect of -0.17. However, only a small amount of the variance in physical activity with the variables of hours worked per week, years of experience, mental health and social support was accounted for at 3 %. Social support was not significantly affected by the exogenous variables of hours worked per week, years of experience, physical activity, mental health and.

Secondary Analysis

Bivariate Analysis

Gender. An independent t-test was used to determine the effect of gender on burnout, perceived wellness, social support, physical activity, mental health, hours worked per week, and years of experience. A significant effect of gender was found on burnout ($t(397) = -4.44$, $p < 0.001$) mental health, physical activity, hours worked per week, and years' experience. For t-tests in which Levene's test for equality of variances was significant, equal variances were not assumed. See Table 4-17 for results of the independent t-tests. The analyses revealed that female ATCs compared to male ATCs reported significantly greater levels of burnout, lower mental health scores, and greater physical activity. Additionally, male ATCs worked significantly more hours per week and had more years' experience than female athletic trainers. See Table 4-8 for all means and standard deviations of the dependent variables by gender.

Research Question 3 was addressed in the One-way ANOVAs that determined the effects of job setting and job title on the dependent variables of burnout, perceived wellness, physical activity, social support and mental health. Job setting and job title were determined to have significant effects on all the dependent variables except social support.

One-way ANOVA

Job Setting. One-way ANOVAs were computed to determine the effects of job setting on the dependent variables of perceived wellness, total burnout, mental health, physical activity, social support, hours worked per week, and years of experience. The results indicated a

significant influence of job setting on each dependent variable except for social support. See Table 4-18 for results. Bonferroni's post hoc tests were conducted for all significant ANOVAs. The results revealed that high school ATCs reported lower perceived wellness scores than clinic ATCs ($p = 0.007$). Professional athletic trainers reported lower levels of burnout compared to upper college level ($p = 0.048$) and high school ($p = 0.015$) athletic trainers. Those athletic trainers who worked in a clinic reported less burnout than upper college level ($p = 0.035$) and high school ATCs ($p = 0.005$). In regards to mental health, professional athletic trainers reported higher mental health scores compared to those in non AT settings ($p = 0.018$). Clinic ATCs reported higher mental health scores than high school ($p = 0.017$) and non-AT settings ($p = 0.014$). The post hoc tests also revealed that high school ATCs reported significantly higher physical activity scores compared to upper college level ($p = 0.002$) and clinic ATCs ($p = 0.048$). Those who work in non-AT settings work significantly less hours per week compared to professional ($p = 0.007$), upper college level ($p = 0.003$), and the lower college level ATCs ($p = 0.001$). Additionally, high school and clinic ATCs work significantly less hours per week compared to professional ($p = 0.014$; $p = 0.001$), upper college level (p 's < 0.001), and lower college level ATCs (p 's < 0.001). Finally, high school ATCs had fewer years experience than clinic ($p = 0.001$) and academics ($p = 0.042$). See Table 4-9 for all means and standard deviations of the dependent variables by job setting.

Job title. One-way ANOVAs were computed to determine the effects of job title on the dependent variables of perceived wellness, total burnout, mental health, physical activity, social support, hours worked per week, and years of experience. The results indicated a significant influence of job title on total burnout, mental health, physical activity, hours worked per week, and years of experience. See Table 4-19 for results of the One-way ANOVAs. All post hoc tests

were conducted using Bonferroni's post hoc tests. Head athletic trainers reported higher levels of burnout compared to clinical athletic trainers ($p = 0.034$). Those that reported not working in athletic training reported lower mental health scores compared to head athletic trainers ($p = 0.011$), assistant athletic trainers ($p = 0.021$), clinical athletic trainers ($p = 0.001$), and those in academics ($p = 0.007$). Head athletic trainers reported greater physical activity than academics ($p = 0.021$). The post hoc tests also revealed that ATCs in academics worked less hours per week than head athletic trainers ($p = 0.044$) and assistant athletic trainers ($p = 0.004$), and that clinical athletic trainers worked less hours than assistant athletic trainers ($p = 0.005$). Additionally, head athletic trainers had significantly more years experience than assistant athletic trainers ($p < 0.001$) and less experience than academics ($p = 0.002$). Finally, assistant athletic trainers had less years experience than clinical athletic trainers ($p < 0.001$) and academics job titles (program directors, professor etc) ($p < 0.001$). See Table 4-9 for all means and standard deviations of the dependent variables by job title.

Tables and Charts for Results

Table 4-1. Pilot data test-retest correlations

Instrument	Correlations
Perceived Wellness Survey	0.763
Copenhagen Burnout Inventory	0.924
Baecke Activity Questionnaire	0.924
Mental Health Inventory	0.938
MOS Social Support	0.924

Table 4-2. Internal Consistency/Cronbach's Alpha (reliability)

Data reliability	Cronbach's Alpha
Perceived Wellness Survey	0.937
Copenhagen Burnout Inventory	0.944
Baecke Activity Questionnaire	0.620
Mental Health Inventory	0.848
MOS Social Support	0.950

Table 4-3. Job title frequency

Job Title	Total	Percent
Non athletic trainer	7	1.7
Head athletic trainer	172	42.5
Assistant athletic trainer	88	21.7
Assistant Athletic Director	4	1.0
Clinical Athletic Trainer	66	16.3
Physician Extender	5	1.2
PT/ATC	17	4.2
Sales	6	1.5
Academics*	39	9.6
Total	404	100.0

* Academics include Assistant, Associate professor, Dean, Program Director and secondary education teacher, lecturer, and dual positions.

Table 4-4. Job setting frequency

Job Setting	Total	Percent
Non AT setting	12	2.9
Professional Athletic Trainer	23	5.6
D I athletics	91	22.5
D II athletics	36	8.8
D III athletics	11	2.7
Community College	10	2.4
High school	139	34.4
Clinic	51	12.6
Hospital	18	4.4
Academic	13	3.2
Total	404	100

Table 4-5. Job title frequency collapsed

Job title	Frequency	Percent
Head athletic trainer	173	42.93
Assistant athletic trainer	89	22.08
Athletic director	4	0.99
Clinical (AT clinic, PT, PE, PA)	96	23.82
Academic (professor, PD, CC)	40	10.17
Total	402	100.00

Table 4-6. Job setting frequency collapsed

Job setting	Frequency	Percent
Professional sports	23	5.7
DI, DII	128	31.7
DIII, CC	22	5.5
Assistant Athletic Director	4	1.0
High School	141	34.1
Clinical	71	17.7
Academics position	14	3.5
Total	403	100.

Table 4-7. Means, standard deviations, Chronbach's Alpha scales and subscales

Variable	Subscale	Mean	Standard Deviation	Cronbach's α
Age		36.52	9.56	
Years of Experience		12.65	9.09	
Hours worked/week		50.62	16.25	
PW		16.57	2.8	0.937
	Psych	4.49	0.69	
	Physical	4.43	0.78	
	Emotion	4.6	0.65	
	Spirit	4.77	0.7	
	Social	4.73	0.67	
	Intellect	4.5	0.6	
BO		41.72	17.1	0.944
	Personal	44.88	17.79	
	Work	42.09	17.96	
	Client	38.18	16.89	
MH		73.85	15.87	0.848
PA		8.55	1.35	0.62
	Work Index	3.13	0.51	
	Sport Index	2.96	0.77	
	Leisure Index	2.47	0.63	
SS		74.52	23.02	0.95
	Emotion	3.89	1.1	
	Tangible	3.9	1.19	
	Affectionate	4.1	1.15	
	Positive social	4.05	0.97	

Means and Standard Deviations for total scales and subscales of Perceived Wellness (PW), Burnout (BO), Mental Health (MH), Physical Activity (PA), and Social Support (SS). Cronbach's Alpha for scales

Table 4-8. Means and standard deviations for each gender

Variable	Gender	N	Mean	SD	<i>t</i>	DF	<i>p</i>
Years Exp*	males	236	14.93	9.84	6.692	396.93	0.001
	females	163	9.33	6.88			
Hours *	males	236	53.23	15.90	3.646	397	0.001
	females	163	47.03	17.73			
PW	males	236	16.71	2.74	1.150	397	0.251
	females	163	16.39	2.80			
BO*	males	236	38.60	16.82	-4.441	397	0.001
	females	163	46.25	17.06			
MHI*	males	236	76.76	13.90	4.20	305.96	0.001
	females	163	70.30	16.70			
PA*	males	236	8.40	1.33	-2.68	397	0.008
	females	163	8.77	1.36			
SS	males	236	75.94	21.98	1.355	397	0.176
	females	163	72.79	23.92			

Means and Standard Deviations for total scales of Perceived Wellness (PW), Burnout (BO), Mental Health (MH), Physical Activity (PA), and Social Support (SS) split by gender.

* significant at .001

Table 4- 9. Means and standard deviations of scales by job setting and job title

Variable	Setting	N	Mean	SD	Variable	Title	N	Mean	SD
Wellness	NON AT	13	16.02	3.30	Wellness	NON AT	8	15.92	3.82
	Pro AT	23	17.56	2.28		Head AT	172	16.31	2.61
	Upper College	128	16.49	2.60		Assist AT	88	16.44	2.54
	Lower College	21	15.92	3.12		Head AD	4	15.90	2.01
	High school	139	16.10	2.56		Clinical	95	17.11	3.11
	Clinic	70	17.59	3.31		Academics	40	16.95	3.01
	Academia	13	16.60	2.42		Total	407	16.58	2.79
	Total	407	16.50	2.79					
Burnout	NON AT	13	49.05	16.06	Burnout	NON AT	8	59.34	19.93
	Pro AT	23	31.39	15.51		Head AT	172	43.74	17.95
	Upper College	128	43.21	16.68		Assist AT	88	44.04	15.91
	Lower College	21	46.56	19.18		Head AD	4	47.66	34.56
	High school	139	44.47	16.53		Clinical	95	36.97	16.73
	Clinic	70	35.21	18.39		Academics	40	37.87	15.20
	Academia	13	38.89	14.37		Total	407	41.82	17.44
	Total	407	41.82	17.44					
Mental Health	NON AT	13	63.38	23.88	Mental Health	NON AT	8	54.00	27.21
	Pro AT	23	81.57	9.32		Head AT	172	73.26	15.67
	Upper College	128	72.70	15.73		Assist AT	88	72.60	15.14
	Lower College	21	72.19	15.56		Head AD	4	67.00	34.00
	High school	139	71.83	16.22		Clinical	95	77.26	14.27
	Clinic	70	79.54	14.59		Academics	40	75.40	14.89
	Academia	13	74.77	9.98		Total	407	73.82	15.93
	Total	407	73.82	15.93					
Physical Activity	NON AT	13	8.19	1.48	Physical Activity	NON AT	8	8.03	0.92
	Pro AT	23	9.03	1.33		Head AT	172	8.75	1.31
	Upper College	128	8.29	1.22		Assist AT	88	8.53	1.21
	Lower College	21	8.15	1.65		Head AD	4	8.06	1.41
	High school	139	8.92	1.30		Clinical	95	8.51	1.35
	Clinic	70	8.32	1.32		Academics	40	7.99	1.70
	Academia	13	8.43	1.64		Total	407	8.55	1.35
	Total	407	8.55	1.35					

Table 4-9. Continued

Variable	Setting	N	Mean	SD	Variable	Title	N	Mean	SD
Social Support	NON AT	13	73.72	28.00	Social Support	NON AT	8	63.77	27.73
	Pro AT	23	76.61	17.62		Head AT	172	73.03	23.58
	Upper College	128	72.71	24.12		Assist AT	88	74.09	23.94
	Lower College	21	69.02	30.97		Head AD	4	81.77	16.61
	High school	139	75.14	21.26		Clinical	95	76.93	20.13
	Clinic	70	78.62	20.73		Academics	40	77.39	23.84
	Academia	13	68.91	28.68		Total	407	74.50	33.95
	Total	407	74.50	22.95					
Hours/Week	NON AT	13	39.10	21.02	Hours/Week	NON AT	8	44.54	18.96
	Pro AT	23	58.91	26.50		Head AT	172	52.40	18.39
	Upper College	128	56.86	15.82		Assist AT	88	55.31	15.47
	Lower College	21	61.62	12.70		Head AD	4	50.50	8.42
	High school	139	46.73	14.47		Clinical	95	46.43	14.30
	Clinic	70	43.46	12.88		Academics	40	43.72	14.90
	Academia	13	48.08	15.48		Total	407	50.61	16.85
	Total	407	50.61	16.87					
Years Exp	NON AT	13	16.27	5.11	Years Exp	NON AT	8	13.57	4.89
	Pro AT	23	15.87	9.74		Head AT	172	13.20	9.03
	Upper College	128	12.67	10.27		Assist AT	88	6.72	4.09
	Lower College	21	10.24	6.54		Head AD	4	17.25	17.13
	High school	139	10.30	7.52		Clinical	95	14.47	9.65
	Clinic	70	15.55	9.55		Academics	40	18.96	8.56
	Academia	13	18.31	8.06		Total	407	12.71	9.13
	Total	407	12.71	9.13					

Table 4-10. Correlations between variables

Variable	1	2	3	4	5	6	7	8
1. Age	1.000	0.024	*0.915	*-0.188	0.073	-0.022	-0.069	∞0.141
2. Hours/week		1.000	0.040	θ0.162	-0.010	-0.055	-0.058	-0.052
3. Years exp			1.000	Θ-0.173	0.083	0.0006	§-0.107	∞0.135
4. Burnout				1.000	*-0.515	*-0.265	§-0.123	*-0.704
5. Perceived wellness					1.000	*0.388	*0.201	*0.486
6. Social support						1.000	§0.114	*0.352
7. Physical activity							1.000	∞0.155
8. Mental health								1.000

*Significant at p<0.0001

θSignificant at p<0.001

∞Significant at p<0.01

§Significant at p<0.05

Table 4-11. Regression model for burnout

Variables	<i>Beta</i>	<i>F</i>	<i>p value</i>
Gender (Male)	-3.57	-2.63	0.0001*
Age	-0.14	-0.87	0.3849
Title (Head ATC)	3.05	1.19	0.2355
Title (Assistant ATC)	1.14	0.41	0.6790
Title (Athletic Director)	2.45	0.39	0.6945
Title (Clinical)	-0.02	-0.01	0.9941
Setting (Professional)	-5.24	-1.16	0.2451
Setting (DI & DII)	-1.48	-0.40	0.6929
Setting (DIII & CC)	-0.98	-.220	0.8268
Setting (High School)	-0.409	-0.11	0.9161
Setting (Clinical)	-0.117	-0.03	0.9771
Years of work experience	0.039	0.23	0.8169
Physical Activity	-0.070	-0.15	0.8815
Social Support	0.018	0.65	0.5179
Perceived wellness	-1.47	33.56	0.0001*
Hour worked per week	0.191	21.90	0.0001*
Mental health	-0.621	184.20	0.0001*

*Significant predictors

Table 4-12. Regression model for perceived wellness

Variables	<i>Beta</i>	<i>F</i>	<i>p value</i>
Gender (Male)	-0.374	-1.41	0.0001*
Age	-0.019	-0.61	0.5398
Title (Head ATC)	-0.480	-0.96	0.3352
Title (Assistant ATC)	-0.547	-1.02	0.3079
Title (Athletic Director)	-0.683	-0.56	0.5725
Title (Clinical)	-0.540	-1.01	0.3141
Setting (Professional)	0.476	0.55	0.5859
Setting (DI & DII)	0.367	0.50	0.6139
Setting (DIII & CC)	0.084	0.10	0.9227
Setting (High School)	0.089	0.12	0.9056
Setting (Clinical)	0.972	1.23	0.2212
Hours worked per week	0.020	2.49	0.01*
Years of experience	0.020	6.20	0.01*
Mental Health	0.023	4.92	0.05*
Physical Activity	0.262	8.34	0.005*
Social Support	0.028	27.10	0.0001*
Burnout	-0.055	33.56	0.0001*

* Significant predictors

Table 4-13. Covariance table

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	0.00	0.00	0.79	-0.45	-0.09	-0.15	-0.18	0.33	0.00	0.00	-0.11	0.14	-1.29	0.26	1.05	-0.21
2		0.00	0.41	-0.41	0.03	-0.12	-0.45	-0.37	0.00	0.00	0.39	-0.47	-0.56	0.62	-0.50	0.32
3			0.01	-0.01	0.02	0.01	0.00	0.00	0.01	0.38	-0.02	0.00	0.07	0.03	-0.02	0.07
4				0.00	0.00	0.01	0.02	-0.02	-1.37	-0.30	0.17	0.02	0.03	0.00	0.02	0.03
5					0.01	0.00	-0.01	0.01	-0.22	0.49	0.02	0.02	-0.04	-0.02	-0.08	0.02
6						0.01	0.02	0.01	-0.01	-0.08	0.03	0.00	0.04	-0.03	-0.04	0.02
7							0.01	0.01	0.49	-0.41	0.05	0.04	0.19	0.04	0.03	0.07
8								0.01	-0.57	0.40	0.02	0.03	0.02	-0.02	-0.07	0.04
9									4.13	-4.22	-0.77	0.15	-0.45	0.58	0.13	-1.43
10										4.00	0.41	0.53	-0.19	-0.01	-0.40	1.34
11											0.00	0.00	0.10	0.08	0.09	0.13
12												0.00	0.08	0.03	0.06	0.03
13													0.00	-0.02	-0.05	0.04
14														0.00	0.10	-0.06
15															0.00	0.00
16																0.32

Scale 1= years; 2= hours; 3=psychological; 4= physical; 5= emotional; 6=spiritual; 7= social; 8= intelligent; 9= burnout; 10= mental health; 11= sport index; 12=leisure index; 13= emotional; 14=tangible; 15= affectionate; 16= positive social.

Table 4-14. Path model Beta estimates and significance

Independent	Dependent	Path Estimate	t-value	Sig
Hours worked per week	Physical Activity	-0.168	-2.53	*
Hours worked per week	Perceived Wellness	0.049	1.11	
Hours worked per week	Professional Burnout	0.109	3.09	*
Hours worked per week	Mental Health	-0.059	-1.21	
Hours worked per week	Social Support	-0.059	-1.11	
Years of experience	Physical Activity	.0001	0.01	
Years of experience	Mental Health	0.139	2.85	*
Years of experience	Professional Burnout	-0.092	-2.64	*
Years of experience	Perceived Wellness	0.020	0.46	
Years of experience	Social Support	0.008	0.15	
Physical Activity (WI SI LI)	Professional Burnout	-0.134	-2.73	*
Physical Activity (WI SI LI)	Perceived Wellness	0.163	2.59	*
Mental Health	Professional Burnout	-0.642	-15.85	*
Mental Health	Perceived Wellness	0.408	7.77	*
Social Support	Professional Burnout	-0.022	-0.54	
Social Support	Perceived Wellness	0.312	5.64	*

Table 4-15. Factor loading table

Table Standardized factor loading for subscales			
Variable	Subscale	Factor loading	<i>t</i> value
Physical activity	Sport Index (SI)	0.56	7.1
	Leisure Index (LI)	0.67	6.8
Social support	Emotional	0.71	15.4
	Tangible	0.73	16.1
	Affectionate	0.78	17.7
	Positive social	0.81	18.6
Perceived wellness	Psychological	0.81	17.6
	Physical	0.54	10.7
	Emotional	0.74	15.7
	Spiritual	0.80	17.4
	Social	0.63	12.9
	Intellectual	0.70	14.9

Table 4-16. Error variances for path model

Error Variances			
Variable	Estimate	Standard error	<i>t</i> value
Sport index	0.375	0.080	4.660
Leisure index	0.307	0.040	7.610
Emotional	0.606	0.051	11.850
Tangible	0.686	0.059	11.480
Affectionate	0.526	0.050	10.330
Positive social	0.333	0.035	9.460
Psychological	0.191	0.017	10.690
Physical	0.494	0.036	13.600
Emotional	0.218	0.018	12.090
Spiritual	0.191	0.017	10.830
Social	0.341	0.025	13.130
Intellectual	0.219	0.017	12.470
Mental Health	242.580	16.860	14.390
Burnout	141.127	10.152	13.900

Table 4-17. Independent t-test gender

Independent Samples t-test for dependent variables by gender			
Dependent Variable	<i>t</i>	<i>df</i>	<i>p</i>
Hours worked per week	3.646	397	0.000*
Years of experience	6.692	396.938	0.000*
Perceived Wellness	1.150	397	0.251
Burnout	-4.441	397	0.000*
Mental Health	4.062	305.962	0.000*
Physical Activity	-2.681	397	0.008*
Social Support	1.355	397	0.176

* Significant variables

One-way ANOVAs for dependent variables by Job Setting

Table 4-18. Job setting

DV		df	Sum of squares	Mean Squares	<i>F</i>	<i>p</i>
PW	Between Groups	6	136.060	22.677	2.987	0.007*
	Within Groups	400	3036.640	7.592		
BO	Between Groups	6	8037.713	1339.619	4.64	0.000*
	Within Groups	400	115486.778	288.717		
MH	Between Groups	6	5868.809	978.135	4.022	0.001*
	Within Groups	400	97275.615	243.189		
PA	Between Groups	6	42.158	7.026	4.001	0.001*
	Within Groups	400	702.466	1.756		
SS	Between Groups	6	2803.867	467.311	0.885	0.506
	Within Groups	400	211162.008	527.905		
HRS	Between Groups	6	16605.000	2767.500	11.179	0.000*
	Within Groups	400	99025.000	247.563		
Years	Between Groups	6	2301.555	383.593	4.861	0.000*
	Within Groups	400	31562.550	78.907		

* Significant

One-way ANOVAs for dependent variables by Job Title

Table 4-19. Job title ANOVA

DV	Source of Variation	df	Sum of squares	Mean Squares	<i>F</i>	<i>p</i>
PW	Between Groups	5	51.534	10.307	1.324	0.253
	Within Groups	401	3121.165	7.783		
BO	Between Groups	5	4636.575	927.315	3.128	0.009*
	Within Groups	401	118887.916	296.479		
MH	Between Groups	5	4739.544	947.909	3.863	0.002*
	Within Groups	401	98404.879	245.399		
PA	Between Groups	5	22639.000	4.528	2515.000	0.029*
	Within Groups	401	721.985	1.800		
SS	Between Groups	5	2412.962	482.592	0.915	0.471
	Within Groups	401	211552.913	527.563		
HRS	Between Groups	5	6348.272	1269.654	4.659	0.000*
	Within Groups	401	109281.976	272.524		
Years	Between Groups	5	5144.830	1028.966	14.367	0.000*
	Within Groups	401	28719.719	71.620		

* Significant

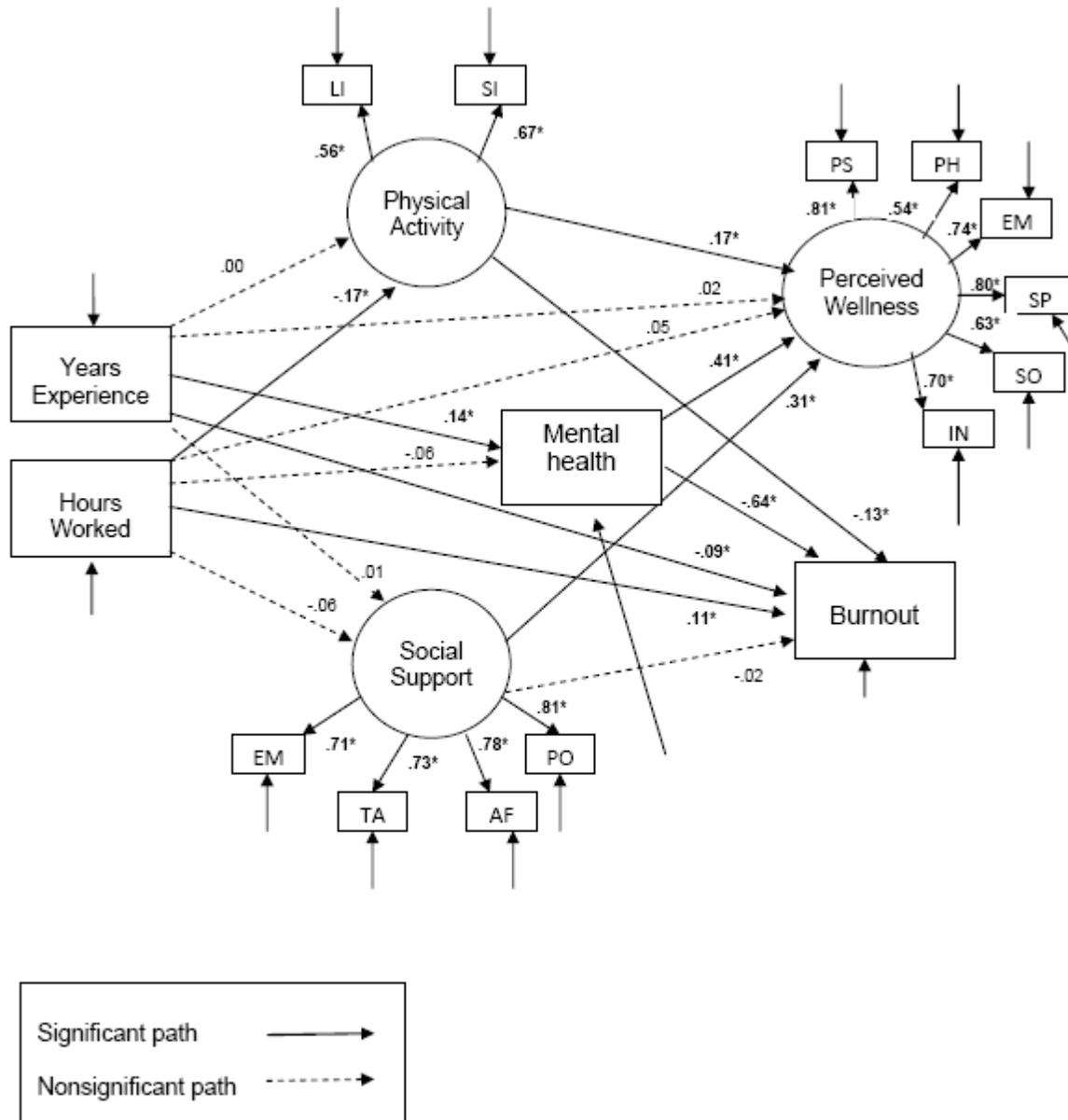


Figure 4-1. Full model with significant and non significant paths

Figure abbreviations: LI: Leisure Index; SI: Sport Index; PS: Psychological; PH: Physical; EM: Emotional; SP: Spiritual; IN: Intellectual; TA: Tangible; AF: Affectionate PO: Positive Social See error variance table for errors into subscales Table 4-15.

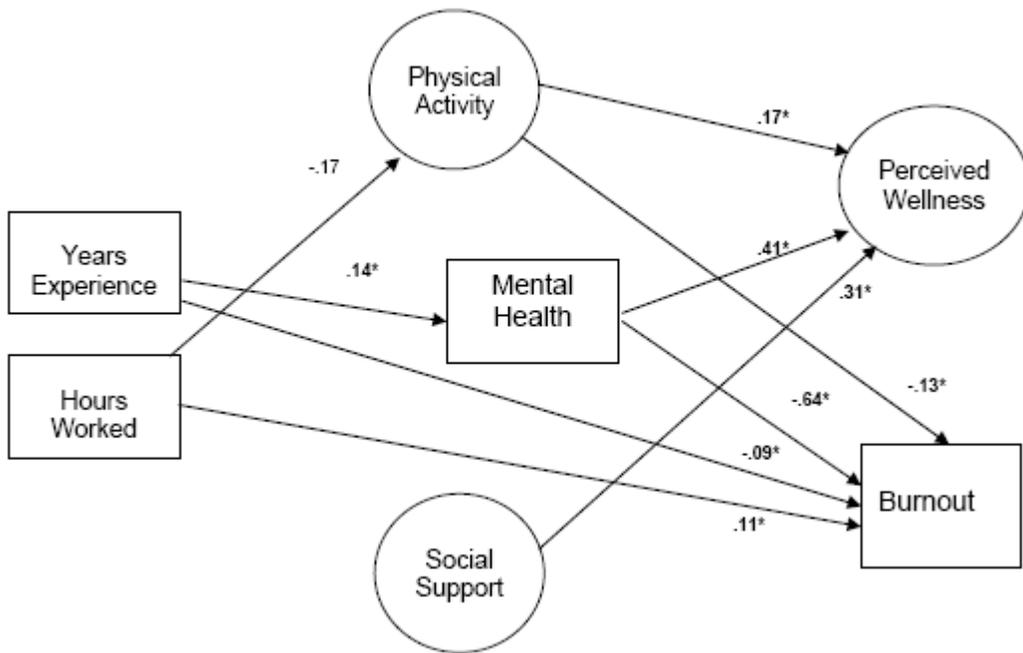


Figure 4-2. Path model with significant paths only

CHAPTER 5 DISCUSSION

Many professionals who work in close proximity with clients or patients experience some level of job burnout and thus have decreased health and wellness levels. Current research relating to the profession of athletic training and burnout is minimal and does not include any mention of the health domains and relationship to burnout. The primary objective of this study was to determine the contributions of the wellness domains (physical, mental and social) on an athletic trainer's burnout level. The secondary aim was to determine the contributions of the wellness domains on the athletic trainer's perceived wellness levels. The tertiary aim was to determine the direct and indirect effects of hours worked per week, and years of experience on burnout and perceived wellness. Job setting, job title and gender, along with the wellness domains, hours worked per week, and years of experience significantly determined and predicted burnout and perceived wellness.

Burnout and Perceived Wellness Path Model

The original path analysis for the domains of health, perceived wellness and burnout revealed that the proposed model did not fit the data. Several possible reasons exist for this lack of fit. With multiple variables and multiple subscales for the variables, a more complex analysis is needed to determine effects in the original model. Another possible reason for lack of fit is that the proposed paths are in need of modification to show a better goodness-of-fit. Upon adaptation, the new model showed several statistically significant direct and indirect effects on burnout and perceived wellness. The new model indicated that three health domains had significant effects on the perceived wellness of athletic trainers. This effect is expected due to the fact that the three domains (physical, mental and social) are part of the perceived wellness instrument. However, contrary to the hypothesized disconnect or lack of relationship between

perceived and actual wellness domains of ATCs, no disconnect exists. This does not indicate that ATCs are healthy, only that they perceived wellness correctly according to the various instruments used in the study. Physical activity, mental health, hours worked per week and years of experience produced direct effects on burnout. Years of experience and hours worked per week also had effects that were indirect on burnout through mental health and physical activity, respectively. This finding supports the hypotheses that the health domains of physical activity and mental health, along with years of experience and hours worked per week are factors that can cause burnout.

Burnout

Athletic Trainers

As predicted, the average total scores exposed that athletic trainers experience moderate burnout in either their job, their personal life or with clients, as part of their job. Athletic training burnout scores on the Copenhagen Burnout Inventory (CBI) ranged from 0 to 97, showing some athletic trainers' scores encompass the extreme ends of the instrument. Direct comparisons to previous research must be made cautiously because of a multitude of burnout instruments being used by other researchers. The current mean of 41.81, indicates moderate burnout and is comparable with past research.³ Additionally, 30 % of the population of athletic trainers in the study were highly burned out (>50), which is an actually higher rate than previous reports.¹⁰ A study on the non athletic training population used both the CBI and MBI, and revealed that 15.5 % of the sample had high burnout according to the MBI while 16 % of the sample had high burnout according to the CBI.³⁸ The non significant difference between scoring instruments allows for some comparison between the two different scores, giving validity to the CBI in regards to burnout and leading to a potentially new instrument to be referenced when determining athletic training burnout.

Past burnout studies in athletic trainers employed the three subscales, emotional exhaustion, depersonalization and personal accomplishment, of the Maslach Burnout Inventory (MBI) i.e. emotional exhaustion, depersonalization, and personal accomplishment, as a way to measure burnout. High emotional exhaustion scores corresponded to higher levels of burnout. High depersonalization scores also corresponded to higher burnout scores. However, when reviewing personal accomplishment scores, a lower score for this subscale is considered to be burned out.⁷⁹ This change of scoring makes it difficult to determine an overall burnout score, as compared to the CBI. The CBI can be used as separate scales or can be combined into a single composite score, making the current study's use of an instrument for burnout a successful step in giving a total burnout score.^{22, 38}

The findings of this study indicate that athletic trainers have moderate to high levels of burnout when compared to past findings in the area of burnout research. Hendrix et al. found that emotional exhaustion scores for football (20.24 ± 9.0) and non football ($20.06 \pm SD 8.71$) athletic trainers are in the middle of the MBI scoring for emotional exhaustion, corresponding with the high to middle level of burnout in this study. Additionally, the depersonalization scores reported by Hendrix et al. for football (10.93 ± 6.24) and non football (8.44 ± 5.2) athletic trainers and the moderate burnout levels found in this study were higher than other professions like mental health workers (7.12 ± 5.22) and medical workers (7.46 ± 4.62).³ Recent work by Kania et al. contradicts the research findings from Hendrix et al. by reporting that only 66 athletic trainers out of 206 (32 %) could be classified as having any type of burnout (high or low). These results may stem from the use of only college level athletic trainers, who according to the author, work with the same athletic teams on a daily basis which affects the overall burnout levels of college athletic trainers.¹⁰ The ability to work with the same athletes and see

favorable outcomes in rehabilitation and progress towards return to play is rewarding and lessens the burnout score. With minimal past research reporting exact burnout level scores in direct comparison of burnout scores is difficult until more research and similar instruments are used in the literature.

Clapper et al. used a modified MBI, called the ATBI or Athletic Training Burnout Inventory among ATCs and found similar levels of burnout as did previous investigations as well as the current study.⁹ However, because the ATBI is not exactly comparable to the MBI, the author cautions against making direct comparisons to previous research.⁹ This different instrument makes comparison to the current study limiting.

Mazerolle et al. examined the relationship between burnout and the work family conflict, and found that a higher work family conflict lead to increased burnout scores. In the current study, correlations between work family conflict and burnout ($r=0.63$) are similar to the negative correlation found between wellness and burnout ($r=-0.515$). Specifically, the negative correlation found showed that athletic trainers with higher total burnout demonstrate lower overall perceived wellness levels. These findings are extremely important because previous literature was anecdotal in nature, discussing signs, symptoms, and case histories as well as ways to manage stress and burnout.^{4, 5} Future wellness and burnout research should incorporate this work family conflict relationship with regard to burnout.

Many common factors of burnout mentioned in these anecdotal articles included job characteristics like: hours worked per week, job stressors and a variety of work related characteristics.^{2, 4, 5, 80, 81} Many other factors that have been linked to burnout in health care workers include: negative feedback, scarcity of resources, and job characteristics (i.e. hours worked per week, number of clients).^{4, 21, 25, 30, 80-83} Factors like hours worked per week and job

or role conflict and a decreased resource base have been linked to burnout in athletic trainers.^{4, 21, 25, 30, 80-83} In this study, the amount of hours worked per week had a significant positive relationship with burnout ($r=0.124$) and was a significant predictor of burnout ($\beta=0.191$). Thus the more hours an athletic trainer works per week, the higher the burnout scores are as was hypothesized in research question 1. This finding is consistent with other research on burnout and hours worked. Mazerolle et al. found that DI athletic trainers who had higher work family conflict also had higher burnout scores leading the researchers to believe that DI athletic trainers struggle to find a balance between work and family, possibly due to the number of hours worked.⁸ These findings only apply to DI athletic trainers and cannot be generalized to all athletic training settings.

The number of hours worked per week reported by the participants in this study (50.6 ± 16.25) is actually lower than reported in past literature. Lockard reported a range of 60 to 70 hours worked per week for high school teacher athletic trainers and 50 to 60 hours worked per week for college athletic trainers.⁸² The range of hours worked per week in this study places our results in the same range as Lockard and Mensch suggest, and what Mazerolle et al. reported in their study.^{8, 81, 82} The original athletic training burnout articles by Geick suggested long hours are consistent with the burnout syndrome.^{4, 5} It seems that there is evidence for hours worked per week as a cause of job burnout in this study, as well as in previous research.^{8, 81, 82} Additionally, the findings demonstrated that hours worked per week had an indirect effect on burnout mediated by physical activity, indicating that more work time leaves less time for physical activity and thus, more likelihood of professional burnout.

An interesting finding of the possible causes of burnout was the number of years of experience that the athletic trainer invested in the profession. In this study, the correlation

between years of experience and the level of burnout ($r = -0.173$) showed a significant negative relationship. Those athletic trainers that had achieved more years of experience had lower burnout scores, suggesting that those who are burned out leave the profession altogether. Mazerolle believed this as well, reporting that those with higher work family conflict had higher intentions to leave the profession. Another possible reason for decreased burnout is the ability to cope with job stressors grows with experience.⁸ Additionally, the path model indicated that years of experience had an indirect effect on burnout and was mediated by mental health. Athletic trainers who stay in the profession longer have better mental health, which leads to a decrease in professional burnout.

Job setting and job title also played a role in which group tends to experience burnout. According to the study by Hendrix et al. those athletic trainers who worked in a non football setting had lower emotional exhaustion and depersonalization scores, while reporting higher personal accomplishment scores.³ Among this sample, a significant difference exists for burnout among the different settings ($p < 0.01$) and the different job titles ($p < 0.0001$), suggesting that the job title as well as the job setting may be a potential determinant of burnout. Athletic trainers whom had the title of assistant athletic trainer reported the highest burnout means for job title, while the lowest mean was reported by those athletic trainers that held athletic director jobs. For job setting, the lower college (DIII and CC) level reported the highest means for burnout. In this sample, the lowest mean scores for burnout were found in the clinical setting. Kania et al. found that high stress levels, coaches' pressure to return athletes to play, and the number of athletes or teams an athletic trainer works with, can predict burnout in the college athletic trainer population.¹⁰

Burnout has many predictors. An even larger number of people will experience burnout if these predictors are not determined and managed successfully in today's athletic training profession. A multitude of other factors outside those mentioned in this study exist. Past research has suggested that factors outside one's job characteristics play a role in the burnout experienced by athletic trainers, such as hardiness, role strain, social support and work family conflict.^{3, 7, 8} In this study, the relationships between the three wellness domains (physical, mental and social) and burnout were investigated. However, determining all the variables of burnout is implausible. Future research should expand to include more of the many factors associated with burnout. Personal characteristics such as stress level, leisure time and hardiness are important to understand since they could lead to decreases in mental health and less professional burnout.^{3, 10}

Physicians

Athletic trainers are not the only allied health care professional to experience the burnout syndrome. Health care professionals like physicians and physical therapists also experience this syndrome. Physicians that worked more hours or shifts per week and took less vacations were those that experienced more burnout. This study's results on burnout in athletic trainers are similar to the results found in research done on physicians and residents, particularly in relation to the hours worked per week. Both athletic trainers and residents or physicians work a high number of hours per week and this can lead to this burnout syndrome. Ozyurt et al. reported that physicians who work a higher number of shifts reported higher emotional exhaustion and depersonalization scores. This finding supports these results that work hours positively correlated to burnout, and that hours worked per week had direct and indirect effects on burnout in the path model.³⁶ Ozyurt also reported that the number of vacations per year was a significant variable in all three subscales of the MBI for their population of doctors, revealing also that

taking time off can reduce the burnout syndrome in health care professionals.³⁶ Another study by Spickard et al. reported that when working over 40 hours per week, the odds of experiencing burnout increased 12-15 % for each additional five hours worked per week.²⁹ Thomas reported that one third of the residents felt overburdened by the overall work load and the intensity of the work load itself, rating it “high”.⁸⁴ Job settings in this study showed that some settings (lower college and high school), lead to higher levels of burnout and decreased levels of wellness.

Physical Therapist

Physical therapists are another allied healthcare professional that experiences burnout. This group of professionals is particularly similar to athletic trainers in job tasks and education, and patient or client interactions. Physical therapists work with similar clients, particular those with orthopedic injuries. Donahoe et al. reported emotional exhaustion (EE) scores of 23, depersonalization scores of 7, and personal accomplishment scores of 37 for this group. Their population had 45 % fall in the high burnout score category (EE), which was similar to the burnout scores for athletic trainers in this study.³³ In a separate study by Balogun et al., the emotional exhaustion and depersonalization scores were much higher than past research, contributing to a higher percent (58 and 40 %) of physical therapists falling into the high burnout category. This finding is similar to the amount of athletic trainers in this study.¹⁴ Mean burnout scores for athletic trainers in this study fell in the moderately high burnout category, and the wide range of scores show that many athletic trainers are experiencing high levels of burnout.

Physician Assistant

Physician assistants (PA) work in a variety of settings, closely with doctors and patients, and sometimes athletic trainers. PAs and athletic trainers have similar job roles and responsibilities within the work place. There is minimal research available on PA burnout. The only article existing on PA burnout is on the emergency room (ER) population of PAs. Using

the Maslach Burnout Inventory, the authors found that 59 % of PAs received high or moderately high burnout scores, and 66 % received high or moderately high scores for depersonalization.¹⁵ This finding suggests a greater percentage of ER PAs appear to experience burnout compared to those ATCs in the current study. However a, comparison should be made with caution because different burnout instruments were used.

Physical Activity and Burnout in Athletic Trainers

Levels of physical activity reported in this study showed that overall athletic trainers from the southeast United States reported moderate levels of physical activity on the Baecke Physical Activity Questionnaire (8.55 ± 1.35). The closer this combined score is to 15, the more active a person is in the areas of work, sport or leisure activity. Cuppett et al. used the Baecke instrument and found that athletic trainers in the Midwest United States were slightly more active with a score of 8.8-9.0 (SD 1.2).⁶ In regards to the individual subscales scores for the Midwest population, scores were higher in the sport subscale and the lowest for the leisure subscale.⁶ The present study found that the work subscale score was the highest score, and was slightly above three. Additionally, in this study, the leisure subscale score was the lowest. According to these results, athletic trainers are somewhat active at work and somewhat active in sport; but have decreased amounts of leisure activity.

Physical activity scores from this study show that the athletic trainer falls in the middle to upper range on the Baecke instrument and that athletic trainers are only somewhat active during a typical day. Another study by Groth et al. found that only 41 % of their population of athletic trainers met the ACSM guidelines of 30 minutes or more per day of exercise, five days a week.⁶³ Groth et al. also discovered that 27 % of the females and 74 % of the males in the study were either overweight or obese.⁶³ With Groth et al.'s findings and those of this study, there is an

overwhelming need for future research that focuses on the barriers to physical activity among athletic trainers.

Several researchers report that physical activity and leisure activity would be helpful in reducing the burnout syndrome.^{4, 5, 80, 81} Research on physical activity and the relationship physical activity has in regards to burnout among athletic trainers is either minimal or non-existent. In this study three levels of physical activity (work, leisure and sport) were measured and compared with burnout scores. In the regression analysis, physical activity was not a significant predictor of burnout. However when the work index was removed from the path model analysis, physical activity had a direct effect on burnout. Greater non work physical activity (leisure and sport) caused ATCs to experience lower levels of burnout. Apparently, physical activity at work should not be grouped with physical activity outside of the work place when examining relationships between physical activity and burnout in athletic trainers. Further research in this area is needed.

Mental Health and Burnout in Athletic Trainers

Athletic trainers are exposed to many factors in their jobs that cause burnout and can decrease mental health levels. The scores on the Mental Health Inventory-5 reported in this study indicate that athletic trainers' levels of mental health ranged from 12 to 100 with high scores being considered a healthy score.^{64, 70, 78,} The mean score found in this sample of athletic trainers was 73.85; however, the scores had a wide range and a 15.88 standard deviation. With a wide range and large standard deviation, many athletic trainers fell into a level of mental health around or below the mental health cut off, which can be indicators of depression or anxiety. According to Kelly et al. a significant cutoff score for mental health is between 68 and 76.⁷⁸ In a study Hoeymans conducted on the general population, the mean mental health score was 80 and only 20 % of the population fell below the 72 cut-off point score.⁷⁰ No MHI-5 scores of athletic

trainers exist for comparison. However, athletic trainers' mental health levels from this study are below the mental health scores of the general population assessed in the Hoeyman's et al. study. A gender separation of the MHI-5 in this study exhibited males (76.6) reported higher scores than females (70.3), which is the same as was found for males (83) and females (78) in the general population.⁷⁰ No study has looked directly at the relationships between mental health and burnout in athletic trainers. In this study mental health was the most important cause of burnout in athletic trainers. The path model indicated that the better an ATCs' mental health score the lower the level or score of burnout. The findings from this study support the notion that depleted emotional health leads to burnout.^{25, 26, 30}

Social Support and Burnout in Athletic Trainers

Research on the level of social support in athletic trainers is minimal and to date, only one study has reviewed social support for athletic trainers. The current study examined whether social support was a predictor of burnout. The MOS Social Support Survey was able to determine social support levels in athletic trainers and possible relationship to burnout. In this study, athletic trainers had mean social support scores of 74.52, which is a particularly good score; however the standard deviation (23.03) and range was quite variable. The range of this instrument score was 95, with four being the lowest score and 100 being the highest score. With such a wide range, many athletic trainers may be experiencing some decreases in social support, while others perceive their social support as good. Hendrix et al. used the Social Support Questionnaire to assess the number of perceived social support network members and more importantly, the degree of satisfaction with the support received. However, according to Hendrix et al. experiencing decreased scores in social support did lead to some perceived stress, and thus higher scores in the burnout subscale of emotional exhaustion.³ The MOS scores found by Sherbourne and Stewart (70.1 ± 24.2) were similar to the scores found in this study, however,

comparison with Sherbourne and Stewart's results should be treated with some caution, because the population in that study was not athletic trainers, but patients with several different chronic illnesses.⁴⁴

Surprisingly, social support did not predict or cause burnout in athletic trainers according to the path model. The MOS only assessed general levels of social support in ATCs, conceivably social support at work is related to burnout, but general social support is not. Future research should distinguish between levels of social support at work versus social support at home or in another environment.

Perceived Wellness and Burnout

Burnout is related to the amount of illness and severity of disease that can place a person at higher risk for major illnesses. However, no research has observed the perceived wellness levels of athletic trainers and the potential effects of the burnout syndrome on the perceived wellness of an athletic trainer. Scores on the Perceived Wellness Survey range from 1 to 29. Scores closer to 29 indicate a positive perception of wellness. The athletic trainers in this study had a mean (16.57 ± 2.8) that was in the middle range of this score, thus demonstrating low to moderate perceived wellness levels. The correlation between burnout and perceived wellness was strong, showing a negative relationship between perceived wellness and burnout. As expected, higher burnout in athletic trainers was associated with lower perceptions of wellness. With a strong correlation and with burnout as a predictor of perceived wellness, a possible clinical significant relationship exists, in which perceived wellness and burnout are plausible causes of one another. Multiple regressions analysis revealed that all three domains were significant predictors of perceived wellness, as was burnout.

Perceived Wellness and the Health Domains in Athletic Trainers

Perceived wellness mean scores for athletic trainers were 16.57 ± 2.8 , on a 29 point wellness scale. Adams et al. created the Perceived Wellness Survey using data from general populations. In comparison to the means in this study, the data is comparable.⁶⁰ Intuitively, allied health care professionals should score fairly high on this instrument and even higher than general populations. However, the mid range score for athletic trainers is quite similar to the original population found by Adams et al.⁶⁰ A comparison should be made cautiously since populations are different, however a concern exists because PWS scores for athletic trainers are in the mid range and not higher, which is considered healthier. The current study also looked at the gender differences of perceived wellness and found that females perceived their health as slightly poorer than males but differences were not statistically significant. When comparing different job settings, the findings show that those athletic trainers working in lower college settings (DIII and CC) exhibited the lowest perceived wellness, followed by high school athletic trainers. Clinical settings received the highest perceived wellness scores. Athletic trainers holding the job title as “head” or “assistant” generated the lowest perceived wellness scores and those with the title of clinical athletic trainer had the highest perceived wellness scores. These findings are possible due to the relative stable work hours and the decreased amount of working hours by clinical athletic trainers.

According to the final path model and as hypothesized, physical activity, mental health and social support all had direct effects on perceived wellness. Mental health had the strongest effect on perceived wellness, followed by social support and physical activity scores respectively. Each domain of wellness was positively related to perceived wellness. Therefore, the greater physical activity, social support and mental health an athletic trainer has, the greater the perceptions of wellness should be in athletic trainers.

Conclusion

This study describes the relationships between the burnout syndrome in athletic trainers and perceived wellness and different health domains of physical activity, mental health and social support of wellness. It should also be noted that demographic variables such as, years of work experience and hours worked per week should be considered in determining individual's levels of burnout and when they syndrome is likely to be experienced.

In conclusion, approximately 30 % of the athletic trainers from District 9 in this study reported high burnout scores, while many more were moderately burnt out. Most importantly, the current study produced a path model of burnout and perceived wellness in athletic trainers. The model indicates that years of experience, hours worked per week, mental health, and physical activity are important factors causing burnout in athletic trainers. Additionally, the health domains play vital roles in determining perceived wellness and should be considered key in maintaining health and wellness.

Limitations

Study limitations preclude the generalizability of these finding to other populations. Methodological limitations include: the use of email surveys as a means to collect data and in particular, the use of a self report or respondent recall for the data. Furthermore, generalizability is limited due to the sampling design which involved only one of the nine districts in the NATA.

Along with the methodological limitations, several outcome limitations have occurred in this study. The response rate of 29-30 % is small and precludes generalizing to a population. Secondly, one of the tools used, the Baecke Physical Activity Questionnaire, was found to have a lower coefficient alpha than the other instruments and was slightly below the traditionally accepted level of 0.7. The findings of total physical activity in this study are considered normal or average; however the score should be interpreted cautiously since many athletic trainers

partake in a fairly large amount of work activity. This large amount of physical activity at work could in turn, lead to higher burnout or exhaustion and lesser amounts of leisure activity, also leading to higher levels of burnout. Since all instruments had previous validity and reliability metrics in the literature, a survey of experts was not used but would be a future step to ensure validity for this combination of instruments. Finally, the study is looking at a population whose respondents are possibly too burned out or not willing to take the time to answer items on a survey. Therefore, the very ATCs experiencing the highest levels of burnout and of most interest for this study are not likely to participate. These limitations should be continued to be addressed in future research by possibly contacting respondents in more direct and qualitative processes.

Implications

The knowledge of the potential factors contributing to professional burnout, either in the workplace or in the personal life, can reduce overall health decrements due to the excessive stressors of jobs in healthcare. All previous athletic training research on burnout uses the MBI or some modification of the MBI. This first use of the CBI in athletic training allows for a new and more direct perspective on measuring burnout in all three areas of burnout (personal, work and client). The development of plans or interventions to reduce burnout may decrease the previously mentioned work family conflict, job dissatisfaction and intention to leave the profession. The same knowledge of potential burnout factors can decrease the number of illnesses and disease present among athletic trainers.

Focusing on the enhancement of the domains of health, physical activity and mental health may reduce the severity of burnout and thus, the severity of illnesses. Many health care professionals can be armed with the knowledge and tools to reduce their personal or job burnout, and also educate both current and future professionals about the causes of burnout.

Practical Applications

With so many known potential factors for burnout and decreases in health and wellness, the ability to reduce certain job characteristics or responsibilities leading to burnout and poor wellness can be acted on by administrators and those who control hiring and job descriptions of potential employees. Educating administrators about the causes of job burnout can reduce their costs of hiring and replacing of employees like athletic trainers who leave the profession after five to ten years of service due to burnout. Another potential application is the adding of a burnout and health related competency to the National Athletic Training Competencies of Education book. Educators can start to manage and prevent job burnout, dissatisfaction and intention to leave the profession.

Future Research

Future research in the areas of athletic trainers' health and wellness should continue to investigate the factors that contribute to burnout. Many factors like personality characteristics, environmental characteristics, coping strategies, job engagement and other qualitative measurements in specific job settings need to be incorporated in path models as well as relationship studies.

Another area that requires attention is the separation of the different health domains and their scores in relation to different job settings. Continued work on the survey instrument will allow for items, subscales or instruments to be reduced, thereby reducing the time required to complete the survey. This reduction may cause more people to participate in future studies. Determining the amounts of social support, mental health and physical activity present in athletic trainers could increase the likelihood of avoiding physical illnesses and decreases in professional burnout. Future research needs to specifically investigate the relationship between burnout and physical activity at work.

Future research should address different populations of athletic trainers like: graduate students, undergraduate students or focusing on particular job titles, like head athletic trainer or clinical athletic trainer. Knowledge of those susceptible to burnout can lead to educational and administrative changes in both undergraduate curriculums and graduate student assistantships at all levels of athletic training. The current study indicates that those working at lower level colleges (DIII and CC) may be particularly important to focus on in regards to burnout.

Direct contact of athletic trainers suspected of experiencing athletic trainer burnout can have an even bigger impact on prevention and more importantly, handling of the burnout syndrome. Focus groups can be used to obtain more information from those athletic trainers that might be experiencing burnout or decreased perceived wellness but are too busy or unaware of their symptoms to participate in traditional quantitative research methods. With the use of qualitative methods, like direct contact of potentially burnt out athletic trainers, there is a greater chance that more effective prevention and treatment of decreased wellness, professional burnout and physical illnesses can be developed.

APPENDIX
APPENDIX A
PSYCHOMETRIC DATA FOR INSTRUMENTS

Table A-1 Table of psychometric data

Instrument	Author	Validity	Reliability	N
MOS-SSS Medical Outcomes Social Support Survey	Sherbourne & Stewart (1991)	Correlations (health status measures) .72- .87	Internal Consistency .97 overall	2987
	Wasserman, Stewart, & Delucchi (2001)	Correlations (4 subscales) .72-.82	Internal Consistency .97 overall	128
12 and 4 item MOS	Gjesfjeld, Greeno & Kim (2007)	Correlations (SF36) .98 & .96	Internal Consistency .94 & .83	330
Baecke Questionnaire on Physical Activity	Pols et al. (1995)	Correlations (Diary M and F) .66 and .42, Correlations (energy expenditure M and F) .56 and .44	Test-retest correlations .65-.89 range	126
	Florindo et al.	Pearson Correlation (Locomotion activities, leisure exercise, & percent heart rate decrease), .52, .47 & .47	Interclass correlations .69, .80, & .77	21
	Baecke, Burema & Frijters (1982)		Test-retest for each index .88, .81, & .74	309
Mental Health Inventory	Veit & Ware (1983)	Correlations (5 subscales) .34-.75	Internal consistency .83-.91 Stability .56- .64	5089
	McCabe, Thomas et al (abstract) (1996)	Correlations (GHQ) .73	Internal Consistency .84	3000
Copenhagen Burnout Inventory	Kristensen, Borritz et al. (2005)	Correlations (SF-36) -.34 to -.75	Internal Consistency .85-.87	1914
	Winwood & Winefield (2004)	Correlations (MBI subscales) .38 to -.45, .38 to .52 and .75 to .82	Alpha Reliability .73-.93	312

Table A-1 continued

Instrument	Author	Validity	Reliability	N
Perceived Wellness Survey	Adams, Bezner Steinhardt (1997)	Correlations (other valid scales) .3-.7	Internal Consistency .88-.93	295,98, 53,&11 2
	Bezner, Adams and Whistler (1999)		Internal Consistency .92	237

Table A-2 Scoring of instruments table

Instrument	Score index/ composite	Possible subscales	Possible max score
MOS-SSS Medical Outcomes Social Support Survey	Total score = $100 \times \left\{ \frac{\text{observed score} - \text{min possible score}}{\text{max possible score} - \text{min possible score}} \right\}$	Emotional support Tangible support Affectionate support Positive social interaction	100
Baecke Questionnaire on Physical Activity	Total score = WI+SI+LTI	WI= work index, SI= sport index, & LTI= leisure time index	15
Mental Health Inventory	Total score= ((raw score of 5 items-5)/25) X 100		100
Copenhagen Burnout Inventory	Total score = total average of three subscales (PB+WRB+CRB)	Personal Burnout (BP) Work Related Burnout (WRB) Client Related Burnout (CRB)	100
Perceived Wellness Survey	Sum all subscales Wellness Magnitude=(P+E+S+P+S+I)/6 which now =xbar For each subscale (mean subscale- xbar) ² =subscale deviation Sum all subscale deviations and divide by 5 this = variance To find Wellness Balance (square root of variance + 1.25 Total score or Wellness Composite = (Wellness Magnitude / Wellness Balance)	Psychological Emotional Social Physical Spiritual Intellectual	0-29

APPENDIX B
INSTRUMENT

Demographics

1. Demographic information

Please enter the following demographic information.

What are the last 4 digits of your certification number?

What is your age?

Gender

- Male
 Female

What is your primary job title?

- Head Athletic Trainer
 Assistant Athletic Trainer
 Head Athletic Director
 Assistant Athletic Director
 Clinical Athletic Trainer
 Physician Extender
 Physical Therapist/Athletic Trainer
 Physician Assistant/Athletic Trainer

Other (please specify)

What job setting do you currently work in?

- Professional sports
 College athletics (DI)
 College athletics (DII)
 College athletics (DIII)
 Community College
 High school athletics
 Clinic
 Hospital

Other (please specify)

How many years experience do you have as an athletic trainer?

In the past month, on average, how many hours per week do you work at your job?

Perceived Wellness Survey

2. Perceived Wellness Survey

The following statements are designed to provide information about your wellness perceptions. Please read them carefully and thoughtfully consider each statement, then select ONE response option with which you MOST agree.

1.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
1. I am always optimistic about my future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
2. There have been times when I felt inferior to most of the people I knew.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
3. Members of my family come to me for support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
4. My physical health has restricted me in the past.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5-6.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
5. I believe there is a real purpose for my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I will always seek out activities that challenge me to think and reason.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
7. I rarely count on good things happening to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
8. In general, I feel confident about my abilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
9. Sometimes I wonder if my family will really be there for me when I need them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
10. My body seems to resist physical illness very well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11-12.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
11. Life does not hold much future promise for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I avoid activities which require me to concentrate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
13. I always look on the bright side of things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
14. I sometimes think I am worthless individual.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15-16.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
15. My friends know they can always confide in me to ask me for advice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. My physical health is excellent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
17. Sometimes I don't understand what life is all about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18-19.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
18. Generally, I feel pleased with the amount of intellectual stimulation I receive in my daily life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. In the past, I have expected the best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
20. I am uncertain about my ability to do things well in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21-24.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
21. My family has been available to support me in the past.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Compared to people I know, my past physical health has been excellent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I feel a sense of mission about my future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. The amount of information that I process in a typical day is just about right for me (i.e. not too much and not too little).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
25. In the past, I hardly ever expected things to go my way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
26. I will always be secure with who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
27. In the past, I have not always had friends with whom I could share my joys and sorrows.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
28. I expect to always be physically healthy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
29. I have felt in the past that my life was meaningless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
30. In the past, I have generally found intellectual challenges to be vital to my overall well-being.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

31.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
31. Things will not work out the way I want them to in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32-33.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
32. In the past, I have felt sure of myself among strangers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. My friends will be there for me when I need help.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

34.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
34. I expect my physical health to get worse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

35.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
35. It seems that my life has always had purpose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

36.

	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
36. My life has often seemed void of positive mental stimulus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Copenhagen Burnout Inventory

(First edition. November 1999)

3. Copenhagen Burnout Inventory					
Personal Burnout					
Please answer the following questions by marking only one circle per question.					
Personal burnout					
1-6.					
	Always	Often	Sometimes	Seldom	Never/almost never
1. How often do you feel tired?	<input type="radio"/>				
2. How often are you physically exhausted?	<input type="radio"/>				
3. How often are you emotionally exhausted?	<input type="radio"/>				
4. How often do you think: "I can't take it anymore"?	<input type="radio"/>				
5. How often do you feel worn out?	<input type="radio"/>				
6. How often do you feel weak and susceptible to illness?	<input type="radio"/>				
Work burnout					
1-3.					
	To a very high degree	To a high degree	Somewhat	To a low degree	To a very low degree
1. Is your work emotionally exhausting?	<input type="radio"/>				
2. Do you feel burnt out because of work?	<input type="radio"/>				
3. Does your work frustrate you?	<input type="radio"/>				
Work Burnout					
4-6.					
	Always	Often	Sometimes	Seldom	Never/almost never
4. Do you feel worn out at the end of the working day?	<input type="radio"/>				
5. Are you exhausted in the morning at the thought of another day at work?	<input type="radio"/>				
6. Do you feel that every working hour is tiring for you?	<input type="radio"/>				
Work Burnout					
7.					
	Always	Often	Sometimes	Seldom	Never/almost never
Do you have enough energy for family and friends during leisure time?	<input type="radio"/>				

Client Burnout

1-4.

	To a very high degree	To a high degree	Somewhat	To a low degree	To a very low degree
1. Do you find it hard to work with athletes/clients?	<input type="radio"/>				
2. Do you find it frustrating to work with athletes/clients?	<input type="radio"/>				
3. Does it drain your energy to work with athletes/clients?	<input type="radio"/>				
4. Do you feel that you give more than you get back when you work with athletes/clients?	<input type="radio"/>				

Client Burnout

5-6.

	Always	Often	Sometimes	Seldom	Never/almost never
5. Are you tired of working with athletes/clients?	<input type="radio"/>				
6. Do you sometimes wonder how long you will be able to continue working with athletes/clients?	<input type="radio"/>				

Mental Health Inventory-5

4. Mental Health Inventory

Please read each question and mark the box by the one statement that best describes how things have been for you during the past month.

Mental Health

1-2

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
1. During the past month, how much of the time were you a happy person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. How much of the time, during the past month, have you felt calm and peaceful?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mental Health

3-5.

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
3. How much of the time, during the past month, have you been a very nervous person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. How much of the time, during the past month, have you felt downhearted and blue?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. How much of the time, during the past month, have you felt so down in the dumps that nothing could cheer you up?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Baecke Physical Activity Questionnaire

5. Baecke Physical Activity Questionnaire

Please mark the appropriate answer for each question considering the past 12 months in regards to your physical activity levels.

1. What is your main occupation?

Work activity levels

2-5.

	Never	Seldom	Sometimes	Often	Always
2. At work I sit:	<input type="radio"/>				
3. At work I stand:	<input type="radio"/>				
4. At work I walk:	<input type="radio"/>				
5. At work I lift heavy loads:	<input type="radio"/>				

6-7.

	Very often	Often	Sometimes	Seldom	Never
6. At work I am tired:	<input type="radio"/>				
7. At work I sweat:	<input type="radio"/>				

8.

	Much heavier	Heavier	As heavy	Lighter	Much lighter
8. In comparison with others of my own age, I think my work is physically:	<input type="radio"/>				

Exercise activity levels

9. Do you do exercise activity?

Yes

No

9-A1. If yes, what exercise activity do you do most frequently?

9-B1.

	<1	1-2	2-3	3-4	>4
How many hours per week?	<input type="radio"/>				

9-C1.

	<1	1-3	4-6	7-9	>9
How many months a year?	<input type="radio"/>				

9-A2. If you do a second exercise activity, what exercise activity do you do?

9-B2.

	<1	1-2	2-3	3-4	>4
How many hours per week?	<input type="radio"/>				

9-C2.

	<1	1-3	4-6	7-9	>9
How many months a year?	<input type="radio"/>				

10.

	Much more	More	The same	Less	Much Less
10. In comparison with others of my own age I think my physical activity during leisure time is:	<input type="radio"/>				

Leisure time activity levels

11.

	Very often	Often	Sometimes	Seldom	Never
11. During leisure time I sweat:	<input type="radio"/>				

12-15.

	Never	Seldom	Sometimes	Often	Always
12. During leisure time I play a sport:	<input type="radio"/>				
13. During leisure time I watch television:	<input type="radio"/>				
14. During leisure time I walk:	<input type="radio"/>				
15. During leisure time I cycle:	<input type="radio"/>				

16.

	<5	5-15	15-30	30-45	>45
16. How many minutes do you walk and or cycle per day to and from work, school and shopping?	<input type="radio"/>				

MOS Social Support Survey

6. MOS Social Support Survey

Social Support

People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it? Mark one circle for each line.

Emotional Support

1-3.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
1. Someone to confide in or talk to about yourself or your problems.	<input type="radio"/>				
2. Someone to share your most private worries and fears with.	<input type="radio"/>				
3. Someone to turn to for suggestions about how to deal with a personal problem.	<input type="radio"/>				

Tangible Support

4-6.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
4. Someone to help you if you were confined to bed.	<input type="radio"/>				
5. Someone to prepare your meals if you were unable to do it yourself.	<input type="radio"/>				
6. Someone to help with daily chores if you were sick.	<input type="radio"/>				

Affectionate Support

7-9.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
7. Someone who shows you love and affection.	<input type="radio"/>				
8. Someone to love and make you feel wanted	<input type="radio"/>				
9. Someone who hugs you.	<input type="radio"/>				

Positive Social Interaction

10-12.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
10. Someone to have a good time with.	<input type="radio"/>				
11. Someone to get together with for relaxation.	<input type="radio"/>				
12. Someone to do something enjoyable with.	<input type="radio"/>				

APPENDIX C
PERMISSION TO USE INSTRUMENTS

CBI

Dear Keith Naugle,

Thank you very much for your mail and for your interest in the CBI. I enclose some material for your information. If you choose to use the instrument in your study, please let me know (and send reports or papers to me when they are available, please).

Best regards,

Tage S. Kristensen
Professor

Fra: Naugle,Keith E [mailto:knaugle@hhp.ufl.edu]
Sendt: 30. marts 2007 19:36
Til: Tage S. Kristensen (TSK)
Emne:

Dear Tage Kristenson

I am a doctoral student at the University of Florida. I am conducting study for my dissertation about the well being of Athletic Trainers ATCs. I would like to ask your permission to use and/or modify the CBI that you developed and discussed in the 2005 article in Work and Stress. My goal is to develop a survey instrument that can be used to assess the well being of ATCs along the physical, social, and emotional dimensions. Your permission would be appreciated greatly.

Thank you

Keith Naugle MS, ATC

MOSSS and Mental Health Instrument

Dear Mr. Naugle,

You will find permissions information on our website
http://www.rand.org/health/surveys_tools.html including the following:

All of the surveys and tools from RAND Health are public documents, available without charge (for non-commercial purposes).

Please provide an appropriate [citation](#) when using these products. In some cases, the materials themselves include specific instructions for citation.

Some materials listed are not available from RAND Health. Those links will take you to other websites, where you will find instructions for use.

Thank you for your interest in RAND Health

Dana Torres
RAND Health

From: Naugle,Keith E [mailto:knaugle@hhp.ufl.edu]
Sent: Monday, March 19, 2007 5:33 PM
To: RAND_Health@rand.org
Subject:

Dear Sir or Madame

I am a doctoral student at the University of Florida. I am conducting study for my dissertation about the well being of Athletic Trainers. I would like to ask your permission to use and/or modify the MOS survey instrument that you developed and discussed in the 1991 article in *soc sci and med*. My goal is to develop a survey instrument that can be used to assess the well being of ATCs along the physical, social, and emotional dimensions. Your permission would be appreciated greatly.

Thank you

Keith Naugle

Baecke

Dear Keith Naugle,
the questionnaire may be used freely and does not require for permission to be requested.
Anyone is allowed to use the questionnaire on his/her own responsibility.

(This was about the 20th request for permission that was sent to me in the last 15 years. Although the principal author did not become Professor, the original paper has been referenced more than 600 times, thus becoming one of the top-five most frequently referenced scientific papers of Dutch origin in 1982.)

Best regards, Jan Burema MSc (biostatistician)

From: Naugle,Keith E [mailto:knaugle@hhp.ufl.edu]
Sent: 29 March 2007 02:55
To: Burema, Jan
Subject: Permission to use the Baecke Questionnaire

Dear Jan Burema

I am a doctoral student at the University of Florida. I am conducting study for my dissertation about the well being of Athletic Trainers (ATCs). I would like to ask your permission to use the Baecke Physical Activity Questionnaire. My goal is to develop a survey instrument that can be used to assess the well being of ATCs along the physical, social, and emotional dimensions. Your permission would be appreciated greatly.

Thank you

Keith Naugle

Keith Naugle MS, ATC

PWS

Keith

Well done. You should get credit for finding me! :-)

You have my permission to use the PWS and my best wishes as well.

I refer you to my website perceivedwellness.com for information about the scale etc.

Typically, after you have collected your data, you will want to email me again with questions about the scoring methods.

Regards

Troy Adams

On 4/2/07 3:14 PM, "Naugle,Keith E" <knaugle@hhp.ufl.edu> wrote:

Dr Adams

I am a doctoral student looking into the wellness and health levels of athletic trainers. I am emailing for permission to use the Perceived Wellness Survey from the journal article Construct Validation of the Perceived Wellness Survey, published in the American Journal of Health Studies for my dissertation. I had to search for Dr Troy Adams on the Google search engine so if you are not the Dr Adams that designed this I am sorry to bother you and could you please let me know. Thanks

Keith Naugle MS, ATC

APPENDIX D
INSTITUTIONAL REVIEW BOARD

UFIRB 02 – Social & Behavioral Research Protocol Submission	
Title of Protocol: Perceptions of wellness and burnout among athletic trainers: Contributions of the wellness domains	
Principal Investigator: Keith Naugle	UFID #: 5640-4790
Degree / Title: MS Clinical Coordinator UF ATEP Department: APK	Mailing Address: P.O. Box 118205 100 Florida Gym Gainesville Fl 32611 Email Address & Telephone Number: knaugle@hnp.ufl.edu 3523920584 ext 1325
Co-Investigator(s):	UFID#:
Supervisor:	UFID#:
Degree / Title: Department:	Mailing Address: Email Address & Telephone Number:
Date of Proposed Research: April 2008 to April 2009	
Source of Funding (<i>A copy of the grant proposal must be submitted with this protocol if funding is involved</i>): Southeastern Athletic Trainers' Association (SEATA) Research Grant and Mentorship Opportunity Grant pending	
Scientific Purpose of the Study: To measure the perceived wellness and burnout in the profession of athletic training and determine what factors lead to increased professional burnout and decreased perceived wellness.	
Describe the Research Methodology in Non-Technical Language: (<i>Explain what will be done with or to the research participant.</i>) A questionnaire will be distributed to athletic trainers who are employed (full time) in the Southeast region of the National Athletic Trainers Association via email. The questionnaire is a combination of research instruments which include: The Copenhagen Burnout Inventory ¹ , The Perceived Wellness Survey ^{2,3} , MOS Social Support Survey ⁴ , Mental Health Inventory ⁵ , and The Baecke Physical Activity Questionnaire ⁶ . In addition, demographic data will also be requested in the survey and will gather information regarding (gender, job setting, job title, age, education level, etc).	

Describe Potential Benefits and Anticipated Risks: *(If risk of physical, psychological or economic harm may be involved, describe the steps taken to protect participant.)*

There are no direct/immediate benefits to participating in this research. The hope is that burnout and perceived wellness in the individuals being surveyed can be decreased and improved respectively in the future. There are also no anticipated risks greater than those of daily activities that take place on a computer.

Describe How Participant(s) Will Be Recruited, the Number and AGE of the Participants, and Proposed Compensation:

Participants are recruited through the National Athletic Trainers' Association (NATA) database and mailing list serve for research participants

A total of 3000 subjects will be recruited for the administration of the instrument in order to receive the anticipated 900 respondents (30% response rate). The age range is from 22-85

There is no compensation for the taking the survey.

Describe the Informed Consent Process. Include a Copy of the Informed Consent Document:

All subjects will be receiving (via email) a short introduction to this investigation, specifically with regards to the purpose, methodology, and time commitment. Subjects will be informed that given the electronic format of the investigation, anyone who completes the survey is providing their informed consent to the primary investigator.

Principal Investigator(s) Signature:

Supervisor Signature:

Department Chair/Center Director Signature:

Date:

References for survey instruments:

1. Kristensen TS, Borritz M, Villadsen E, & Christensen. The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress*. 2005; 19(3): 192-207.
2. Adams T, Benzer J, & Steinhardt M. The conceptualization and measurement of perceived wellness: integrating balance across and within dimensions. *Am J Health Promot*. 1997;11(3): 208-218.
3. Adams TB, Bezner JR, & Whistler LS. The relationship between physical activity and indicators of perceived wellness. *Am J Health Studies*. 1999; 15(3): 130-138
4. Sherbourne CD, & Stewart AL. The MOS Social Support Survey. *Soc Sci Med*. 1991; 32(6): 705-714
5. Veit CT, & Ware JE. The structure of psychological distress and well-being in general populations. *J Consulting and Clin Psych*. 1983; 51(5): 730-742.
6. Florindo AA, & do Rosario Dias de Oliveira Latorre. Validation and reliability of the Baecke questionnaire for the evaluation of habitual physical activity in adult men. *Rev Bras Med Esporte* 2003 9(3):129-135.

APPENDIX E
LETTER TO PARTICIPANT

Dear Fellow Certified Athletic Trainer:

I am a doctoral student at the University of Florida. I am conducting a survey of certified athletic trainers, the purpose of which is to learn about the levels of burnout and the perceived wellness of athletic trainers. I am asking you to participate in this interview because you have been identified as a certified athletic trainer. Participants will be asked to participate in a survey approximately 30 minutes. Your survey will be conducted by email via a website link. Please follow the link at the end of this letter to an online survey titled: Perceptions of wellness and burnout among athletic trainers: Contributions of the wellness domains. The questionnaire consists of demographic questions, and questions relating to wellness, burnout, physical activity levels, social support and mental health.

This student survey is not approved or endorsed by NATA. It is being sent to you because of NATA's commitment to athletic training education and research. If you have any questions about this research protocol, please contact me at 352-392-0584 ext 1325. Questions or concerns about your rights as a research participant rights may be directed to the UFIRB office, University of Florida, Box 112250, Gainesville, FL 32611; ph (352) 392-0433.

This is a completely anonymous questionnaire and upon submission, neither your name nor email address will be attached to your answers. Your information will be kept strictly confidential.

As a fellow certified athletic trainer, your knowledge and opinions regarding this topic makes your input invaluable. Please take a few minutes to fill out the anonymous questionnaire you will find by clicking on this link and submit it within two weeks.

By participating in the survey you are giving informed consent to use your data in the research project.

Thank you for your time and consideration.

Keith Naugle MS ATC LAT

APPENDIX F
CONTACT LIST REQUEST FORM



NATIONAL ATHLETIC TRAINERS' ASSOCIATION, INC.
RESEARCH STUDY
Contact List Request Form



Request Date: 7-26-2008 _____ Date Needed: 8-25-2008 _____

Member Making Request: Keith Naugle _____

NATA Member Number 982094 _____ (Required) Student Member? Yes No

Mailing Address: 1418 SW 25th Place _____

City: Gainesville _____ State: FL _____ Zip: 32608 _____ Phone: 352-392-0584 ext 1325 _____

E-Mail Address: knaugle@hhp.ufl.edu _____ Fax: _____

Title of Study: Perceptions of wellness and burnout among athletic trainers: Contributions of the wellness domains _____

Purpose Statement: To determine burnout and wellness levels in certified athletic trainers, and the relationships that the wellness domains have in burnout and wellness _____

Institution where Research is Being Conducted: University of Florida _____

Advisor's Signature (if applicable): _____ Date: _____

Funding Source of Study: District IX grant from the Research and Education Committee _____

**** Please include a copy of your survey instrument, informed consent form, and documentation of approval from your Institutional Review Board (IRB).**

**** Student Members: If you are requesting an email broadcast from the National Office for notification of a web site for your survey, you MUST provide the letter of announcement that you plan on using in the broadcast as well as your current email address.**

*Send this form to your District Secretary for processing.
Please allow three to four weeks for delivery.*

APPENDIX G
VARIABLE TABLES

Perceived Wellness Survey

Table G-1 Perceived Wellness Survey

Perceived Wellness Survey Question	# percent (responses) Responses		Disagree	Agree	Strongly Agree	Very Strongly Agree	Response Count
	Very Strongly Disagree	Strongly Disagree					
1. I am always optimistic about my future.	0.9% (4)	3.1% (13)	15.8% (67)	33.9% (144)	35.3% (150)	11.1% (47)	425
2. There have been times when I felt inferior to most of the people I knew.	11.9% (51)	26.5% (113)	33.0% (141)	24.4% (104)	3.5% (15)	0.7% (3)	427
3. Members of my family come to me for support.	1.6% (7)	1.2% (5)	5.2% (22)	42.5% (181)	32.4% (138)	17.1% (73)	426
4. My physical health has restricted me in the past.	37.2% (159)	24.1% (103)	23.2% (99)	11.2% (48)	3.5% (15)	0.7% (3)	427
5. I believe there is a real purpose for my life	0.5% (2)	0.5% (2)	1.4% (6)	27.6% (117)	30.0% (127)	40.1% (170)	424
6. I will always seek out activities that challenge me to think and reason.	0.5% (2)	0.2% (1)	5.9% (25)	39.3% (166)	32.0% (135)	22.0% (93)	422
7. I rarely count on good things happening to me.	18.3% (78)	33.6% (143)	30.5% (130)	12.7% (54)	3.3% (14)	1.6% (7)	426
8. In general, I feel confident about my abilities.	0.0% (0)	1.2% (5)	0.7% (3)	26.3% (112)	48.6% (207)	23.2% (99)	426
9. Sometimes I wonder if my family will really be there for me when I need them.	40.2% (171)	29.9% (127)	17.2% (73)	8.7% (37)	2.1% (9)	1.9% (8)	425

Perceived Wellness Survey Question	# percent #responses Responses						Response Count
	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree	
10. My body seems to resist physical illness very well.	1.2% (5)	1.6% (7)	8.9% (38)	39.4% (168)	32.2% (137)	16.7% (71)	426
11. Life does not hold much future promise for me.	45.0% (192)	32.8% (140)	20.1% (86)	1.4% (6)	0.5% (2)	0.2% (1)	427
12. I avoid activities which require me to concentrate.	33.3% (141)	37.3% (158)	25.0% (106)	3.5% (15)	0.5% (2)	0.5% (2)	424
13. I always look on the bright side of things.	0.5% (2)	1.2% (5)	16.3% (69)	39.6% (168)	29.7% (126)	12.7% (54)	424
14. I sometimes think I am worthless individual.	56.2% (239)	19.1% (81)	18.4% (78)	5.6% (24)	0.5% (2)	0.2% (1)	425
15. My friends know they can always confide in me to ask me for advice.	0.2% (1)	0.5% (2)	0.9% (4)	25.6% (109)	41.2% (175)	31.5% (134)	425
16. My physical health is excellent.	0.5% (2)	3.8% (16)	20.9% (88)	36.3% (153)	28.7% (121)	10.0% (42)	422
17. Sometimes I don't understand what life is all about.	19.3% (82)	26.7% (113)	27.4% (116)	23.6% (100)	2.6% (11)	0.5% (2)	424
18. Generally, I feel pleased with the amount of intellectual stimulation I receive in my daily life.	0.5% (2)	2.8% (12)	13.2% (56)	46.2% (196)	29.2% (124)	8.0% (34)	424
19. In the past, I have expected the best.	0.0% (0)	0.5% (2)	7.6% (32)	37.5% (157)	37.7% (158)	16.7% (70)	419
20. I am uncertain about my ability to do things well in the future.	17.5% (74)	36.2% (153)	28.8% (122)	11.1% (47)	3.8% (16)	2.6% (11)	423
21. My family has been available to support me in the past	0.2% (1)	0.5% (2)	2.8% (12)	29.0% (123)	32.1% (136)	35.4% (150)	424

Perceived Wellness Survey Question	# percent #responses Responses						Response Count
	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree	
22. Compared to people I know, my past physical health has been excellent.	0.2% (1)	2.3% (10)	10.1% (43)	35.9% (153)	32.9% (140)	18.5% (79)	426
23. I feel a sense of mission about my future.	0.2% (1)	1.2% (5)	9.7% (41)	35.9% (151)	34.7% (146)	18.3% (77)	421
24. The amount of information that I process in a typical day is just about right for me (i.e. not too much and not too little).	2.1% (9)	7.3% (31)	19.2% (82)	51.2% (218)	16.7% (71)	3.5% (15)	426
25. In the past, I hardly ever expected things to go my way.	14.4% (61)	32.7% (139)	38.1% (162)	12.5% (53)	1.9% (8)	0.5% (2)	425
26. I will always be secure with who I am.	0.2% (1)	1.2% (5)	11.1% (47)	38.4% (163)	31.5% (134)	17.6% (75)	425
27. In the past, I have not always had friends with whom I could share my joys and sorrows.	20.2% (86)	21.2% (90)	29.4% (125)	22.4% (95)	5.6% (24)	1.2% (5)	425
28. I expect to always be physically healthy.	0.5% (2)	3.3% (14)	19.1% (81)	39.9% (169)	25.9% (110)	11.3% (48)	424
29. I have felt in the past that my life was meaningless.	36.4% (154)	27.4% (116)	25.3% (107)	9.0% (38)	1.4% (6)	0.5% (2)	423
30. In the past, I have generally found intellectual challenges to be vital to my overall well-being.	0.0% (0)	0.9% (4)	6.1% (26)	42.8% (181)	35.5% (150)	14.7% (62)	423
31. Things will not work out the way I want them to in the future.	24.4% (103)	34.4% (145)	32.2% (136)	7.6% (32)	1.4% (6)	0.0% (0)	422

32. In the past, I have felt sure of myself among strangers .	0.7% (3)	2.6% (11)	15.8% (67)	43.5% (185)	28.0% (119)	9.4% (40)	425
33. My friends will be there for me when I need help.	0.0% (0)	1.0% (4)	4.0% (17)	42.4% (178)	31.7% (133)	21.0% (88)	420
34. I expect my physical health to get worse.	16.0% (67)	26.0% (109)	37.0% (155)	18.4% (77)	2.4% (10)	0.2% (1)	419
35. It seems that my life has always had purpose.	0.2% (1)	0.5% (2)	9.7% (41)	40.0% (169)	31.4% (133)	18.2% (77)	423
36. My life has often seemed void of positive mental stimulus.	21.5% (91)	32.8% (139)	38.4% (163)	5.4% (23)	1.7% (7)	0.2% (1)	424

Copenhagen Burnout Inventory

Table G-2 Copenhagen Burnout Inventory

Copenhagen Burnout Inventory						
Question	Responses					Response count
	Always	Often	Sometimes	Seldom	Never/al most never	
Personal work burnout						
1. How often do you feel tired?	7.8% (33)	45.4% (191)	38.2% (161)	7.6% (32)	1.0% (4)	422
2. How often are you physically exhausted?	1.7% (7)	20.6% (87)	44.1% (186)	27.7% (117)	5.9% (25)	422
3. How often are you emotionally exhausted?	3.3% (14)	27.8% (117)	38.5% (162)	24.5% (103)	5.9% (25)	421
4. How often do you think: "I can't take it anymore"?	1.7% (7)	11.4% (48)	24.2% (102)	34.7% (146)	28.0% (118)	421
5. How often do you feel worn out?	3.6% (15)	32.1% (134)	38.5% (161)	21.5% (90)	4.3% (18)	418
6. How often do you feel weak and susceptible to illness?	0.7% (3)	4.5% (19)	23.6% (99)	46.2% (194)	25.0% (105)	420

Table G-2

Copenhagen Burnout Inventory		Responses					
Question	To a very high degree	To a high degree	Some-what	To a low degree	To a very low degree	Response count	
1. Is your work emotionally exhausting?	7.1% (30)	19.7% (83)	39.1% (165)	24.4% (103)	9.7% (41)	422	
2. Do you feel burnt out because of work?	6.7% (28)	14.7% (62)	29.9% (126)	28.3% (119)	20.4% (86)	421	
3. Does your work frustrate you?	7.1% (30)	14.0% (59)	37.1% (156)	26.1% (110)	15.7% (66)	421	
	Always	Often	Some-times	Seldom	Never/almost never		
4. Do you feel worn out at the end of the working day?	6.1% (26)	33.8% (143)	37.4% (158)	17.0% (72)	5.7% (24)	423	
5. Are you exhausted in the morning at the thought of another day at work?	3.1% (13)	10.4% (44)	28.1% (119)	33.3% (141)	25.1% (106)	421	
6. Do you feel that every working hour is tiring for you?	2.4% (10)	4.3% (18)	17.9% (75)	39.4% (165)	36.0% (151)	419	
7. Do you have enough energy for family and friends during leisure time?	20.6% (87)	41.1% (174)	31.9% (135)	5.7% (24)	0.7% (3)	423	

Table G-2

Copenhagen Burnout Inventory		Responses					Response count
Question	To a very high degree	To a high degree	Somewhat	To a low degree	To a very low degree		
Client burnout scale							
1. Do you find it hard to work with athletes/clients?	0.7% (3)	2.1% (9)	14.2% (60)	41.8% (177)	41.1% (174)	423	
2. Do you find it frustrating to work with athletes/clients?	1.4% (6)	3.8% (16)	19.9% (84)	40.4% (171)	34.5% (146)	423	
3. Does it drain your energy to work with athletes/clients?	1.2% (5)	2.6% (11)	18.1% (76)	39.0% (164)	39.0% (164)	420	
4. Do you feel that you give more than you get back when you work with athletes/clients?	9.0% (38)	22.5% (95)	29.6% (125)	23.7% (100)	15.2% (64)	422	
	Always	Often	Sometimes	Seldom	Never/almost never		
5. Are you tired of working with athletes/clients?	1.7% (7)	4.5% (19)	20.8% (88)	30.3% (128)	42.8% (181)	423	
6. Do you sometimes wonder how long you will be able to continue working with athletes/clients?	4.3% (18)	14.3% (60)	26.8% (113)	27.1% (114)	27.6% (116)	421	

Mental Health Inventory – 5

Table G-3 Mental Health Inventory-5

Table G-3 Mental Health Inventory-5

Question	Responses						Response Count
	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time	
1. During the past month, how much of the time were you a happy person?	6.6% (28)	56.9% (240)	20.9% (88)	12.3% (52)	3.1% (13)	0.2% (1)	422
2. How much of the time, during the past month, have you felt calm and peaceful?	3.6% (15)	33.6% (142)	22.5% (95)	24.9% (105)	14.2% (60)	1.2% (5)	422
3. How much of the time, during the past month, have you been a very nervous person?	0.0% (0)	4.5% (19)	6.9% (29)	19.7% (83)	46.1% (194)	22.8% (96)	421
4. How much of the time, during the past month, have you felt downhearted and blue?	0.7% (3)	2.1% (9)	8.1% (34)	17.1% (72)	46.3% (195)	25.7% (108)	421
5. How much of the time, during the past month, have you felt so down in the dumps that nothing could cheer you up?	0.2% (1)	1.2% (5)	2.4% (10)	8.3% (35)	14.8% (62)	73.1% (307)	420

Baecke Physical Activity Questionnaire

Table G-4 Baecke Physical Activity

Baecke Physical Activity Questionnaire						
Question	Responses					Response count
1. Job	See Table					
Work Index	Never	Seldom	Sometimes	Often	Always	Response count
2. At work I sit:	2.6% (11)	25.4% (107)	45.6% (192)	25.4% (107)	1.0% (4)	421
3. At work I stand:	0.0% (0)	2.9% (12)	28.8% (121)	58.6% (246)	9.8% (41)	420
4. At work I walk:	0.0% (0)	5.5% (23)	26.1% (109)	60.0% (251)	8.4% (35)	418
5. At work I lift heavy loads:	7.9% (33)	36.5% (153)	35.3% (148)	17.9% (75)	2.4% (10)	419
6. At work I am tired:	4.8% (20)	16.9% (71)	47.7% (201)	28.3% (119)	2.4% (10)	421
7. At work I sweat:	13.1% (55)	22.9% (96)	35.8% (150)	22.7% (95)	5.5% (23)	419
	Much heavier	Heavier	As heavy	Lighter	Much lighter	
8. In comparison with others of my own age, I think my work is physically:	5.8% (24)	31.9% (133)	35.3% (147)	23.0% (96)	4.1% (17)	
Sport Index						
9. Do you do exercise activity?	Yes		No			
	77.80%		22.20%			418
9-A If yes what exercise activity do you do most frequently						
	<1	1 to 2	2 to 3	3 to 4	>4	
9-B1. How many hours per week?	11.8% (43)	17.6% (64)	22.3% (81)	21.5% (78)	26.7% (97)	363
	<1	1 to 3	4 to 6	7 to 9	>9	
9-C1. How many months a year?	7.4% (27)	3.3% (12)	9.9% (36)	10.2% (37)	69.2% (252)	364
9-A2. If you do a second exercise activity, what exercise activity do you do?						
	<1	1 to 2	2 to 3	3 to 4	>4	
9-B2. How many hours per week?	16.5% (40)	36.8% (89)	23.6% (57)	13.2% (32)	9.9% (24)	242

Table G-4 continued

Baecke Physical Activity Questionnaire						
Question	Responses					
	<1	1 to 3	4 to 6	7 to 9	>9	
9-C2. How many months a year?	5.9% (14)	8.0% (19)	15.1% (36)	16.0% (38)	55.0% (131)	238
10. In comparison with others of my own age I think my physical activity during leisure time is:	Much more	More	The same	Less	Much Less	
	10.2% (40)	27.9% (110)	32.2% (127)	23.4% (92)	6.3% (25)	394
11. During leisure time I sweat:	12.4% (52)	25.9% (109)	40.4% (170)	18.8% (79)	2.6% (11)	421
12. During leisure time I play a sport:	Never	Seldom	Sometimes	Often	Always	
	21.9% (92)	30.2% (127)	36.8% (155)	10.5% (44)	0.7% (3)	421
Leisure Index						
13. During leisure time I watch television:	Never	Seldom	Sometimes	Often	Always	
	1.4% (6)	7.9% (33)	41.9% (175)	46.2% (193)	2.6% (11)	418
14. During leisure time I walk:	4.3% (18)	24.6% (103)	44.5% (186)	24.2% (101)	2.4% (10)	418
15. During leisure time I cycle:	45.8% (191)	27.1% (113)	17.5% (73)	8.6% (36)	1.0% (4)	417
16. How many minutes do you walk and or cycle per day to and from work, school and shopping?	<5	5 to 15	15 to 30	30 to 45	>45	
	37.6% (157)	17.9% (75)	21.1% (88)	12.0% (50)	11.5% (48)	418

MOS Social Support

Table G-5 MOS Social Support Survey

Question	Responses					Response Count
	None of the time	A little of the time	Some of the time	Most of the time	All of the time	
1. Someone to confide in or talk to about yourself or your problems.	2.4% (10)	10.0% (42)	17.4% (73)	31.0% (130)	39.1% (164)	419
2. Someone to share your most private worries and fears with.	6.2% (26)	11.7% (49)	16.7% (70)	26.0% (109)	39.4% (165)	419
3. Someone to turn to for suggestions about how to deal with a personal problem.	1.2% (5)	13.7% (57)	16.5% (69)	30.5% (127)	38.1% (159)	417
4. Someone to help you if you were confined to bed.	5.5% (23)	9.8% (41)	13.9% (58)	28.7% (120)	42.1% (176)	418
5. Someone to prepare your meals if you were unable to do it yourself.	6.0% (25)	10.3% (43)	12.2% (51)	28.1% (117)	43.4% (181)	417
6. Someone to help with daily chores if you were sick.	7.4% (31)	11.0% (46)	12.9% (54)	27.1% (113)	41.5% (173)	417
7. Someone who shows you love and affection.	4.3% (18)	8.8% (37)	12.2% (51)	20.3% (85)	54.4% (228)	419
8. Someone to love and make you feel wanted	4.8% (20)	8.1% (34)	12.9% (54)	20.5% (86)	53.7% (225)	419
9. Someone who hugs you.	4.5% (19)	9.6% (40)	12.4% (52)	21.3% (89)	52.2% (218)	418
10. Someone to have a good time with.	0.7% (3)	6.9% (29)	17.9% (75)	32.7% (137)	41.8% (175)	419
11. Someone to get together with for relaxation.	2.9% (12)	6.5% (27)	20.4% (85)	29.0% (121)	41.2% (172)	417
12. Someone to do something enjoyable with.	1.4% (6)	5.8% (24)	19.7% (82)	30.9% (129)	42.2% (176)	417

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BIOGRAPHICAL SKETCH

Keith Naugle was born in Johnstown, PA on 1975, to Martin and Deborah Naugle. Growing up, Keith and his siblings were pushed to achieve as much as possible in academic endeavors. Keith's passion for learning and knowledge helped him to push through the many years of undergraduate and graduate studies. Keith went on to earn a BS from Roanoke College (Salem, VA) in sports medicine/athletic training. After graduating in 2000, Keith enrolled at the University of Illinois in Urbana-Champaign, where he earned a MS in Kinesiology in 2002. As a graduate assistant, He worked with a variety of college and Paralympics athletes with the University of Illinois wheelchair basketball and track teams. These experiences set the path in motion for him to pursue real life experience in the field of athletic training. Keith worked for two years as a high school athletic trainer and middle school health and PE teacher. Those two years spent as a teacher truly opened up his eyes to a calling in higher education. Following his role as a high school athletic trainer, Keith attended the University of Florida to complete his PhD in 2009. While pursuing his doctorate, Keith was hired as the Clinical Coordinator of the undergraduate athletic training education program, and was blessed with an abundant of great students and faculty who supported this dream of becoming a Doctor of Philosophy.