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Perceived Stress and Burnout in Athletic Training Students

Desiree Nicole Daniels

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PERCEIVED STRESS AND BURNOUT IN ATHLETIC TRAINING STUDENTS

A thesis submitted to
the Graduate College of
Marshall University
In partial fulfillment of
the requirements for the degree of
Master of Science

In
Exercise Science emphasis in Athletic Training
by
Desiree Nicole Daniels

Approved by
Dr. Elizabeth Pacioles, Committee Chairperson
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Marshall University
May 2021

APPROVAL OF THESIS

We, the faculty supervising the work of Desiree Nicole Daniels, affirm that the thesis, *Perceived Stress and Burnout in Athletic Training Students*, meets the high academic standards for original scholarship and creative work established by the Master of Science in Exercise Science and the College of Health Professions. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With our signatures, we approve the manuscript for publication.



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TABLE OF CONTENTS

List of Tables	vii
Abstract.....	viii
Chapter 1: Introduction	1
Operational Definitions.....	2
Limitations.....	2
Delimitations.....	3
Assumptions.....	3
Statement of the Problem.....	3
Research Question.....	4
Null Hypothesis.....	4
Alternate Hypothesis.....	4
Chapter 2: Literature Review.....	5
Defining Athletic Training.....	5
Defining Athletic Training Students.....	5
Defining Stress in Health Professionals.....	6
Defining Burnout.....	7
Chapter 3: Methods.....	12
Purpose.....	12
Null Hypothesis.....	12
Alternative Hypothesis.....	12
Participants.....	12
Inclusion Criteria.....	13

Exclusion Criteria.....	13
IRB Approval.....	13
Procedure.....	13
Measures.....	13
Perceived Stress Scale.....	14
Burnout Clinical Subtype Questionnaire, Student Survey.....	14
Demographics.....	14
Delimitations.....	15
Data Analysis.....	15
Chapter 4: Results.....	17
The Relationship between Perceived Stress and Burnout.....	23
Exploratory Analysis: Factors related to Perceived Stress and Burnout.....	26
Exploratory Analysis: Stress Management Strategies.....	28
Chapter 5: Discussion.....	32
Limitations.....	35
Future directions.....	36
Conclusion.....	39
References.....	40
Appendix A: Office of Research Integrity Approval Letter.....	44
Appendix B: Anonymous Survey Consent.....	45
Appendix C: Questionnaire Tool.....	46
Appendix D: Perceived Stress Scale.....	47
Appendix E: Burnout Clinical Subtype Questionnaire: Student Survey.....	48

LIST OF TABLES

Table 1: Demographic Characteristics of Sample Population.....	18
Table 2: School Specific Demographic Characteristics.....	19
Table 3: Descriptive Statistics for Perceived Stress Scale (PSS).....	21
Table 4: Descriptive Statistics for BCSQ-12-SS.....	22
Table 5: Means and Standard Deviations for PSS Totals and BCSQ-12-SS Subscales.....	23
Table 6: Spearman-Rho Correlations between PSS Total Scores and Burnout Items.....	25
Table 7: PSS Total Scores and Burnout Subscale Mean Comparisons for Participants Reporting Stress Management Addressed in AT Curriculum vs. Stress Management Not Addressed in AT Curriculum.....	28
Table 8: Comparisons of PSS Total Scores for Participants Reporting vs. Not Reporting Use of Stress Management Strategies.....	30
Table 9: Comparisons of Overload Burnout Means for Participants Reporting vs. Not Reporting Use of Stress Management Strategies	31

ABSTRACT

Athletic training students can experience stress and symptoms of burnout and there is empirical support for a relationship between stress and burnout in health professions students in fields such as medicine and nursing.¹⁻³ However, prior research on the relationship between stress and burnout has been limited in athletic training students. The purpose of the present study was to examine the relationship between perceived stress and symptoms of burnout in athletic training students. Two hundred thirty athletic training students from 61 institutions completed an online questionnaire consisting of the Perceived Stress Scale (PSS), the Burnout Clinical Subtype Questionnaire - Student Survey (BCSQ-12-SS), and answered questions related to their athletic training student experience and stress management. Higher perceived stress scores were positively correlated to higher reported symptoms in all three burnout subtypes (overload, lack of development, and neglect), with the strongest relationship between perceived stress and symptoms of the overload burnout subtype. Number of classes, number of credit hours, and clinical site placements were unrelated to perceived stress or burnout symptoms. Students reporting that stress management was addressed in the athletic training curriculum had lower levels of perceived stress compared to students who reported that stress management was unaddressed. Students who reported use of a self-care stress management strategy (such as breaks, exercise, or time for themselves) had lower perceived stress scales compared to students who did not report using a self-care strategy. The findings suggest that how students respond to and manage stressors may be more important to the athletic training student experience than the size or type of workload.

CHAPTER 1

INTRODUCTION

Athletic trainers are healthcare professionals who can provide healthcare services to individuals with a wide range of injuries and medical conditions.^{4,5} Similar to other healthcare professions, athletic training can be stressful in many ways. Stress can be from different aspects of the job such as working with coaches, low compensation, and working long hours.^{6,7} Comparable to athletic trainers having stress in their job profession, athletic training students also experience stress in their athletic training programs.⁸ Studies have shown that prolonged stress can lead to burnout within the individual's profession.⁶⁻⁹ The goal of the present study is to gain a better understanding of the experiences of stress in athletic training students. More specifically, the purpose of the present study is to examine the relationship between perceived stress and symptoms of burnout in athletic training students.

A better understanding of the experiences of stress in athletic training students could help students develop effective stress management strategies. In addition, a better understanding of stress in athletic training students could help athletic training education program directors and instructors to determine the extent to which interventions within their curriculum could be incorporated to assist their students with their stress levels. Many studies have shown that stress and anxiety in health professions students during their educational time can carry over to their careers.^{3,10,11} Learning ways to address and manage stress during their athletic training education would allow students to more effectively utilize stress management strategies during their professional careers as athletic trainers. Prior research demonstrates that long periods of stress over time can lead to burnout in athletic training.¹² Providing athletic training students with tools to manage stress could help prevent burnout in the athletic training profession.

Operational Definitions

Athletic Trainers are healthcare professionals who can provide primary care, injury and illness prevention, wellness promotion and education, emergent care, examination and clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions.^{4,5}

Athletic Training Students are students enrolled in a Commission on Accreditation of Athletic Training Education (CAATE) approved athletic training education program.¹³

Stress is the mental or physical response to some type of external stimulus, such as home life, work, school, or health related issues.¹¹

Perceived stress is the feelings or thoughts that an individual has about how much stress they are under at a given point in time or over a given time period.¹⁴

Burnout is a reaction to long term stress that includes three key negative psychological responses such as exhaustion, professional inefficacy, and cynicism.^{3,7,15,16}

Overload is one of the burnout clinical subtypes that describe an individual who invests large amounts of time into their work and their need to succeed overpowers their personal life.¹⁷

Lack of development is one of the burnout clinical subtypes that describes an individual who appears bored and does not find personal development within their work field.¹⁷

Neglect is one of the burnout clinical subtypes that describes an individual who is worn-out by the rigidity of the workplace, lack of recognition, and neglect of responsibilities.¹⁷

Limitations

The limitations of this study include:

1. The participants' understanding of the questionnaire and answering the questions honestly.

2. The choice of the athletic training program director to forward the survey to their students.
3. Interpretation of stress may or may not be increased due to the ongoing Covid-19 pandemic.

Delimitations

The delimitations of this study include:

1. A survey questionnaire that included the Perceived Stress Scale (PSS) and the Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS).
2. The participants included were of at least 18 years of age or older and students in an entry level athletic training program approved by the Commission on Accreditation of Athletic Training Education (CAATE).

Assumptions

The assumptions of this study include:

1. Participants read and complied with all instructions.
2. Participants read the questions asked in their entirety.
3. Participants understood the questions asked.

Statement of the Problem

Athletic training students face intense academic loads like any other health professions student. There is empirical support for a relationship between stress and burnout in health professions students such as medical, nursing, occupational therapy, and dental students.^{2,3,9,10} However, this relationship has been examined in a limited number of studies including athletic training students. Burnout early in the learning period of a health profession is associated with increased likelihood of burnout symptoms later on as a professional.^{2,3,9,10} Given similarities

among athletic training students and other health professions students, the relationship between stress and burnout among athletic training students was further examined. A better understanding of stress in athletic training students could hopefully guide meaningful interventions that will benefit students in their collegiate and professional careers.

Research Question

Is there a relationship between perceived stress and symptoms of burnout subtypes in athletic training students?

Null Hypothesis

There will be no relationship between levels of perceived stress and reported symptoms of burnout in athletic training students. Participants with higher scores on the Perceived Stress Scale (PSS) will not have higher scores on the Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS) subscales.

Alternate Hypothesis

There will be a positive correlation between levels of perceived stress and reported symptoms of burnout in athletic training students. Participants with higher scores on the Perceived Stress Scale (PSS) will have higher scores on the Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS) subscales.

CHAPTER 2

LITERATURE REVIEW

Defining Athletic Training

Athletic trainers are healthcare professionals who can provide primary care, injury and illness prevention, wellness promotion and education, emergent care, examination and clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions.^{4,5}

Athletic trainers are highly qualified and multi-skilled professionals who usually work under and with a physician as well as work within their state regulations and guidelines.^{4,5} The profession of athletic training is a regulated profession in 49 states and in 48 states, it is required the athletic trainer hold a Board of Certification (BOC) credential of “Athletic Trainer Certified” (ATC).⁵

These professionals can work in many different settings such as secondary schools, collegiate settings, hospital settings, physical therapy clinic settings, professional sports settings, and other emerging settings such as performing arts, public safety, military, and occupational health.^{4,5}

Athletic trainers can obtain a bachelor’s degree, a master’s degree, a terminal degree (PhD, EdD), a clinical and doctoral degree.^{4,5} The minimum degree requirement is a bachelor’s degree; however, the profession has moved towards the master’s degree as the minimum level of education.^{4,5}

Defining Athletic Training Students

The Commission on Accreditation of Athletic Training Education (CAATE) oversees athletic training education programs to help define, assess, and improve athletic training education.¹³ Education in the athletic training profession focuses on five domains of clinical practice. The five domains are injury and illness prevention and wellness promotion, examination, assessment and diagnosis, immediate and emergency care, therapeutic

interventions, and healthcare administration and professional responsibility.¹³ Athletic training curriculums allow the students to learn how to prevent, evaluate, diagnose, and treat injuries that pertain to the musculoskeletal system as well as certain general medical conditions.¹³ The students have opportunities to practice those skills learned in class while they are attending clinical rotations. Clinical rotation sites can include settings such as secondary school settings, collegiate level settings, and physical therapy clinics. Other emerging clinical rotation settings include student opportunities with performing arts, public safety, and the military. A recent addition to the CAATE requirements is the immersive component to the clinical experience. The immersive component consists of a minimum four-week period in which the student experiences a day-to-day and week-to-week role as an autonomous athletic trainer.¹³ Upon completion of their coursework and fulfilling the requirements within their CAATE approved program, students are eligible to take the BOC exam to be certified in athletic training.^{5,13} After passing the BOC exam, students are deemed officially certified athletic trainers and can register to obtain their licensure in the states requiring licensure to practice athletic training.^{5,13}

Defining Stress in Health Professionals

The National Institute of Mental Health (NIMH) defines stress as the mental or physical response to some type of external stimulus, such as home life, work, school, or health related issues.¹⁷ The profession of athletic training can be a stressful career as many athletic trainers can be faced with the stress from minimal financial support, high athlete to athletic trainer ratio, and dual role responsibilities.^{6,7,12} Dual role responsibilities are athletic trainers who are also athletic training education instructors, clinical education preceptors, or even athletic training education program directors.^{6,7} Other stressors that are common within the athletic training profession are the relationships with the athletes, administration, coaches, physicians, and even parents of the

athletes.^{6,7} Prolonged stress can lead to burnout within athletic trainers, graduate assistant athletic trainers, athletic training program directors, and athletic training students.^{6,7}

To identify stressors and reasons for dropout, Bowman et al.⁸ conducted interviews with former athletic training students to examine frustrations among athletic training graduates. Based on the interviews, the four primary factors identified as contributing to student frustration were student life strain, influence of others within the program, monotonous clinical experiences, and career considerations.⁸ Stressors cited in the interviews included considerations such as hours required for clinical, time devoted to studying, heavy course loads, being used as a “workhorse” for tasks such as cleaning and non-clinical tasks, and negative feedback from preceptors or other athletic trainers.⁸ Given the numerous frustrations cited by athletic training students, determining the impact of stressors on educational and experiential outcomes would be beneficial in clarifying how to best support stress management efforts for athletic training students. Further investigation of potential psychological correlates of stress, such as burnout, is warranted to understand the impact of stress on athletic training students fully.

Defining Burnout

Burnout can be described as a reaction to long term stress that includes three key negative psychological responses such as exhaustion, professional inefficacy, and cynicism.^{3,7,15,16} Feelings of exhaustion can be described as the inability to offer, emotionally, more than oneself is able to give.¹⁶ Feelings of professional inefficacy can be described as the feelings of not performing tasks or job related activities at an acceptable level.¹⁶ Feelings of cynicism can be described as having a distant or lack of caring attitude towards their work.¹⁶ Oglesby et al.¹² performed a systematic review regarding athletic trainer burnout and discovered that work-family conflict and role strain were reasons for increased levels of stress and burnout. Work-

family conflict was described as a disruption in family life or responsibilities towards family that was directly related to one's work.¹² Athletic trainers work long hours and may have travel responsibilities with teams, which can lead to work-life conflicts. Staffing patterns and high turnover rates within the profession were another reason for work-life conflict as other athletic trainers would have to pick up workloads from not having enough employees.¹² Female athletic trainers expressed that roles of motherhood introduced challenges for balancing home life and work. Role strain was described as athletic trainers' inability to complete tasks within their profession. Many athletic trainers also hold other responsibilities such as educators and preceptors that can increase the risk of role strain within the profession.¹²

Symptoms of burnout in athletic training professionals are not limited to athletic trainers, but also are present in athletic training graduate assistants and students. A study by Mazerolle et al.¹⁸ assessed burnout in graduate assistant certified athletic trainers and found that there were several factors that lead to burnout. Factors such as time commitment, organizational support, administrative responsibilities, and the number of hours worked per week were associated with increased risk of burnout.¹⁸ Collegiate level Division 1 graduate assistant athletic trainers reported more symptoms of stress and burnout compared to secondary school graduate assistant athletic trainers. Also, graduate assistant athletic trainers who had additional roles, such as a teaching assistant, showed increased signs of burnout within the emotional exhaustion and depersonalization standpoints.¹⁸

Several of the studies included in the systematic review of burnout in athletic trainers by Ogelsby et al.¹², and the study of graduate assistants by Mazerolle et al.¹⁸, conceptualized burnout using Maslach's widely used burnout subtypes of emotional exhaustion, depersonalization, and decreased perception of personal accomplishment.^{12,18} The emotional

exhaustion, depersonalization, and decreased personal accomplishment subtypes are comparable to the subtypes used in another burnout inventory, the Burnout Clinical Subtype Questionnaire for students (BCSQ-12-SS) subtypes.^{15,16} Frenetic (overload), under-challenged (lack of development), and worn-out (neglect) are the subtypes used in the BCSQ-12-SS.^{15,16} Montero-Marín et al.¹⁶ examined burnout syndrome among dental students using the Burnout Clinical Subtype Questionnaire for students (BCSQ-12-SS). The subtypes discussed in the study were frenetic (overload), under-challenged (lack of development), and worn-out (neglect).^{16,17,19} Frenetic was described as people who invest large amounts of time into their work and having feelings of overload.^{16,17,19} Under-challenged was described as people who had feelings of boredom, lack of personal development, and were seen in people who usually do mechanical tasks.^{16,17,19} Worn-out was described as people who received lack of recognition to their efforts, felt as if they were losing control over work outcomes, and felt like giving up on their responsibilities.^{16,17,19} In addition to demonstrating that the BCSQ-12-SS questionnaire subtypes were consistent with the characteristics of burnout from the widely used Maslach Burnout Inventory (MBI), Montero-Marín et al.¹⁶ found factors, such as distance from home and time spent studying weekly, that were associated with burnout. Identifying factors related to the burnout subtypes might be helpful in preventing burnout for athletic training students during their education or later on as athletic training professionals.

Stress appears to be a factor related to burnout as prior research demonstrates that symptoms of stress and burnout coincide in health professions students. El-Masry et al.²⁰ examined the relationship between perceived stress and burnout among medical students during their clinical education period and found a significant positive correlation between levels of burnout and perceived stress.²⁰ Over 80% of study participants experienced increased stress and

emotional exhaustion within their final year of clinical education. The findings of this study suggest that higher rates of emotional exhaustion and stress may affect students' behavior, their education progress, and potentially the future care of their patients. Increased rates of emotional exhaustion and stress also increased the likelihood of dropout.²⁰

Similar to studies demonstrating burnout in dental and medical students, another study by Mazerolle et al.²¹ examined student perspectives on burnout among athletic training students. Results suggested that many athletic training students experience burnout symptoms during their education. Similar to athletic trainers' sources of burnout, athletic training students also experience role strain and time commitment as sources of burnout.²¹ Time commitment was a source of burnout due to the multiple responsibilities of an athletic training student, such as clinicals, academic responsibilities, and home life.²¹ Role strain was a source of burnout due to adhering to several different roles including the roles of student, participant in extracurricular activities, member of a sports medicine club, having a part time job, and being a husband/wife.²¹ The students who reported not experiencing burnout gave credit to having social support, time management, and personal time. These students reported that they received social support from their friends, family, and fellow athletic training students with whom they could confide in regarding stressors in their life.²¹ Time management strategies, such as making lists, avoiding procrastination on major assignments, and allowing time for breaks, were also reported as effective in preventing burnout. The results also suggested that students who did experience burnout allotted themselves personal time, such as scheduling a day off from homework and clinicals to engage in enjoyable activities like time with friends, going to the movies, or reading a book.²¹

In conclusion, there are numerous studies examining stress and burnout in health professions such as athletic trainers. There are also many studies on stress and burnout in health profession students such as nursing students, dental students, medical school students, and chiropractic students, but there are fewer studies investigating stress and burnout in athletic training students. Further examination of the relationship between stress and burnout in athletic training students could help inform strategies for preventing burnout in athletic training students.

CHAPTER 3

METHODS

Purpose

The overall purpose of the study is to examine the relationship between perceived stress and symptoms of burnout in athletic training students.

Null Hypothesis

There will be no correlation between levels of perceived stress and reported symptoms of burnout in athletic training students. Participants with higher scores on the Perceived Stress Scale (PSS) will not have higher scores on the Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS) subscales.

Alternate Hypothesis

There will be a positive correlation between levels of perceived stress and reported symptoms of burnout in athletic training students. Participants with higher scores on the Perceived Stress Scale (PSS) will have higher scores on the Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS) subscales.

Participants

Participants were recruited by obtaining program director information from the CAATE website. An e-mail was sent to the program directors stating what the study was about and who would be performing the study. The program directors were then given the consent statement shown in Appendix B and were asked to forward the e-mail containing the consent statement and Qualtrics survey link to their athletic training students.

Inclusion criteria: Undergraduate and graduate students enrolled in an entry-level Bachelor or Master's degree program approved by the Commission on Accreditation of Athletic Training Education (CAATE).

Exclusion criteria: Students under the age of 18, not enrolled in a CAATE approved athletic training program

IRB Approval

This study was approved by the Marshall University Institutional Review Board and was approved on January 25, 2021. IRBNet ID# 1666132 (Appendix A). The consent form (Appendix B) was presented at the start of the survey and consent was confirmed based on survey completion.

Procedure

The procedure included sending a Qualtrics survey link via e-mail to athletic training program directors who could choose to send it to their athletic training students. Upon clicking the questionnaire link, a consent statement was provided describing the nature of the survey. Participants provided consent through completion and submission of the anonymous survey. The questionnaire included the Perceived Stress Scale (PSS) and the Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS). The questionnaire also included demographic information, student information, and program questions, as well as an open-ended question regarding stress management strategies.

Measures

Additional questions. Participants were asked demographic questions including age, gender, race, ethnicity, marital status, and employment status. Student information questions included class year (freshmen, sophomore, junior, senior, 1st year graduate student, and 2nd year

graduate student), financial status (student loans, scholarships), and course load (number of credit hours, number of classes). Program information questions included type of clinical rotation site, type of program (entry-level bachelor's, entry-level master's, master's degree with the 3+2 option), and whether or not stress management was addressed in their athletic training curriculum. Participants were also asked to report their current stress management strategies in an open-ended format (Appendix C).

Perceived Stress Scale (PSS). The Perceived Stress Scale (Appendix D) is designed to measure the perception of stress. It consists of 10 questions that ask about perception of stress within the past month. The PSS works on a 0 to 4 numerical scale where 0 is “never,” 1 is “almost never,” 2 is “sometimes,” 3 is “fairly often,” and 4 is “very often.” The scoring ranges are: 0-13 is considered low stress, 14-26 is considered moderate stress, and 27-40 is considered high perceived stress. Chen Li²⁴ examined the efficacy between the PSS-4, PSS-10, and PSS-14 questionnaires. Pairwise correlation analysis and Spearman's correlation coefficients both showed significant correlations with each other. Subscale for Spearman's rho coefficients showed consistency of subscales between the different PSS scales. Another study examined the Cronbach alpha coefficients for the PSS-14 and found out of the three samples, they were at least 0.84 or higher, with a test-retest reliability coefficient of 0.85,⁹ which means the PSS-10 is comparable to the PSS-4 and PSS-14.

Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS). Burnout Clinical Subtype Questionnaire, Student Survey (Appendix E) is a 12-question survey that asks students certain statements that are related to student life in general. This survey is scored on a 1-7 point scale where 1 is totally disagree, 2 is strongly disagree, 3 is disagree, 4 is undecided, 5 is agree, 6 is strongly agree, and 7 is totally agree. Questions asked are divided into three subtypes such as

neglect, lack of development, and overload. Neglect questions are numbers 3, 6, 9, and 12 on the questionnaire. Lack of development questions are numbers 2, 5, 8, and 11 on the questionnaire. Overload questions are numbers 1, 4, 7, and 10 on the questionnaire. The three subtypes of the BCSQ-12-SS, neglect, lack of development, and overload are comparable to the Maslach Burnout Inventory-General Survey (MBI-GS) subtypes of exhaustion, cynicism, and efficacy based on a study by Montero-Marin et al.¹⁹ comparing the BCSQ-12-SS to the MBI-GS. Cronbach's alpha demonstrated internal consistency for overload was 0.87, lack of development was 0.89, and neglect was 0.85.¹⁹

Delimitations

A Qualtrics survey link was sent to 273 athletic training program directors to multiple universities and colleges. The participants were at least 18 years of age and were currently enrolled in a Commission on Accreditation of Athletic Training Education (CAATE) approved athletic training program. Scales including Perceived Stress Scale (PSS) and Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS) were utilized based on prior research supporting self-report methodology.

Data Analysis

The data analysis consisted of examining the questionnaires for completeness after data was exported from the Qualtrics survey tool to Microsoft Excel and Statistical Package for the Social Science (SPSS). Three participants were missing responses to one item on the PSS, and these participants' data were excluded from any analysis involving the PSS total score.

Descriptive analyses (frequencies and percentages, means and standard deviation) were used to describe the participant sample. The significance level for all statistical analyses was set at $p < 0.05$. Spearman-Rho correlations were performed to assess correlations among Perceived

Stress Scale (PSS) totals and Burnout Clinical Subtype Questionnaire – Student Survey (BCSQ-12-SS) subscale means. Independent samples t-tests and one-way analysis of variance (ANOVA) tests were conducted to compare groups (men vs. women, class years, course loads, etc.) on PSS total scores and BCSQ-12-SS subscale means. Responses to the open-ended question regarding stress management strategies were coded based on identified themes. Independent samples t-test were used to compare PSS and BCSQ-12-SS scores among participants who mentioned each themed stress management strategy compared to students who did not mention the themed strategy in their response.

CHAPTER 4

RESULTS

The questionnaire was sent through a Qualtrics survey link to 273 athletic training program directors and 230 responses from students were obtained. Three participants were missing responses to one item on the PSS, and these participants' data were excluded from any analysis involving the PSS total score. Ages of the participants ranged from 19 to 33 years of age. The majority of the participants were female (73.0%), single or never married (94.4%), white (81.9%), and employed part-time (52.2%). The percentage of students who reported that they had a scholarship was equivalent to students without a scholarship. A higher percentage of students had student loans (74.4%) compared to students who did not have student loans (25.6%). Detailed demographics are listed in Table 1.

Table 1. Demographic Characteristics of Sample Population (N=228)

Characteristics	Percentage (%)
Gender	
Female/trans-female (n=169)	73.47%
Male/trans-male (n=61)	26.52%

Race	
American Indian or Alaska Native (n=6)	2.59%
Asian (n=6)	2.59%
Black or African American (n=21)	9.05%
Native Hawaiian or Other Pacific Islander (n=0)	0%
White (n=190)	81.90%
Other (n=9)	3.88%

Marital Status	
Single, never married (n=217)	94.35%
Married or domestic partner (n=12)	5.22%
Divorced or widowed (n=0)	0%
Separated (n=1)	0.43%

Employment Status	
Full-time (n=5)	2.17%
Part-time (n=120)	52.17%
Not currently employed (n=105)	45.65%

Scholarship	
Yes (n=114)	49.57%
No (n=116)	50.43%

Student loans	
Yes (n=171)	74.35%
No (n=59)	25.65%

The participants from an entry-level bachelor’s degree program consisted of 55.6% of the sample. Students in their senior year of an undergraduate program or the first year of a graduate program comprised more than half of the study sample. Most of the participants were enrolled in four classes (30%) or five classes (32.61%) and 12-14 credit hours (47.83%) was the most common number of credit hours enrolled. Among the sample participants, 70.04% reported being involved with a collegiate sport as their clinical rotation site. More than half of the students (54.82%) reported that stress management was not addressed within their program. Detailed school specific demographic characteristics are listed in Table 2.

Table 2. School Specific Demographic Characteristics (N=228)

Characteristics	Percentage (%)
Type of Program	
Entry-level bachelors (n=128)	55.65%
Entry-level masters (n=97)	42.172%
3+2 bachelors/masters (n=5)	2.17%
<hr style="border-top: 1px dashed black;"/>	
Class year	
Freshmen (n=0)	0%
Sophomore (n=26)	11.30%
Junior (n=38)	16.52%
Senior (n=67)	29.13%
1 st Year Graduate Student (n=67)	29.13%
2 nd Year Graduate Student (n=30)	13.04%
Other (n=2)	0.87%
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Number of classes	
Zero (n=0)	0%
1 (n=0)	0%
2 (n=6)	2.61%
3 (n=21)	9.13%
4 (n=69)	30.00%
5 (n=75)	32.61%
6 (n=39)	16.96%
>6 (n=20)	8.70%
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Credit hours	
Zero (n=0)	0%
1-5 (n=0)	0%
6-8 (n=9)	3.91%

9-11 (n= 32)	13.92%
12-14 (n=110)	47.83%
15-17 (n=60)	26.09%
18-20 (n=18)	7.83%
21+ (n=1)	0.43%

Clinical site

Collegiate Sports (n=166)	70.04%
High School Sports (n=45)	18.99%
Physical Therapy Clinic (n=10)	4.22%
Hospital Setting (n=5)	2.11%
Chiropractic Clinic (n=1)	0.42%
Professional Sports (n=0)	0%
Performing Arts (n=0)	0%
ROTC (n=0)	0%
Other (n=10)	4.22%

Stress Management
addressed in program

Yes (n=68)	29.82%
No (n=125)	54.82%
Not sure (n=35)	15.35%

Descriptive Statistics for the PSS scale are found in Table 3. Table 3 shows the means and standard deviations in the total sample, males/trans-males, and females/trans-females for each of the ten PSS items. The PSS questionnaire can be found in Appendix C.

Table 3. *Descriptive Statistics for Perceived Stress Scale (PSS)*

Question	Total Sample		Male/trans-male		Female/trans-female	
	Mean	SD	Mean	SD	Mean	SD
PSS 1*	2.90	.81	2.70	0.79	2.97	0.81
PSS 2*	2.99	.84	2.79	0.84	3.06	0.82
PSS 3**	3.58	.58	3.26	0.68	3.70	0.49
PSS 4 [^] **	3.14	.69	3.41	0.64	3.04	0.68
PSS 5 [^] *	2.86	.68	3.05	0.64	2.79	0.68
PSS 6*	2.71	.94	2.46	1.06	2.80	0.89
PSS 7 [^] *	3.10	.766	3.28	0.72	3.03	0.78
PSS 8 [^] **	2.85	.77	3.16	0.61	2.74	0.78
PSS 9	2.83	.90	2.66	0.90	2.89	0.90
PSS 10**	2.78	.95	2.44	0.94	2.91	0.93

[^]Items are reverse scored for the PSS total

** $p < .01$, * $p < .05$ (comparing male/transmale vs. female/transfemale)

Descriptive statistics for the BCSQ-12-SS are found in Table 4. Table 4 shows the means and standard deviations in the total sample, males/trans-males, and females/trans-females for each of the twelve BCSQ-12-SS items. The BCSQ-12-SS questionnaire can be found in appendix C.

Table 4. *Descriptive Statistics for BCSQ-12-SS (N = 228)*

Question	Total Sample		Male/Trans-Male		Female/Trans-Female	
	Mean	SD	Mean	SD	Mean	SD
BCSQ 1	4.29	1.44	4.03	1.51	4.39	1.41
BCSQ 2	2.62	1.32	2.69	1.37	2.59	1.30
BCSQ 3	2.80	1.37	2.92	1.43	2.76	1.34
BCSQ 4	4.57	1.56	4.34	1.63	4.64	1.55
BCSQ 5	3.39	1.33	3.30	1.36	3.40	1.32
BCSQ 6	2.63	1.28	2.56	1.20	2.65	1.32
BCSQ 7**	3.60	1.68	3.05	1.69	3.78	1.64
BCSQ 8	2.68	1.48	2.87	1.52	2.61	1.46
BCSQ 9	2.20	1.15	2.03	1.02	2.25	1.20
BCSQ 10**	4.39	1.71	3.77	1.80	4.62	1.63
BCSQ 11	2.48	1.19	2.34	1.10	2.52	1.22
BCSQ 12	2.75	1.31	2.61	1.29	2.79	1.32

** $p < .01$ (comparing male/transmale vs. female/transfemale)

Means and standard deviations in the total sample, males/trans-males, females/trans-females for the PSS total score and BCSQ-12-SS subscales items are shown in Table 5. The scoring ranges for the PSS scale are 0-13 (low stress), 14-26 (moderate stress), and 27-40 (high perceived stress). Mean subtype scores for the BCSQ can range from 1 (totally disagree with all items in the subscale) to a maximum of 7 (totally agree with all items in the subscale).

Table 5. Means and Standard Deviations for PSS Total Score and BCSQ-12-SS Subscales (n=227)

Scale	Total Sample		Male/trans-male		Female/trans-female	
	Mean	SD	Mean	SD	Mean	SD
PSS Total Score*	25.86	5.34	24.45	5.13	26.73	5.17
BCSQ Neglect ^a	2.59	1.05	2.53	0.99	2.61	1.07
BCSQ Overload ^{b*}	4.21	1.25	3.79	1.32	4.35	1.20
BCSQ Lack of Development ^c	2.78	0.99	2.79	0.89	2.77	1.02

* $p < .05$ ** $p < .01$ (comparing male/transmale vs. female/transfemale)

^aNeglect questions 3,6,9 and 12

^bOverload questions 1,4,7 and 10

^cLack of development questions 2,5,8, and 11

The Relationship between Perceived Stress and Burnout

The primary research question was assessing if there was a relationship between perceived stress and symptoms of burnout in athletic training students. The null hypothesis being tested states that there is no correlation between levels of perceived stress and reported symptoms of burnout in athletic training students. According to the null hypothesis, participants scores on the Perceived Stress Scale (PSS) are unrelated to scores on the Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS) subscales.

The alternate hypothesis states that there is a positive correlation between levels of perceived stress and reported symptoms of burnout in athletic training students. According to the

alternative hypothesis, participants with higher scores on the Perceived Stress Scale (PSS) will have higher scores on the Burnout Clinical Subtype Questionnaire, Student Survey (BCSQ-12-SS) subscales.

Spearman-Rho Correlations were used to assess the correlation between the PSS total scores and the BCSQ-12-SS subscale means. Spearman-Rho correlation tests the relationship between nonparametric data and suggests that if one variable increases or decreases, the other variable also increases or decreases.²² Correlations are between +1 and -1, with 0 indicating no relationship. Higher values on either end, +1 or -1, indicate strong correlations.²² However, variables moving in the same direction indicate a positive correlation. Variables moving in the opposite direction indicate a negative correlation. When using Spearman-Rho correlations, 0 to +/- 0.20 is insignificant, +/- 0.21 to +/- 0.40 is weak, +/- 0.41 to +/- 0.60 is moderate, +/- 0.61 to +/- 0.80 is strong, and +/- 0.81 to +/- 1.00 is very strong. The significance level was set at $p \leq 0.05$.²²

Perceived stress scale (PSS) total scores were significantly positively correlated with the overload ($r = 0.55$, $p < 0.001$), lack of development ($r = 0.25$, $p < 0.001$), and neglect ($r = 0.35$, $p < 0.001$) subscale means, indicating that higher PSS total scores were related to higher scores on all three burnout subscales. The correlation between PSS total score and the overload subscale was moderate, whereas the correlations between the PSS total score and the neglect and lack of development subscales were weak.

Spearman-Rho Correlations were also conducted to determine the correlation between PSS Total Score and specific items on the BCSQ-12-SS, as shown in Table 6. There was a statistically significant difference between PSS Total Score and all BCSQ-12-SS items, except for Item 2 (I would like to study something else that would be more challenging to my abilities).

The items with the strongest correlations with PSS total scores were item 7 (I am endangering my health in pursuing good results in my studies), item 10 (I ignore my own needs to satisfy the requirements of my studies), and item 4 (I neglect my personal life due to pursuing great objectives in studying). Correlations between PSS Total Score and items 7, 10, and 4 were moderate in strength, whereas correlations between PSS Total Score and items 1, 3, 5, 6, 8, 9, 11, and 12 were considered weak correlations.

Table 6. *Spearman-Rho Correlations between PSS Total Score and Burnout Items (n=227)*

Item	Spearman-Rho Correlation with PSS Total (r)
BCSQ 1 I think I invest more than is healthy in my commitment to my studies	0.25**
BCSQ 2 I would like to study something else that would be more challenging to my abilities	0.06
BCSQ 3 When the results of my studies are not good at all, I stop making an effort	0.23**
BCSQ 4 I neglect my personal life due to pursuing great objectives in studying	0.43**
BCSQ 5 I feel that my current studies are hampering the development of my abilities.	0.32**
BCSQ 6 I give up in response to an obstacle in my studies	0.36**
BCSQ 7 I am endangering my health in pursuing good results in my studies	0.53**
BCSQ 8 I would like to study something else in which I could better develop my talent	0.18**
BCSQ 9 I give up when faced with any difficulty in my tasks as a student	0.23**
BCSQ 10 I ignore my own needs to satisfy the requirements of my studies	0.53**
BCSQ 11 My studies do not provide me with opportunities to develop my abilities	0.25**
BCSQ 12 When the effort invested in studying is not enough, I give up	0.35**

** $p < .01$

Exploratory Analysis: Factors related to Perceived Stress and Burnout

Independent samples t-tests and one-way analysis of variance (ANOVA) tests were conducted to examine factors related to perceived stress and burnout subscale scores, including the number of classes, credit hours, class year, gender, and whether stress was addressed the athletic training curriculum.

Perceived stress and burnout subscale scores were compared among students taking two classes, three classes, four classes, five classes, six classes, and more than six classes. There were no statistically significant differences among groups means of total perceived stress score as determined by one-way ANOVA ($F(5, 221) = 1.770, p = .120$). Although not statistically significant, participants with more classes had a lower mean for total PSS score as students taking more than six classes had the lowest mean total perceived stress score ($M = 23.21, SD = 5.19$). Similarly, there were no statistically significant differences among the different number of class groups: overload burnout subscale, lack of development burnout subscale, or neglect burnout subscale. Perceived stress and burnout subscale scores were compared among students taking 6-8 credit hours, 9-12 credit hours, 13-15 credit hours, 18-20 credit hours, and more than 21 credit hours. Consistent with the results for number of classes, there were no statistically significant differences among groups means of total perceived stress score. Although not statistically significant, participants who were taking 18+ credit hours ($M = 24.32, SD = 4.94$) had a lower mean PSS total scores compared to students taking 17 or less credit hours ($M = 26.00, SD = 5.37$), $t(225) = 1.320, p = .189$. However, independent samples t-tests showed that participants who were taking 18+ credit hours had statistically significant lower mean scores compared to students taking 17 or less credit hours in the overload ($t(228) = 2.164, p = .031$),

lack of development ($t(228) = 2.272, p = .008$), and neglect ($t(228) = 3.018, p = .003$) burnout subscales.

Perceived stress and burnout subscale scores were compared among participants in different class years (sophomore, junior, senior, first-year graduate school, and second-year graduate school). One-way ANOVA tests showed no statistically significant differences among class year groups, including perceived stress score, overload burnout subscale, lack of development burnout subscale, or neglect burnout subscale. Independent samples t-tests also showed no statistically significant differences between graduate students and undergraduate students in total perceived stress score and mean burnout subscale scores.

Independent samples t-tests showed a significant difference between collegiate sport clinical placements and high school sport clinical placements in PSS total score, $t(202) = 2.114, p = 0.036$. Total scores of participants in collegiate sport placements on the PSS ($M = 26.21, SD = 5.27$) were significantly higher than total PSS scores for students in high school sport clinical placements ($M = 24.25, SD = 5.24$). There were no statistically significant differences between participants in collegiate sport clinical placements and high school sport clinical placements on the burnout subscales. Although mean total PSS scores were higher among participants in health/medical clinical placements than in sport clinical placements, this difference was not statistically significant.

Independent samples t-tests showed a significant difference between males and females in PSS total score, $t(188) = -2.173, p = 0.031$. Total scores of females on the PSS ($M = 26.60, SD = 5.59$) were significantly higher than total PSS scores for males ($M = 24.82, SD = 4.93$). There was also a significant difference between males and females in the overload subscale of the BSCQ-12-SS, $t(188) = -2.173, p = .031$. Mean scores of females on the overload subscale (M

= 3.80, $SD = 1.32$) were significantly higher than mean overload subscale scores for males ($M = 4.36$, $SD = 1.20$). There were no statistically significant differences between males and females on the lack of development or neglect burnout subscales.

Independent samples t-tests were used to assess perceived stress and burnout symptoms in participants who reported stress management addressed in their athletic training curriculum compared to participants who reported stress management was not addressed in their athletic training curriculum. There was a statistically significant difference in perceived stress and overload burnout subscale scores between participants who responded “yes” (stress management addressed in the curriculum) compared to participants who answered “no” (stress management not addressed in the curriculum), as shown in Table 7.

Table 7. PSS Total Score and Burnout Subscale Means Comparison of Participants Reporting Stress Management Addressed in AT Curriculum vs. Stress Management Not Addressed in AT Curriculum (N=227)

Stress Management Addressed	Yes			No		
	N	Mean	SD	N	Mean	SD
PSS Total**	66	24.81	4.93	124	26.59	5.59
BCSQ Overload**	68	3.92	1.12	125	4.39	1.25
BCSQ Lack of Development	68	2.75	0.85	125	2.80	1.05
BCSQ Neglect	68	2.47	1.05	125	2.66	1.06

** $p < 0.01$

Exploratory Analysis: Stress Management Strategies

Responses to the open-ended question (“What do you do to manage stress as an athletic training student? Please describe anything you currently do to manage stress:”) regarding stress management were thematically categorized into eleven categories, including (1) exercise,

(2)planning/time management, (3) helplessness, (4)breaks, (5) self-care/time for self, (6) sleep, (7) drinking, (8) religion prayer, spiritual, or meditation/breathing, (9) seeking support or spending time with family/friends, (10) cognitive approaches (such as a change in perception or positive self-talk), and (11) movie/TV/video games.

Independent samples t-tests were conducted to compare PSS total scores (Table 8) and overload burnout subscale (Table 9) of students who mentioned stress management strategies compared to students who did not mention stress management strategies. Participants who mentioned “breaks” as a stress management technique had statistically significantly lower PSS total scores compared to those who did not mention “break” as a stress management technique, as shown in Table 8. Examples of responses that were coded as breaks are: “schedule time for myself,” “take breaks to keep myself refreshed,” “take breaks/talk with friends,” “take breaks and reflect,” and “having a set time for myself every day.” However, there was not a statistically significant difference in burnout subscale scores between students who mentioned breaks compared to students who did not mention breaks, as shown in Table 9.

Participants who mentioned religion as a stress management strategy had lower perceived stress scores and lower overload subscale mean scores compared to participants who did not mention religion. When comparing students who mention self-care as a stress management strategy to students who did not mention self-care, there was a statistically significant difference in PSS totals and overload burnout subscale.

Students who provided a response indicating a sense of helplessness or avoidance compared to students who indicated an active stress management strategy had statistically significant higher PSS totals and burnout overload subscale mean scores. Examples of responses that were coded as helplessness are: “Ignore it,” “cry,” “It is inevitable,” and “procrastinate.”

The following comparisons of stress management strategies among students showed no statistically significant differences in their PSS totals and burnout subscales: exercise/working out vs. no exercise/working out, sleep vs. no mention of sleep, movie/TV/video games vs. no mention of movie/TV/video games, cognitive reappraisal vs. no mention indicating cognitive reappraisal, and support/friends vs. no mention of support/friends.

Table 8. Comparisons of PSS Total scores for Participants Reporting vs. Not Reporting Use of Stress Management Strategies

Categories	Reported Use			Did Not Report Use			<i>t</i>
	N	Mean	SD	N	Mean	SD	
Exercise	64	25.40	5.37	145	26.09	5.15	.881
Planning/time management	35	25.31	5.60	174	26.00	5.15	.709
Helplessness**	24	30.50	3.00	185	25.28	5.15	-4.850
Breaks*	49	24.28	5.19	160	26.37	5.14	2.484
Self-care/time for self**	70	24.38	5.12	139	26.64	5.12	3.006
Sleep	25	26.16	5.93	184	25.84	5.13	-.280
Drinking	7	24.57	7.28	202	25.93	5.15	.677
Religion prayer, spiritual, or meditation/breathing*	17	23.00	3.57	191	26.18	5.24	2.456
Seeking support or spending time with family/friends	48	24.89	4.52	161	26.18	5.39	1.502
Cognitive approaches such as change in perception or positive self-talk	4	24.00	4.32	204	25.91	5.24	.724
Movie/TV/video games	18	25.27	5.15	191	25.94	5.23	.516

* $p < 0.05$, ** $p < .0$

Table 9. Comparisons of Overload Burnout Means for Participants Reporting vs. Not Reporting Use of Stress Management Strategies

Categories	Reported Use			Did Not Report Use			<i>t</i>
	N	Mean	SD	N	Mean	SD	
Exercise	65	4.28	1.12	146	4.18	1.29	-.549
Planning/time management	36	4.22	1.26	175	4.21	1.24	-.004
Helplessness*	24	4.69	1.23	187	4.15	1.23	-2.005
Breaks	49	3.97	1.16	162	4.28	1.25	1.555
Self-care/time for self**	70	3.86	1.26	141	4.39	1.19	2.982
Sleep	25	4.09	1.33	184	4.23	1.23	.535
Drinking	7	4.00	1.49	204	4.22	1.23	.466
Religion prayer, spiritual, or meditation/breathing*	18	3.65	1.13	192	4.28	1.23	2.456
Seeking support or spending time with family/friends	49	4.29	1.26	162	3.98	1.12	1.555
Cognitive approaches such as change in perception or positive self-talk	4	5.18	.38	206	4.20	1.24	-1.589
Movie/TV/video games	18	3.97	1.39	193	4.23	1.23	.868

* $p < 0.05$, ** $p < .01$

In summary, there was a positive correlation between perceived stress and burnout subscales. Perceived stress was most strongly correlated with items on the overload burnout subscale. Exploratory analysis showed gender differences in perceived stress and burnout, as well as stress management strategies (such as self-care and religion), were related to lower perceived stress and burnout.

CHAPTER 5

DISCUSSION

The purpose of this study was to examine the relationship between perceived stress and symptoms of burnout in athletic training students. The main research (alternative) hypothesis was that there is a positive correlation between levels of perceived stress and reported symptoms of burnout in athletic training students. Athletic training students with higher PSS scores also reported higher BCSQ-12-SS means. Among the three burnout subtypes, perceived stress was most strongly correlated with the overload subtype.

The current study's findings that higher levels of perceived stress are related to higher levels of overload burnout subtype coincide with the findings by Montero-Marín et al.²³ on dental students. Dental students had higher means on the overload questions compared to means on the lack of development and neglect subscales. Athletic training students also had higher means on three of the overload questions which were, "I neglect my personal life due to pursuing great objectives in studying," "I am endangering my health in pursuing good results in my studies," and "I ignore my own needs to satisfy the requirements of my studies." If athletic training students are neglecting their personal life, endangering their own health, and ignoring their own needs to pursue academic success, that is not good for their well-being and mental health.

Based on the correlational nature of the study it is unknown if burnout symptoms lead to increased perceptions of stress, or if perceived stress leads to an increased likelihood of burnout symptoms. The positive correlation between perceived stress and burnout symptoms also could be due to other factors that simultaneously increase perceived stress and burnout.

One potential factor that was expected to be related to increased perceived stress and burnout was course load. An interesting finding was that course load, whether it was number of

classes or number of credit hours taken, was unrelated to stress and burnout. In fact, although not statistically significant, participants who took more class and more credit hours had lower perceived stress total scores. It is possible that there is a relationship between course load and stress/burnout that was not found. A potential explanation for the lack of relationship between number of classes and perceived stress and burnout could be that students with very high course loads did not participate in the study and therefore, the study had a small sample size of participants taking more classes and more credit hours. However, it is possible that there is actually no relationship between course load and perceived stress or burnout. Participants with high course loads could use more or better stress management strategies compared to others who do not have high course loads. Perceived stress can be conceptualized as an interpretation of situations rather than the nature of the actual event.¹⁴ There is the possibility that the interpretation and coping to the perception of stress matters more than the actual time commitment of a higher course load. The lack of relationship between course load and stress in the present study does not suggest that a lighter load will reduce perceived stress or burnout among students.

Another result from the present study consistent with prior research was the gender differences between males and females regarding stress and burnout. Previous research suggests that females report more stress and burnout than males.²⁴ In the present study, females had statistically significant higher perceived stress and overload burnout subscales scores compared to males. The majority of the participants in the current study were female (73.47%), which accurately reflects the percentages of male and female students in athletic training programs, according to CAATE reports. Past CAATE reports state that more females enroll into a CAATE

approved athletic training program compared to males.¹³ Therefore, the results could be skewed towards more females answering than males.

Prior research has suggested that females tend to experience more stress due to family obligations than males.²⁵ There are many young female athletic trainers who go into the field of athletic training in the most common setting, which is collegiate, but those women tend to leave that setting after the age of 30.²⁵ Prior research has found that the reasoning behind this trend could be due to family obligations. Many young female AT's felt they could not keep up with the demands of the normal athletic training settings and have a family. Therefore, they moved onto other jobs within the athletic training industry that allowed them to have a rather normal work schedule.²⁵

There were also statistically significant differences in stress management within participants who reported that stress management was addressed in their athletic training curriculum compared to participants who reported that stress management was not addressed in their curriculum. The results of the current study suggest that students who mentioned stress management being a part of their curriculum had lower PSS totals and BCSQ burnout subscale means. Students who reported that stress management was not in their AT curriculum, had higher levels of PSS totals and burnout overload subscale means. Although students may not be able to accurately report if stress management is addressed due to lack of familiarity with future content or misremembering past content, the findings suggest that addressing stress management at the program level may play a role in lower perceived stress and burnout symptoms for AT students. Future research studies aimed at identifying how and when stress management is typically addressed in the AT curriculum would be beneficial in making programmatic efforts more effective.

Additional findings regarding the use of stress management strategies showed that students who mentioned taking breaks or self-care had significantly lower perceived stress scores compared to students who mentioned other tools for managing stress. Based on the correlational nature of the study, it is unclear whether breaks or self-care was the cause for lower perceived stress or if other factors could explain the lower perceived stress among students who took breaks. Self-care, time for self, and breaks are related to lower symptoms of burnout as the data suggests. This finding suggests that regardless of course load or clinical placement, students take time for self-care activities, and that faculty and supervisors support student's self-care efforts.

Limitations

The administration and format of the survey for the present study could have potentially impacted the results. The timing of the survey administration could be a limitation as the survey was sent out in February 2021 during the coronavirus pandemic. Students who responded may have been more stressed or had other stressors outside of school that impacted their answers to the survey, which could have caused an increase in their perception of stress and an increase in their total scores on the PSS and BCSQ-12-SS means. Although participants were from 61 different institutions across the United States, it is unknown whether the sample is truly representative of all athletic training students. It is possible that students experiencing high stress may have been more likely to respond if they felt the topic of stress was important to them, which would also cause an increase of participants involved and potentially cause an increase in their PSS total scores and BCSQ-12-SS means. On the other hand, students with high levels of stress might have not responded because completing the survey could be perceived as another added stressor.

The format of the survey also could have impacted results. The PSS includes four reverse scored items. Adding up reverse scored items in the PSS could also be a limitation. A study by Suárez-Alvarez et al.²⁶ suggests that the cognitive process of each participant is not the same and can make reverse scored item questionnaires problematic. For example, one student's interpretation of the questions and how the student answers reverse scored items may not be the same as another student's interpretation of the question and way of answering. Students with better cognitive and verbal skills have an increased likelihood of understanding the reversed item questions better than students whose cognitive and verbal skills are lower.

Another limitation of the survey format is that survey type questionnaires can be impersonal and could therefore lead to surface level answers by participants. It is possible that the participants were not sure how to answer a question and a face-to-face or phone call interview could have clarified the questions for the participants.

Future directions

A more in-depth investigation of college students and programmatic or social factors that are stressors could be future research within the athletic training student population. The athletic training student experience may differ based on cohort size, clinical experience opportunities, and specific program requirements. Clinical expectations may also make a difference in stress as some students may have a great clinical experience and have their expectations met. Another student may have a terrible experience with their clinical rotation that does not meet the student's expectations. A qualitative research study by McCleese et al.²⁷ assessed the main themes and identified relationships, lack of resources, expectations, academics, environment, transition to university, diversity, and a category of "other" as main themes of college stressors.²⁷ Academics as a main stressor coincide with previous research within athletic training students such as the

study previously mentioned by Mazerolle et al.²¹ who examined student perspectives on burnout. Sources of burnout were from academics and home life among other responsibilities such as clinical assignments.

Although the current study included one open-ended question on stress management, the survey format's closed-ended nature might have limited participants' abilities to fully convey their experience of stress as an athletic training student. Additional studies, including qualitative analysis of interviews, would better explain the complexities of the students' experiences. For example, focus groups and interviews were used to deduce themes of academic burden, non-academic stressors and coping with stress that arose in a study by Daud et al.²⁸ of stress in medical students.

In another study by Ahmen Al-Naggar et al.²⁹ of medical students using a focus group/interview methodology, sleep and going out with friends were identified as the most frequently reported stress management strategies. Using the interview methodology may have better results as this method is more personable than just taking a survey. Several students in the focus group/interview methodology mentioned that sharing problems with trusted people and being able to talk about problems helped with their overall mood. There is the possibility that the researchers doing the interview developed a trustworthy rapport with these participants to allow them to be open and honest with their answers. Taking the interview methodology stance in further research regarding stress and burnout among athletic training students could be beneficial in determining the stressors that the athletic training students may be facing.

Coping strategies and how students react to stressors in their lives could also be a future study that could be beneficial in the movement towards stress management being a part of athletic training curriculums. A study by Forlini et al.³⁰ regarding coping strategies and the use of

pharmaceutical stimulants as cognitive enhancers among Australian University students was conducted and found that there were three main focuses for coping.

Emotion-focused, problem-focused, and adjustment-focused stress management strategies were common categories among college students. Emotion-focused coping targets the emotions and feelings caused by the stressor.³⁰ Examples of emotion-focused coping are seeking support, switching activities, and avoiding the problem with social media, sleep, TV, etc.³⁰ Problem-focused coping targets the main stressor that is causing the stress. Examples of problem-focused coping are planning, organizing, exercise, and academic support. Adjustment-focused coping targets the way a person thinks about the stressor.³⁰ Similarly, a study by Reed et al.³¹ regarding stress and coping responses of certified graduate athletic training students found similar coping strategies such as planning, social support, emotional support, and activities outside of the profession or schoolwork.³¹ In the current study, different stress management strategies were determined by asking the athletic training students what they did to manage their stress. Still, it would be interesting to specifically examine their coping strategies similar to Forlini et al.³⁰ Additional in-depth information about the athletic training students' categories of coping strategies could potentially be beneficial to identify typical behavioral cycles when athletic training students are faced with stressful situations.

Future research studies of stress management could also help to determine the specific stressors (stressful events or situations) that athletic training students face. It would be helpful to explore if students who report a greater number of stressors also had higher perceived stress scores, or if students who reported fewer stressors had lower perceived stress scores. There is the possibility that perceived stress is unrelated to the actual stressors themselves. There is also the possibility that students who have more stressors have lower perceived stress scores because they

can manage their stressors more effectively. Future studies on how athletic training students cope with their stress would be helpful to differentiate effective versus ineffective coping strategies. Future studies of stress management interventions for athletic training students would help to inform directions for athletic training programs and students, and hopefully better prepare students to manage stress as future professionals in the athletic training field.

Conclusion

In conclusion, the present study demonstrated that perceived stress was positively correlated to higher reported symptoms in all three burnout subtypes (overload, lack of development, and neglect), with the strongest relationship between perceived stress and symptoms of the overload burnout subtype. Workload (number of classes and credit hours) was unrelated to perceived stress and burnout. Athletic training students who reported use of stress management strategies, such as breaks or self-care activities, had lower perceived stress scale scores. Athletic training program's who addressed stress management in their curriculum showed lower perceived stress and burnout symptoms. The findings suggest that how students respond to and manage stressors may impact perceived stress more than workload. Future research is needed to identify primary sources of stress and to identify the most effective stress management strategies for athletic training students.

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Appendix A

Office of Research Integrity Approval Letter



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Office of Research Integrity
Institutional Review Board
One John Marshall Drive
Huntington, WV 25755

FWA 00002704

IRB1 #00002205
IRB2 #00003206

January 25, 2021

Elizabeth Pacioles

Health Sciences Department

RE: IRBNet ID# 1666132-1

At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Pacioles:

Protocol Title: [1666132-1] Stress Among Athletic Training Students

Site Location: MU

Submission Type: New Project APPROVED

Review Type: Exempt Review

In accordance with 45CFR46.104(d)(2), the above study was granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Designee. No further submission (or closure) is required for an Exempt study **unless** there is an amendment to the study. All amendments must be submitted and approved by the IRB Chair/Designee.

This study is for student Desiree Daniels.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral) Coordinator Anna Robinson at (304) 696-2477 or robinsonn1@marshall.edu. Please include your study title and reference number in all correspondence with this office.

Sincerely,

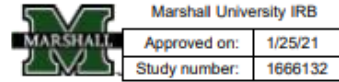
A handwritten signature in blue ink that reads 'Bruce F. Day'.

Bruce F. Day, ThD, CIP
Director, Office of Research Integrity

Appendix B

Anonymous Survey Consent

Anonymous Survey Consent



You are invited to participate in a research project entitled “Stress Among Athletic Training Students” designed to better understand stress among athletic training students. The study is being conducted by Elizabeth Pacioles and Desiree Daniels from Marshall University. This research is being conducted as part of the thesis requirement for Desiree Daniels and has been approved by the Marshall University Institutional Review Board (IRB).

This survey is comprised of 20 questions and will take approximately 10 minutes to complete. Your replies will be anonymous, so do not type your name anywhere on the form. There are no known risks involved with this study. Some questions address topics such as student stress and anxiety, which could potentially be uncomfortable or unsettling to think about. However, it might also be beneficial to reflect upon stressful student experiences. You may choose to not answer any question by simply leaving it blank. Participation is completely voluntary and there will be no penalty or loss of benefits if you choose to not participate in this research study or to withdraw. If you choose not to participate, you can leave the survey site. Once you complete the survey, you can delete your browsing history for added security. Completing the online survey indicates your consent for use of the answers you supply. If you have any questions about the study you may contact Elizabeth Pacioles at 304-696-5831, Desiree Daniels at daniels109@marshall.edu.

If you have any questions concerning your rights as a research participant you may contact the Marshall University Office of Research Integrity at (304) 696-4303. By completing this survey and returning it you are also confirming that you are 18 years of age or older.

Please keep this page for your records.

Appendix C

Questionnaire Tool

Questionnaire

What is your class year?

Select the following that apply: male, female, trans-male, trans-female, or prefer not to say

Current age:

Are you of Hispanic, Latino, or of Spanish origin? Yes or no.

How would you describe yourself? Check all that apply. American Indian or Alaska Native, Black or African American, Native Hawaiian or Other Pacific Islander, White, or other.

What is the current number of classes you are taking? Zero, 1, 2, 3, 4, 5, or more than 5.

What is your current number of total credit hours?

What is your marital status? Single, never married, married or domestic partnership, widowed, divorced, or separated.

What is your employment status? Work full time, work part time, or not currently employed.

Select which of the following applies to you: I have a scholarship or I do not have a scholarship.

Select which of the following applies to you: I have student loans or I do not have student loans.

Please select your current clinical site placement:

Select the type of athletic training program in which you are currently enrolled:

What do you do to manage stress as an athletic training student? Please describe anything you currently do to manage stress:

Is stress management for athletic training students addressed in your athletic training curriculum?

Yes, no, or not sure.

If yes, please explain how stress management is addressed.

Appendix D

Perceived Stress Scale

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

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

In the last month, how often have you been upset because of something that happened unexpectedly?

In the last month, how often have you felt that you were unable to control the important things in your life?

In the last month, how often have you felt nervous and “stressed”?

In the last month, how often have you felt confident about your ability to handle your personal problems?

In the last month, how often have you felt that things were going your way?

In the last month, how often have you found that you could not cope with all the things that you had to do?

In the last month, how often have you been able to control irritations in your life?

In the last month, how often have you felt that you were on top of things?

In the last month, how often have you been angered because of things that were outside of your control?

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Appendix E

Burnout Clinical Subtype Questionnaire, Student Survey

1 Totally disagree, 2 Strongly disagree, 3 Disagree, 4 Undecided, 5 Agree, 6 Strongly agree, and
7 Totally agree

I think I invest more than is healthy in my commitment to my studies

I would like to study something else that would be more challenging to my abilities

When the results of my studies are not good at all, I stop making an effort

I neglect my personal life due to pursuing great objectives in studying

I feel that my current studies are hampering the development of my abilities

I give up in response to an obstacle in my studies

I am endangering my health in pursuing good results in my studies

I would like to study something else in which I could better develop my talent

I give up when faced with any difficulty in my tasks as a student

I ignore my own needs to satisfy the requirements of my studies

My studies do not provide me with opportunities to develop my abilities

When the effort invested in studying is not enough, I give up