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## Stressed Fracture: The Relationship Between Coping Strategies and Workload in Secondary School Athletic Trainers

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## Stressed Fracture: The Relationship Between Coping Strategies and Workload in Secondary School Athletic Trainers

### Abstract

**Purpose:** The work environment for an athletic trainer (AT) working in a secondary school is typified by heavy workloads and job-related stress. Occupational stress can have negative effects on productivity, absenteeism, employee turnover, and quality of life. Research suggests that personal and situational factors can influence the coping process adopted by an individual. The approach-avoidance framework suggests that people cope with a stressor by either attempting to reduce it or removing oneself from that stressor. Previous research on other healthcare professionals suggested that use of avoidance coping was correlated with higher levels of job stress and those who perceived greater social support possessed lower work-related stress. However, the relationship between coping strategies and perceived social support has not been examined in ATs. The purpose of this study was to examine the relationship among coping strategies, perceived social support, and workload in secondary school ATs. **Method:** This was a cross-sectional study completed via an online survey. Three hundred, ninety-two (392) secondary school athletic trainers ( $35.7 \pm 11.1$  years old) from all NATA districts responded to the survey. Outcomes included the Brief COPE, Multidimensional Scale of Perceived Social Support, and average hours worked. **Results:** The average workload reported was  $44.10 \pm 12.96$  hours a week over the school year (i.e., fall and spring). The regression model showed that avoidant coping ( $B=0.34$ , 95% CI=0.12, 0.56,  $p=.005$ ) was directly associated with the average number of hours worked (adjusted  $R^2=.07$ ). Approach coping ( $B=-0.28$ , 95% CI=-0.43, -0.12,  $p=.007$ ) was indirectly associated with the average numbers of hours worked. However, perceived social support did not display a significant association with any variable of interest. **Conclusions:** Our findings suggest that a relationship between average workload and coping strategies adopted by secondary school ATs may exist. Increased workloads were related to increases in avoidance coping strategies. Further research in this area is needed to determine how coping strategies affect patient care.

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### ABSTRACT

**Purpose:** The work environment for an athletic trainer (AT) working in a secondary school is typified by heavy workloads and job-related stress. Occupational stress can have negative effects on productivity, absenteeism, employee turnover, and quality of life. Research suggests that personal and situational factors can influence the coping process adopted by an individual. The approach-avoidance framework suggests that people cope with a stressor by either attempting to reduce it or removing oneself from that stressor. Previous research on other healthcare professionals suggested that use of avoidance coping was correlated with higher levels of job stress and those who perceived greater social support possessed lower work-related stress. However, the relationship between coping strategies and perceived social support has not been examined in ATs. The purpose of this study was to examine the relationship among coping strategies, perceived social support, and workload in secondary school ATs. **Method:** This was a cross-sectional study completed via an online survey. Three hundred, ninety-two (392) secondary school athletic trainers (35.7 ± 11.1 years old) from all NATA districts responded to the survey. Outcomes included the Brief COPE, Multidimensional Scale of Perceived Social Support, and average hours worked. **Results:** The average workload reported was 44.10 ± 12.96 hours a week over the school year (i.e., fall and spring). The regression model showed that avoidant coping (B=0.34, 95% CI=0.12, 0.56, p=.005) was directly associated with the average number of hours worked (adjusted R<sup>2</sup>=.07). Approach coping (B=-0.28, 95% CI=-0.43, -0.12, p=.007) was indirectly associated with the average numbers of hours worked. However, perceived social support did not display a significant association with any variable of interest. **Conclusions:** Our findings suggest that a relationship between average workload and coping strategies adopted by secondary school ATs may exist. Increased workloads were related to increases in avoidance coping strategies. Further research in this area is needed to determine how coping strategies affect patient care.

**Keywords:** social support, avoidant coping, approach coping

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## INTRODUCTION

Recent membership reports from the National Athletic Trainers' Association (NATA) showed that just over a quarter (25.6%) of its total membership worked in secondary schools.<sup>1</sup> This represented the second largest block of membership, second only to the college/university setting (27.2%).<sup>1</sup> Unlike the college/university setting, most secondary schools only employ one athletic trainer (AT) which can lead to increased workloads. Despite the number of ATs working in the secondary school setting, little research exists on how those ATs cope with their workloads.

Research has shown that athletic trainers are prone to working long hours to complete the tasks required of the job.<sup>2,3</sup> Winkelmann and Eberman reported that the majority of secondary school ATs report working between 31 and 60 hours per week.<sup>3</sup> Secondary school ATs workloads, as with most ATs, are unique in that they are often responsible for the totality of patient care as well as other duties usually not required of other healthcare professionals (e.g., administration, practice setup). The day-to-day workload of secondary school ATs suggest that they complete tasks related to injury/illness prevention and wellness, clinical evaluation of various (e.g., orthopedic, general medical) conditions, treatment and rehabilitation of injuries, administrative responsibilities, as well as immediate and emergency care.<sup>3</sup> In one study, approximately 25% of secondary school ATs in the sample also had some teaching responsibilities.<sup>3</sup> This research also found that the number of ATs employed at a secondary school can have an effect on the stresses experienced by those ATs, as well as the perceived stress in their daily practice.<sup>3</sup> To date, studies of secondary school ATs have primarily focused on how increases in workload or patient load are correlated with experiencing burnout and work-life conflict.<sup>4-6</sup> One recent study also found that younger ATs and females were more likely to suffer from burnout.<sup>4</sup> It is essential to better understand how secondary school ATs cope with the stresses of the position given the number of duties they must fulfill, the large time demands of the job, as well as the high rates of burnout and turnover. Identifying the relationship between workloads and coping mechanisms employed by secondary school ATs can highlight areas of concern that could affect higher rates of burnout and reduced patient care.

## Coping

Coping can be defined as cognitive and behavioral efforts used to manage specific demands an individual identifies as taxing or exceeding the resources of that person.<sup>7</sup> The Brief Coping Orientations to Problems Experienced (Brief COPE) scale is used to quantify the extent to which a person uses avoidance (e.g., denial, substance use) and approach (e.g., emotional support, positive reframing) coping mechanisms that are typically employed by a person to manage stressors.<sup>8-11</sup> Research has shown that avoidant coping strategies are less effective at managing anxiety when compared to approach strategies.<sup>8,12</sup> The ability to cope with stressors is vital to healthcare professionals. Studies have found that the inability to effectively cope with the demands of healthcare can negatively affect the clinician's mental health (e.g., depression, anxiety) and patient care outcomes.<sup>11,13-15</sup>

Studies examining coping strategies among ATs have predominately been included in examinations of burnout in samples of athletic trainers.<sup>16-19</sup> In these studies burnout was defined as a reaction to chronic stress that involves negative interactions between environmental and personal characteristics that is often caused by working too hard for too long in high pressure situations.<sup>16-19</sup> Despite the positive contributions of these studies, they have mainly focused on describing the coping techniques used and have not used a validated scale such as the Brief COPE to categorize or quantify the strategies employed to manage stress. Among existing studies, collegiate ATs reported using positive reframing, planning, and emotional support as adaptive type coping mechanisms to manage occupational stresses.<sup>16-20</sup> Studies have consistently demonstrated that emotional support and staff support are important coping factors for the reduction of burnout, and increasing retention among ATs working in the collegiate and secondary school settings.<sup>4,21-23</sup>

By contrast, samples of ATs have also reported substance abuse, behavioral disengagement (e.g., depersonalization), and an intention to leave the profession (i.e., avoidance) as negative coping strategies.<sup>4,24,25</sup> A recent examination of substance abuse among collegiate athletic trainers found that nearly half (46.3%) of the sample admitted to engaging in at least one binge-drinking episode during the preceding 30 days.<sup>24</sup> The study also reported that 3.5% of the sample used marijuana, 1.4% smoked cigarettes, and 5.2% used smokeless tobacco during the same time frame.<sup>24</sup> The literature is also replete with studies of burnout among both secondary school and collegiate ATs that have shown that depersonalization is a common mechanism for dealing with workplace stresses.<sup>24</sup> Also, ATs working in those settings who cannot develop positive coping strategies typically intend to leave the profession altogether.<sup>23</sup>

To date, research among ATs has yet to use a validated scale to assess the coping mechanisms employed by ATs working in the secondary school setting. Further, published studies have not reported whether a relationship exists between a secondary school AT's average workload and the coping mechanisms used. The purpose of the present study is to provide a better understanding of how secondary school ATs cope with workload, while accounting for other factors (i.e., perceived social support, age, race, sex, years of experience, organizational support) associated with those mechanisms. Because of the exploratory nature of the study,

we predicted that the relationship among coping and workload will be consistent with literature published in other healthcare fields.<sup>15,26</sup> Specifically, we expect that as workload increases avoidant coping mechanisms will increase and approach coping will decrease.

## **METHODS**

### **Recruitment Procedures**

To participate in the study, participants had to be a certified athletic trainer working in the secondary school setting during the time of study. Those who did not have internet access, could not read English, were no longer practicing as a certified athletic trainer and/or no longer working in the secondary school setting were excluded from the study. Prior to participant recruitment, the researchers obtained approval for the study through the sponsoring institution's Institutional Review Board. Data for the study were collected using a cross-sectional, web-based survey design. Specifically, researchers uploaded survey items and scales to the Qualtrics (Provo, UT) survey platform. After successfully completing the survey upload, a unique hyperlink to the survey was created and distributed. The hyperlink was first distributed during the fall of 2019 using a snowball sampling technique using several social media platforms (e.g., Facebook, Instagram) dedicated for use by ATs. In addition, the researchers contacted the NATA Research Survey Services to have the survey distributed to 4000 NATA members that worked in the secondary school setting. In each instance, a recruitment message with the relevant hyperlink was shared detailing the purpose of the study and emphasizing the survey was only intended for ATs currently working in the secondary school setting. Reminder emails and postings were made through a four-week data collection period to increase participation. All participants provided informed consent prior to completion of surveys.

### **Instrumentation**

Researchers employed a cross-sectional study design using a web-based survey for data collection. Prior to survey distribution, the survey instrument was peer reviewed by athletic trainers for readability, typographical errors, and grammar. The resulting survey contained 97 questions and was composed of several previously validated scales that measured the variables of interest. The relevant portions of the survey used in this study are discussed as follows:

### **Demographics**

Participants were asked to report their age, sex (i.e., male, female), and ethnicity (i.e., Non-Hispanic White, Non-Hispanic Black, Hispanic, Asian or Pacific Islander, Multiracial, or other).

### **Athletic Training Work Related Questions**

Participants responded to questions related to their work experience. First, they were asked to disclose the number of years they had been certified as an athletic trainer. Then, participants were asked to report the number of full-time athletic trainers that they worked with on a daily basis at their school. Both questions were taken from previous work on athletic trainers<sup>3</sup> with responses being provided in whole numbers. For descriptive purposes, participants were asked to report the NATA district they were currently working in. Finally, participants were asked to provide the average number of hours they worked per week for two different time frames during the year. These time frames were associated with the traditional fall (i.e., August 1- December 31) and spring (i.e., January 1-May 31) semesters. For statistical purposes, an "overall workload" variable was created to represent the total number hours averaged per week during the calendar year.

### **Social Support**

The Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess the amount of perceived social support participants felt in our sample.<sup>27</sup> This scale has been used previously in AT research and consists of 12 items that assess 3 sources of social support (i.e., significant other, family, friend).<sup>24</sup> Participants respond to each item on a 7-point Likert scale that ranges from "Very Strongly Disagree" (1) to "Very Strongly Agree" (7) with a "Neutral" score of 4. Scores from each item are totaled to create an overall social support score. Using this approach mean scale scores can be interpreted as follows: 1 to 2.9 = "low perceived support", 3 to 5 = "moderate support", 5.1 to 7 = "high support". Higher scores on the scale indicates the person perceives a greater amount of social support. The MSPSS has a reported Cronbach's alpha of  $\alpha = .79$ .<sup>28</sup>

### **Coping Strategies**

We assessed coping strategies using the Brief Coping Orientations to Problems Experienced (Brief COPE) scale.<sup>8</sup> This scale consists of 28 items designed to assess the coping strategies typically employed by persons in stressful situations. Coping strategies are classified as either avoidant (i.e., self-distraction, denial, substance use, behavioral disengagement, venting, self-blame) or approach (i.e., active coping, emotional support, informational support, positive reframing, planning, acceptance). For each item a respondent indicates the extent to which they have used a specific coping strategy on a 4-point Likert scale. Response options range from 1 (not at all) to 4 (a lot). Response scores were recorded and calculated to create a mean score for approach

and avoidance coping to be included in analyses. Higher scores on either scale indicates a stronger tendency to adopt the coping behavior.<sup>8</sup> Items related to humor and religion were not included in our analysis as research by Carver has shown that they do not load on a specific coping method.<sup>8</sup>

### Substance Use

Previous research has identified substance use as a common coping mechanism for work-related stress among various populations of healthcare workers, including athletic trainers.<sup>24,29–31</sup> Questions assessing substance use in the sample were derived from the Monitoring the Future Study.<sup>32</sup> Participants were asked to report the number of binge drinking episodes they had engaged in during the previous 30 days (i.e., “How many times (if any) have you had five or more drinks in row (four or more for females) over the last 30 days?”). Then, participants were asked to report the number of occasions they had used marijuana and tobacco products in the 30 days prior to completing the survey. The response set for all the above items included seven possible answers that ranged from “Never” to “40+”. All of the substance variables in the dataset were dichotomized (i.e., yes, no) because the behaviors were infrequent and not normally distributed.

### Statistical Analyses

The initial dataset included 430 responses from athletic trainers working in the secondary school setting. To create the dataset used for analysis we first examined the dataset to determine if any duplicate surveys existed by comparing IP addresses of respondents. We found that all surveys were from unique IP addresses, and none were duplicated. Then, 38 responses were removed because the response was missing the data required for the analyses. The final dataset was comprised of 392 participants.

Descriptive statistics were used to characterize the sample, including mean and standard deviation or median and interquartile range for continuous variables, and count and percentage for categorical variables. A series of regression models were used to examine the association between coping strategies (i.e., avoidant, approach), social support (i.e., MSPSS total score), and average workload. The outcome variable for multivariate analyses was the average workload reported for the academic year (i.e., fall and spring) by participants in the sample. Age, sex, race/ethnicity, years of AT experience, and number of ATs on staff were included as covariates in the multivariate model. P-values for statistical significance were set at 0.05. All analyses were conducted in Stata/SE version 15.1 (College Station, TX).

## RESULTS

### Sample Demographics

A total of 392 surveys were analyzed. The average age of participants in the sample was 35.7 years (SD=11.13). Respondents typically reported working with one additional full time AT at their institution ( $\chi=1.24$ , SD=.81). The majority of the sample was female (65.82%), and Caucasian (86.73%). Responses were received from all 10 NATA districts with the highest responses coming from Districts 4 (73; 18.62%) and 6 (56; 14.29%). By comparison, the Board of Certification reported demographics for Certified Athletic Trainers was mostly female (57.17%), and White/Caucasian (80.72%).<sup>33</sup> The full demographics of the sample are displayed in Table 1.

**Table 1.** Demographics of the Sample (n=392)

	n	%
Sex		
Male	134	34.18
Female	258	65.82
Ethnicity		
White	340	86.73
Black	11	2.81
Hispanic	16	4.08
Asian or Pacific Islander	9	2.30
Biracial/Multiracial/Other	16	4.08
NATA District		
1 (CT, ME, MA, NH, RI, VT)	31	7.91

	n	%
2 (DE, NJ, NY, PA)	53	13.52
3 (DC, MD, NC, SC, VA, WV)	39	9.95
4 (IL, IN, MI, MN, OH, WI)	73	18.62
5 (IA, KS, MO, NE, ND, OK, SD)	24	6.12
6 (AR, TX)	56	14.29
7 (AZ, CO, NM, UT, WY)	21	5.36
8 (CA, HI, NV, Guam, American Samoa)	27	6.89
9 (AL, FL, GA, KY, LA, MS, TN, Puerto Rico, Virgin Islands)	36	9.18
10 (AK, ID, MT, OR, WA)	31	7.91

### Average Reported Workload

The average overall workload of secondary school ATs in the sample was 44.10 hours per week (SD = 12.96). Average workload was 46.33 (SD =14.04) hours per week during the fall semester and 41.86 (SD = 12.87) hours per week in the spring semester.

### Substance Use

Alcohol was the most commonly reported substance used by ATs in the sample. Overall, 149 (38.01%) reported engaging in at least one binge drinking episode during the 30 days prior to survey completion. Thirty-four (8.67%) participants in the sample reported using marijuana and 18 (4.59%) reported using a tobacco product. We explored adding each substance to the final multivariate model. However, substance use is assessed in the Brief COPE and adding individual substances created issues with multicollinearity in the final model. Thus, they were not included in further analyses.

### Coping Strategies

The mean participant score among all the avoidant coping strategies in the Brief COPE was 20.87 (SD=5.47). Scores ranged from 12 to 43. Self-Distraction was the most commonly used avoidant coping strategy with an average score of 4.75 (SD= 1.51; Range 2-8). The mean participant score among all the approach coping strategies was 30.58 (SD= 7.46) and scores ranged from 12 to 48. Planning was the most commonly reported approach coping strategy with an average score of 5.3 (SD= 1.7; Range 2-8). Average scores for all coping strategies are provided in Table 2.

**Table 2.** Participant Scores on the Brief Coping Orientations to Problems Experienced (COPE)

Questionnaire Subscale	Scale Range	Participant's Scores, Mean $\pm$ SD (Range)
Avoidant Coping Total		20.87 $\pm$ 5.47 (12-43)
Self-Distraction		4.75 $\pm$ 1.51 (2-8)
Denial		2.48 $\pm$ 0.94 (2-8)
Substance Use		2.77 $\pm$ 1.46 (2-8)
Behavioral Disengagement		2.72 $\pm$ 1.15 (2-8)
Venting		4.01 $\pm$ 1.53 (2-8)
Self-blame		4.15 $\pm$ 1.70 (2-8)
Approach Coping Total		30.58 $\pm$ 7.46 (12-48)
Active Coping		5.23 $\pm$ 1.68 (2-8)
Emotional Support		4.81 $\pm$ 1.73 (2-8)
Use of Informational Support		4.88 $\pm$ 1.72 (2-8)
Positive Reframing		5.20 $\pm$ 1.52 (2-8)
Planning		5.30 $\pm$ 1.70 (2-8)
Acceptance		5.17 $\pm$ 1.61 (2-8)

### Social Support

As outlined in the methodology, MSPSS scores were calculated by creating mean subscales (i.e., significant other, family, friends) and a total mean score in accordance with scoring instructions proposed by Zimet et al.<sup>28</sup> The mean total MSPSS score in the sample was 5.18 (SD= 1; Range 1.25-6.42). The mean score for the significant other subscale was 5.73 (SD= 1.53; Range 1-7).

For the family subscale the average score was 5.66 (SD=1.29; Range 1-7). Finally, the average score for the friends subscale was 5.55 (SD= 1.25; Range 1-7).

### Multivariate Analysis

Results of the regression model indicated that both avoidant and approach coping were significantly associated with the average workload reported by ATs in the sample. Avoidant coping (B=0.34, 95% CI=0.12, 0.56,  $p=.006$ ) was directly associated with the average number of hours worked. Approach coping (B=-0.28, 95% CI=-0.43, -0.12,  $p=.007$ ) was inversely associated with the average numbers of hours worked. An increased number of full time ATs was also associated with a higher workload (B=1.08, 95% CI=.40-1.76,  $p<.001$ ). Social support was not significantly associated with the average workload reported. Results for all variables entered into the equation can be found in Table 3.

**Table 3.** Results of a Multivariable Logistic Regression of the Association Between Coping Strategies, Social Support, and Average Workload (n=392)

	B	S.E.	Wald	95% CI
Avoidant Coping*	0.34	0.11	3.03	0.12, 0.56
Approach Coping*	-0.28	0.08	-3.45	-0.43, -0.12
Social Support	-0.23	0.56	-0.41	-1.34, 0.87
Age	-0.32	0.20	-1.64	-0.71, 0.06
Years of Experience	0.24	0.21	1.12	-0.18, 0.66
Number of Athletic Trainers on Staff**	1.08	0.35	3.12	0.40, 1.76
Sex				
Female	----	----	----	----
Male	0.61	1.16	0.60	-1.66, 2.89
Ethnicity				
White	----	----	----	----
Black/African American	-0.04	3.11	-0.01	-6.16, 6.07
Hispanic	-0.73	2.59	-0.28	-5.83, 4.37
Asian or Pacific Islander	0.38	3.42	0.11	-6.33, 7.10
Other	0.51	2.61	0.19	-4.63, 5.64

Adjusted R-squared = 0.07

Note. \* $p<0.01$ , \*\* $p<0.001$

### DISCUSSION

The present study sought to explore the relationship between coping and workload among a sample of secondary school ATs. The average workload of those ATs was 44.10 hours per week over the course of the school year. The average number of hours work during the school year (i.e., fall, spring semester) was within the previously reported range of 31 to 60 hours per week.<sup>3</sup> However, the previously published study only asked ATs to report an average number of hours worked per week and did not ask participants to distinguish based on the time of year. Multivariate statistical analyses revealed that the average number of hours worked by ATs in the sample increased proportionally to the number of ATs on staff. These results would suggest that increased staffs are being asked to provide medical care at more events than before. However, the average number of hours worked did not differ based on the sex of the AT. These findings suggest that the overall average number of hours worked per week in secondary schools has remained relatively consistent with the previous report.<sup>3</sup>

As hypothesized, avoidant (i.e., negative) and approach (i.e., positive) coping strategies were related to the number of hours or work reported each week. Increases in the reported number of hours worked per week was associated with significant increases in avoidant coping and decreases in approach coping. This finding is consistent with published reports in samples of other healthcare professionals.<sup>13-15</sup> Scores associated with avoidant coping mechanisms measured by the Brief COPE were highest in self-distraction (i.e., drawing one's thoughts or attention away from the problem or stressor), venting (i.e., focusing on and verbalizing negative feelings), and self-blame (i.e., placing undeserved blame on oneself based on character or action). This result was comparable to studies examining coping mechanisms among samples of doctors and nurses.<sup>15,26</sup> The highest avoidant coping mechanism scores in these studies were associated with self-distraction, self-blame, humor and venting. Of note, scores for the substance abuse (i.e., use alcohol or drugs) scale were ranked fourth on the avoidant coping subscales and consistent with previous research.<sup>15</sup> The percentage of ATs in the sample who engaged in binge drinking (38% v 46.3%), and tobacco products (4.59% v 6.6%) were both lower than those reported among a sample of collegiate ATs.<sup>24</sup> However, the use of marijuana (8.67% v 3.5%) was higher in secondary school ATs than collegiate ATs.<sup>24</sup> Low rates of substance use as a coping mechanism is



encouraging and indicates ATs are using other coping strategies to manage stressors. Given these results, secondary school ATs may engage in more self-distraction, venting and self-blame as workload increases. Thus, secondary school ATs who exhibit these behaviors should be provided resources to manage stressors in more positive and constructive manners. Future research should be completed to determine if these factors serve as antecedents to increased levels of burnout and intention to leave the profession.

Scores of the subscales associated with approach coping mechanisms were highest for planning (i.e., thinking about how to confront the stressor), active coping (i.e., taking steps to remove or ameliorate the stressor) and positive reframing (i.e., viewing a stressor in positive terms that should lead to active, problem focused coping). Equivalent findings were reported in samples of doctors and nurses.<sup>15,26</sup> In those studies, the most commonly used approach coping mechanisms were planning, active coping, acceptance, positive reframing and emotional support.<sup>15,26</sup> These findings provide further insight into how to positively reduce stressors. It is well understood that those who plan and take proactive steps to reduce stress tend to manage better. Providing these skills to athletic trainers while obtaining their education may enhance future success and longevity in the professions.

Contrasting results were found in the present study in that perceived social support was not significantly associated with the number of hours worked by secondary school ATs when accounting for all variables entered into the equation. Additionally, emotional support (i.e., seeking reassurance, acceptance and encouragement at time of stressor) scores were the lowest of the six types of approach coping measured in the study. This result is consistent with a study that found that social interaction was not associated with workload incongruence in a sample of ATs, but was inconsistent with research on burnout and increasing retention that noted the importance of social support.<sup>4,21,23-25</sup> These results suggest that perceived social support has varying importance in the management of stressors among ATs. Further research is needed to determine areas that perceived social support can enhance an ATs work environment and increase professional longevity.

### Limitations

There are several limitations that should be acknowledged when interpreting the results of the present study. First, the present study only focused on the relationship between workload and coping mechanisms. Although coping strategies are often evaluated with perceived stress and aspects of burnout, these variables were not measured in the present study. Future studies should explore how the relationships among these factors impact coping strategies. Second, the study employed a cross-sectional research design. Therefore, causal relationships cannot be established. Further, the sample obtained was not completely reflective of the population of Certified Athletic Trainers as the sample contained more females (65.82% v. 57.17%) and White/Caucasians (86.73% v. 80.72%). Thus, the results of the present study may not be representative of all Certified Athletic Trainers and only reflects the participants' feelings at one point in time. It is possible that coping strategies will change during the course of a semester or year. Future longitudinal studies are needed to determine how secondary school ATs cope with workload over longer periods of time. Third, self-report and recall biases may have affected the results reported by participants. Participants may have provided socially desirable responses or inaccurately remembered their use of specific substances assessed in the present study. Fourth, the study may be limited by selection bias. Recruitment of participants occurred through social media channels and the NATA Research Survey Service. Those who chose to participate may have been more interested in the topic or more likely to participate in studies. Finally, those working the greatest number of hours per week may have been less inclined to participate due to lack of time.

### CONCLUSIONS

In conclusion, the coping mechanisms exhibited by secondary school ATs were inversely related to the average number of hours worked. Negative (i.e., avoidant) coping strategies increased with reported workload, while positive (i.e., approach) coping decreased. Most commonly secondary school ATs reported negative coping that included self-distraction, venting, and self-blame. Positive coping was associated with planning, positive reframing, and active coping. This suggest that ATs with time will proactively plan to meet the demands of the job. When the job begins to overwhelm the stressor capacity, ATs respond through distraction, blaming themselves and voicing frustration. Interestingly, perceived social support was not associated with reported workload. Given these findings, secondary school administrators should identify methods to reduce an ATs workload. This could occur by increasing the number of ATs employed at a school or by limiting the scope of the ATs practice to patient care. Findings of the present study suggest that reductions in workload for secondary school ATs would benefit patient care. Further, programming should be developed to provide ATs working in secondary schools tools and resources designed to increase the adoption of positive coping strategies when increases in workload occur. Future research should be conducted to support the present findings.

## REFERENCES

1. National Athletic Trainers' Association. NATA Certified Membership by Job Setting. Published online September 2022. Accessed January 25, 2023. <https://members.nata.org/members1/documents/membstats/2022-09.htm>
2. Goodman A, Mazerolle SM, Eason CM. Organizational Infrastructure in the Collegiate Athletic Training Setting, Part II: Benefits of and Barriers in the Athletics Model. *J Athl Train*. 2017;52(1):23-24. doi:10.4085/1062-6050-51.12.24
3. Winkelmann ZK, Eberman LE. Characteristics of Secondary School Athletic Trainers: Salary, Job Satisfaction, and Perceived Percentage of Daily Practice. *Athl Train Sports Health Care*. 2017;9(3):124-132. doi:10.3928/19425864-20170210-01
4. Singe SM, Cairns A, Eason CM. Age, gender, and years of experience: Examining burnout among secondary school athletic trainers. *J Athl Train*. Published online February 23, 2022. doi:10.4085/1062-6050-0731.21
5. Eason CM, Gilgallon TJ, Singe SM. Work-Addiction Risk in Athletic Trainers and Its Relationship to Work-Family Conflict and Burnout. *J Athl Train*. 2022;57(3):225-233. doi:10.4085/JAT0348-20
6. Eason C, Cairns A, Singe S. The Impact of the Number of Student Athletes on Burnout and Work-Family Conflict of High School Athletic Trainers. *Sport J*. 2000;617:548-8283.
7. Rappaport J, Seidman E. *Handbook of Community Psychology*. Spring Science & Business Media; 2000.
8. Carver C. You want to measure coping but your protocol's too long: Consider the Brief COPE. *Int J Behav Med*. 1997;4(1):92-100.
9. Carver C, Scheier M, Weintraub J. Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*. *J Pers Soc Psychol*. 1989;66:184-195.
10. Meyer BB. Coping with severe mental illness: Relations of the Brief COPE with symptoms, functioning, and well-being. *J Psychopathol Behav Assess*. 2001;23(4):265-277.
11. Seyedfatemi N, Tafreshi M, Hagani H. Experienced stressors and coping strategies among Iranian nursing students. *BioMed Cent Nurs*. 2007;6(11).
12. Jalbrzikowski M, Sugar C, Zinberg J, Bachman P, Cannon T, Bearden C. Coping styles of individuals at clinical high risk for developing psychosis. *Early Intervention in Psychiatry*. *Early Interv Psychiatry*. 2014;8:68-76.
13. Biro E, Veres-Balajti L, Kosa K. Social support contributes to resilience among physiotherapy students: A cross sectional survey and focus group study. *Physiotherapy*. 2016;102(2):189-195.
14. Finlay-Jones A, Rees C, Kane R. Self-compassion, emotion regulation and stress among Australian Psychologists: Testing an emotion regulation model of self-compassion using structural equation modeling. *PLoS ONE*. 2015;10(7):1-19.
15. McKinley N, McCain R, Convie L, et al. Resilience, burnout and coping mechanisms in UK doctors: a cross-sectional study. *BMJ Open*. 2020;10(1):e031765.
16. Hendrix A, Acevedo E. An examination of stress and burnout in certified athletic trainers at division I-A universities. *J Athl Train*. 2000;35(2):139-144.
17. Mazerolle SM, Eason CM, Trisdale WA. Work-Life Balance Perspectives of Male NCAA Division I Athletic Trainers: Strategies and Antecedents. *Athl Train Sports Health Care*. 2015;7(2):50-62. doi:10.3928/19425864-20150216-01
18. Mazerolle S, Eason C. A Longitudinal Examination of Work-Life Balance in the Collegiate Setting. *J Athl Train*. 2016;51(3):223-232. doi:10.4085/1062-6050-51.4.03
19. Mazerolle SM, Pitney WA, Eason CM. Experiences of Work-Life Conflict for the Athletic Trainer Employed Outside the National Collegiate Athletic Association Division I Clinical Setting. *J Athl Train*. 2015;50(7):748-759. doi:10.4085/1062-6050-50.4.02
20. Mazerolle SM, Pitney WA, Casa DJ, Pagnotta KD. Assessing Strategies to Manage Work and Life Balance of Athletic Trainers Working in the National Collegiate Athletic Association Division I Setting. *J Athl Train*. 2011;46(2):194-205. doi:10.4085/1062-6050-46.2.194
21. DeFreese JD, Mihalik JP. Work-Based Social Interactions, Perceived Stress, and Workload Incongruence as Antecedents of Athletic Trainer Burnout. *J Athl Train*. 2016;51(1):28-34. doi:10.4085/1062-6050-51.2.05
22. Rynkiewicz K, Singe SM, Eason CM. Athletic Trainers' Use of Support Systems for Balancing Roles as an Athletic Trainer and Parent. *J Athl Train*. 2022;57(3):282-290.
23. Schellhase K, Tran E, Carmody S, Dawry P, Mangum L. Retention of Athletic Trainers in the Secondary School Setting. *Int J Athl Ther Train*. 2022;1(aop):1-6.
24. Oglesby LW, Gallucci AR, Wynveen CJ, Ylitalo KR, Benson NF. Burnout and Substance Use in Collegiate Athletic Trainers. *J Athl Train*. 2020;55(7):744-751. doi:10.4085/1062-6050-178-19
25. Terranova AB, Henning JM. National Collegiate Athletic Association Division and Primary Job Title of Athletic Trainers and Their Job Satisfaction or Intention to Leave Athletic Training. *J Athl Train*. 2011;46(3):312-318. doi:10.4085/1062-6050-46.3.312

26. Tsouvelas G, Kalaitzaki A, Tamiolaki A, Rovithis M, Konstantakopoulos G. Secondary traumatic stress and dissociative coping strategies in nurses during the COVID-19 pandemic: The protective role of resilience. *Arch Psychiatr Nurs*. 2022;41:264-270.
27. Zimet GD, Dahlem NW, Zimet SG, Farley GK. The Multidimensional Scale of Perceived Social Support. *J Pers Assess*. 1988;52(1):30-41. doi:10.1207/s15327752jpa5201\_2
28. Kazarian SS, McCabe SB. Dimensions of social support in the MSPSS: Factorial structure, reliability, and theoretical implications. *J Community Psychol*. 1991;19(2):150-160. doi:10.1002/1520-6629(199104)19:2<150::AID-JCOP2290190206>3.0.CO;2-J
29. Farrell SM, Moir F, Molodynski A, Bhugra D. Psychological wellbeing, burnout and substance use amongst medical students in New Zealand. *Int Rev Psychiatry*. 2019;31(7-8):630-636. doi:10.1080/09540261.2019.1681204
30. Hyman SA, Shotwell MS, Michaels DR, et al. A Survey Evaluating Burnout, Health Status, Depression, Reported Alcohol and Substance Use, and Social Support of Anesthesiologists: *Anesth Analg*. 2017;125(6):2009-2018. doi:10.1213/ANE.0000000000002298
31. Lee T, Tzeng W, Chiang H. Impact of coping strategies on nurses' well-being and practice. *J Nurs Scholarsh*. 2019;51(2):195-204.
32. National Institute on Drug Abuse. Monitoring the Future Survey. <https://nida.nih.gov/research-topics/trends-statistics/monitoring-future>.
33. BOC Certified AT Demographics. Board of Certification for the Athletic Trainer. Updated April 14, 2022. Accessed June 1, 2023. [https://bocatc.org/system/document\\_versions/versions/293/original/at-demographics-20220414.pdf?1649950857](https://bocatc.org/system/document_versions/versions/293/original/at-demographics-20220414.pdf?1649950857)