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EFFECT OF COVID-PROTOCOLS ON ATHLETIC TRAINING BURNOUT

By

Harrison Christopher Garcia

THESIS

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ABSTRACT

EFFECT OF COVID-PROTOCOLS ON ATHLETIC TRAINING BURNOUT

By

Harrison Christopher Garcia

Burnout is a psychological condition consisting of emotional exhaustion, depersonalization, and a decreased sense of personal accomplishment and identity. Since the start of the pandemic, a significant increase in burnout has been reported by healthcare professionals, however, there is little known regarding the experiences of athletic trainers (ATs). **PURPOSE:** The purpose of our study was to investigate the association between burnout and COVID-19 related factors among ATs. **METHODS:** An electronic survey grouped by the Maslach Burnout Inventory – Human Services Survey, COVID-19 related workplace policies, and demographics was sent to 1,000 ATs through the National Athletic Trainer's Association email listserv; participants were also recruited via a social media link. Pearson correlations or Kendall's tau non-parametric correlations were used to measure the strength of the association between burnout and COVID-19 job-related items. One-way ANOVA was used to determine any differences between burnout scores across demographic factors. **RESULTS:** 81 ATs (age: 34.72 ± 11.27 y; career experience: 11.7 ± 10.6 y) across the US completed the survey (6% response rate). Emotional exhaustion depersonalization (EEDP) burnout was identified among 33.3% of the respondents. Correlations were found between EEDP burnout and poor financial compensation for increased responsibilities (n= 81; r=.212, p=.042), work hour alterations (n=78; r=.217, p=.037) and workload changes (n=78; r=.158, p=.128). **CONCLUSIONS:** Our findings support the COVID-19 pandemic changed the AT profession in novel ways. Moving forward, researchers should aim for a better understanding on the long-term effects of COVID-19 and effective strategies in alleviating burnout in the larger population of ATs.

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2023

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This thesis follows the format prescribed by the American Medical Association (AMA) Manual of Style, 11th edition.

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INTRODUCTION

Decades of research have demonstrated that athletic trainers (ATs) experience career burnout, similar to other healthcare professionals.[1] However, the recent coronavirus disease 2019 (COVID-19) has presented novel challenges to practicing ATs. The onset of a global pandemic prompted the cancellation of nearly all sporting events in the United States in early 2020, and day-to-day AT duties changed drastically, leaning toward more COVID-19 related tasks and less of the typical AT tasks. Additional responsibilities include COVID-19 testing, contact tracing, and new and extensive sanitation procedures were part of an AT's career since the outbreak of COVID-19, but have since seen a recent decline. Changes to the AT profession led to extreme levels of stress and career burnout caused by potential new factors, like economic stressors, job uncertainty, etc. This ultimately coincided with medical professionals, like ATs, leaving their careers on a scale not seen before.[2]

ATs are allied health professionals who work in a variety of different settings including schools (high schools, colleges and universities), clinics (inpatient and outpatient), professional athletics, as well as hospitals. Compared with physicians who often diagnose patients and refer out for rehabilitation, ATs provide injury treatment services and work with patients on a daily basis. Some ATs also work alongside other medical practitioners in these settings.[3] The major services provided by ATs as a part of a healthcare team are 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.[3]

The purpose of this review is to summarize the published literature on pre-pandemic career burnout in ATs, specifically, discuss the hypothesized causes and contributors of career

burnout in ATs, instruments which are used to assess career burnout in ATs, and the consequences of career burnout. Finally, the effect of the COVID-19 pandemic on AT duties and AT burnout during the COVID-19 pandemic will be discussed in an effort to identify the gaps in the current literature as well as the direction for future research. An extensive search of online scholarly articles and research was conducted. Key words such as burnout, athletic trainers, athletic training, COVID-19, pandemic, MBI-HSS, and health care were used for electronic searches within Google Scholar and PubMed.

CHAPTER ONE: CAREER BURNOUT IN ATHLETIC TRAINERS

Career burnout is a multi-dimensional psychological condition comprised of emotional exhaustion, depersonalization, and a decreased sense of personal accomplishment and identity.[1] Emotional exhaustion includes basic individual stress referring to feelings of being overextended and depleted of one's emotional and physical resources.[4] Depersonalization represents a motivational, interpersonal distancing comprised of negative, callous, or excessively detached responses to various aspects of the job.[4] The third aspect, a decreased sense of personal accomplishment, represents the self-evaluation of feelings of incompetence and a lack of achievement and productivity in work.[4] Burnout typically presents as a loss of motivation and sense of emotional depletion after an individual sustains persistent, high levels of stress in their job.[5] Physical symptoms including fatigue, inability to fight off infections, headaches, gastrointestinal issues, and insomnia are also described in classic burnout literature.[6,7] Many healthcare and allied health professionals are at high risk for experiencing burnout due to the high demands of their career.[1]

A significant amount of literature has been published regarding AT career burnout, with the majority being prior to the onset of the COVID-19 pandemic. However, there is large variability in the methodology for assessing burnout.[1] Moderate levels of burnout (scores between 15 and 25 out of 36 points total), on average, were self-reported by 189 ATs employed in the collegiate setting recruited via the National Athletic Trainers' Association (NATA) using a short self-reported burnout scale.[8] A similar, yet more recent study by Eason et al measured burnout in 226 ATs employed across 13 different settings using the Copenhagen Burnout Inventory (scores range 0-100; scores >50 indicate burnout) and the Work Addiction Risk Test

(scores range 25-100; scores 67-100 indicate "workaholic").[9] On average, the participants' total score was not indicative of burnout (46 ± 16), but scores for both the personal and work dimension indicated a moderate level of burnout (55 ± 19 and 50 ± 16, respectively).[9] Kania et al also utilized a cross-sectional study design to assess burnout in ATs employed in collegiate settings.[10] In this study, 206 ATs completed the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) and 32% of the sample met criteria for experiencing burnout.[10] For each domain, 20% reported high levels of emotional exhaustion, 23.3% reported high levels of depersonalization, and 15.5% reported low levels of a sense of personal accomplishment.[10] In 2022, ATs in the secondary school setting reported low levels of burnout using the Perceived Stress Scale, Copenhagen Burnout Inventory, and the Work-Family Conflict Scale.[11] Female ATs reported experiencing greater levels of burnout as well as personal and work-related burnout.[11] Early career ATs, defined as those within their first 3 years in the profession, also reported higher levels of burnout.[11] A recent systematic literature review summarized 51 relevant articles assessing burnout in ATs via qualitative, cross-sectional, mixed-methods, and case study methodologies and concluded burnout was present within all subpopulations of athletic training including students, graduate assistants, staff, and faculty, with female ATs generally experiencing greater burnout than males.[1] Taken together, it can be concluded that ATs do in fact experience career burnout, although the estimated levels reported appear to be lower than that of other healthcare practitioners (e.g., physicians, nurses).[1]

Methods for Assessing Career Burnout in Athletic Trainers

There has been a plethora of surveys created and utilized to measure burnout in different populations. The MBI-HSS is the most common and considered the gold standard for measuring burnout in medical personnel.[12] This survey consists of 22 items that encompass three latent

constructs of burnout: emotional exhaustion, depersonalization, and a sense of personal accomplishment.[13] Items in the MBI-HSS are scored with a 7-point Likert-scale anchored with zero being "never feel the effects" up to six being "feel the effects every day."[13] Burnout scores are calculated by summing the numeric reference for each item. The scores range from 0 to 54 on the emotional exhaustion subscale with a score ≥27 indicating burnout; 0 to 30 on the depersonalization subscale with a score ≥13 indicating burnout; and 0 to 48 on the personal accomplishment subscale with a score between 0 and 31 indicating burnout.[13] A large number of studies have examined the reliability and validity of the MBI-HSS in healthcare professionals and others using exploratory and confirmatory factor analysis and have demonstrated support for the three-factor model and that scores from the survey can be interpreted meaningfully.[14] The validity and reliability of the MBI-HSS have been demonstrated in various populations of health care professionals; as such, it is considered the best instrument available to assess burnout in ATs. Internal consistency reliability for the 3 subscales ranged from $\alpha = .71$ to $\alpha = .90$ ($P < .001$), with test-retest reliability ranging from $r = 0.71$ to $r = 0.90$.[10]

The Copenhagen Burnout Inventory (CBI) consists of 19-items within three scales measuring personal burnout, work-related burnout, and client-related burnout, for use in different domains.[15] While its popularity worldwide is continuing to grow, its reliability differs as it is translated between different languages and different professions. Among American healthcare workers, the CBI was found to have Cronbach's alphas for each scale respectively of 0.91, 0.89, and 0.92 demonstrating excellent internal consistency reliability for the subscales.[16]

The Athletic Training Burnout Inventory (ATBI) includes the MBI (18 items) as well as 45 new items specific to burnout factors and workload issues within the athletic training profession.[17] The ATBI utilized four constructs: emotional exhaustion and depersonalization

(alpha = 0.85), administrative responsibility (alpha = 0.82), time commitment (alpha = 0.86), and organizational support (alpha = 0.80).[17] The ATBI produced results similar to those of other instruments, not only regarding the factors that contribute to burnout in athletic training but also regarding the relationship of sex, marital status, and age to the factors that contribute to burnout.[17]

The Well-Being Index is another common option to measuring psychological well-being status in relation to burnout in health care populations.[17] Its aim is to assess burnout, fatigue, mental health, physical quality of life, depression, anxiety, and stress using a 7-item instrument with a "yes" or "no" response.[18] For healthcare workers, any score of 4 or higher indicates distress or burnout. This survey is most commonly used for medical students and other medical personnel. This survey was validated in 2012 with a specificity of 0.84 – 0.86 for measuring burnout in healthcare professionals.[18]

Another survey used to measure burnout within ATs has been the Approved Clinical Instructors (ACI) Role Strain Inventory. This survey is much less common and has not been validated. This uses 7 role strain subscales including role conflict (3 items), inter-sender conflict (5 items), intra-sender conflict (8 items), inter-role conflict (3 items), role ambiguity (8 items), role overload (7 items), role incongruity (6 items), and role incompetence (5 items).[19] While some researchers chose to conduct qualitative interviews to measure burnout, this approach can make it difficult to directly compare across studies without a consistent measure.

Hypothesized Causes and Contributors of Career Burnout in Athletic Trainers

Several causes and contributors as to why ATs experience career burnout have been identified throughout the literature. In a pre-pandemic systematic review summarizing the prevalence, causes, effects, or alleviations of burnout in ATs, 29 groups of researchers published

literature and the most common causes of career burnout in ATs were identified as: 1) work-family conflict, 2) role strain, and 3) challenges with professional socialization.[1]

Work-life, or work-family conflict (WFC), is when responsibilities associated with one's job takes precedence over or interrupts the responsibilities of family or social life.[1] This is when an AT's job consumes most of their time, leaving less time for themselves or for their family. These findings were supported in a survey study with follow-up, in-depth, in-person interviews that investigated the occurrence of WFC in ATs and identified roots and factors leading to quality-of-life issues for ATs working in the NCAA D-I setting. Mazerolle et al found their regression analyses to show that among the 587 subjects surveyed and 12 interviewed, long hours and travel directly contributed to WFC.[20] Inflexible work schedule and staffing patterns also had a slight relationship with WFC. WFC affected D-I ATs independent of sex, marital status, family status, or age of children.[20] In a qualitative study of 23 female ATs that worked within the Southeastern Conference (SEC) for Division-I football, Goodman et al examined the effect of burnout and attrition of female ATs on organizational effectiveness and consistent quality of patient care.[21] Factors that led to increased senses of burnout or leaving the profession included life-balance issues, role conflict, role overload, supervisory/coach conflict, and decreased autonomy.[21]

Role strain was another major cause identified leading into higher levels of burnout. Role strain refers to an individual being unable to complete the expected requirements of their job role.[1] For example, with the growth of responsibilities of an AT due to the spread of COVID-19, it can be hypothesized that role strain could have been affected and most likely increased. The subcategories of role strain, including "poor salary compensation for the long hours of work required" and "difficulty dealing with the politics in the workplace," added onto WFC. This

eventually leading to less time for the ATs themselves or less time spent at home with the family. These results were pulled from multiple studies that used a variety of measurement tools including qualitative questionnaires, interviews, a validated 5-item WFC scale, the Athletic Training ACI Role Strain Inventory Survey, as well as the MBI-HSS.[1]

Personal and environmental characteristics and traits have been shown to contribute to the overall exacerbation of burnout among ATs. In a cross-sectional study using the MBI-HSS along with a self-made demographic survey, Kania et al examined the relationship between personal and environmental characteristics and burnout among 206 ATs within the NCAA clinical setting.[10] Personal characteristics predicted 45.5% of the emotional exhaustion, 21.5% of the depersonalization, and 24.8% of the decreased personal accomplishment reported.[10] Environmental characteristics predicted 16.7% of the emotional exhaustion, 14.4% of the depersonalization, and 10.4% of the decreased personal accomplishment reported.[10] Stress levels and coaches' pressure to medically clear athletes predicted ratings on all three subscales of the MBI-HSS.[10] Other factors contributing to elevated levels of career burnout cited by ATs include hours worked, salary, and overall lack of job satisfaction.[20] ATs felt they were working too many hours and not being financially compensated fairly, leading to lower job satisfaction and higher career resentment.

Catastrophic events, such as c-spine injuries and other EMS situations, were also seen to play a role in affecting burnout among ATs. In 2018, in a survey studying looking at NATA ATs, it was found that ATs who provided care to athletes exposed to a catastrophic event could be more likely to suffer from a decreased sense of personal accomplishment, one of the domains of burnout.[22] They were also likely to incorporate or demonstrate emotion-oriented coping strategies,[22] which could lead to a negative feedback loop.

Outcomes and Consequences of Career Burnout in Athletic Trainers

Career burnout has been shown to have a negative impact on job performance and increase depression, anxiety, and work-related stressors, with the ultimate consequence of an employee leaving their profession. However, the effects of athletic training burnout have not been well researched, and a recent systematic review identified just six studies investigating this topic.[1] Interestingly, there is a significant decline in ATs choosing to practice after age 30 years, with career burnout being one of the major reasons they may choose to leave the profession.[1,23] Other effects ATs may experience as a result of career burnout that have been identified in the research include headaches, high blood pressure, weight concerns, gastrointestinal issues, fatigue, insomnia, irritability, and depression.[1] While all of these are concerning on an individual/personal level, such factors could have a negative impact on job performance such that patients are provided with a lower standard quality of health care. Increased levels of burnout have been known to impact the ATs' job performance and can lead to more mistakes being made in the clinical setting.[24] Specifically, within secondary school settings, ATs experiencing decreased sense of personal accomplishment and elevated emotional exhaustion made more frequent mistakes in the clinical setting. Burnout was directly associated with both the likelihood of an AT committing medical errors and the number of errors committed.[24] In 2021, spiritual well-being was linked to burnout rates among full-time collegiate ATs.[25] Existential well-being was found to be a significant predictor for social support and a significant negative predictor for work family conflict, sense of decreased personal accomplishment, emotional exhaustion, depersonalization, intention to leave the profession, and binge drinking.[25] Emotional exhaustion and decreased sense of personal accomplishment within collegiate ATs were both found to be significant predictors for substance use including binge drinking, tobacco,

and marijuana.[26] Heavy episodic binge drinking was the most prevalent with nearly half of the sampled population reporting taking part in this action.[26]

Changes in Athletic Trainers' Roles and Responsibilities During the COVID-19 Pandemic

When COVID-19 arrived in the US, many healthcare professionals and allied health professionals faced novel challenges and changes to their roles in order to decrease transmission of the virus. As many ATs work with the athletic population, they experienced unique and drastic changes as tournaments, competitions, and sports of all kinds came to an abrupt halt in early 2020. As the year 2020 and the pandemic progressed, healthcare providers, politicians, and others had to make decisions regarding when it was safe for athletes to return to sport.[2] It was reported that as of July 2021, there was no standard practice across the nation regarding guidance on decisions for returning to sport.[2] Thus, ATs have had to adapt to an ever changing pandemic environment with little to no guidance regarding how their athletes and/or patients should proceed.

In addition to the uncertainty regarding sport, many day-to-day aspects of the AT job changed including increases in working hours and role responsibilities. Along with their regular athletic training-related duties, ATs report having to integrate new COVID-19 related duties into their everyday tasks. The main pandemic responsibilities that appear to be integrated into the AT job presently include telemedicine appointments, administering COVID-19 tests, contact tracing, and more frequent sanitation/cleaning procedures.[27] Winkelmann et al conducted a cross-sectional study of 611 ATs that aimed to assess the change in job tasks and status during the COVID-19 pandemic using a survey that collected demographic information, questions related to telemedicine use, and measured resilience.[28] They found the majority of ATs continued to work in some capacity during the pandemic, but there was an increased prevalence of financial and

mental health concerns due to reduced pay, increased stress, and future uncertainty.[28] When compared directly to other healthcare workers, such as nurses, ATs average a national salary of $52,891 while newly graduated nurses earn a yearly average of $67,712.[29] Additionally, 41.1% of participants reported adopting new roles including reworking their entire set of job duties online through telemedicine while having no prior training or knowledge on how to do so.[28] The same study also measured across 13 different settings and found that the majority of ATs have changed their focus from typical patient care and education to completing duties remotely, including health care administrative duties (policy updates, organizations, risk management, stakeholder education session), and non-health care related tasks.[28] Out of all the pandemic-related changes measured in this study, the most commonly reported change was the changes in job setting or duties, with more than half of these responses signifying that the changes have actually led to a positive effect on their career.[28] Specifically working remotely via telehealth was reported to have a positive effect on ATs' family life, personal time, health behaviors, and their ability to safely continue to provide healthcare to their patients.[28] An article through UC Health examined this topic with their three ATs and revealed their new job tasks now included large-scale medical event planning, COVID-19 test administering, COVID-19 educating, and consistent updating of COVID-19 policies and procedures.[30] It is evident that the role of the AT throughout the peak of the pandemic increased, such that ATs have taken over more duties than ever before with COVID-19 looming in athletics, but has since seen a drop off.

Impact of the COVID-19 Pandemic on Burnout in Athletic Trainers

COVID-19 has not only affected the daily job duties assigned to ATs, but their experience with burnout as well. For example, frontline COVID-19 testing, mental health support, and virtual telehealth medicine are all either new tasks or ones that have taken up the

majority of AT duties since COVID-19 became a threat.[28] Therefore, it would be expected that the role strain dimension of career burnout would be accentuated by the pandemic as well. Challenges with professional socialization, such as lack of promotion or politics within the workplace, was another factor that was identified to influence career burnout of ATs at an increased rate compared to pre-pandemic levels.[1] Taken together, it appears that the COVID-19 pandemic has magnified many variables in the workplace that lead to employees' level of burnout.

ATs act as another branch of the primary health care providers for many patients, projecting similar burnout rates as fellow health care positions. With these new responsibilities potentially consuming the majority of an AT's time, it has been reported that those who are within the first two years of being certified have experienced an accelerated rate of resentment towards their new profession as well as feeling undervalued or underutilized.[27] In recent examination of the impact of COVID-19 on athletic training burnout, it was found that using the MBI-HSS alongside the COVID Anxiety Scale, subscales of exhaustion and depersonalization served as significant predictors of burnout.[27] The major impacts on wellness revealed themselves through negative changes in mental health, fear of exposure, work-life balance versus work-life conflict, and support and coping strategies.[27] The pandemic impacted ATs' wellness, changed perceptions of athletic training, and altered operating procedures.[27] This same study mentioned the increase in COVID-related administrative duties led to role overload and conditions prime for burnout. The literature suggests that the pandemic has exacerbated job-related stressors that already existed for ATs and led to feelings of burnout resulting in significant impacts on wellbeing and health and these continued to effect ATs through the duration of the pandemic.[27]

Gaps and Research Directions

While ATs are defined as being responsible for the emergency care, injury prevention, evaluation, treatment, coordination, and rehabilitation for their patients, these duties have clearly expanded since the onset of the COVID-19 pandemic. It is already clear that throughout the pandemic, a majority of ATs' time was, and may continue to be, occupied by new COVID-19 related job tasks and less of the traditional AT duties. This in turn has the potential to lead to feelings and symptoms of burnout, which may ultimately lead to a decline in the quality of patient care and ATs leaving the profession at accelerated rates. It is unknown the chronic effects of COVID-related duties have had on AT burnout. Studies have not examined how each specific change to the everyday tasks for ATs caused by the pandemic have affected the burnout rate among the profession, whether it be positive or negative. The aim of this study was to fill the gap by examining the association between which changes to AT tasks caused by COVID-19 led to either a positive or negative effect on career burnout. Using this information, we were able to note any patterns seen within the quantitative data to suggest potential strategies to alleviate the growing percentage of burnout within the athletic training profession.

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CHAPTER 2: MANUSCRIPT

Over the past 20 years, the concept of career burnout has gained considerable attention as a topic of interest, especially for those who work in the healthcare profession. Career burnout is defined as a multi-dimensional psychological condition comprised of three constructs: emotional exhaustion, depersonalization, and a decreased sense of personal accomplishment and identity.[1] Emotional exhaustion encompasses basic individual stress referring to feelings of being overextended and depleted of one's emotional and physical resources.[2] Depersonalization represents a motivational, interpersonal distancing comprised of negative, callous, or excessively detached responses to various aspects of the job.[2] The third aspect, a decreased sense of personal accomplishment, represents the self-evaluation of feelings of incompetence and a lack of achievement and productivity in work.[2] Elevated levels of burnout have been experienced among healthcare workers, including athletic trainers (ATs).[1,3]

In early 2020, the novel coronavirus disease-2019 (COVID-19) caused by the SARS-CoV-2 virus was detected in the US and completely changed the infrastructure and careers of virtually all healthcare providers as the world entered a global pandemic.[4] Prior to the onset of COVID-19, compared to a variety of other professions, those working in healthcare professions often reported high levels of career burnout, which is not surprising considering they often work long hours and experience extremely stressful situations daily.[1] A meta-analysis conducted by Aymerich et al found a significant prevalence of mental health concerns in all measured domains within healthcare workers exposed to COVID-19 including 32% of the sample experiencing post-traumatic symptoms and 37% to experiencing burnout.[5] During the COVID-19 outbreak, a relatively high prevalence of anxiety (24.94%), depression (24.83%) and sleep disorders

(44.03%) was reported in meta-analyses investigating the mental health of healthcare workers.[5] Since then, frontline healthcare workers have presented high levels of emotional exhaustion through the fear of infecting others, safety against COVID-19 in the workplace, and confidence in self-protection from COVID-19.[3] Moreover, healthcare workers reported a 30% reduction in work effort for each 1-point increase in burnout (on a 7-point scale).[6] Scope of practice, job responsibilities, and overall workload are three major job-related aspects that have been identified as playing a role in exacerbating career burnout in the healthcare professions, and all of these factors have increased since the outbreak of COVID-19.[3,6]

Allied health professionals, such as ATs, are no exception when it comes to experiencing burnout and various pre-pandemic studies have reported ATs experience comparable rates of burnout to other healthcare workers, like nurses.[1] Prior to the onset of the COVID-19 pandemic, the main causes and contributors of career burnout in AT's have been identified as: work-family conflict, role strain, and challenges with professional socialization.[1] For example, ATs have reported that they feel they are being over-worked and that they do not have enough time for themselves or their loved ones, feel they are not fairly compensated, and also indicate they are under consistent high levels of stress.[7] Burnout among ATs has also been revealed to have a negative impact on job performance (e.g., decreased quality of patient care in healthcare professionals) and increase depression, anxiety, and work-related stressors, which may ultimately lead to employees leaving their profession.[1]

Since the outbreak of the COVID-19 virus, many new responsibilities have emerged as a part of an AT's job - such as the implementation of telehealth/medicine, COVID-19 testing, frequent and excessive sanitation protocols, and the necessity to strictly enforce the use of personal protective equipment (PPE).[8] Several of these changes appear they could be permanent

additions, in some form, to the job duties of an AT, therefore, it is of interest to understand how ATs have adapted to their new roles as we enter a post-pandemic era. ATs have reported that the increased time spent implementing the aforementioned COVID-19 related tasks took time away from their athletic training related duties and patient care leading to a loss of connection with their patients and an increased sense of role overload.[8] Additionally, AT's faced new challenges brought upon by the pandemic unlike other types of healthcare professionals, including job insecurity and uncertainty.[8] ATs who were fortunate to continue working felt there was a lack of compensation for the additional work responsibilities as well as hours spent on the job.[8] With this qualitative data in hand, there is little known quantitative data regarding how the additional COVID-19 job duties and protocols have affected the rate of career burnout in ATs, and which policies appear to be sustainable in regard to retention of ATs in the profession.

The purpose of this research was to determine the associations between the sustained effects of COVID-19 protocols and responsibilities on burnout among ATs in a variety of different career settings. Key factors of emotional exhaustion and depersonalization during the pandemic may exacerbate the potential for burnout among ATs.[8] We hypothesized there would be a positive correlation between career burnout and job-related factors found to be affected by COVID-19. Additionally, we hypothesized there would be themes of a decreased sense of burnout with responses who reported increased use of organizational and social support (patient scheduling, more time for themselves/family, remote work).[8]

Methodology

An electronic survey consisting of 52 items was developed and administered via Qualtrics over the course of six weeks. The survey consisted of a mixture of Likert-scale items, multiple choice, and open-ended questions grouped by the following sections: 1) career burnout

inventory for healthcare professionals, 2) items related to COVID-19 policies and practices, and 3) demographics. The survey was sent to a random sample of n=1,000 ATs through the National Athletic Trainers Association (NATA) email listserv (the estimated population size of AT in the US is 44,000 members), with follow-up emails sent out to all participants who had not yet completed the survey each week for up to six weeks. Additional surveys were distributed via social media to fellow ATs to increase the sample size of the study. Previous literature reported electronic surveys distributed to ATs via email had an average response rate of 34.21% with a range of 2.2% to 82.6%.[9] Therefore, we set out to receive responses from 342 participants to achieve the primary aim of the study.

Maslach Burnout Inventory – Human Services Survey. Career burnout in ATs was assessed using the Maslach Burnout Inventory Human Services Survey (MBI-HSS); a questionnaire designed specifically for medical professionals working in the human service and healthcare field. The MBI-HSS is widely regarded as the primary instrument used to study career burnout among healthcare professionals.[10] The MBI-HSS consists of 22 Likert-scale items (responses range from never to every day on a seven-point scale) that measure three latent constructs of career burnout: emotional exhaustion, depersonalization, and personal accomplishment.[11] Emotional exhaustion refers to a human service worker who feels emotionally overextended and exhausted because of the human service work.[12] Personal accomplishment refers to a human service worker who feels successful and competent when engaging in the human service work.[12] Depersonalization refers to a human service worker who feels indifference and impersonal when providing human service to a service recipient.[12] A score for each of the latent construct was calculated, along with an overall score for career burnout.[11] Burnout scores were calculated by summing the numeric reference for each item. The scores

range from 0 to 54 on the emotional exhaustion (EE) subscale with a score ≥27 indicating high levels; 0 to 30 on the depersonalization (DP) subscale with a score ≥13 indicating high levels; and 0 to 48 on the decreased sense of personal accomplishment (PA) subscale with a score between 0-31 indicating high levels.[13] Scoring in the "high" range for both EE and DP or EE and PA determined presence of burnout.

The MBI-HSS has demonstrated a high degree of validity in healthcare professionals, such that high convergent validity was established through external verification of personal experiences, dimensions of the job experiences, and personal outcome.[10] Previous studies have examined the reliability and validity of the MBI-HSS in healthcare professionals with exploratory and confirmatory factor analysis and have demonstrated support for the three-factor model and that scores from the survey can be interpreted meaningfully.[9] The validity and reliability of the MBI-HSS have been demonstrated in various populations of health care professionals; as such, it is considered the best instrument available to assess burnout in ATs. Internal consistency reliability for the 3 subscales ranged from $\alpha = .71$ to $\alpha = .90$ ($P < .001$), with test-retest reliability ranging from $r = 0.71$ to $r = 0.90$.[10] Studies have also demonstrated that items within the MBI-HSS have high reliability measures for each of their respective dimensions (exhaustion, depersonalization, and personal accomplishment).[12] The MBI-HSS was reported to have a Cronbach alpha rating of 0.90 for emotional exhaustion, 0.76 for depersonalization, and 0.76 for personal accomplishment.[13]

COVID-19-related items and demographics. To measure how AT job-related factors were affected by the COVID-19 pandemic, we developed a series of Likert-scale items stemming from topics previously reported to have been affected by the pandemic, derived from open-ended questions.[1,8] Participants responded to several items using Likert-scales to describe how they

perceived each job-related factor was impacted by COVID-19. The questions focused on the following topics: frequency and strength of COVID-19 policies and procedures, and alterations of AT duties and responsibilities. Frequency was questioned using the Likert-scale listed as: 1 = never, 2 = a few times a year or less, 3 = once a month or less, 4 = a few times a month, 5 = once a week, 6 = a few times a week, and 7 = every day. The strength of COVID-19 policies and procedures were questioned using the Likert-scale listed as: 1 = very poor, 2 = below average, 3 = average, 4 = above average, and 5 = excellent. Participants then answered a series of open-ended and "yes-or-no" questions to gather additional individualized COVID-19-related information possibly not addressed within the COVID-19 Likert-scale questions. A general inductive approach was used for qualitative analysis of open-ended questions.[14] Responses were grouped by themes that emerged from the data. Demographic information regarding the participants' age, sex, work history, and education history was assessed in the last section of the survey (Table 1).

Statistical Analyses. Descriptive statistics for continuous and categorical variables are reported as mean ± standard deviation or *n* (%), respectively. Likert-scale variables were treated as categorical and continuous data for analyses. Data was cleaned and any participants who failed to answer more than two of the MBI-HSS and COVID-19 Likert-scale questions were excluded. Assumptions were checked visually using normality and residual plots. Pearson correlations or Kendall's tau non-parametric correlations were used to measure the strength of the association between career burnout and each of the COVID-19 job-related items. Strength of linear associations were defined as: very weak, 0.1-0.3; weak, 0.3-0.5; moderate, 0.5-0.7; strong, .7-1.0. One-way ANOVAs were utilized to determine whether differences existed between overall scores of career burnout in ATs when grouped based on various demographic variables.

Results

Participant characteristics. The survey was sent to 1,000 participants in the NATA database and 65 provided complete responses (response rate = 6.5%). An additional 16 responses were recorded from recruitment via word-of-mouth and social media. Table 1 displays the participant characteristics for the sample. Most respondents were recruited via NATA and were middle-aged females who attained a bachelor's degree and primarily worked in either a high school or college setting. The majority of participants indicated they were practicing as a licensed AT both prior to and during the COVID-19 pandemic and were still currently practicing (Table 2). While two participants indicated they were no longer practicing as an AT (Table 2) for reasons that included retirement or a promotion to an administrative position. Approximately 43% of the sample reported their job setting had changed since the onset of the COVID-19 pandemic and reported a number of different reasons as to why (Table 3). Reasons for this change included COVID-19 related duty/workforce changes (n=10), increased capacity of their workplace/expanded (n=2), received a promotion (n=1), relocation (n=4), graduation (n=4), and other (n=9). Participants responded working as an AT on average for 11.7 years with most working for only one year and ranged up to 44 years in the profession (Mdn=8.5, SD=10.6).

MBI-HSS. A summary of the results from the MBI-HSS are shown in Table 4. Most respondents (71.6%) reported high levels of emotional exhaustion, while 33.3% reported high levels of depersonalization. Emotional exhaustion depersonalization (EEDP) burnout was identified among 33.3% of the respondents. Emotional exhaustion personal accomplishment (EEPA) burnout was not identified among any of the respondents. There was a small, negative correlation between EEDP burnout and years spent practicing as an AT (n=77; r=-.177, p=.123) and a small, positive correlation between EEDP burnout and age (n=79; r=.151, p=.184). There

was no difference in EEDP burnout rate when participants were grouped by their identity ($F(2,76)=1.121$, $p=.331$), education level ($F(2,75)=1.128$, $p=.329$), job setting ($F(5,75)=1.031$, $p=.406$), or whether they indicated a change in job setting ($F(1,77)=1.843$, $p=.179$).

COVID-19 PPS and burnout. The most common COVID-19 tasks reported by respondents were sanitizing the workplace, enforcing the mask mandate, and educating patients/coaches on COVID-19 (Table 5). Table 6 shows, on average, participants rated patient scheduling, accessibility to proper COVID-19 PPE, COVID-19 return-to-play protocol, support from the workplace/employer, and overall COVID-19 policies and procedures to be strongest. Respondents reported spending on average, 16.8% of their time each day on COVID-19 related tasks (SD=16.9; Mdn=10.0; Mode=10.0). When reporting the changes in responsibilities since the onset of COVID-19 the majority of respondents stated their hours increased a moderate amount (n=25; 32.1%) and their overall workload (n=29; 37.2%) and workplace duties (n=35; 44.9%) only slightly increased (Table 7). There was a small, positive correlation between EEDP burnout (n=81) and poor financial compensation for increased responsibilities ($r=.212$, $p=.042$; Table 8), change in hours spent working (n=78; $r=.217$, $p=.037$) and the overall change in workload (n=78; $r=.158$, $p=.128$).

Table 1: Respondent Demographics

Variable	Mean ± SD [range] or n (%)
Age (y; n=79)	34.72 ± 11.27 [22 – 63]
Sex (n=79)	
Male	29 (35.8)
Female	49 (60.5)
Non-binary	1 (1.2)
Unanswered	2 (2.5)
Distribution Channel (n=81)	
NATA	65 (80.2)
Social Media	16 (19.8)

NATA Member (n=81)	
Yes	77 (95.1)
No	4 (4.9)
Job Setting (n=81)	
High School Athletics	35 (43.2)
Outreach School Athletics	12 (14.8)
College Athletics	31 (38.3)
Professional/Olympic Athletics	1 (1.2)
Hospital	4 (4.9)
Clinical Rehabilitation	4 (4.9)
Per Diem	7 (8.6)
Graduate Assistant/Student	7 (8.6)
Not Currently Practicing	1 (1.2)
AT Education	3 (3.7)
Other	9 (11.1)
Education (n=78)	
Bachelor	51 (65.4)
Master	8 (10.3)
Ph.D.	19 (24.4)

Note: "Job Setting" percentages do not add up to 100% due to some respondents working in multiple settings.

Table 2: Athletic Training Timetable

Variable	Yes n (%)	No n (%)
Were you practicing as a Certified and/or Licensed Athletic Trainer before the onset of the COVID-19 pandemic (i.e., prior to January 2020)? (n=81)	58 (71.6)	23 (28.4)
Were you practicing as a Certified and/or Licensed Athletic Trainer during the COVID-19 pandemic (i.e., January 2020 to present)? (n=81)	79 (97.5)	2 (2.5)
Are you currently practicing as a Certified and/or Licensed Athletic Trainer? If no, explain. (n=81)	79 (97.5)	2 (2.5)
Has your job setting changed since the onset of the COVID-19 pandemic? (n=79)	34 (43.0)	45 (57.0)

Table 3: Explanations for Job Setting Change

COVID-19 Related Duty/Workforce Changes	Doing more gen med due to COVID and increasing the amount of EKG and ECHOs done.
	Patient scheduling to decrease foot traffic through our clinics. Mask mandates still in place. Vaccine compliance. Quarantine. Private treatment bays. Designated gen med triage room.
	It went from numerous COVID testing and contact tracing to almost no COVID related work.
	Hired in 2021 via a hospital that has contracts with high schools and 3rd party organizations. With the pandemic we had less outreach event opportunities (ex. Sport camps, tournaments).
	We were remote for a year, then outdoors March-June 2021. Back in AT facility summer 2021.
	Now Director of Student Health Services (set schedule M-F 7:30a-3:30p unless there is a COVID case). Until this school year because we do not have to contact trace/test as much, I worked all of the time- during the day, after school, weekends, holidays/breaks, etc it was exhausting. I am hoping this year is better.
	It did during the height of COVID-19 but has gone closer to normal. We are short staffed now and so workload has increased.
	So much to do with temperature checks, who is in an exposure, who is in quarantine.
	Now covering multiple schools due to staff leaving and remaining ATs filling in gaps.
	I was employed by a hospital as the director of sports medicine, providing outreach services at the start of the pandemic, but I was furloughed and subsequently left.
Other	I moved from the high school setting to a college health and recreation setting.
	I recently cut back part time duties to per diem.
	Previously in academia and provided outreach services and in-patient care.
	Changed school and employer but remained in secondary school outreach.
	Left the secondary school setting and transitioned to the military setting.
	Secondary School outreach to college athletics.
	Switched schools. Now employed directly at a new school.
	I worked in a chiropractic clinic 2020-2021.
	Transitioned HS to clinical.
Relocation	Changed schools this summer, but still with same outreach company.
	Switched companies due to relocation.
	I took a new AT job in VA from MD, so we moved during pandemic.

	Moved from NCAA Power 5 in Michigan to High School in Texas. My change in workload and hours has changed "a lot" because I now work less and get paid more, not due to COVID but a change in setting and location.
Graduated	From undergraduate BSAT student to certified working in collegiate.
	Was an AT student at a 4-year university in 2020-21 and a community college 2021-22, now working as a GA AT at a 4-year university.
	I went from being an AT student in the pandemic to a full time AT out of the pandemic.
	As a student, working summer camps with children, now working at a Division I institution.
Increased Capacity of Workplace/Expanded	We were able to expand our space of the athletic training clinics for more space in between treatment areas. We were able to acquire some adjacent rooms to make more room. This has been helpful for mental health of the athletic community as a whole.
	Increased full departmental policy development.
Promoted	I was hired full time rather than doing per diem.

Table 4: MBI-HSS Results

Subscales	MBI-HSS Risk Stratification by Scores	MBI-HSS Results by Respondents n (%)	MBI-HSS Subscale Scores
EE	High: ≥ 27 Moderate: 17-26 Low: 0-16	58 (71.6) 20 (24.7) 3 (3.7)	Median = 34.0 IQR: 24-43 (Mean = 34.4)
DP	High: ≥ 13 Moderate: 7-12 Low: 0-6	27 (33.3) 42 (51.9) 12 (14.8)	Median = 10.0 IQR: 7-16 (Mean = 12.0)
PA	High: 0-31 Moderate: 32-38 Low: ≥ 39	0 (0) 6 (7.4) 75 (92.6)	Median = 49.0 IQR: 44-51 (Mean = 47.8)
Note:	MBI-HSS criteria for burnout: High risk EE scores + High risk DP scores or High risk EE scores + High risk PA scores Burnout detected: 33.3% (27/81)		

Table 5: COVID-19 PPS - Frequency

Variable n=81	Never n (%)	Sometimes n (%)	About half the time n (%)	Most of the time n (%)	All of the time n (%)
Contact tracing	44 (54.3)	29 (35.8)	2 (2.5)	3 (3.7)	3 (3.7)

COVID-19 testing	45 (55.6)	28 (34.6)	4 (4.9)	1 (1.2)	3 (3.7)
Sanitize your workplace	1 (1.2)	3 (3.7)	10 (12.3)	15 (18.5)	52 (64.2)
Enforce mask mandate	41 (50.6)	15 (18.5)	5 (6.2)	11 (13.6)	9 (11.1)
Telemedicine appointments	57 (70.4)	20 (24.7)	1 (1.2)	1 (1.2)	2 (2.5)
Educate coach/patient on COVID-19	13 (16.0)	39 (48.1)	7 (8.6)	7 (8.6)	15 (18.5)
Verify vaccination status	43 (53.1)	20 (24.7)	6 (7.4)	3 (3.7)	9 (11.1)
Cardiac screening	52 (64.2)	19 (23.5)	4 (4.9)	1 (1.2)	5 (6.2)

Table 6: COVID-19 PPS - Strength

Variable	Very poor n (%)	Below average n (%)	Average n (%)	Above average n (%)	Excellent n (%)
Patient scheduling (n=80)	7 (8.8)	8 (10.0)	33 (41.3)	17 (21.3)	15 (18.8)
Accessibility to proper COVID-19 PPE (n=81)	4 (4.9)	8 (9.9)	32 (39.5)	15 (18.5)	22 (27.2)
COVID-19 return to play protocol (n=81)	7 (8.6)	8 (9.9)	27 (33.3)	17 (21.0)	22 (27.2)
Support from workplace/employer (n=81)	5 (6.2)	11 (13.6)	18 (22.2)	19 (23.5)	28 (34.6)
Financial compensation for increases in responsibilities (n=81)	43 (53.1)	16 (19.8)	16 (19.8)	3 (3.7)	3 (3.7)
Accessibility to mental health support (n=80)	14 (17.5)	12 (15.0)	29 (36.3)	16 (20.0)	9 (11.3)
Overall COVID-19 policies and procedures (n=81)	2 (2.5)	11 (13.6)	38 (46.9)	13 (16.0)	17 (21.0)

Table 7: Responsibility Changes

Variable	Not at all n (%)	A little n (%)	A moderate amount n (%)	A lot n (%)	A great deal n (%)
How much has the amount of hours you currently work changed compared to the amount of hours you worked pre-pandemic? (n=78)	19 (24.4)	23 (29.5)	25 (32.1)	5 (6.4)	6 (7.7)
How much has your overall workload changed compared to your workload pre-pandemic? (n=78)	9 (11.5)	29 (37.2)	19 (24.4)	13 (16.7)	8 (10.3)
How much have your workplace duties changed compared to your pre-pandemic workplace duties? (n=79)	7 (9.0)	35 (44.9)	19 (24.4)	10 (12.8)	7 (9.0)

Table 8: Kendall Tau Correlation Between EEDP and COVID PPS Questions

Burnout	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q1.0	Q2.0	Q3.0	Q4.0	Q5.0	Q6.0	Q7.0
r-value	-.141	-.016	.060	.134	.063	.040	.092	-.189	.158	.112	.147	.161	.212	.150	-.025
p-value	.190	.879	.573	.195	.564	.700	.377	.077	.124	.273	.148	.114	.042*	.140	.806

Note: *Correlation is significant at the 0.05 level (two-tailed).

Discussion

The purpose of our study was to measure the associations between COVID-19 protocols and burnout among ATs. We found approximately one-third of our sample of ATs met criteria for experiencing burnout measured via the MBI-HSS, and all participants meeting criteria for burnout did so via the EEDP domain. Participants identifying as female and of younger age tended to experience EEDP burnout the most. ATs who indicated they were early in their career or who had significant changes to their work hours and workload also tended to have higher levels of burnout. Financial burden appeared to be the main contributor to career burnout with inadequate accessibility to mental health support, average patient scheduling, and strong support from the workplace or employer also appearing to be noteworthy factors. The COVID-PPS survey revealed workplace sanitization, mask enforcement, and COVID-19 education to be the most common practices implemented with very few participants reporting regular contact tracing, COVID-19 testing, telemedicine appointments, and cardiac screening. Our findings have implications for the future direction of athletic training work conditions as well as adding to the literature an up-to-date burnout rate since having to cope with COVID-19 and suggesting the possible reasoning behind these changes that need to be addressed.

A systematic review of athletic training burnout rates reported this psychological condition to be prevalent among ATs with 20% in the high level of EE; 23.3%, in the high level of DP; and 15.5% in the low level of PA.[1] The 206 NCAA ATs referred to in this meta-analysis

had an average age of 32.7 ± 8.7 years with 52% identifying as male, 95% identifying as white, 47% married, and 80% possessing a master's degree.[15] Participants in our study self-reported experiencing much higher levels of both EE and DP, 71.6% and 33.3%, respectively, compared to previous literature. However, none of the ATs in our study reported experiencing low levels of PA. These differences in results could be attributed to the fact that the systematic review was conducted prior to the onset of COVID-19. The decreased prevalence within the PA domain of the survey could have been caused by ATs potentially viewing their increased COVID-19 responsibilities to be more important and directly affecting the safety and lives of their patients and the general public.

All reports of burnout were determined to be in the emotional exhaustion depersonalization (EEDP) domain and not the emotional exhaustion decreased personal accomplishment (EEPA) domain of the survey. These results are supported by Madden et al who found statistically significant burnout rates solely in the EEDP domains among a sample of 429 ATs primarily working. In secondary school and collegiate settings (82.8% women; age: 33 ± 9 years; experience: 11 ± 9, years in current setting: 6 ± 7).[8] On average, participants scores for each burnout dimension of the MBI-HSS reported by Madden et al were: EE = 17.1, DP = 4.8, and PA = 21.8. Our study revealed an average of 34.43 for the EE domain, 12.05 for the DP domain, and 47.75 for the PA domain. Our surveyed respondents reported higher average levels of emotional exhaustion and depersonalization while feeling a greater sense of personal accomplishment when compared to the aforementioned study. This could be attributed to the timing of the survey being in the later stages of the pandemic as well as ATs potentially feeling their workload increased and never seemed to return to baseline. In some athletic training settings, select institutions determined pay cuts were necessary to survive the pandemic.

However, some individuals may have never experienced a return of their salary to original levels. This may have been due to the fact that many individuals essentially demonstrated they were still able to complete their pre-pandemic duties with lower pay. This could be an additional reasoning behind the specific rises in burnout domains exemplified in our study.

There was not a statistically significant difference in EEDP burnout rate demonstrated between education levels. However, graduate students reported the highest average burnout rate at 50%. This could be attributed to the fact that these ATs underwent an additional two years of school to obtain the same job as those with undergraduate degrees while not having the increased pay or job opportunities available to those with a terminal degree. While there is extremely limited research on the link between athletic training education levels and burnout, Mazerolle et al reported graduate assistant ATs are at risk for burnout because of the time necessary to complete their clinical and academic responsibilities and their additional administrative responsibilities, with Division I graduate assistants at the highest risk.[16] Singe and Bowman also found athletic training students (n=14, 64% females, age: 26 ± 4. Years) enrolled in masters programs across the 14. Separate colleges in 13 different states experienced increased stress levels due to COVID-19 and the demands of a health care professional program.[17]

While 43% of the respondents in our study reported changing job settings, there was not a statistically significant difference in EEDP burnout rate demonstrated between those who did not change settings. A general inductive approach revealed themes within the reasoning behind the reported job changes that included: COVID-19 related duty/workforce changes, increased capacity of workplace/expansion, relocation, and graduation. It could be offered that those who changed settings moved to an environment better suited for them therefore eliminating the relationship between EEDP burnout. Madden et al did report prioritizing COVID-19 roles and

responsibilities over athletic training led many ATs to question both their current setting and staying in the athletic training profession in general.[8] While there hasn't been any published literature further explaining why ATs changed job settings during the pandemic, Sheppard et al found mental distress related to work environment or patient quality and safety to be significant factors in registered nurses intent to leave their profession during the COVID-19 pandemic.[18]

One study aimed to identify the relationship between descriptive/demographic factors and athletic training burnout in a sample of 573 secondary school ATs (age: 36 ± 10 years; experience: 13 ± 10 years; 92% full time status; 65% female), it was reported females experienced higher levels of burnout when compared to males.[19] While there was not a significant difference in burnout among identity in our study, it was notable that females did report a higher average burnout rate (38.8%) compared to those who identified as male (24.1%). The investigators of the same study also found early-career ATs and those 30 years old or younger to demonstrate higher levels of burnout,[19] suggesting the need for more support during this time. Our survey also reported a very weak, negative correlation between EEDP burnout and years spent practicing as an AT. This may indicate that ATs with less experience are experiencing higher levels of burnout when compared to those who have been practicing longer. We also found ATs younger in age to report higher rates of burnout compared to older coworkers.

Among the COVID-PPS questionnaire, EEDP burnout was determined to have a small positive correlation with poor financial compensation for increased responsibilities due to COVID-19 (r=.212). A study comprised of 587 ATs (44.8% female) across all 10 NATA districts employed in Division I football programs that aimed to identify the factors leading to work-family conflict in ATs, supplied qualitative results from 12 ATs (50% female) stating that

one major contributor to feeling unsatisfactory in their job prior to COVID-19 was working long hours, seven days a week, for low pay.[7] The sample size had an average of eight years of experience and reported working as head ATs (12.6%), associate ATs (5.8%), assistant ATs (46.8%), graduate assistant ATs (34.8%), and program directors (2.6%) with 59.3% holding a master's degree and 79% between the ages of 20 and 35 years.[7] These same respondents reported preferring increased pay for the same hours or lower pay for less hours worked.[7] As seen in table 4, some other noteworthy factors found among our COVID-PPS survey included weak mental health support, average support for patient scheduling, and strong support from the workplace or employer. Weak mental health support provided to ATs may directly impact feelings of burnout within the population given it is a psychological condition. Average patient scheduling could be attributed to ATs feeling that their patient scheduling system either did not change during the pandemic or did not play an effective role in minimizing the overall exposure possibility for everyone involved. Interestingly, strong support from the workplace or employer demonstrated a noteworthy relationship with EEDP burnout. This could be due to the AT still feeling burnt out from the normal stresses of their job and the added stressors of COVID-19 brought to the entire world despite their workplace doing its best to support their needs.

EEDP burnout did demonstrate a significant positive correlation with the change in hours worked per week by ATs ($r=.217$, $p=.037$). This means that there was a strong relationship between the increase in hours worked brought on by COVID-19 and the feeling of burnout among ATs. Our findings are supported by others including Mazerolle et al who found through regression analyses that long work hours and traveling contributed directly to burnout causing work family conflict along with inflexible schedules and staffing patterns in ATs.[7]

EEDP burnout demonstrated a small, positive correlation with the overall change in workload in ATs (r=.158, p=.128). The average response among the participants to this Likert scale question was experiencing a moderate increase of overall workload. Prior to COVID-19, Mazerolle et al stated workload and unclear job responsibilities already contributed to work family conflict burnout among Division I ATs.[7] A recent study by Madden et al examined the impact of COVID-19 on AT burnout and reported additional responsibilities and stressors associated with the pandemic seem to have exacerbated burnout in ATs.[7] With career burnout being a resultant of work-related stress, it could be assumed that an increase in workload would increase the stress felt within a job, therefore, leading to higher levels of burnout felt among the workforces. As the workload continues to rise, while salary and other incentives remain stagnant, an eventual inability to adapt would lead to the inflation of burnout levels.

Associations Between COVID-19 PPS Items

Other patterns worth noting were also revealed between each of the COVID-19 PPS questions. Those who reported infrequent contact tracing were also likely to conduct infrequent COVID-19 testing, infrequent mask mandate enforcement, infrequent telemedicine use, infrequent cardiac screening, infrequent COVID-19 coach and patient education, and infrequent vaccination verification. However, the same respondents reported having an average-to-excellent COVID-19 protocol in place and poor financial compensation for increased responsibilities. This could be due to the timing of the survey, where these ATs originally had a strong COVID-19 protocol in place that was successful and no longer required them to continue the additional COVID-19 tasks. This could also be attributed to the location of each AT. Depending on the local COVID-19 policies and regulations, some ATs could work in a more restrictive area

compared to others. The reports of poor financial compensation could be due to the majority of ATs generally reporting poor pay as seen in other studies.[7]

A study of 42 ATs (age 31.33 ± 6.34 years) examining stress-coping mechanisms for COVID-19 used by ATs found the most popular actions to be self-distraction, acceptance, emotional support, positive reframing, and instrument support.[20] The sample size included 9.5% of the respondents identifying as Hispanic or Latino, 78.6% identifying as female, 78.3% having a master's degree, and 50% reporting working in the secondary school setting at the time of the survey.[20] This study utilized a survey via Qualtrics that included demographics, the Perceived Stress Scale, the Stress Appraisal Measure, and the Brief COPE.[20] In our study, it was seen that ATs who reported utilizing patient scheduling were also likely to report having ample access to the proper COVID-19 PPE, a strong COVID-19 return-to-play protocol, adequate access to mental health support, average overall COVID-19 policies and procedures, and excellent support from their workplace and employers. These strategies have previously been seen to decrease the sense of burnout in ATs[7,] and should be heavily considered in all athletic training settings to continue this trend. Among athletic training graduate students, Singe and Bowman found the importance of flexibility and adaptability, increased empathy, and multiple stress management strategies to be emerging themes effective in coping with the pressure of the COVID-19 pandemic.[17]

Limitations

This study was accompanied by several limitations throughout the data collection process. From the NATA database, we received a 6.5% response rate with only an additional 16 respondents from the social media survey. This extremely low response rate hindered the extent of our reach to survey the overall athletic training population. With an estimated athletic training

population of 50,000 in the US, being limited to 1,000 NATA members and word-of-mouth through personal connections contributed to the inherent limitation of the study. The survey was distributed for six weeks towards the end of 2022. Six weeks may have been too short of a time period to allow for additional responses; however, reminder emails were sent out every two weeks to remind participants to take the survey in an attempt to mitigate this limitation. Those who felt the most severe burnout may have also failed to respond due to the lack of time and being overworked in their setting. It is also possible that healthcare professionals, including ATs, were 'oversampled' during the pandemic, as many researchers performed survey research when in-person clinical research was not possible.

The end of 2022 can be viewed as either the end of the pandemic or post-COVID around the US considering most schools were back to in-person instruction and most businesses were back to operating as normal, which could have affected participants' responses. Another consideration to take into account would be the fact that each county or state where the ATs worked likely had varying COVID-19 regulations. Based on the location of each AT, their surrounding infection rate, threat or risk of COVID-19, and overall mandated safety protocols may have been an influence on their responses. We did not account for location, so it is possible that these mandates affected the responses in ways we are unable to describe. Of our responses, we received a majority of female respondents (60.5%) compared to male respondents (35.8%), non-binary, and unanswered. While this is similar to the Board of Certification demographic information for ATs (57.17% female; 42.28% male)[21], this uneven identity distribution limits the generalizability of our study to the overall athletic training population. Future research should aim to identify additional strategies to limit athletic training burnout and provide continued statistical support for the positive effect these can have on not only the individual AT, but on the

job performance as well. Studies should also strive to survey a much larger portion of the athletic training population in the US to get a better vantage point of the situation as well as compared to the results of the smaller studies previously conducted. While it appears the world is past the peak of the COVID-19 pandemic, future studies should be conducted to monitor the long-term effects on ATs.

Conclusion

Our findings were consistent with our hypothesis that the COVID-19 pandemic has changed the AT profession in novel ways. Poor financial compensation for the increased responsibilities brought on by COVID-19 was seen to be the most significant contributor to the increased burnout rate reported in this survey. The biggest jump in burnout symptoms was demonstrated through the emotional exhaustion domain, while no respondents reported low levels of personal accomplishment. This suggests that ATs do recognize this job does take a toll on them, but they feel the work they are doing is rewarding in itself. The change in hours and workload were also seen to play a role in the increased sense of burnout among the ATs. Those who reported stronger COVID-19 protocols also responded to having influential patient scheduling, proper PPE, mental health support, strong COVID-19 return-to-play protocols, and ample support from their workplace or employer. These are strategies which have been previously seen to help mitigate the burnout experience in prior studies. Currently, there is very limited research looking into the effect of COVID-19 on athletic training career burnout, suggesting the need for additional studies on this topic. Moving forward, researchers should aim to get a better understanding on the long-term effects of COVID-19 and effective strategies in alleviating burnout in the larger population of ATs.

CHAPTER 3: FUTURE DIRECTIONS

The primary aim of our study set out to analyze the relationship between COVID-19 protocols and burnout among ATs. We found approximately one-third of our sample of ATs met criteria for experiencing burnout measured via the MBI-HSS, and all participants meeting criteria for burnout did so within the EEDP domain. Participants identifying as female and younger in age tended to be the most prevalent demographics to experience EEDP burnout. ATs who indicated they were early in their career or who had significant changes to their work hours and workload also demonstrated higher levels of burnout. Financial burden appeared to be the main contributor to career burnout with inadequate accessibility to mental health support, average strength patient scheduling strategies, and strong support from the workplace or employer having noteworthy relationships as well. The COVID-PPS survey revealed workplace sanitization, mask enforcement, and COVID-19 education to be the most common practices implemented with very few participants reporting regular contact tracing, COVID-19 testing, telemedicine appointments, and cardiac screening. Our findings have implications for the future direction of athletic training, specifically related to work conditions as well as providing an up-to-date burnout rate since having to cope with COVID-19 and suggesting the possible reasoning behind these changes that need to be addressed. This being said, more research is needed to fully understand the repercussions of COVID-19 on AT burnout and the athletic training profession as a whole. Along with the need to simply increase the amount of literature on this topic, future directions for research should aim to provide evidence to support effective strategies that could be used to help mitigate AT career burnout. Studies should strive to reach a larger sample size and provide a better generalizability in understanding the effect COVID-19 has had on all ATs across the country. Additional research on this topic in the future would inherently provide a

look at the chronic and long-lasting changes COVID-19 has brought upon the burnout rate in ATs. One specific method moving forward to help examine the change in burnout between pre- and post-COVID-19 would be for authors who have already conducted studies prior to COVID-19 on AT burnout to repeat a similar study present day on the same participant pool and compare findings specifically in the areas of job duties and responsibilities, work settings, and burnout rates. With the impending influx of future research, this will bring about the need for additional meta-analyses and literature reviews to keep up with the changes seen in career burnout with ATs. The continuation of dialogue on this topic could help make the necessary permanent changes in this field to one day be able to create a lower burnout rate among these medical professionals.

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APPENDIX A: TABLES

Table 9: MBI-HSS

Variable	Never n (%)	A few times a year or less n (%)	Once a month or less n (%)	A few times a month n (%)	Once a week n (%)	A few times a week n (%)	Everyday n (%)
I feel emotionally drained from my work. (n=81)	4 (4.9)	6 (7.4)	12 (14.8)	19 (23.5)	8 (9.9)	25 (30.9)	7 (8.6)
I feel used up at the end of the workday. (n=81)	3 (3.7)	3 (3.7)	10 (12.3)	16 (19.8)	16 (19.8)	24 (29.6)	9 (11.1)
I feel fatigued when I get up in the morning and have to face another day on the job. (n=81)	5 (6.2)	8 (9.9)	15 (18.5)	18 (22.2)	15 (18.5)	13 (16.0)	7 (8.6)
I can easily understand how my patients feel about things. (n=81)	0 (0.0)	1 (1.2)	0 (0.0)	4 (4.9)	8 (9.9)	20 (24.7)	48 (59.3)
I feel I treat some patients as if they were impersonal objects. (n=81)	42 (51.9)	19 (23.5)	5 (6.2)	7 (8.6)	8 (9.9)	0 (0.0)	0 (0.0)
Working with people all day is really a strain for me. (n=81)	16 (19.8)	23 (28.4)	12 (14.8)	15 (18.5)	2 (2.5)	8 (9.9)	5 (6.2)
I deal very efficiently with the problems of my patients. (n=81)	0 (0.0)	1 (1.2)	1 (1.2)	3 (3.7)	6 (7.4)	27 (33.3)	43 (53.1)

I feel burned out from my work. (n=81)	6 (7.4)	19 (23.5)	12 (14.8)	18 (22.2)	9 (11.1)	11 (13.6)	6 (7.4)
I feel I'm positively influencing other people's lives through my work. (n=81)	0 (0.0)	0 (0.0)	3 (3.7)	6 (7.4)	5 (6.2)	28 (34.6)	39 (48.1)
I've become more callous toward people since I took this job. (n=81)	24 (29.6)	22 (27.2)	11 (13.6)	8 (9.9)	5 (6.2)	9 (11.1)	2 (2.5)
I worry that this job is hardening me emotionally. (n=81)	29 (35.8)	18 (22.2)	8 (9.9)	9 (11.1)	4 (4.9)	8 (9.9)	5 (6.2)
I feel very energetic. (n=81)	0 (0.0)	1 (1.2)	5 (6.2)	6 (7.4)	10 (12.3)	46 (56.8)	13 (16.0)
I feel frustrated by my job. (n=80)	2 (2.5)	7 (8.8)	12 (15.0)	16 (20.0)	21 (26.3)	17 (21.3)	5 (6.3)
I feel I'm working too hard on my job. (n=81)	6 (7.4)	9 (11.1)	10 (12.3)	14 (17.3)	16 (19.8)	21 (25.9)	5 (6.2)
I don't really care what happens to some patients. (n=81)	47 (58.0)	13 (16.0)	10 (12.3)	3 (3.7)	6 (7.4)	1 (1.2)	1 (1.2)
Working with people directly puts too much stress on me. (n=81)	23 (28.4)	28 (34.6)	9 (11.1)	12 (14.8)	3 (3.7)	4 (4.9)	2 (2.5)
I can easily create a relaxed atmosphere with my patients. (n=81)	1 (1.2)	1 (1.2)	0 (0.0)	4 (4.9)	6 (7.4)	26 (32.1)	43 (53.1)

I feel exhilarated after working closely with my patients. (n=81)	1 (1.2)	3 (3.7)	5 (6.2)	9 (11.1)	10 (12.3)	37 (45.7)	16 (19.8)
I have accomplished many worthwhile things in this job. (n=81)	0 (0.0)	3 (3.7)	2 (2.5)	11 (13.6)	16 (19.8)	26 (32.1)	23 (28.4)
I feel like I'm at the end of my rope. (n=81)	20 (24.7)	27 (33.3)	11 (13.6)	12 (14.8)	4 (4.9)	4 (4.9)	3 (3.7)
In my work, I deal with emotional problems very calmly. (n=81)	0 (0.0)	1 (1.2)	2 (2.5)	6 (7.4)	8 (9.9)	34 (42.0)	30 (37.0)
I feel patients blame me for some of their problems. (n=81)	27 (33.3)	31 (38.3)	3 (3.7)	8 (9.9)	4 (9.9)	5 (4.9)	3 (3.7)

Table 10: Kendall Tau Correlation Between COVID-19 PPS Questions

Correlations

			Burnout_EEDP	COVID19_PPS_1	COVID19_PPS_2	COVID19_PPS_3	COVID19_PPS_4	COVID19_PPS_5	COVID19_PPS_6	COVID19_PPS_7	COVID19_PPS_8	COVID_19PPS_1.0	COVID_19PPS_2.0	COVID_19PPS_3.0	COVID_19PPS_4.0	COVID_19PPS_5.0	COVID_19PPS_6.0
Kendall's tau_b	COVID19_PPS_1	Correlation Coefficient	-.141														
		Sig. (2-tailed)	.190														
		N	81														
	COVID19_PPS_2	Correlation Coefficient	-.016	.571**													
		Sig. (2-tailed)	.879	<.001													
		N	81	81													
	COVID19_PPS_3	Correlation Coefficient	.060	.049	-.051												
		Sig. (2-tailed)	.573	.632	.619												
		N	81	81	81												
	COVID19_PPS_4	Correlation Coefficient	.134	.289**	.248*	.123											
		Sig. (2-tailed)	.195	.003	.012	.209											
		N	81	81	81	81											
	COVID19_PPS_5	Correlation Coefficient	.063	.216*	.167	-.203	.261**										
		Sig. (2-tailed)	.564	.040	.112	.051	.010										
		N	81	81	81	81	81										
	COVID19_PPS_6	Correlation Coefficient	.040	.315**	.276**	.228*	.550**	.107									
		Sig. (2-tailed)	.700	.001	.005	.019	<.001	.288									
		N	81	81	81	81	81	81									
	COVID19_PPS_7	Correlation Coefficient	.092	.376**	.392**	.066	.435**	.194	.408**								
		Sig. (2-tailed)	.377	<.001	<.001	.505	<.001	.058	<.001								
		N	81	81	81	81	81	81	81								
	COVID19_PPS_8	Correlation Coefficient	-.189	.230*	.327**	-.103	.104	.282**	.193*	.301**							
		Sig. (2-tailed)	.077	.025	.001	.312	.290	.007	.049	.003							
		N	81	81	81	81	81	81	81	81							
	COVID_19PPS_1.0	Correlation Coefficient	.158	.070	.187	-.083	.038	.172	.003	.237*	.179						
		Sig. (2-tailed)	.124	.480	.058	.392	.685	.086	.978	.013	.068						
		N	80	80	80	80	80	80	80	80	80						
	COVID_19PPS_2.0	Correlation Coefficient	.112	.087	.148	.077	.178	.167	.289**	.306**	.149	.394**					
		Sig. (2-tailed)	.273	.376	.133	.427	.059	.095	.002	.001	.128	<.001					
		N	81	81	81	81	81	81	81	81	81	80					
	COVID_19PPS_3.0	Correlation Coefficient	.147	.212*	.271**	-.075	.144	.067	.221*	.243*	.213*	.476**	.419**				
		Sig. (2-tailed)	.148	.029	.005	.438	.125	.500	.018	.010	.028	<.001	<.001				
		N	81	81	81	81	81	81	81	81	81	80	81				
	COVID_19PPS_4.0	Correlation Coefficient	.161	-.087	-.062	.138	-.041	-.114	.021	-.055	-.052	.198*	.146	.353**			
		Sig. (2-tailed)	.114	.374	.522	.151	.661	.251	.821	.562	.594	.034	.116	<.001			
		N	81	81	81	81	81	81	81	81	81	80	81	81			
	COVID_19PPS_5.0	Correlation Coefficient	.212*	-.199*	-.048	-.035	-.191*	-.091	-.144	-.064	-.041	.144	.155	.194*	.435**		
		Sig. (2-tailed)	.042	.048	.635	.725	.047	.372	.133	.514	.681	.132	.105	.041	<.001		
		N	81	81	81	81	81	81	81	81	81	80	81	81	81		
	COVID_19PPS_6.0	Correlation Coefficient	.150	-.012	.089	-.047	-.230*	.066	-.209*	-.031	.018	.341**	.265**	.282**	.351**	.498**	
		Sig. (2-tailed)	.140	.904	.360	.625	.014	.506	.026	.745	.852	<.001	.004	.002	<.001	<.001	
		N	80	80	80	80	80	80	80	80	80	79	80	80	80	80	
	COVID_19PPS_7.0	Correlation Coefficient	-.025	.138	.203*	-.076	.167	.081	.229*	.154	.200*	.416**	.429**	.545**	.408**	.220*	.245**
		Sig. (2-tailed)	.806	.165	.040	.437	.078	.422	.016	.110	.042	<.001	<.001	<.001	<.001	.022	.009
		N	81	81	81	81	81	81	81	81	81	80	81	81	81	81	80

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

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

A Kendall's tau-b correlation was run to determine the relationship between each of the COVID-19 PPS questions among the 81 participants. There was a moderate, positive correlation between infrequent contact tracing and infrequent COVID-19 testing, which was statistically significant (r=.571, p<.001). There was a very weak, positive correlation between contact tracing and infrequent mask mandate enforcement (r=.289, p=.003), infrequent telemedicine use (r=.216, p=.040), infrequent cardiac screening (r=.230, p=.025), and an average – excellent COVID-19 return to play protocol (r=.212, p=.029), which was statistically significant. There was a weak, positive correlation between contact tracing and infrequent coach/patient COVID-19 education (r=.315, p=.001), infrequent vaccination verification (r=.376, p<.001), which was statistically significant. There was a very weak, negative correlation between contact tracing and poor financial compensation for increased responsibilities (r=-.199, p=.048), which was statistically significant.

The Kendall's tau-b correlation demonstrated a very weak, positive correlation between infrequent COVID-19 testing and infrequent mask mandate enforcement (r=.248, p=.012), infrequent COVID-19 coach/patient education (r=.276, p=.005), average – excellent COVID-19 return to play protocol (r=.271, p=.005), and average overall COVID-19 policies and procedures (r=.203, p=.040), which was statistically significant. A weak, positive correlation was demonstrated between infrequent COVID-19 testing with infrequent vaccination verification (r=.392, p<.001) and infrequent cardiac screening (r=.327, p=.001) which was statistically significant.

The Kendall's tau-b correlation demonstrated a very weak, positive correlation between always sanitizing the workplace and infrequent coach/patient COVID-19 education (r=.228, p=.019), which was statistically significant.

A very weak, positive correlation was found between infrequent mask mandate enforcement and infrequent telemedicine use (r=.261, p=.010), which was statistically significant. A moderate, positive correlation was found between infrequent mask mandate enforcement and infrequent coach/patient COVID-19 education (r=.550, p<.001), which was statistically significant. A weak, positive correlation was found between infrequent mask mandate enforcement and infrequent vaccination verification (r=.435, p<.001), which was statistically significant. Very weak, negative correlations were found with infrequent mask mandate enforcement between poor financial compensation for increased responsibilities (r=-.191, p=.047) and an average level of accessibility to mental health support (r=-.230, p=.014), which was statistically significant.

The Kendall's tau-b correlation demonstrated a very weak, positive correlation between infrequent telemedicine use and infrequent cardiac screening (r=.282, p=.007), which was statistically significant.

A weak, positive correlation was found between infrequent coach/patient COVID-19 education and infrequent vaccination verification (r=.408, p<.001), which was statistically significant. A very weak, positive correlation was found between infrequent coach/patient COVID-19 education and infrequent cardiac screening (r=.193, p=.049), average – excellent accessibility to proper COVID-19 PPE (r=.289, p=.002), average – excellent COVID-19 return to play protocol (r=.221, p=.018), and average overall COVID-19 policies and procedures (r=.229, p=.016), which was statistically significant. A very weak, negative correlation was found between infrequent coach/patient COVID-19 education and an average level of accessibility to mental health support (r=-.209, p=.026), which was statistically significant.

A weak, positive correlation was found with infrequent vaccination verification between infrequent cardiac screening (r=.301, p=.003) and average – excellent accessibility to proper COVID-19 PPE (r=.306, p=.001), which was statistically significant. A very weak, positive correlation was found with infrequent vaccination verification between an average strength of patient scheduling (r=.237, p=.013) and an average – excellent COVID-19 return to play protocol (r=.243, p=.010), which was statistically significant.

Very weak, positive correlations were found with infrequent cardiac screening between an average – excellent COVID-19 return to play protocol (r=.213, p=.028) and average overall COVID-19 policies and procedures (r=.200, p=.042), which was statistically significant.

The Kendall's tau-b test demonstrated a weak, positive correlation with an average strength of patient scheduling between average – excellent accessibility to proper COVID-19 PPE (r=.394, p<.001), an average – excellent COVID-19 return to play protocol (r=.476, p<.001), an average level of accessibility to mental health support (r=.341, p<.001), and average overall COVID-19 policies and procedures (r=.416, p<.001), which was statistically significant. A very weak, positive correlation was found between an average strength of patient scheduling and excellent support from workplace/employer (r=.198, p=.034), which was statistically significant.

Weak, positive correlations were found with average – excellent accessibility to proper COVID-19 PPE between an average – excellent COVID-19 return to play protocol (r=.419, p<.001) and average overall COVID-19 policies and procedures (r=.429, p<.001), which was statistically significant. A very weak, positive correlation was found between average – excellent

accessibility to proper COVID-19 PPE and an average level of accessibility to mental health support (r=.265, p=.004), which was statistically significant.

A very weak, positive correlation was demonstrated between an average – excellent COVID-19 return to play protocol and an average level of accessibility to mental health support (r=.282, p=.002), which was statistically significant. A weak, positive correlation was found between an average – excellent COVID-19 return to play protocol and an average strength of patient scheduling and support from workplace/employer (r=.353, p<.001), which was statistically significant. A moderate, positive correlation was found between an average – excellent COVID-19 return to play protocol and average overall COVID-19 policies and procedures (r=.545, p<.001), which was statistically significant.

Weak, positive correlations were found with excellent support from workplace/employer and poor financial compensation for increased responsibilities (r=.435, p<.001), an average level of accessibility to mental health support (r=.351, p<.001), and average overall COVID-19 policies and procedures (r=.408, p<.001), which is statistically significant.

A very weak, positive correlation was demonstrated between poor financial compensation for increased responsibilities and average strength of overall COVID-19 policies and procedures (r=.220, p=.022), which was statistically significant. A weak, positive correlation was found between poor financial compensation for increased responsibilities and average level of accessibility to mental health support (r=.498, p<.001), which was statistically significant.

A very weak, positive correlation was demonstrated between an average level of accessibility to mental health support and average overall COVID-19 policies and procedures (r=.245, p=.009), which was statistically significant.

APPENDIX B: COVID-19 AND AT BURNOUT SURVEY

COVID-19 and AT Burnout Survey

Start of Block: Consent

Q1_Consent We would like to invite you to participate in a brief survey research project investigating the association between career burnout and COVID-19 policies and procedures in Certified Athletic Trainers. This survey will take approximately 10 minutes to complete, and your participation is voluntary. All responses to this survey will remain anonymous (i.e., no one will be able to identify you or your answers) unless you choose to provide your email address at the end of the survey to be entered into a raffle to win one of several $10 Amazon gift cards. If you do choose to provide your email address, it will be unlinked and kept separately from your data for confidentiality purposes and will only be used to contact you in the event you are randomly chosen to receive a gift card.

This survey will contain a variety of question types (e.g., multiple choice, Likert-scale, etc.) that relate to your experience as a Certified Athletic Trainer currently and throughout the COVID-19 pandemic. There are no right or wrong answers to any of the questions. If you do not feel a question is relevant to your experience, you may skip it. Of course, we hope you will answer all of the items, but you do not have to answer any question you do not want to, for any reason at all. If you do have any concerns about your participation in this survey, you may contact Dr. Megan Nelson (msuer@nmu.edu), Assistant Professor, or Dr. Lisa Eckert (leckert@nmu.edu; 906-227-1291), Dean of Graduate Studies and Research. This project was approved by the Northern Michigan University Institutional Review Board.

By selecting "Yes, I consent" you acknowledge that you consent to voluntarily participate in this survey, that you are at least 18 years of age and understand that you have the option to withdraw participation in this study at any time with no penalties involved.

Note: If you have received and completed this survey via an NATA email, please do not proceed any further.

☐ Yes, I am at least 18 years old and consent to voluntary participate in this study. (1)

☐ No, I do not consent to voluntarily participate in this study and/or I am not at least 18 years old. (2)

Skip To: End of Survey If We would like to invite you to participate in a brief research project investigating the a = No, I do not consent to voluntarily participate in this study and/or I am not at least 18 years old

End of Block: Consent

Start of Block: Job demographics

Q2_PriorPracticeCOV Were you practicing as a Certified and/or Licensed Athletic Trainer before the onset of the COVID-19 pandemic (i.e., prior to January 2020)?

- ○ Yes (1)
- ○ No (2)

Q3_PractDuringCOV Were you practicing as a Certified and/or Licensed Athletic Trainer during the COVID-19 pandemic (i.e., January 2020 to present)?

- ○ Yes (1)
- ○ No (2)

Q4_CurrentPrac Are you currently practicing as a Certified and/or Licensed Athletic Trainer (if no, please explain)?

- ○ Yes (1)
- ○ No (please explain): (2) _____

Q5_NATA_member Are you currently a member of the National Athletic Trainers' Association (NATA)?

- ○ Yes (1)
- ○ No (2)

End of Block: Job demographics

Start of Block: MBI-HSS Survey

Q6 **Instructions:** Below are 22 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, select the statement "never". If you have had this feeling, indicate how often you feel it by selecting the statement that best describes how frequently you feel that way.

	Never (1)	A few times a year or less (2)	Once a month or less (3)	A few times a month (4)	Once a week (5)	A few times a week (6)	Every day (7)
I feel emotionally drained from my work. (1)	○	○	○	○	○	○	○
I feel used up at the end of the workday. (2)	○	○	○	○	○	○	○
I feel fatigued when I get up in the morning and have to face another day on the job. (3)	○	○	○	○	○	○	○
I can easily understand how my patients feel about things. (4)	○	○	○	○	○	○	○
I feel I treat some patients as if they were impersonal objects. (5)	○	○	○	○	○	○	○

Working with people all day is really a strain for me. (6)	○	○	○	○	○	○	○
I deal very efficiently with the problems of my patients. (7)	○	○	○	○	○	○	○
I feel burned out from my work. (8)	○	○	○	○	○	○	○
I feel I'm positively influencing other people's lives through my work. (9)	○	○	○	○	○	○	○
I've become more callous toward people since I took this job. (10)	○	○	○	○	○	○	○
I worry that this job is hardening me emotionally. (11)	○	○	○	○	○	○	○

MBI_HSS: How often do you experience the following job-related feelings?

	Never (1)	A few times a year or less (2)	Once a month or less (3)	A few times a month (4)	Once a week (5)	A few times a week (6)	Every day (7)
I feel very energetic. (1)	○	○	○	○	○	○	○
I feel frustrated by my job. (2)	○	○	○	○	○	○	○
I feel I'm working too hard on my job. (3)	○	○	○	○	○	○	○
I don't really care what happens to some patients. (4)	○	○	○	○	○	○	○
Working with people directly puts too much stress on me. (5)	○	○	○	○	○	○	○
I can easily create a relaxed atmosphere with my patients. (6)	○	○	○	○	○	○	○
I feel exhilarated after working closely with my patients. (7)	○	○	○	○	○	○	○
I have accomplished many	○	○	○	○	○	○	○

worthwhile things in this job. (8)							
I feel like I'm at the end of my rope. (9)	○	○	○	○	○	○	○
In my work, I deal with emotional problems very calmly. (10)	○	○	○	○	○	○	○
I feel patients blame me for some of their problems. (11)	○	○	○	○	○	○	○

End of Block: MBI-HSS Survey

Start of Block: COVID19_PPS

COVID19_PPS: How often do you perform each of the following COVID-19 related tasks on a typical workday?

	Never (1)	Sometimes (2)	About half the time (3)	Most of the time (4)	Always (5)
Contact tracing. (1)	○	○	○	○	○
COVID-19 testing. (2)	○	○	○	○	○
Sanitize your workplace. (3)	○	○	○	○	○
Enforce mask mandate. (4)	○	○	○	○	○
Telemedicine appointments. (5)	○	○	○	○	○
Educate coach/patient on COVID-19. (6)	○	○	○	○	○
Verify vaccination status. (7)	○	○	○	○	○
Cardiac screening. (8)	○	○	○	○	○

COVID_19PPS: Rate the strength of the following policies and/or protocols in your workplace.

	Very Poor (1)	Below Average (2)	Average (3)	Above Average (4)	Excellent (5)
Patient scheduling. (1)	○	○	○	○	○
Accessibility to proper COVID-19 PPE. (2)	○	○	○	○	○
COVID-19 return to play protocol. (3)	○	○	○	○	○
Support from workplace/employer. (4)	○	○	○	○	○
Financial compensation for increases in responsibilities. (5)	○	○	○	○	○
Accessibility to mental health support. (6)	○	○	○	○	○
Overall COVID-19 policies and procedures. (7)	○	○	○	○	○

Pcnt_COVIDtasks: What percentage of time, on a typical day at your job, do you spend performing COVID-19 related tasks?

	0 10 20 30 40 50 60 70 80 90 100
Please drag/click your response on the bar provided. ()	

HoursChange: How much has the amount of hours you currently work changed compared to the amount of hours you worked pre-pandemic?

- ○ Not at all (1)
- ○ A little (2)
- ○ A moderate amount (3)
- ○ A lot (4)
- ○ A great deal (5)

WrkloadChange: How much has your overall workload changed compared to your workload pre-pandemic?

- ○ Not at all (1)
- ○ A little (2)
- ○ A moderate amount (3)
- ○ A lot (4)
- ○ A great deal (5)

WorkDutiesChange: How much have your workplace duties changed compared to your pre-pandemic workplace duties?

- ○ Not at all (1)
- ○ A little (2)
- ○ A moderate amount (3)
- ○ A lot (4)
- ○ A great deal (5)

End of Block: COVID19_PPS

Start of Block: Demographics

Education: What is the highest level of education you have completed?

- ○ Bachelor's degree (1)
- ○ Master's degree (2)
- ○ Ph.D. or other terminal degree (e.g., DAT) (3)
- ○ Prefer not to say (4)

ATYears: How many years have you been working as a Certified and/or Licensed Athletic Trainer?

_____

JobSetting How would you describe your current job setting (check all that apply)?

- [ ] High school athletics (1)
- [ ] Outreach school athletics (2)
- [ ] College athletics (3)
- [ ] Professional/Olympic athletics (4)
- [ ] Hospital (5)
- [ ] Clinical rehabilitation (6)
- [ ] Per diem (7)
- [ ] Graduate assistant/student (8)
- [ ] Not currently practicing (9)
- [ ] AT Education (10)
- [ ] Other (please describe): (11) _____

JobSettingChange Has your job setting changed since the onset of the COVID-19 pandemic?

- ○ Yes (please describe): (1) _____
- ○ No (2)

Page Break

Identity How do you describe yourself?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer to self-describe (4) _____
- ○ Prefer not to say (5)

Age: How old are you in years?

_____

End of Block: Demographics

Start of Block: Block 5

End: Thank you for taking this survey. We have recorded your response and sincerely appreciate your time!

If you would like to be entered into a drawing to receive one of several $10 Amazon gift cards, **please provide your email address below** so we may contact you in the event you are chosen as a winner.

_____

End of Block: Block 5

APPENDIX C: IRB APPROVAL

Graduate Studies and Research
Marquette, MI 49855-5301
906-227-2300
www.nmu.edu/graduatestudies/

Memorandum

TO: Megan Nelson
Harrison Garcia
School of Health and Human Performance

FROM: Lisa Schade Eckert
Dean, Graduate Studies and Research
Northern Michigan University

DATE: July 15, 2022

SUBJECT: IRB Proposal HS22-1319
"Effects of COVID-19 protocols on burnout in Certified Athletic Trainers"
IRB Approval Date: 7/15/2022
Proposed Project Dates: 7/15/2022 – 2/1/2023

Your proposal "Effects of COVID-19 protocols on burnout in Certified Athletic Trainers" has been approved by the Northern Michigan University Institutional Review Board. Please include your proposal number (HS22-1319) on all research materials and on any correspondence regarding this project.

If you find that modifications of investigators, methods, or procedures are necessary, you must submit a Project Modification Form for Research Involving Human Subjects before collecting data. Any changes or revisions to your approved research plan must be approved by the IRB prior to implementation.

Until further guidance, per CDC guidelines, the PI is responsible for obtaining signatures on the COVID-19 Researcher Agreement and Release and COVID-19 Research Participant Agreement and Release forms.

All forms can be found at the NMU Human Subjects Research webpage.