

Athletic Trainer Burnout: A Systematic Review of the Literature

Leslie W. Oglesby, PhD, LAT, ATC*;

Andrew R. Gallucci, PhD, LAT, ATC, CSCS†; Christopher J. Wynveen, PhD†

*School of Health Professions, The University of Southern Mississippi, Hattiesburg; †Department of Health, Human Performance and Recreation, Baylor University, Waco, TX

Objective: To identify the causes, effects, and prevalence of burnout in athletic trainers (ATs) identified in the literature.

Data Sources: EBSCO: SPORTDiscus and OneSearch were accessed, using the search terms *athletic trainer* AND *burnout*.

Study Selection: Studies selected for inclusion were peer reviewed, published in a journal, and written in English and investigated prevalence, causes, effects, or alleviation of AT burnout.

Data Extraction: The initial search yielded 558 articles. Articles that did not specifically involve ATs were excluded from further inspection. The remaining 83 full-text articles were reviewed. Of these 83 articles, 48 examined prevalence, causes, effects, or alleviation of AT burnout. An evaluation of the bibliographies of those 48 articles revealed 3 additional articles that were not initially identified but met the inclusion criteria. In total, 51 articles were included in data collection.

Data Synthesis: Articles were categorized based on investigation of prevalence, causes, effects, or alleviation of burnout. Articles were also categorized based on which subset of the athletic training population they observed (ie, athletic training students, certified graduate assistants, high school or collegiate staff members, academic faculty).

Conclusions: Burnout was observed in all studied subsets of the population (ie, students, graduate assistants, staff, faculty), and multiple causes of burnout were reported. Suggested causes of burnout in ATs included work-life conflict and organizational factors such as poor salaries, long hours, and difficulties dealing with the “politics and bureaucracy” of athletics. Effects of burnout in ATs included physical, emotional, and behavioral concerns (eg, intention to leave the job or profession).

Key Words: work-life conflict, role strain, attrition

Key Points

- Burnout occurred in athletic training students, graduate assistants, staff, and faculty.
- Causes of burnout in athletic trainers included work-life conflict and role strain.
- Physical, emotional, and behavioral concerns have all been associated with burnout in athletic trainers.

Burnout was first described in the literature in 1974¹ and is defined as a psychological syndrome that includes emotional exhaustion (EE), depersonalization of patients (DP), and decreased perception of personal accomplishment (PA).² Burnout has been identified in a variety of health care professionals, including physicians,^{3,4} psychiatrists,⁵ dentists,^{6,7} paramedics,^{8,9} nurses,^{10,11} and psychologists.^{12–14} In fact, among physicians,⁴ a high level of EE was reported in 31%, a high level of DP in 25.3%, and a low level of PA in 12.3%; among nurses,¹¹ a high level of EE was reported in 36%, a high level of DP in 12%, and a low level of PA in 10%. In 2 studies^{12,13} of psychologists, a high level of EE was reported in 44%, a high level of DP in 34.3%, and a low level of PA in 0.9%. These results show the high occurrence of EE and DP along with a low perception of PA, which constitute burnout in health care professionals.

These findings are concerning because the literature indicated that individuals suffering from burnout could display decreased work quality,^{3,15,16} increased substance use,^{3,5,17} and more reporting of depressive symptoms.^{3,18}

Decreased work quality in health care professionals is of utmost concern as this suggests decreased quality of patient care. The authors¹⁹ of a systematic review commented that decreased occupational well-being in physicians might lead to decreased quality of patient care. Another group²⁰ specifically examined the effects of burnout in surgeons and found a significant positive correlation between burnout and self-reported major medical errors in the prior 3 months. Investigators of burnout in nurses and patient satisfaction noted a similar adverse relationship.²¹

Athletic trainers (ATs) are health care professionals who also experience burnout.^{18,22–25} After the age of 30, athletic trainers in the workforce decline,²⁶ and burnout could be a contributing factor to this attrition.²³ Despite the significant volume of literature published on burnout in ATs recently, a systematic review of this body of literature is needed to identify gaps and provide direction for future research. The purpose of our systematic review was to identify published estimated prevalence, causes, and effects of burnout in ATs as well as potential methods of alleviation.

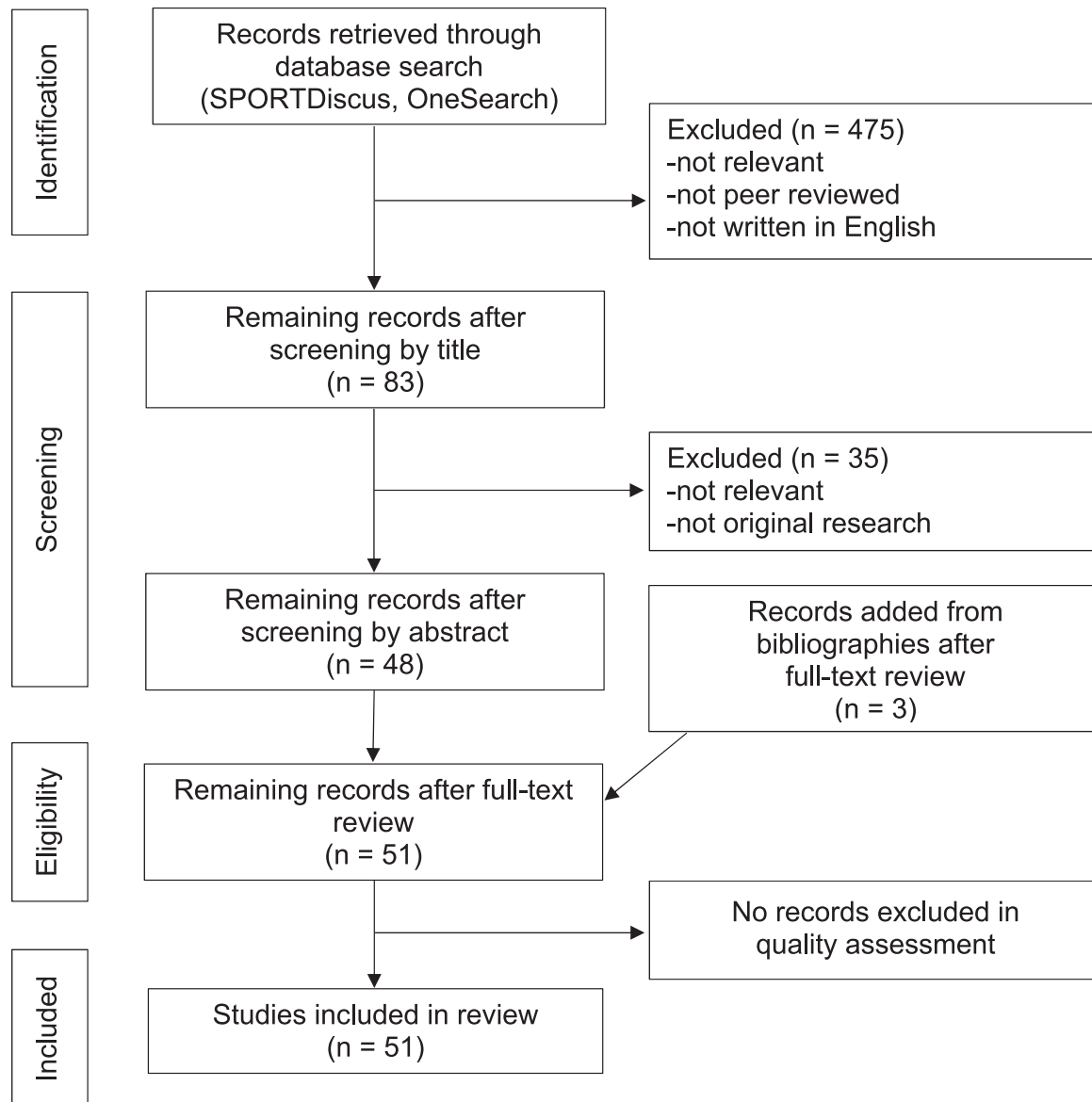


Figure. Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) flow chart.

METHODS

Literature Search Strategy

The SPORTDiscus and OneSearch databases were accessed in February 2018 to locate valid research for this review. To obtain all available studies, we placed no limits on publication dates. Using the search terms *athletic trainer* AND *burnout*, we identified 55 results in SPORTDiscus and 503 results in OneSearch.

Included Studies

An initial search identified 558 results. For inclusion, articles had to be published in peer-reviewed journals and written in English. Articles that did not meet these criteria and those with titles that indicated the research did not pertain to athletic training were removed, which left 83 articles. Each of the remaining 83 articles underwent an abstract review and then a full-text review. Articles that did not address new research (ie, editorials, brief summaries) or

did not investigate prevalence, causes, effects, or alleviation of burnout in ATs were then removed, which left 48 articles. After reviewing the bibliographies of all 48 remaining articles, we identified an additional 3 articles that did not appear in the original search, fully reviewed them, and determined they met all aforementioned criteria. This resulted in 51 articles for data collection (Figure).

Data Collection

All articles included in the systematic review underwent an assessment of methodologic quality (Table 1). Different assessment tools were applied based on the type of research conducted. We used the Qualitative Checklist of the Critical Appraisal Skills Programme (CASP)⁷³ to assess all qualitative studies (n = 23). Although a numeric value did not suggest the overall worth of articles that were appraised using CASP,⁷³ it can help readers determine worth based on methodologic quality. Therefore, CASP scores were not used as a method of inclusion or exclusion

for articles. Rather, they were simply reported in Tables 1–3 so that readers may be aware of the methodologic quality of each study. The maximum possible CASP score is 9/9.

The remaining studies included in the systematic review were a case study ($n = 1$), cross-sectional studies in the form of a survey ($n = 20$), and mixed-methods studies that included qualitative and quantitative survey components ($n = 7$). These studies were all assessed using Study Quality Assessment Tools provided by the National Heart, Lung, and Blood Institute (NHLBI).⁷⁴ The case study was assessed using the NHLBI Quality Assessment Tool for Case Series Studies, which allows for a maximum score of 9/9. The cross-sectional studies were assessed using the NHLBI Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies, which allows for a maximum score of 14/14. Both tools allowed for lower maximum scores if certain aspects of the tool were not applicable to the study in question. Similar to the studies that were appraised using CASP, these scores were not used as a method of inclusion or exclusion but were reported in Tables 1–3.

Articles that met all inclusion criteria were categorized by the purpose of the study (ie, studying causes, effects, or prevalence of burnout). Based on the results of the search, articles were also categorized based on the subset of the AT population studied (ie, athletic training students, certified graduate assistants [GAs], high school or collegiate staff ATs, academic faculty). Meta-analyses were not performed for multiple reasons. Many of the studies ($n = 23$) were qualitative in nature. Also, studies of the same subsets of populations using the same instruments were limited. Specifically, only a handful of researchers^{29,75} assessed burnout using the Maslach Burnout Inventory, and they investigated athletic training program directors (ATPDs), students, GAs, or staff.

RESULTS

Causes of Burnout in ATs

The causes of burnout in ATs have received much attention in the literature. Among the 51 articles we reviewed, 29 groups of authors investigated causes of burnout. Specifically, work-family conflict (WFC), role strain, and challenges with professional socialization were identified. The literature pertaining to each of the causes of AT burnout is discussed below.

Work-Family and Work-Life Conflict

Work-family conflict (WFC) is a disruption of responsibilities associated with family that is caused by one's work.⁷⁶ Twelve groups of authors* investigated WFC in ATs (Table 2). Several suggested that ATs did suffer from WFC.^{43,44,47} For example, in 1 study⁴³ ($n = 587$), more than 60% of respondents reported that their work interfered with home and family, sometimes resulting in missing family activities; other researchers^{57,66} observed similar results. It is also important to note that 1 group⁴³ demonstrated no difference in the amount of WFC experienced by ATs based on marital status or number of children. The authors suggested that ATs who were single and had no children

might still experience conflict between professional expectations and personal responsibilities outside of work. For this reason, the term *work-life conflict* (WLC) was introduced and will be used hereafter.

Multiple causes of WLC among ATs have been identified. The number of hours worked and travel requirements associated with athletic training were linked with increased WLC among ATs.^{43,47,66} Staffing patterns can also contribute to WLC: fewer ATs resulted in more medical coverage per AT and may therefore be a source of WLC.⁴³ A lack of work flexibility also contributed to WLC. Rescheduled or delayed practices or games could interfere with family plans for ATs and thereby increase WLC.⁴³

Males and females both experienced WLC, although the causes of WLC and the experience itself varied by sex. Specifically, female ATs felt that motherhood presented an additional challenge to maintaining work-family balance because they must take greater responsibility in caring for their children than males.^{26,59} Female ATs also expressed a belief that their gender played a role in whether they could maintain careers as ATs.⁵³ Mazerolle and Eason⁵³ posited that the increased strain could be attributed to the beliefs held by many participants regarding the traditional role of females in the family. Specifically, several participants in a qualitative study ($N = 27$) thought that the primary focus of females should be child rearing rather than pursuing a career, which made these participants fear that being ATs would interfere with their responsibilities as mothers.⁵³ Authors^{55,58} examining male ATs found that the time of year and occupational demands of the job had a greater effect on WLC. Due to the seasonal nature of work for many ATs, certain times of the year could require that ATs spend more hours at work to provide medical care for their teams. During these times, WLC might reach a peak, only to lessen during the off-season.^{55,58} The same participants also believed that personal time, separating work from life, and using a support network could prove beneficial in decreasing WLC.^{55,58} Regardless of gender, ATs in these samples were concerned with work-family balance while having children, in that children made this balance harder to maintain.³² Due to this perception, ATs commented that childbearing decisions were strongly affected by their work setting, suggesting that some ATs might feel pressure to choose between career and children.³²

The effect of various work settings on WLC in ATs has also been addressed. High school and collegiate ATs reported greater levels of WLC than those working in the clinical, industrial, and professional settings.⁵⁴ Although Mazerolle et al⁵⁴ mentioned criterion scores for categorizing participants as experiencing low, moderate, or high WLC, no data indicated the percentage of participants in each category. Most research on WLC in collegiate settings occurred in National Collegiate Athletic Association (NCAA) Division I, yet 1 study⁵⁷ suggested that WLC was also prevalent in other collegiate settings (ie, Divisions II and III, National Association of Intercollegiate Athletics, National Junior College Athletic Association). In summary, WLC affected ATs employed in many work settings.

Although 12 groups of investigators examined WLC in ATs, only 2 of those 12 examined the relationship between WLC and burnout.^{43,44} Both found a positive, moderate, and statistically significant relationship between these

*References 26, 32, 43, 44, 47, 66, 53–55, 57–59.

Table 1. Overview of Reviewed Studies and Key Findings Extended on Next Page

Study (Year)	Sample	Study Design
Aparicio et al (2015) ²⁷	104 Division I ATs	One-time survey
Bowman et al (2015) ²⁸	12 graduates of postprofessional athletic training programs who were no longer primarily employed as an AT	Qualitative survey
Campbell et al (1985) ¹⁸	221 ATs	One-time survey
Capel (1986) ²⁹	332 ATs	One-time survey
Capel (1990) ²²	82 former ATs	One-time survey
DeFreese and Mihalik (2016) ³⁰	154 ATs	One-time survey
Dorrel et al (2014) ³¹	190 collegiate ATs with dual role of clinician and educator	One-time survey
Eberman and Kahanov (2013) ³²	1962 NATA members	One-time survey
Gaffney et al (2012) ³³	367 ATs	One-time survey
Giacobbi (2009) ³⁴	934 ATs	One-time survey
Gieck (1986) ³⁵	1 AT	Case study
Goodman et al (2010) ²⁴	23 female NCAA Division I ATs	Qualitative survey
Heinerichs et al (2014) ³⁶	318 undergraduate ATs in Pennsylvania	One-time survey
Hendrix et al (2000) ³⁷	118 NCAA Division I ATs	One-time survey
Henning and Weidner (2008) ³⁸	118 athletic training preceptors	One-time survey
Judd and Perkins (2004) ³⁹	83 ATPDs	Qualitative survey
Kahanov et al (2010) ²⁶	411 female ATs	Mixed methods survey
Kahanov and Eberman (2011) ⁴⁰	18 571 ATs in the collegiate, clinical, or secondary school setting	Analysis of data from NATA database
Kania et al (2009) ⁴¹	206 collegiate ATs	One-time survey
Mauzy et al (2015) ⁴²	27 undergraduate ATs	Qualitative survey
Mazerolle et al (2008) ⁴³	587 NCAA Division I ATs	Mixed-methods study
Mazerolle et al (2008) ⁴⁴	587 NCAA Division I ATs	Mixed-methods study
Mazerolle et al (2010) ⁴⁵	27 collegiate ATs	Qualitative survey
Mazerolle and Pagnotta (2011) ⁴⁶	14 undergraduate ATs	Qualitative survey

Table 1. Extended from Previous Page Continued on Next Page

Key Finding	Critical Appraisal Skills Programme Quality Assessment Score	National Heart, Lung, and Blood Institute Study Quality Assessment Tools Score
Only 34% of respondents met the recommended number of full-time equivalents for football.	NA	6/10
Recognition of low salary, long and inconsistent hours, and work-life imbalance caused participants to leave the profession.	8/9	NA
39.8% were categorized as “burned out.” “Burned-out” individuals were more likely to report headaches, high blood pressure, weight problems, nervousness, depression, excessive drinking, irritability, indigestion, fatigue, and sleeplessness.	NA	7/13
Average MBI scores for sample: EE = 25.56, DP = 9.75, PA = 41.6. Role conflict, number of athletes, and number of hours worked predicted burnout.	NA	9/13
Respondents cited workload, WFC, and low pay as reasons to leave the profession.	NA	5/10
Mean scores were not reported, but 36% reported a high level of EE; 16%, a high level of DP; and 48%, a low level of PA. Perceived stress, workload incongruence, and perceived social support were all correlated with burnout.	NA	8/13
Hours worked and taught per week, average number of assigned students at clinical site, and number of job responsibilities were positively associated with role strain.	NA	8/13
Males had a more difficult time finding balance as working parents. Females felt more strongly that balancing work and family was stressful and caused burnout. The decision to not have children was strongly affected by work setting.	NA	8/13
Average MBI scores for the sample: EE = 28.6, DP = 11.6, PA = 43.4. Job satisfaction was significantly related to all 3 subscales of burnout.	NA	8/13
17% categorized as high level of burnout. Females and those working in the collegiate setting were more likely to suffer from burnout. Occupational stress was positively correlated with burnout.	NA	8/13
The author cited low salary, high job burden, low social support, increased hostility, weight gain, irritability, and decreased sleep. The AT attempted to determine his priorities by working with a religious figure. The AT eventually changed jobs to decrease stress and work fewer hours.	NA	2/7
A reason for women to leave their collegiate AT position was “life-balance issues.”	8/9	NA
Females experienced greater levels of frustration than males. Students experienced frustration due to lack of respect, demands of the clinical experience, inability to perform or remember skills, and not having ample opportunity to use skills.	NA	8/13
Average MBI scores for sample: EE = 20.16, DP = 9.85, PA = 37.87. A positive correlation was present between perceived stress and EE and DP. A negative correlation occurred between perceived stress and PA. A negative correlation was also identified between social support and perceived stress, but the relationship between social support and burnout was not examined.	NA	9/13
49% experienced a moderate or high level of role strain. Role overload contributed the most to role strain.	NA	10/13
Reasons to leave a program director position included personal concerns such as burnout.	8/9	NA
Females perceived that motherhood created more challenges and struggles in work and family settings. Mentoring and social support were crucial for ATs who had or planned a family.	9/9	6/12
Females tended to leave the profession around age 28; an overall decline of ATs in the workforce occurred after age 30; males tended to shift from the collegiate setting to the secondary school setting in their mid to late 40s.	NA	6/11
Percentages that scored high (EE = 20.4, DP = 23.3) or low (PA = 15.5) on each MBI subscale. Stress level predicted all 3 MBI subscales, while type of athletic training program predicted EE, and leisure time was positively correlated with PA. Several environmental characteristics (eg, number of sports and athletes AT was responsible for) were correlated with various MBI subscales.	NA	8/13
Freshmen were concerned with time demands and wanted more hands-on work. Sophomores felt stressed over retaining information and the expectation to perform hands-on work and worried about balancing academic and clinical work. Juniors were concerned about challenging coursework, pressure during clinical experiences, and social conflicts. Seniors were afraid of not achieving professional proficiency.	6/9	NA
Hours worked and travel requirements were positively correlated with WFC. Level of control over one's work schedule was also a contributing factor.	8/9	8/13
Negative relationship between WLC and job satisfaction. Positive relationship between WLC and job burnout and intention to leave the profession. WLC directly contributed to all 3 burnout subscale scores.	8/9	8/13
78% of respondents stated that staff size was inadequate to fulfill all responsibilities; the main reason was required out-of-season medical care.	6/9	NA
Participants believed role strain and time were major factors contributing to burnout. Social support and personal time were common methods of stress alleviation for participants.	7/9	NA

Table 1. Continued from Previous Page Extended on Next Page

Study (Year)	Sample	Study Design
Mazerolle et al (2011) ⁴⁷	28 NCAA Division I ATs	Qualitative survey
Mazerolle et al (2012) ⁴⁸	14 female NCAA Division I ATs	Qualitative survey
Mazerolle et al (2012) ⁴⁹	201 GAATs	One-time survey
Mazerolle et al (2013) ⁵⁰	11 male collegiate ATs	Qualitative survey
Mazerolle et al (2013) ⁵¹	8 male ATs who had left the NCAA Division I setting	Qualitative survey
Mazerolle et al (2015) ⁵²	23 undergraduate ATSSs	Qualitative survey
Mazerolle and Eason (2015) ⁵³	27 female NCAA Division I ATs	Qualitative survey
Mazerolle et al (2015) ⁵⁴	246 ATs	Online survey
Mazerolle et al (2015) ⁵⁵	22 male NCAA Division I ATs	Qualitative survey
Mazerolle et al (2015) ⁵⁶	18 NCAA Division I head ATs	Online journaling
Mazerolle, Pitney, Eason (2015) ⁵⁷	244 collegiate ATs not in NCAA Division I	Mixed-methods survey
Mazerolle and Eason (2016) ⁵⁸	6 NCAA Division I ATs	Qualitative survey
Mazerolle and Eason (2016) ⁵⁹	22 female collegiate ATs	Qualitative survey
Mazerolle et al (2016) ⁶⁰	22 NCAA Division I ATs	Mixed-methods survey
Mazerolle et al (2017) ⁶¹	21 NCAA Division I ATs	Qualitative survey
Naugle et al (2013) ⁶²	390 ATs from District 9	One-time survey
Pitney et al (2002) ⁶³	16 NCAA Division I ATs	Qualitative survey
Pitney (2006) ⁶⁴	16 NCAA Division I ATs	Qualitative survey
Pitney et al (2008) ⁶⁵	257 dual-position high school ATs and physical educators	Mixed-methods survey
Pitney et al (2011) ⁶⁶	415 high school ATs	Mixed-methods study
Reed and Giacobbi (2004) ⁶⁷	6 postprofessional ATSSs	Qualitative survey
Riter et al (2008) ⁶⁸	51 undergraduate ATSSs	Quantitative survey taken twice (8 wk apart)
Terranova and Henning (2011) ²³	191 collegiate ATs	One-time survey
Thrasher et al (2015) ⁶⁹	21 ATs	Qualitative survey
Thrasher et al (2016) ⁷⁰	19 collegiate GAATs	Qualitative survey
Thrasher et al (2016) ⁷¹	19 collegiate GAATs	Qualitative survey
Walter et al (2009) ⁷²	249 ATPDs	One-time survey

Abbreviations: AT, athletic trainer; ATPD, athletic training program director; ATS, athletic training student; DP, depersonalization of patients; EE, emotional exhaustion; GA, graduate assistant; NA, not available; MBI, Maslach Burnout Inventory; NATA, National Athletic Trainers' Association; NCAA, National Collegiate Athletic Association; PA, personal accomplishment; WFC, work-family conflict; WLC, work-life conflict.

Table 1. Extended from Previous Page

Key Finding	Critical Appraisal Skills Programme Quality Assessment Score	National Heart, Lung, and Blood Institute Study Quality Assessment Tools Score
Teamwork should be encouraged among staff members, and ATs should set boundaries and priorities to manage work-life balance.	8/9	NA
Communication, mentorship, serving as a role model, and having supervisor support were helpful in reducing gender discrimination.	8/9	NA
GAs working at NCAA Division I institutions had higher rates of burnout than those working at Division III institutions or high schools. Travel and teaching responsibilities were associated with increased stress. The GAs at Division I schools worked more hours per week than those at Division III institutions or high schools.	NA	8/13
Reasons to stay in the Division I setting included the atmosphere of athletics and workplace environmental factors: eg, strong coworker relationships and supervisor support.	7/9	NA
Reasons for leaving the Division I setting included role strain, WFC, and lack of career advancement opportunities.	6/9	NA
Students implemented multiple social support networks, physical outlets, and time-management skills to cope with stress.	7/9	NA
Gender played a role in assessing work-life balance and a long-term career as an AT.	8/9	NA
Collegiate and high school ATs reported higher levels of WFC than those in other practice settings. No difference in WFC based on gender.	NA	8/13
Negative influences on work-life balance were time of year, spouse or family needs, and professional. Positive influences were personal time, separation of work and life, and support networks.	7/9	NA
Head ATs realized the need to promote work-life balance.	8/9	NA
Job demands and staffing concerns negatively affected WLC. Organizational and personal support positively affected WLC.	8/9	8/13
Time of year (in-season) and organizational demands influenced work-life balance. A positive mindset, social support, and personal time helped counterbalance conflict.	7/9	NA
Work demands, time of year, and motherhood influenced WLC.	9/9	NA
Perceived effects of required summer medical care included increased workload and a negative influence on work-life balance.	8/9	7/13
Participants believed that formal policies could assist with their own work-life balance but were unaware of formal institutional policies and therefore implemented informal policies.	8/9	NA
Women reported more burnout than men but no difference in perceived wellness. Men reported working more hours than women.	NA	8/13
Methods of professional socialization can have positive and negative effects on health care professionals.	7/9	NA
Participants were concerned about high work volume and limited administrative support, which may lead to burnout.	8/9	NA
Hours worked per week were positively associated with role strain. Feelings of support and appreciation were negatively associated with role strain.	8/9	8/13
Significant positive relationship between WFC and average hours of work per week. Those with less control of their schedules experienced more conflict. Administrative understanding of role demands allowed for schedule modifications to deter conflict. Taking personal time and familial understanding of work demands also led to less perceived conflict.	9/9	8/13
Duties, comparison of duties, student responsibilities, time management, social evaluation, and future concerns were sources of stress. Planning, social support, adjustment to responsibilities, positive evaluations, humor, wishful thinking, religion, mental or behavioral disengagement, and extracurricular activities were coping strategies.	8/9	NA
EE = 14.2 (pretest), 17.0 (posttest). DP = 3.94 (pretest), 5.7 (posttest). PA = 38 (posttest); pretest score not provided. Fourth-semester students had higher DP and EE scores than most other groups. Women in serious relationships had higher DP and EE scores than men in serious relationships.	NA	10/13
Job satisfaction was negatively correlated with intention to leave one's current position.	NA	7/13
Success of GAATs largely depended on individual's adaptability. Supervisors used role orientation, mentoring, and support to help GAATs achieve professional socialization.	9/9	NA
Immersion in clinical responsibilities created stress for GAATs. This included building relationships with coaches, patients, and physicians as well as balancing coursework with clinical responsibilities. Lacking were orientation and preparation from their organizations. Participants experienced maturation as they gained experience and developed confidence.	9/9	NA
Participants relied on supervising staff ATs for professional socialization.	9/9	NA
Average scores for MBI subscales: EE = 18.11, DP = 6.05, PA = 38.29. Women suffered from EE at a higher rate than men. Tenure-track professors suffered from EE at a higher rate than tenured individuals. Weak negative relationship occurred between EE, age, experience, and years at current job.	NA	10/13

Table 2. Studies of Work-Life Conflict (WLC)

Study (Year)	Sample	Study Design	Key Finding	Critical Appraisal	
				Skills Programme Quality Assessment Score	National Heart, Lung, and Blood Institute Study Quality Assessment Tools Score
Mazerolle et al (2008) ⁴³	587 NCAA Division I ATs	Mixed-methods study	Hours worked and travel requirements were positively correlated with WFC. Level of control over one's work schedule was a contributing factor.	8/9	8/13
Mazerolle et al (2008) ⁴⁴	587 NCAA Division I ATs	Mixed-methods study	Negative relationship between WLC and job satisfaction. Positive relationship between WLC and job burnout and intention to leave the profession. WLC directly contributed to all 3 burnout subscale scores. Teamwork should be encouraged among staff members, and ATs should set boundaries and priorities to manage work-life balance.	8/9	8/13
Mazerolle et al (2011) ⁴⁷	28 NCAA Division I ATs	Qualitative survey	Significant positive relationship between WFC and average hours of work per week. Those with less control of their schedule experienced more conflict. Administrative understanding of role demands allowed for schedule modifications to deter conflict. Taking personal time and familial understanding of work demands also led to less perceived conflict.	8/9	NA
Pitney et al (2011) ⁶⁶	415 high school ATs	Mixed-methods study		9/9	8/13
Mazerolle et al (2015) ⁵⁷	244 collegiate ATs not in NCAA Division I	Mixed-methods survey	Job demands and staffing concerns negatively affected WLC. Organizational and personal support positively affected WLC.	8/9	8/13
Kahanov et al (2010) ²⁶	411 female ATs	Mixed-methods survey	Females perceived that motherhood created more challenges and struggles in work or family settings. Mentoring and social support were crucial for ATs who had or planned a family.	9/9	6/12
Mazerolle and Eason (2016) ⁵⁹	22 female collegiate ATs	Qualitative survey	Work demands, time of year, and the role of motherhood all influenced WLC.	9/9	NA
Mazerolle and Eason (2015) ⁵³	27 female NCAA Division I ATs	Qualitative survey	Gender played a role in assessing work-life balance and a long-term career as an AT.	8/9	NA
Mazerolle et al (2015) ⁵⁵	22 male NCAA Division I ATs	Qualitative survey	Negative influences on work-life balance were time of year, spouse or family needs, and professional demands. Positive influences on work-life balance were personal time, work-life separation, and support networks.	7/9	NA
Mazerolle and Eason (2016) ⁵⁸	6 NCAA Division I ATs	Qualitative survey	Time of year (in-season) and organizational demands influenced work-life balance. Positive mindset, social support, and personal time helped counterbalance conflict.	7/9	NA
Eberman and Kahanov (2013) ³²	1962 NATA members	One-time survey	Males had a more difficult time finding balance as a working parent. Females felt more strongly that balancing work and family was stressful and caused burnout. The decision to not have children was strongly affected by work setting.	NA	8/13
Mazerolle et al (2015) ⁵⁴	246 ATs	Online survey	Collegiate and high school ATs reported higher levels of WFC than those in other practice settings. No difference in WFC based on gender.	NA	8/13

Abbreviations: AT, athletic trainer; NA, not available; NATA, National Collegiate Athletic Association; NCAA, National Collegiate Athletic Association; WFC, work-family conflict.

Table 3. Studies of at Least 1 Component of Role Strain

Study (Year)	Sample	Study Design	Key Finding	Critical Appraisal Skills Programme Quality Assessment Score	National Heart, Lung, and Blood Institute Study Quality Assessment Tools Score
Pitney et al (2008) ⁶⁵	257 dual-position high school AT and physical educators	Mixed-methods survey	Hours worked per week were positively associated with role strain. Feelings of support and appreciation were negatively associated with role strain.	8/9	8/13
Henning and Weidner (2008) ³⁸	118 athletic training preceptors	One-time survey	49% experienced moderate or high role strain. Role overload was the biggest contributing subscale to strain.	NA	10/13
Goodman et al (2010) ²⁴	23 female NCAA Division I ATs	Qualitative survey	A reason for women to leave their collegiate AT position was "life- balance issues."	8/9	NA
Dorrel et al (2014) ³¹	190 collegiate ATs with dual role of clinician and educator	One-time survey	Hours worked and taught per week, average number of assigned students at clinical site, and number of job responsibilities were positively associated with role strain.	NA	8/13
Terranova and Henning (2011) ²³	191 collegiate ATs	One-time survey	Job satisfaction was negatively correlated with intention to leave one's current position.	NA	7/13
Mazerolle et al (2013) ⁵¹	8 male ATs who had left the NCAA Division I setting	Qualitative survey	Reasons for leaving the Division I setting included role strain, WFC, and lack of career advancement opportunities.	6/9	NA
Capel (1990) ²²	82 ATs	Follow-up survey mailed to ATs who were ineligible for previous study due to no longer practicing.	Respondents cited workload, WFC, and low pay as reasons to leave the profession.	NA	5/10
Capel (1986) ²⁹	332 ATs	One-time survey	Average MBI scores for sample: EE = 25.56, DP = 9.75, PA = 41.6. Role conflict, number of athletes and number of hours worked predicted burnout.	NA	9/13
Gaffney et al (2012) ³³	367 ATs	One-time survey	Average MBI scores for sample: EE = 28.6, DP = 11.6, PA = 43.4. Job satisfaction was significantly related to scores on all 3 subscales of burnout.	NA	8/13
DeFreese and Mihalik (2016) ³⁰	154 ATs	One-time survey	Mean scores were not reported, but 36% had a high level of EE; 16%, a high level of DP; and 48%, a low level of PA. Perceived stress, workload incongruence, and perceived social support were correlated with burnout.	NA	8/13
Aparicio et al (2016) ²⁷	104 NCAA Division I ATs	One-time survey	Only 34% of respondents met recommended number of full-time equivalents for football.	NA	6/10

Abbreviations: AT, athletic trainer; DP, depersonalization of patients; EE, emotional exhaustion; NA, not available; PA, personal accomplishment; WFC, work-family conflict.

variables, indicating that as WLC increased in ATs, burnout also increased.^{43,44}

Role Strain

In 19 studies, researchers[†] examined at least 1 component of role strain in ATs (Table 3). *Role strain* refers to an individual's inability to complete the requirements of the job role.⁷⁷ Pitney et al⁶⁵ highlighted several types of role strain, including role ambiguity, role conflict, role overload, role incongruity, and role incompetence. *Role ambiguity* was associated with a lack of specificity in a job description.⁶⁵ *Role conflict* occurred when there was no ambiguity, but multiple roles were unharmonious with each other.⁶⁵ *Role overload* referred to a situation in which job requirements exceeded the time and energy availability of the individual.⁶⁵ *Role incongruity* occurred when job expectations were not compatible with the employee's own values and beliefs.⁶⁵ *Role incompetence* resulted when an individual was not prepared for the role in terms of knowledge or skills.⁶⁵ Role strain has been investigated in high school ATs⁶⁵ and collegiate ATs serving as preceptors for athletic training students (ATSS).³⁸ Role strain was also identified as a reason some female ATs intended to leave their jobs or exit the profession.²⁴

As with other helping professionals (eg, educators¹⁵), an excessive workload has been connected to both role strain and burnout in ATs. One group of authors³¹ studying collegiate ATs identified hours worked per week as a significant predictor of role strain; post hoc testing revealed that ATs who worked 50 hours or more per week reported greater role strain than ATs who worked 40 hours or fewer. Excessive workload has also been cited by numerous investigators^{22–24,51} as a reason for ATs' wanting to leave the profession altogether. A correlation was found between the perception of an excessive workload and burnout in ATs.^{29,30,33} Insufficient staffing might contribute to the perception of excessive workload. In fact, 1 group of researchers²⁷ found that nearly 67% of participating NCAA Division I Football Bowl Subdivision institutions did not meet the recommended staff size for football. Insufficient staffing could lead to more hours worked per person or additional responsibilities. This additional workload might contribute to burnout^{29,33} and specifically EE.³⁰

Professional Socialization

In 6 studies, authors^{48,63,64,69–71} examined the professional socialization of ATs. *Professional socialization* has been defined as one's growth and development as a professional in a chosen field.⁷⁸ Athletic trainers undergo professional socialization in 5 phases: envisioning the role, formal preparation, organizational entry, role revolution, and gaining stability.⁶³ These phases have been divided into the categories of *anticipatory socialization* (ie, envisioning the role and formal preparation) and *organizational socialization*.⁶³ Difficulty with any of these phases can be a potential cause of burnout. In fact, 1 investigator⁶⁴ determined that NCAA Division I ATs were often concerned about their assumed places in the hierarchy and the politics that surrounded many administrative decisions regarding athletics. The same author found that

ATs were concerned about their quality of life because of large workloads and low levels of administrative support.⁶⁴

Another study⁴⁸ looked at the difficulties collegiate female ATs faced in professional socialization due to gender bias and learned that adequate communication, mentorship, and the support of supervisors all aided their navigation of the process. Another group of researchers⁶⁹ demonstrated similar results in the professional socialization of graduate assistant athletic trainers (GAATs) and added that a lack of adaptability by GAATs could create challenges. Difficulties such as these could create a fear of burnout in ATs and possibly lead to it.⁶⁴ Another group of investigators⁷⁰ observed that GAATs experienced initial stress during professional socialization because they were immediately immersed in their clinical responsibilities. Stressors induced by this immediate immersion included building relationships with coaches, patients, and physicians and learning to balance clinical responsibilities with graduate coursework. The GAATs in this qualitative study also noted that their graduate experience began without much formal orientation or preparation from their organization.⁷⁰ Although it was not named as an initial stressor, excessive workload was reported by an unknown number of participants as a hindrance to success.⁷⁰ Despite these initial stressors, maturation was a theme derived from this study as GAATs gained experience and developed confidence.⁷⁰ These same GAATs also stated that they relied on staff ATs who served in a supervisory role for socialization into the profession.⁷¹

Effects of Burnout

The effects of burnout in ATs have not been researched as extensively as the causes. In fact, our review of the literature identified only 6 studies^{18,22–24,34,35} of the effects of AT burnout. Two reports,^{18,35} 1 of which was a case study,³⁵ showed that ATs suffering from burnout were more likely to report headaches, high blood pressure, weight concerns, indigestion, fatigue, and sleeplessness. In addition, those experiencing burnout were more likely to experience emotional problems such as irritability and depression.¹⁸

Attrition of ATs from the profession has also been noted as an effect of burnout. One investigator²² found that ATs who left the profession listed several causes of burnout as reasons for leaving (eg, hours worked, salary, and overall lack of job satisfaction). Other authors^{23,24} have supported this, finding that the nature of work-life balance challenges (eg, WFC) and role strain were reasons for ATs to leave the profession.

The authors^{18,34} of 2 studies included in our review examined substance use and abuse in ATs, and 1 group addressed a possible relationship with burnout.¹⁸ Almost 69% of the sample consumed at least 1 alcoholic beverage each week,³⁴ and 5% of participants self-reported excessive drinking.¹⁸ The same authors¹⁸ also determined that those suffering from burnout in their sample were significantly more likely to report excessive drinking than those not suffering from burnout.

Demographics and Burnout

Burnout in ATs has been assessed in multiple settings and different types of employment. In the earlier study¹⁸ of

[†]References 22–24, 27, 29–31, 33, 38, 42–49, 51, 65.

burnout, the researchers were unable to correlate demographic variables with the risk for burnout; however, more recent investigators found links with age, gender, employment status, and career tenure in staff ATs (mostly at the NCAA Division I level), GAATs, ATSSs, and ATPDs.

Differences in Age and Gender

Female ATs experienced greater burnout than male ATs.^{34,62} This could partially explain why female ATs in any setting tended to leave the profession at approximately age 28,⁴⁰ as opposed to males, who tended to work longer and then shifted from collegiate settings to the high school settings in their mid to late 40s.²⁶ As previously mentioned, WFC arising from marriage and parenthood could be another major contributing factor to those gender-specific statistics, as well as the overall decline of ATs in the workforce that occurred after age 30.^{24,26} Men and women working at the NCAA Division I level gave the primary reasons for leaving their jobs as life balance concerns and role strain, which are 2 major causes of burnout in this population.^{24,51}

Burnout in Full-Time Collegiate Staff ATs

Burnout research has typically been conducted on ATs who serve in staff roles, usually at NCAA institutions.[‡] In an early study, Capel²⁹ noted that ATs described lower amounts of burnout than those in other helping professions; the AT result was comparable with that of coaches. A later study by Giacobbi³⁴ supported Capel's conclusion but did not provide percentages. The prevalence of burnout in ATs has been speculated to be lower than in other profession because ATs have an off-season that allows an opportunity to work fewer hours for a time and recover.²⁹ However, Capel's study was published more than 30 years ago, and the work requirements of ATs have since changed. Recent NCAA rule changes have permitted more practice time in the summer, which requires ATs to supply medical care and thereby diminished the amount of off-season recovery time.⁶⁰

Burnout in GAATs

Three groups of authors^{28,49,67} studied GAATs and their relationship with burnout. Six major stressors in the GAATs' lives contributed to burnout.⁶⁷ First was the workload associated with being a new AT.⁶⁷ Second was comparing one's workload with that of other GAATs; some GAATs might have worked more hours than their colleagues and believed it was unfair.⁶⁷ Third was attempting to balance newfound AT responsibilities with the academic requirements of being a graduate student.⁶⁷ Fourth was time management in balancing student, work, and life responsibilities.⁶⁷ This stressor coincided with that from another group of investigators⁴⁹ who found that GAATs who worked at NCAA Division I institutions were at greater risk of burnout than those working in Division III institutions or in high schools because of the increased hours worked. Fifth was social evaluation, which was described by GAATs' as feeling as though their coaches did not respect them because they were newly certified or not

full-time staff members.⁶⁷ Sixth was concern about future plans such as graduation and obtaining full-time employment.⁶⁷

Failing to transition from graduate assistantships into full-time employment has also been evaluated. One group of researchers²⁸ studied individuals who had completed postprofessional athletic training programs but no longer worked primarily as ATs. All participants worked as GAATs during their graduate studies but left the profession for various reasons shortly after graduation. Most participants stated that they intended to stay in the profession after graduation, but low salaries, excessive workloads, and WLC contributed to their decisions to leave the profession.²⁸

Burnout in ATSSs

Three groups of authors^{42,46,68} assessed burnout in ATSSs, whereas 3 other groups^{36,42,52} explored either perceived frustration or coping strategies. Upper-level students have reported significantly higher burnout scores than lower-level students, and most students experienced some level of burnout.^{46,68} The relationship status of students was also possibly correlated with burnout; Riter et al⁶⁸ reported that female ATSSs in serious relationships had significantly higher levels of DP and EE than male ATSSs in serious relationships.

The causes of and coping methods associated with burnout in ATSSs have been briefly examined. Role strain and time commitments were 2 major factors contributing to burnout, and common methods of stress alleviation included social support and taking personal time.⁶⁸ Sources of frustration in ATSSs included a lack of respect and the demands of the clinical experience.³⁶ Sources of stress were also evaluated in ATSSs, and students at different levels in their programs had different sources of stress.⁴² Freshmen were stressed by the time demands of the major as well as a desire for more patient interaction at their clinical sites. Sophomores were stressed by the amount of information they were expected to retain as well as the performance of hands-on duties at their clinical sites. Juniors endured stress due to rigorous coursework, feelings of inadequacy during clinical experiences, and social conflicts among classmates. Seniors struggled with a fear of not achieving professional proficiency. Burnout was assessed qualitatively, and it is unclear if a definition of burnout was provided.⁴²

Coping strategies used by ATSSs to manage their clinical and academic responsibilities were also addressed by authors⁵² of a single qualitative study. Students not only used support networks both inside and outside their athletic training programs but also relied on physical outlets (eg, sleep and exercise) and time-management skills (eg, making lists or keeping organized datebooks).⁵²

Burnout in ATPDs

Our review of the literature yielded 2 groups of researchers^{39,72} who studied burnout in athletic training faculty members, specifically ATPDs. The ATPDs did experience some level of burnout, and weak negative relationships were present between EE and age ($r = -0.263$), years at current job ($r = -0.162$), and experience ($r = -0.157$).⁷² These findings suggested that faculty members who were younger, less experienced, and less established in

[‡]References 24, 37, 38, 41, 43, 44, 45, 47, 63, 64.

their current positions experienced greater EE and explained why tenure-track faculty in this sample described greater EE than ATPDs who had already achieved tenure.⁷² Also, female ATPDs in their sample reported greater EE than male ATPDs. Although they examined EE, PA, and DP in faculty members, it is important to note that no statistically significant differences occurred for DP or PA based on any demographic variables.⁷²

Reasons for accepting and leaving ATPD positions have also been assessed. Reasons for accepting ATPD positions included wanting to move into an academic environment, considering the change a personal professional advancement, wishing to advance the profession, wanting to play a role in program development and administration, and desiring to interact more with students.³⁹ Reasons for leaving ATPD positions included accepting professional appointments, having personal challenges (including burnout), experiencing programmatic concerns (eg, bureaucratic problems, programs being eliminated), and seeking career advancement.³⁹

Alleviating Burnout in ATs

Of the 51 articles we analyzed, the authors^{35,46,47,50,56,61,67} of 7 either investigated or anecdotally suggested various management methods for burnout. Although burnout in ATs has no single remedy, it was important to identify factors causing burnout and modify them if possible. Some researchers⁴⁷ have recommended establishing boundaries, determining priorities, and learning to say “no” as ways to modify risk factors for burnout. Developing a social support system offered the potential for managing burnout in ATs.^{46,47,67} A strong coworker support system was also suggested as important for job retention.⁵⁰ This social support system could include friends, family, coworkers, and others. One group of authors⁵⁶ also examined the role that head ATs played in promoting appropriate work-life balance for their assistants. They speculated that employee WLC could be decreased if head ATs modeled work-life balance, promoted appropriate disengagement from one’s role, encouraged cooperation among staff members, and provided administrative support as needed. Athletic trainers also believed that organizational adherence to adequate staffing patterns and formalized work schedules could reduce WLC, which might lead to a decrease in burnout.⁶¹

The use of religious or spiritual coping mechanisms to combat burnout in ATs has received little attention in the literature. Specifically, authors of qualitative studies have described relying on a minister to help an AT manage his burnout³⁵ and the use of religion as a way for GAATs to manage their stress.⁶⁷ However, the precise role that religion played in the coping response to stress or burnout for the participants was not discussed. The relationship among spirituality, religion, and burnout in ATs remains unclear.

DISCUSSION

To our knowledge, we are the first to systematically gather published data pertaining to burnout in ATs to summarize the current state of knowledge. This analysis also allowed us to identify gaps in the literature that should be addressed moving forward. Most recently, investigators⁴¹ studied burnout rates in ATs and found that 20% of

participants reported a high level of EE; 23.3%, a high level of DP; and 15.5%, a low level of PA. These rates are better than those reported for other health care professionals, such as physicians,⁴ nurses,¹¹ and psychologists.^{12,13} The better rates in ATs have been attributed to their off-season for recovery.^{18,34} However, it is important to note that these burnout demographic values for ATs⁴¹ were published more than 10 years ago. The landscape of athletic training is constantly changing, with the recent rule changes in the NCAA that now allow many sports more practice time during the traditional off-season.⁶⁰ These additional practices require that medical care be provided, which decreases the season of recovery for those ATs. These changes could increase burnout rates for ATs working in NCAA settings and result in rates that equal or exceed those of other health care professionals.

After considering the literature, we believe the causes of burnout in ATs include WLC^{43,44,47} and role strain.^{29,30,33} Challenges in professional socialization have been suggested as a cause of burnout in ATs,⁶⁴ but this relationship has not been examined quantitatively. As the landscape of athletic training continues to change, the causes of burnout may also change. Effects of burnout include physical, emotional, and behavioral deviations that could lead to an individual’s leaving a job or the profession altogether.

Physical signs and symptoms described in the classic burnout literature included fatigue, an inability to fight off simple infections, constant headaches, digestive problems, and sleeplessness.^{1,25} Only a few groups of authors^{18,35} in our review examined the effects of burnout in ATs, but they agreed with many of these physical effects. Earlier literature also described those suffering from burnout as willing to spend more time at work than was necessary and overachievers who were more likely to experience burnout because they continued to give more of themselves.^{1,25} An overall change in personality has also been noticed in individuals suffering from burnout (ie, extroverted individuals becoming more introverted and vice versa).⁷⁹ In addition, the burnout literature in the helping professions described emotional concerns such as increased anger, frustration, and paranoia.¹ Although these factors have not been fully explored in the athletic training literature, researchers¹⁸ who studied ATs with burnout found that they were more likely to experience emotional symptoms such as irritability and depression.

The relationship between the causes and effects of burnout is explained in the Smith Cognitive-Affective Model of Athletic Burnout.⁸⁰ This model was originally designed to describe burnout in athletes, but Smith⁸⁰ suggested that it might be applicable to others in the athletic setting (ie, coaches, administrators, ATs). Two groups of authors^{37,41} have affirmed the applicability of this model to AT burnout. Smith⁸⁰ proposed that relationships exist among situational (eg, WFC, social support, workload), cognitive (eg, sense of PA), physiological (eg, EE), and behavioral (eg, DP, decreased performance) components of burnout. Specifically, Smith⁸⁰ believed that both cognitive appraisal of and the physiological response to an individual’s situation will inform one’s behavioral responses.

Many of the authors in our review only investigated ATs employed by NCAA Division I institutions. The reason for this lack of diversity is unclear. If participants are identified

by contacting the head AT, gaining access to a larger institution may ensure more access to ATs overall. Caution must be exercised when attempting to apply findings from NCAA Division I studies to ATs who work in other university settings because the similarities and differences in burnout among these settings are largely unknown.

Recognizing the symptoms of burnout (ie, EE, DP decreased sense of PA) in our colleagues and ourselves is critical. Early recognition may allow for better management of the condition and deter turnover and attrition. Because many ATs leave the profession by the age of 30,⁴⁰ it is possible that burnout is becoming a larger concern for young professionals and should be addressed as such. However, given the limited available research on the effects of burnout in ATs, other significant factors may contribute to turnover and attrition.

Our systematic review had limitations. Our review was restricted to the results produced by the search engines that we accessed, which suggests that some studies may not have been included. The lack of meta-analysis, although justified, makes it difficult to quantitatively assess the collective data from all the studies included in our review. Finally, the literature on burnout in undergraduate ATSS may soon become irrelevant as athletic training education moves to the graduate level.

Future Directions for Research

Future researchers should continue to examine rates of burnout of ATs in a variety of workplace settings, especially understudied areas such as industry, clinics, and athletic training program faculty. Although reported rates of burnout in ATs were lower than those in other health care professions,⁴¹ the demands of the profession have changed greatly in the time since those data were published. These changes may increase burnout rates for ATs working in selected settings so they equal or exceed the rates of other health care professionals. As athletic training education moves to the graduate level, we also need to examine burnout in entry-level master's students and compare this rate with previous findings in undergraduate students.

Studies of the prevalence of substance abuse among ATs suffering from burnout should be conducted. Investigators should determine if ATs are abusing alcohol and other substances (either on or off the job) as an unhealthy way to cope with burnout and related factors. Although burnout rates seem to be lower in athletic training than in other health care professions, whether substance use and abuse rates would follow the same pattern is unknown.

The relationship between burnout and work quality, especially the quality of patient care, in ATs is also undetermined. Authors have found an inverse relationship between burnout and work quality in university faculty^{15,16} and physicians,³ yet this relationship has not been examined in ATs. Because a decrease in work quality could lead to poorer patient outcomes, this relationship in ATs should be addressed.

Finally, the use of coping strategies to combat burnout in ATs should be explored more thoroughly. Because most research thus far has examined causes and effects, future investigators should focus more on methods of alleviation, including both positive and negative coping strategies.

Although some healthy strategies (eg, spiritual or religious coping strategies) have received attention in the literature, these strategies should also be examined more thoroughly.

CONCLUSIONS

Both the current literature and future directions for research in the area of athletic training burnout have been presented. The literature is clear that burnout is an ongoing problem for the profession. Although authors have suggested that ATs suffer from burnout at a lower rate than other health care professionals, evidence suggests these trends may be changing. Burnout affects all personnel in the profession: students, graduate students, faculty, and clinically practicing ATs. Symptoms includes EE, DP, and a decreased sense of PA, which can lead to many physical, emotional, and behavioral concerns. Many of the factors that cause burnout, such as WLC, role strain, and difficulties in professional socialization, have been identified.

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Address correspondence to Leslie W. Oglesby, PhD, LAT, ATC, School of Health Professions, The University of Southern Mississippi, 118 College Drive, #5122, Hattiesburg, MS 39406. Address e-mail to Leslie.Oglesby@usm.edu.