Personal and Environmental Characteristics Predicting Burnout Among Certified Athletic Trainers at National Collegiate Athletic Association Institutions

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Context: Recent research in the health care professions has shown that specific personal and environmental characteristics can predict burnout, which is a negative coping strategy related to stressful situations. Burnout has been shown to result in physiologic (eg, headaches, difficulty sleeping, poor appetite), psychological (eg, increased negative self-talk, depression, difficulty in interpersonal relationships), and behavioral (eg, diminished care, increased absenteeism, attrition) symptoms.

Objective: To examine the relationship between selected personal and environmental characteristics and burnout among certified athletic trainers (ATs).

Design: Cross-sectional survey.

Setting: A demographic survey that was designed for this study and the Maslach Burnout Inventory–Human Services Survey.

Patients or Other Participants: A total of 206 ATs employed at National Collegiate Athletic Association (NCAA) institutions as clinical ATs volunteered.

Main Outcome Measure(s): We assessed personal and environmental characteristics of ATs with the demographic survey and measured burnout using the Maslach Burnout Inventory–Human Services Survey. Multiple regression analyses were performed to examine relationships between specific

personal and environmental characteristics and each of the 3 subscales of burnout (emotional exhaustion, depersonalization, personal accomplishment).

Results: Most ATs we surveyed experienced low to average levels of burnout. Personal characteristics predicted 45.5% of the variance in emotional exhaustion ($P < .001$), 21.5% of the variance in depersonalization ($P < .001$), and 24.8% of the variance in personal accomplishment ($P < .001$). Environmental characteristics predicted 16.7% of the variance in emotional exhaustion ($P = .005$), 14.4% of the variance in depersonalization ($P = .024$), and 10.4% of the variance in personal accomplishment ($P = .209$). Stress level and coaches' pressure to medically clear athletes predicted ratings on all 3 subscales of burnout.

Conclusions: Our findings were similar to those of other studies of burnout among NCAA Division I ATs, coaches, and coach-teachers. The results also support the Cognitive-Affective Model of Athletic Burnout proposed by Smith. Finally, these results indicate new areas of concentration for burnout research and professional practice.

Key Words: work stress, work pressure, professional development

Key Points

- We found that 32.0% of athletic trainers reported burnout, which was a lower level when compared with the level reported for athletic trainers in other studies.
- Of the personal characteristics, stress level was predictive of all 3 subscales of burnout, and leisure time was predictive of personal accomplishment.
- Of the environmental characteristics, pressure from a coach to medically clear an athlete was predictive of all 3 subscales of burnout, injury-type frequency was predictive of emotional exhaustion, number of sports for which the athletic trainer was primarily responsible was predictive of depersonalization, and number of athletes for whom the athletic trainer was primarily responsible was predictive of personal achievement.

Initially operationalized in the early 1970s and dismissed as a “fad” or “pseudoscientific jargon” by other researchers,¹ burnout recently has become a popular topic among health care workers. Burnout is a psychological syndrome of emotional exhaustion (EE), depersonalization (DP), and reduced personal accomplishment (PA). More specifically, EE is defined as a period during which “emotional resources are depleted, and workers feel that they are no longer able to give of themselves at a psychological level”; DP is a period during which an individual harbors “negative, cynical attitudes or feelings about one’s clients”; and reduced PA is a “tendency to

evaluate oneself negatively, particularly with regard to one’s work with clients.”² The development or exacerbation of burnout may result in many symptoms at the physiologic (eg, headaches, difficulty sleeping, poor appetite), psychological (eg, increased negative self-talk, depression, difficulty in interpersonal relationships), and/or behavioral (eg, diminished care, increased absenteeism, attrition) levels. These symptoms may impair the health care professional and lead to diminished care for the patient.

In part because of their constant contact with people and the concomitant emotional involvement with clients,

individuals in health care professions report higher rates of burnout compared with those in non-health care professions.³⁻⁶ Increased burnout among health care professionals has been linked to increases in perceived job-related stressors, such as earning an inadequate salary, covering work for another employee, working overtime, making critical on-the-spot decisions, addressing crises, having staff shortages, lacking control over work, and having decreased discretionary time.^{4,7}

The aforementioned challenges appear consistent with the work environment of certified athletic trainers (ATs). Recently, pressure has increased on ATs working in collegiate settings to provide medical services to athletes while balancing issues related to staffing, inadequate resources, longer competitive seasons, and increased risk of litigation.^{8,9} For example, data from 2003 showed an average ratio of 80 athletes to 1 AT, which is likely greater than the student-to-professor or athlete-to-coach ratio at many of the same institutions.^{10,11} Much anecdotal evidence and a modest amount of empirical evidence support the notion that ATs experience stressors similar to those reported by other health care professionals and, thus, may be at risk for developing burnout.

The aim of our study was to expand on the contributions of the 3 empirical articles on burnout among ATs. The authors of these studies identified physical symptoms concomitant with the experience of burnout¹² and environmental and personal characteristics related to burnout,^{13,14} and they compared levels of perceived burnout among other sport-related occupations.^{13,14} Our expansion of the literature fills gaps that previous researchers left. These gaps include using a nonstandard measure of burnout,¹² summing the burnout subscales for a single index of burnout,¹³ and focusing on very discrete samples (eg, National Collegiate Athletic Association [NCAA] Division I-A ATs),¹⁴ thereby limiting comparisons with other burnout literature and other AT work settings.

Taken together, the paucity of research examining burnout among ATs, the aforementioned literature gaps, the expansion of NCAA athletics, and the possible ramifications of burnout on ATs and their patients prompted the need for a more comprehensive analysis of the burnout experience of ATs. Therefore, the purpose of our study was to assess the prevalence of burnout among ATs employed at NCAA institutions. To that end, we asked the following research questions: (1) What is the level of perceived burnout (EE, DP, and PA) measured by the Maslach Burnout Inventory–Human Services Survey¹⁵ (MBI-HSS)? (2) Which personal characteristics best predict burnout? (3) Which environmental characteristics best predict burnout?

METHODS

Participants

Participants in our study consisted of 206 ATs working at NCAA institutions as clinical ATs. Participants were recruited through an electronic discussion list for ATs (ATHTRN-L@lists.indstate.edu) and through direct e-mails. No attempt was made to recruit a specific number of ATs from each of the NCAA divisions because we wanted to examine NCAA division affiliation as a

predictor of burnout. The Institutional Review Board at the University of Wisconsin–Milwaukee approved this study.

Instrumentation

We used 2 instruments in the assessment of burnout and characteristics related to burnout: the MBI-HSS,¹⁵ which is a valid and reliable assessment inventory measuring the 3 subcategories of burnout (EE, DP, PA), and a demographic survey measuring personal and environmental characteristics thought to predict burnout.

Burnout. Burnout was measured using the MBI-HSS,¹⁵ which is the primary instrument used in the study of burnout among health care professionals.^{3-7,13,14} 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 $\alpha = .90$ ($P < .001$),¹⁵ with test-retest reliability ranging from $r = 0.71$ to $r = 0.90$.² Validity for the MBI-HSS has been established in many forms. Convergent validity has been demonstrated by external verification of personal experiences, dimensions of the job experience, and personal outcomes, and divergent validity has been established by distinguishing the MBI-HSS from other psychological constructs (eg, job satisfaction) alleged to be confounded with burnout.¹⁵

The MBI-HSS consists of 22 questions measuring the 3 dimensions of burnout. The items are scored on a 7-point, fully anchored, Likert-type scale, with the 2 extremes of *never feel the effects (0)* and *feel the effects every day (6)*. Scores on each subscale are computed by summing the numeric responses. Scores range from 0 to 54 on the EE subscale, from 0 to 30 on the DP subscale, and from 0 to 48 on the PA subscale. A high degree of burnout is reflected by high scores on the EE and DP subscales and a low score on the PA subscale. The categorization of high, average, or low burnout for medical occupations is shown in Table 1.

Demographic Survey. The Cognitive-Affective Model of Athletic Burnout¹⁶ proposes that burnout develops when the perceived demands of a situation exceed the individual's psychological, physiologic, and environmental resources to respond. Thus, increased environmental and/or personal stressors and weak personal resources lead to increased experiences of burnout in accordance with the 3-subscale conceptualization (EE, DP, reduced PA). Research informed by this model indicates that personal and environmental characteristics may facilitate the description and prediction of burnout among ATs.¹⁴ As such, we designed a demographic questionnaire to assess participants' personal (demographics) and environmental (institutional milieu) characteristics.

Most of the questions were asked in a multiple-choice format. For example, relationship status was assessed by asking participants to choose 1 of 5 responses (ie, *single*, *long-term exclusive relationship*, *married*, *divorced [not remarried]*, or *widowed*). In addition, 2 questions designed to assess the participants' perceptions of coaches pressuring them to medically clear athletes and to assess their current stress levels were measured on an 11-point Likert-type

Table 1. Scoring Criteria for the Maslach Burnout Inventory–Human Services Survey¹⁵

	Burnout		
	High	Average	Low
Emotional exhaustion	≥27	19–26	≤18
Depersonalization	≥10	6–9	≤5
Personal accomplishment	≤33	39–34	≥40

scale, with 0 representing *no pressure and no stress* and 10 representing *constant pressure and high stress*.

Procedures

As noted, participants were recruited through an electronic discussion list for ATs and through direct e-mails. To obtain viable information from 200 participants, we targeted 600 individuals for inclusion. Individuals interested in participation responded to the first author via e-mail, providing their names and mailing addresses. Each participant received a packet containing an informational letter; the informed consent document; the MBI-HSS; the demographic survey; and a self-addressed, stamped envelope for return of the materials. The participants were instructed to complete the study materials in a convenient location and return them to the first author in the self-addressed, stamped envelope within 2 weeks. If a participant returned a partially completed survey, the author contacted him or her to complete it. Incomplete surveys were not included in the results.

Statistical Analysis

Descriptive statistics (ie, frequency distribution, mean, SD) were calculated for all demographic and burnout variables. To determine the extent to which personal and environmental characteristics predict burnout, we used multiple regression analysis. Six separate regressions were performed, pairing each burnout subscale with either the environmental or personal characteristics variable group. Specifically, these regression calculations were used to determine which personal and environmental characteristics best predicted EE, DP, and PA. The change in shared variance (R^2) was calculated for each subscale to quantify the amount of variance in the dependent variable that each independent variable (personal or environmental characteristic) explained. We conducted the statistical analyses using SPSS (version 12.0; SPSS Inc, Chicago, IL).

RESULTS

Descriptive Analyses

The 206 participants in our study (response rate = 33.3%) had an average age of 32.7 ± 8.7 years. Of those participants, 52% ($n = 108$) were male, 95% ($n = 195$) were white, 47% ($n = 97$) were married, and 80% ($n = 165$) held a master's degree (Tables 2 and 3).

Results from the MBI-HSS (Table 4) demonstrated that most ATs that we surveyed experienced low to average levels of burnout. By definition,² high burnout is characterized by high EE, high DP, and low PA; average burnout is characterized by average EE, DP, and PA; and

low burnout is characterized by low EE, low DP, and high PA. Using these definitions, only 66 (32%) ATs in our study could be labeled as experiencing high, average, or low burnout. The remaining 140 (68%) ATs had various levels of EE, DP, and PA, which we could not categorize into high, average, or low burnout per MBI-HSS standards.

Multiple Regression Analyses

Personal characteristics (Table 5) were predictive of each of the 3 subscales of the MBI-HSS. Personal characteristics predicted 45.5% ($P < .001$) of the variance in EE, 21.5% ($P < .001$) of the variance in DP, and 24.8% ($P < .001$) of the variance in PA. Stress level was the significant predictor in each of the 3 regression equations. In addition, graduating from an entry-level master's degree athletic training education program was predictive of EE, whereas leisure time was predictive of PA. The results regarding the predictive ability of graduating from an entry-level master's degree program must be viewed with caution because only 2 participants fit this criterion. However, the average EE level for these 2 ATs was 36.5, versus 17.9 for all other ATs.

Environmental characteristics (Table 6) were predictive of each of the 3 subscales of the MBI-HSS. Environmental characteristics predicted 16.7% ($P = .005$) of the variance in EE, 14.4% ($P = .024$) of the variance in DP, and 10.4% ($P = .209$) of the variance in PA. A coach pressuring the AT to medically clear athletes was the environmental characteristic of significance in each of the 3 regression equations. In addition, injury-type frequency was predictive of EE, the number of sports for which the AT was primarily responsible was predictive of DP, and the number of athletes for whom the AT was primarily responsible was predictive of PA.

DISCUSSION

A goal in applied health care disciplines is to use research and theory to inform professional practice. To that end, we used the Smith¹⁶ Cognitive-Affective Model of Athletic Burnout to predict burnout among a group of ATs employed at NCAA institutions. Support for this model has been shown among ATs, as well as coaches, employed at NCAA Division I institutions.^{15,17} We hope that the results of this study will be used to better understand the burnout experiences of ATs in the broader collegiate setting and, therefore, will improve the work experience of ATs as well as patient outcomes.

Burnout Experienced by ATs

Our findings are consistent with findings reported in the literature because ATs reported lower overall levels of burnout (ie, lower EE, lower DP, and higher PA) compared with other health care professionals,^{3,4} yet they contradict findings in the literature because ATs in our sample reported lower levels of burnout compared with ATs in earlier studies.^{13,14} The ATs in our study recorded higher levels of burnout compared with collegiate head coaches¹⁷ and high school basketball coaches¹⁸ and lower levels of burnout compared with a mixed sample of high school and college coaches.¹⁹

Table 2. Statistics Related to the Personal Characteristics (Demographics) of the Athletic Trainer Sample^a

Characteristic	Participants	
	n	%
District		
1 (CT, MA, ME, NH, RI, VT)	23	11.2
2 (DE, NJ, NY, PA)	35	17.0
3 (DC, MD, NC, SC, VA, WV)	28	13.6
4 (IL, IN, MI, MN, OH, WI)	42	20.4
5 (IA, KS, MO, NE, ND, OK, SD)	13	6.3
6 (AR, TX)	13	6.3
7 (AZ, CO, NM, UT, WY)	12	5.8
8 (CA, HI, NV)	11	5.3
9 (AL, FL, GA, KY, LA, MS, TN)	27	13.1
10 (AK, ID, MT, OR, WA)	2	1.0
Age, y		
21–30	114	55.3
31–40	56	27.2
41–50	27	13.1
51–60	7	3.4
61–70	2	1.0
Sex		
Female	98	47.6
Male	108	52.4
Race		
Asian-American	4	1.9
Hispanic/Latino	5	2.4
Native Hawaiian/other Pacific Islander	1	0.5
White/Caucasian	195	94.7
Other/mixed	1	0.5
Relationship status		
Single	76	36.9
Long-term exclusive	30	14.5
Married	97	47.1
Divorced (not remarried)	3	1.5
Children/dependent adults living in household		
0	147	71.4
1–3	54	26.2
4–6	4	1.9
7–10	1	0.5
Leisure time, h/wk		
0	1	0.5
1–10	123	59.7
11–20	76	36.9
21–30	5	2.4
31–40	1	0.5
Current stress level		
No stress (0)	8	3.9
Minimal stress (1–3)	52	25.2
Moderate stress (4–7)	129	62.6
High stress (8–10)	17	8.3
Highest degree attained		
Bachelor	38	18.4
Master's	165	80.1
Doctoral	3	1.5
Athletic training program completed		
Accredited (CAAHEP or NATA)	90	43.7
Internship	114	55.3
Entry-level master's	2	1.0
Years certified		
<1	3	1.4
1–5	84	40.8
6–10	50	24.3
11–15	26	12.6
16–20	20	9.7
21–25	13	6.3
26–30	6	2.9
31–35	2	1.0
36–40	2	1.0

One reason for the lower levels of burnout reported in our study may be related to the voluntary nature of participation. Although the word *burnout* was not mentioned in the study packet, subjective responses that study participants added to survey packets confirmed that they may have been able to ascertain the purpose of the study rather easily by reading items on the MBI-HSS (eg, “I feel emotionally drained from my work,” “I feel burned out from my work,” and “I feel like I am at the end of my rope”). The inability to mask the purpose of this study may have had an effect on the overall accuracy of the data (eg, self-report bias, social desirability bias). In addition, ATs experiencing a higher degree of burnout may have been less likely to volunteer to participate in research because they felt overwhelmed by their current situations. The inclusion of individuals trying to downplay their dissatisfaction with their work situations and the exclusion of individuals who already are overburdened may have artificially lowered the burnout scores in this study. However, note that authors of earlier studies of burnout among ATs reported response rates comparable with the response rate in our research study (33.3%).^{13,14} For example, Capel¹³ reported a response rate of 37% (n = 332) in a study of ATs employed in a variety of settings, and Hendrix et al¹⁴ reported a response rate of 52% (n = 118) in a study of ATs employed at NCAA Division I-A institutions.

The ATs in our study may have reported lower levels of burnout compared with other health care professionals because of differences in workplace structure. Many physicians, nurses, and other health care providers work with a variety of patients or clients from different age, gender, socioeconomic, and ethnic backgrounds on a single day, but ATs in the collegiate setting tend to work with the same group or team of athletes on a daily basis. Working with the same group of athletes may affect the overall burnout that ATs experience, with ATs citing the following as the most enjoyable aspects of their jobs: working with athletes, helping or feeling needed, contributing to athletes' safety, improving athlete care, and combining sports with medicine.²⁰ In addition, ATs often experience the successful outcomes of their treatments, such as when an athlete returns to play after an injury, but other health care professionals may not have this experience. This provision of positive feedback with or without the athlete acknowledging the work of the AT often is missing from the health care professional–patient/client relationship,¹ which is a factor that may lead to increased levels of burnout in other health care providers. Because the most enjoyable aspects of being an AT appear to include factors related to working with athletes, future researchers should examine factors other than athlete interactions that may contribute to burnout among ATs.

This buffering effect of the athlete was highlighted by an unsolicited observation provided by an anonymous participant:

←

Abbreviations: CAAHEP, Commission on Accreditation of Allied Health Education Programs; NATA, National Athletic Trainers' Association.

^a Responses have been condensed; results are not reported for options that were not chosen.

Table 3. Statistics Related to the Environmental Characteristics (Demographics) of the Athletic Trainer Sample

Characteristic	Participants	
	n	%
National Collegiate Athletic Association division		
I-A	65	31.5
I-AA	44	21.4
II	36	17.5
III	61	29.6
Years employed at current institution		
<1	12	5.8
1–5	130	63.1
6–10	30	14.5
11–15	10	4.9
16–20	16	7.8
21–25	3	1.5
26–30	4	1.9
31–35	1	0.5
Employment status		
Head athletic trainer	67	32.5
Associate head athletic trainer	17	8.3
Assistant athletic trainer	95	46.1
Graduate assistant athletic trainer	21	10.2
Other	6	2.9
Athletic training contract		
Full-time	173	84.0
Part-time	33	16.0
Salary		
<\$20 000	21	10.2
\$20 000–29 999	35	17.0
\$30 000–39 999	74	35.9
\$40 000–49 999	35	17.0
>\$50 000	41	19.9
Total No. of athletes at institution		
<150	6	2.9
150–249	28	13.6
250–349	69	33.5
>350	103	50.0
Total No. of athletes for whom athletic trainer responsible		
<10	2	1.0
10–19	15	7.3
20–29	12	5.8
30–39	13	6.3
40–49	13	6.3
50–59	18	8.8
60–69	19	9.2
>70	114	55.3
Total No. of sports for which athletic trainer responsible		
0–1	57	27.6
2–3	72	34.9
4–5	48	23.3
6–7	11	5.4
8–9	11	5.4
10–11	5	2.4
12–13	1	0.5
≥14	1	0.5
Days per week worked in season		
0–1	0	0.0
2–3	0	0.0
4–5	8	3.9
6–7	198	96.1

From my perspective ... The athletes are NOT the problem! The problem is our lack of control over conditions that affect us. For example, many of us have no say over schedule changes that affect our working hours. We have to adapt at a moment's notice, and thus

Table 3. Continued

Characteristic	Participants	
	n	%
Hours per week worked in season		
<10	0	0.0
10–19	1	0.5
20–29	5	2.4
30–39	7	3.4
40–49	25	12.1
50–59	68	33.0
>60	100	48.6
Days per week worked off season		
0–1	6	2.4
2–3	7	3.4
4–5	116	56.3
6–7	78	37.9
Hours per week worked off season		
<10	8	3.9
10–19	3	1.5
20–29	14	6.8
30–39	39	18.9
40–49	85	41.3
50–59	46	22.3
>60	11	5.3
Current part of season		
In season	75	36.4
Off season	95	46.1
Always in season	36	17.5
Injury-type frequency		
Acute (1–3)	18	8.7
Half acute/half chronic (4–7)	174	84.5
Chronic (8–10)	14	6.8
Pressure from coaches to medically clear athletes		
No pressure (0)	26	12.6
Occasional pressure (1–3)	108	52.4
Moderate pressure (4–7)	61	29.6
Constant pressure (8–10)	11	5.4

pay a high personal cost because we put our family's plans last.

This response highlights the effect of negative environmental factors on ATs, reinforcing the original suggestion of Freudenberg²¹ that burnout is exacerbated by situations in which a person expends much effort in a job and receives minimal financial compensation. The response by the anonymous participant also highlights a previously identified stressor on the AT: bureaucracy in collegiate athletics that devalues the role of the AT.⁹

One final explanation for the observation that ATs in our study experienced less burnout than ATs in other studies^{13,14} is that ATs have been found to have relatively high levels of hardiness.¹⁴ Hardiness is a personality construct consisting of 3 main components: (1) control (ie, belief that the individual can control life situations), (2) commitment (ie, having a sense of purpose, being willing to enter new relationships, and having a fresh outlook on life), and (3) challenge (ie, enjoyment and acceptance of changing situation). In the dynamic arena of collegiate sport, ATs must be able to accept changes (positive and negative) in their work environments and to remain stable in their work behaviors, such as caring for athletes and interpersonal work relationships. Although we did not measure hardiness, the hardiness level in our sample of ATs may be similar to levels recorded in a study of NCAA Division I-A ATs,¹⁴ in which

Table 4. Results of the Maslach Burnout Inventory–Human Services Survey¹⁵ for the Athletic Trainer Sample

	Mean $\pm$ SD	High	Average	Low
		n (%)	n (%)	n (%)
Emotional exhaustion	18.1 $\pm$ 9.9	42 (20.4)	46 (22.3)	118 (57.3)
Depersonalization	6.7 $\pm$ 4.9	48 (23.3)	61 (29.6)	97 (47.1)
Personal accomplishment	93.9 $\pm$ 5.8	123 (59.7)	51 (24.8)	32 (15.5)

the authors reported that the ATs were better able to adapt to the negative changes in their workplaces and were less susceptible to burnout than coaches.

Personal Characteristics Predicting Burnout Among Athletic Trainers

Collectively, the 12 personal characteristics that we examined accounted for 45.5% of the variance in EE, 21.5% of the variance in DP, and 24.8% of the variance in PA. Examined individually, stress level was predictive of each of the 3 subscales of burnout, type of athletic training education program was predictive of EE, and leisure time was predictive of PA.

Although we used a single-item, 11-point, Likert-type scale to measure stress level, Hendrix et al¹⁴ reported similar results among NCAA Division I-A ATs using the 14-item Perceived Stress Scale. The identified relationship between burnout and stress level indicates that stress and burnout might overlap. Although both constructs indicate an imbalance between resources and demands, the consequences of burnout can be more severe than those of stress. For instance, consequences of EE occur at the emotional level and may affect patient care, but consequences of stress manifest themselves at the physical and psychological levels and affect only the practitioner.¹⁶

The positive relationship between DP and stress level that we identified indicates that as an imbalance between demands and resources occurs (ie, stress), the individual may begin to have a more negative attitude toward his or her clients, thereby treating them more as objects than as people (ie, DP). In addition, a similar relationship is seen between stress level and PA. That is, as an imbalance between demands and resources occurs, the individual may begin to evaluate himself or herself negatively because of the perception of failure. For example, if an AT is working with a team that has a sudden increase in injured athletes, the demand on the AT to provide treatments for the athletes increases. If this AT perceives that his or her resources are not adequate to meet this demand, the level

of stress increases. The AT also may perceive an inability to meet the increased demands as failure, thereby decreasing his or her sense of PA and increasing the level of stress.

In addition to stress level, graduating from an entry-level master's degree athletic training education program before certification was a predictor of EE. This result must be viewed with caution, because only 2 participants in our study fit this criterion. However, these 2 individuals did report higher-than-average levels of EE compared with the overall group (ie, average EE for entry-level master's degree ATs = 36.5, average EE for all other ATs = 17.9). Additional research involving a larger sample of ATs with entry-level master's degrees is necessary before conclusions about the effect of this variable on burnout can be discussed further. If this finding is replicated in future studies, it could point to a fatal flaw in the entry-level master's educational preparation of ATs.

Number of hours per week spent on leisure activities was also positively related to PA. That is, ATs who spent more hours per week on leisure activities, such as exercise, hobbies, and vacation, experienced greater levels of PA. Although this variable has not been examined in other studies, anecdotal evidence indicates that spending more time on activities of enjoyment and less time on work-related tasks may result in less stress and more PA. Recently, Pitney⁹ cited quality-of-life issues as possible precursors to burnout. This finding points to a possible buffering effect of a healthy work-life balance on the experience of PA among ATs. In addition, Fritz and Sonnentag²² showed that negative workweek experiences can lead to dissatisfaction during weekend activities (ie, workers cannot leave their work issues at work), which leads to decreased engagement and well-being during the successive workweek.

Two personal characteristics (sex and age) that were related to burnout among health care professionals in previous studies^{4,5,13,17,23} were unrelated to burnout in our study. Maslach and Jackson²³ suggested that women are more likely than men to become emotionally involved with the problems of their clients or patients, thereby overex-

Table 5. Multiple Regression Results for the Personal Characteristics and Maslach Burnout Inventory–Human Services Survey¹⁵ for the Athletic Trainer Sample

	R^2	β	Significance Level (<i>P</i> value)
Emotional exhaustion	.455		<.001
Graduating from entry-level master's program		.153	.009
Stress level		.622	<.001
Depersonalization	.215		<.001
Stress level		.418	<.001
Personal accomplishment	.248		<.001
Leisure time		.199	.006
Stress level		-.299	<.001

Table 6. Multiple Regression Results for the Environmental Characteristics and Maslach Burnout Inventory–Human Services Survey¹⁵ for the Athletic Trainer Sample

	R^2	β	Significance Level (<i>P</i> value)
Emotional exhaustion	.167		.005
Injury-type frequency		.161	.020
Coach's pressure		.247	<.001
Depersonalization	.144		.024
No. of sports responsible for		.214	.011
Coach's pressure		.253	<.001
Personal accomplishment	.104		.209
No. of athletes for whom responsible		.167	.041
Coach's pressure		-.193	.010

tending themselves emotionally and experiencing burnout. This was not the case in our study, perhaps because of the socialization of female ATs in a male-dominated setting. Concomitantly, investigators^{4,5} have suggested that health care professionals in the first 5 years of their careers experience burnout more often compared with more experienced professionals, perhaps because they lack adequate exposure to stressors during educational training, idealization of job, and self-selected attrition based on inability to cope with job stress; more experienced practitioners have learned strategies to cope with the stressors effectively. Again, this finding was not replicated in our study. Although the sample was relatively young (55% of participants were less than 30 years of age), most participants (58%) reported working for more than 5 years as an AT. Most participants in our study appeared to be beyond that 5-year period for experiencing burnout, thereby explaining the lack of relationship between age and burnout in our sample.

Environmental Characteristics Predicting Burnout Among Athletic Trainers

Collectively, the 17 environmental characteristics accounted for 16.7% of the variance in EE, 14.4% of the variance in DP, and 10.4% of the variance in PA. Examined individually, a coach pressuring the AT to medically clear athletes was predictive of each of the 3 subscales of burnout, injury-type frequency was predictive of EE, number of sports for which the AT is primarily responsible was predictive of DP, and the number of athletes for whom the AT is primarily responsible was predictive of PA among our sample of ATs.

The predictions between coaches pressuring ATs to medically clear athletes and the constructs of EE and DP were positive, meaning that ATs who perceived that they incurred more pressure from the coaches to medically clear athletes were more likely to experience EE and DP. We measured coaches' pressure by asking the ATs to rate their agreement with the statement "I feel that the head coach(es) associated with my assigned sports pressure me to medically clear athletes before they are fully healed/ready to compete," part of a single-item, 11-point, Likert-type scale with the extremes of *no pressure* (0) and *constant pressure* (10). The relationship between coaches' pressure and PA was negative, indicating that as pressure increases, PA decreases. Anecdotal accounts support the assertion that poor or negative relationships with coaches may predispose an AT to burnout.²⁴ In addition to coaches pressuring ATs to medically clear athletes, other stressors in the AT-coach relationship include (1) coach not feeling that the AT or his or her skills are important, (2) AT having little to no input into decisions that affect the team and AT (eg, practice time, meal planning), and (3) lack of positive feedback provided by the coach to the AT.²⁴ Conflict with coaches also has been cited as a reason that ATs leave the profession.²⁰

Therefore, establishing a positive relationship with coaches is imperative to improving the well-being of the AT. However, this relationship also requires the coach to willingly work with the AT, which is a situation that the AT cannot fully control. Through better understanding of the AT's expertise in the area of sport injury, as well as through mutual respect, the AT-coach relationship can be

strengthened and can become an innocuous factor in the experience of burnout. This improved relationship may have a positive effect on both the AT and the coach. That is, the AT would experience less burnout and, thus, would provide a higher level of care to the athletes, giving the coach a healthier team to lead.

In addition to the relationship between coaches pressuring ATs to medically clear injured athletes and EE, the prediction between injury-type frequency and EE was also positive. This finding demonstrates that ATs who worked with athletes who had chronic injuries were more likely to experience EE. By nature, chronic injuries require daily, monotonous care, which may explain why the AT would experience a feeling of having his or her emotional resources depleted after prolonged treatment of an injury that does not seem to improve. Other researchers in the field of athletic training have not examined this predictive relationship. However, Meltzer and Huckabay²⁵ found that futile care and moral distress were related to EE among critical care nurses. In some cases, the treatments used for a chronic injury may seem futile based on the long-standing nature of the injury (ie, the treatment does not heal the injury) or lack of empirical support for the treatment, but they still are performed to "pacify" the athlete. This aforementioned perception of futility of treatment used for chronic injuries may lead the AT to experience an increased level of EE.

The positive relationship that we observed between DP and number of sports for which an AT was responsible (3.24 ± 2.68) indicates that an increased workload (ie, working with a larger number of sports) may lead ATs to experience more DP. This relationship between workload and burnout also has been seen in previous studies of ATs¹³ and of nurses in various medical specialties.^{25,26} The increased workload that we observed also might be related to perceived pressure from the coach on the AT. Responsibility for more sport teams also translates into a greater number of coaches with whom the AT must work, thereby intensifying the challenge of reconciling multiple leadership styles (eg, democratic, authoritative) and personality differences (eg, communication style, cooperativeness).

Somewhat contradictory to the positive relationship between the number of sports for which an AT is responsible and DP, the relationship between the number of athletes for whom an AT is responsible and PA was also positive. That is, as ATs became responsible for more athletes, they also experienced higher levels of PA. The ratio of more than 70 athletes to 1 AT, as reported by more than 55% of the ATs in our study, is consistent with the data obtained from NCAA and National Athletic Trainers' Association records from the 2002–2003 academic year, which indicate that each AT was responsible for an average of 80 athletes.^{9,10} As the number of athletes increases, the number of successful accomplishments that the AT can experience may also increase, thereby increasing the rate of perceived PA.

Directions for Future Research and Professional Practice

Although the results of our study add to the dearth of literature examining burnout among ATs, additional research should be conducted to improve the workplace environment for these specialized health care professionals. Although the ATs in our study did not report experiencing

high levels of burnout as defined by the MBI-HSS, their voluntary narratives and anecdotal reports in the literature support the existence of burnout among collegiate ATs. Therefore, in future studies, researchers should examine the predictive effect of variables related to burnout in previous studies of ATs^{13,14} but not assessed in our study, including role conflict, role ambiguity, hardiness, and locus of control. Similarly, researchers should consider the development of a new measurement tool to assess burnout, because the MBI-HSS may not be sensitive to the specific workplace stressors of ATs. In addition, highlighted by the personal narrative, more research informed by naturalistic inquiry and qualitative methods should be conducted to ascertain the critical issues facing ATs in the workplace.

Finally, a longitudinal research study examining burnout among ATs also would be beneficial in determining if burnout fluctuates during the course of an athletic or academic year. Most of the data that we collected were recorded by participants during the months of March, April, and May. This 3-month period represents the end of many athletic seasons and is likely not considered to be the most stressful time of the year for a typical AT. If the ATs experience fewer stressful situations during this period, they naturally may have a diminished level of perceived burnout. A longitudinal study would enable researchers to determine if ATs have varying levels of burnout throughout the academic year that correspond to periods of more intense pressure, including championship games, final examinations, and performance reviews.

The collegiate ATs in our study reported low to moderate levels of burnout, but many of the personal and environmental characteristics that were predictors of burnout, such as number of hours per week spent in leisure activities, stress level, and coaches pressuring ATs to medically clear athletes, are modifiable. For example, spending more time in leisure activities and less time at work, particularly during the off-season, when the AT should be working less, may affect the overall stress, EE, and DP levels that ATs experience. Similarly, fostering a more positive work environment, one in which the coach does not pressure the AT to medically clear the athlete (ie, providing the AT with an enhanced locus of control), may result in lower levels of burnout. Athletics directors and other athletics department personnel should be made aware of the potential relationship between a coach's pressure and burnout. To facilitate a more positive and autonomous work environment, ATs must be their own best advocates, fostering a constructive and affirmative relationship with athletics department personnel to improve their working environments.

Anecdotal accounts of burnout indicate that it occurs more often in younger professionals because of a lack of formal training and acknowledgment of workplace stressors during the educational process,^{1,27,28} thereby highlighting a situation in athletic training education that requires a remedy. The anecdotal accounts of a lack of stress management training are consistent with Freudenberg's²¹ assertion that burnout usually occurs about 1 year after an individual begins working at an institution because of various factors, including loss of charisma for the leader. Although beyond the scope of this research report, recent preliminary evidence supports a psychosynthesis-based prevention program designed to decrease burnout and to

enhance happiness, emotional intelligence, and feelings of spirituality.²⁹ Similarly, adding content that is related to stress management and burnout to athletic training education programs can assist young professionals in navigating the complex world beyond graduation.

Concomitantly, maintaining a healthy work-life balance is vital in the field of athletic training. Although several authors^{21,29} have identified measures to prevent the occurrence of burnout, none of these measures have been empirically tested. The preventive measures suggested include (1) providing thorough training for newly hired ATs, including stress management techniques; (2) limiting the hours per week that a person can work; (3) working as a team with other staff members rather than working individually; (4) providing time off to attend workshops and conferences; (5) increasing the number of staff to spread the work around; and (6) encouraging regular exercise.²¹

Lastly, and perhaps most importantly, all ATs would benefit from learning the warning signs of burnout, how to prevent burnout, and the steps to remedy this condition. Knowledge of the signs of burnout and early detection and intervention are crucial in alleviating burnout among ATs and perhaps in preventing attrition and improving athlete care.

CONCLUSIONS

We hope that the results of this study will be used to better understand the burnout experiences of ATs in the broader collegiate setting and, therefore, to improve the AT's work experience and patient outcomes. Our findings are similar to those of other studies of burnout among NCAA Division I ATs, coaches, and coach-teachers. Most ATs we surveyed experienced low to average levels of burnout. The results also support the Cognitive-Affective Model of Athletic Burnout proposed by Smith.¹⁶ As such, increased environmental or personal stressors and weak personal resources will lead to increased experiences of burnout in accordance with the 3 subscale conceptualization (ie, EE, DP, PA).

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