

Perceptions of Wellness and Burnout Among Certified Athletic Trainers: Sex Differences

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Context: Athletic trainers are exposed to various stressors, increasing the potential for burnout and decreasing perceived wellness. Burnout and decreased perceived wellness can result from many factors: years of experience, hours per week worked, or decreased levels of physical activity. Another factor that accounts for a portion of the variance is sex differences.

Objective: To determine the differences in burnout, physical activity, and perceived wellness scores relating to sex in District 9 of the National Athletic Trainers' Association (NATA).

Design: Cross-sectional study.

Setting: Web-based questionnaire.

Patients or Other Participants: Athletic trainers who were included in the e-mail directory of NATA District 9 (men = 232, women = 158).

Intervention(s): A 19-item questionnaire for burnout, a 36-item questionnaire for perceived wellness, and a 16-item activity questionnaire for physical activity and demographics.

Main Outcome Measure(s): The variables included demographics (hours per week worked, years of experience, sex), Copenhagen Burnout Inventory (CBI; scores range from 0–100, and higher scores represent a higher level of burnout), Perceived Wellness Survey (PWS; scores range from 1–36, and scores close to 29 are considered healthy), and Baecke Physical Activity Questionnaire (BPAQ; scores range from 1–15, and higher scores represent more physical activity).

Results: Of the 1560 members contacted, 390 responded (response rate = 25%), and 59.5% (n = 232) were male. The mean scores were 38.73 ± 16.9 for men and 46.2 ± 17.1 for women for the CBI, 16.68 ± 2.76 for men and 16.41 ± 2.81 for women for the PWS, and 8.42 ± 1.32 for men and 8.77 ± 1.36 for women for the BPAQ. Men and women worked an average of 55.60 ± 26.03 and 47.86 ± 20.57 hours per week, respectively, and had a mean experience of 14.79 ± 9.86 and 8.92 ± 6.51 years, respectively. Women reported a higher level of burnout ($t_{388} = -4.255$, $P = .001$) and greater levels of physical activity ($t_{388} = -2.52$, $P = .01$) than men. Men reported working more hours ($t_{388} = 3.131$, $P = .002$) and having more years of experience ($t_{388} = 6.568$, $P = .001$) than women. Perceived wellness was not different between sexes ($t_{388} = 0.958$, $P = .34$).

Conclusions: Our results suggest that women experienced moderate to high burnout and men experienced moderate burnout. Interestingly, men reported lower levels of burnout but worked more hours than women. Future researchers should focus on why women experience higher levels of burnout but work fewer hours. These findings may lead to educational interventions that might reduce burnout and increase professional longevity and quality of work.

Key Words: health, physical activity, work

Key Points

- Women reported moderate to high levels of burnout, and men reported moderate levels.
- Men worked more hours but reported lower levels of burnout than women.
- Women reported greater levels of physical activity than men.
- Men and women did not differ in overall scores of perceived wellness; however, men reported greater emotional but less social well-being than women.

Articles on burnout first appeared in the literature during the 1970s and were characterized by 3 distinct dimensions: emotional exhaustion, depersonalization, and decreased personal accomplishment.¹ Early research was focused on workers involved in human service professions or health care occupations. One underlying concept that emerged from this research was that burnout resulted from a demanding job and preceded emotional exhaustion.^{1,2} Among professionals such as athletic trainers (ATs), *depersonalization* has been described as emotionally distancing oneself from the patient or client to facilitate coping with the high demands of the job.^{1,2} The distancing of an AT from his or her work or

patients can have serious and harmful effects on those patients' overall health and ability to return to full participation. Today, the condition or phenomenon called *burnout* has expanded to encompass most, if not all, medical professionals, including ATs. Athletic trainers are particularly susceptible to job burnout because of their prolonged exposure to a variety of stressful job settings and stressors, which increase their potential exposure for burnout and decrease their perception of wellness.

Burnout can severely affect a person's work life. However, few researchers have documented the outcomes it has on overall health and wellness. Honkonen et al³ found a correlation between burnout and musculoskeletal diseases

among women and burnout and cardiovascular diseases in men. Their findings pointed toward an association between women's experiencing some type of burnout and chronic neck and back pain, as well as osteoarthritis.³ In their study, men experienced burnout and cardiovascular disease possibly because of job stresses.³

According to the World Health Organization,⁴ *health* is not defined solely as the lack of illness, but as mental and emotional, social, and physical well-being. Burnout has the potential to drastically affect the mental and physical health of those experiencing this phenomenon and thus to decrease the health or wellness of the individual. Common health-related symptoms of burnout include, but are not limited to, anxiety, depression, headaches, and poor appetite.^{2,5} Job-related symptoms include increased absenteeism and low productivity.^{2,5} Burnout is believed to develop from various factors, such as number of years of job experience, hours per week worked, and physical activity levels. Among ATs, long work hours and high levels of job stress lead to job burnout and result in a decline in health and quality of life.^{6,7}

Given that many women are ATs, an exploration of sex differences in the burnout experience is warranted. Honkonen et al³ pointed to the presence of sex differences in burnout in the general population of Finland. Identifying sex-specific attributes of burnout will aid in developing appropriate programs to enable ATs to recognize signs of burnout early, possibly avoiding more severe consequences, such as leaving the profession or decreased quality of patient care. Men and women may have different responsibilities both at home and at work, which may play a major role in why one person leaves a position or one person stays.

Many reasons exist for the causes and symptoms of burnout, such as long work hours and high levels of stress. Coping differences between men and women also may play a role in the rates and outcomes of job burnout. For example, an effective coping style and role management might be the reason why someone is not experiencing the emotional exhaustion and depersonalization of burnout. In addition, Giacobbi⁸ observed a high degree of occupational engagement within the athletic training population. This occupational engagement potentially reduces job stress, burnout, and departure from the profession.

Minimal research exists on the physical activity levels of ATs, and no research exists on how physical activity levels are associated with burnout symptoms. In a recent study on health and fitness habits of ATs, Groth et al⁹ found that only 41% met the American College of Sports Medicine guidelines for exercise. Cuppett and Latin¹⁰ observed that physical activity varied by setting and that women scored higher than men in overall daily activity. In both studies, the researchers found sex differences in the amount of physical activity.^{9,10}

Therefore, the primary purpose of our study was to explore sex differences within burnout, physical activity, and perceived wellness scores among members of District 9 of the National Athletic Trainers' Association (NATA), which is the Southeastern Athletic Trainers' Association. Our secondary purpose was to explore the relationships among perceived wellness, level of physical activity, and burnout in ATs. By determining if a difference exists between men and women, a plan of management specific for each sex potentially can be developed to reduce burnout and increase perceived wellness and physical activity.

METHODS

Participants

A total of 1560 members of District 9 received the Web-based survey, and 390 members responded to it, giving a response rate of 25%. This response rate is comparable with that in other studies in which researchers used e-mail-only surveys¹¹ and falls closely in line with previous athletic training research.^{5,8,9,12} Athletic trainers listed in the District 9 mailing who responded included 232 men (age = 38.71 ± 10.10 years) and 158 women (age = 32.41 ± 7.09 years). Participants implied consent by completing the survey received via e-mail, and the study was approved by the University of Florida Institutional Review Board.

Procedures

A cross-sectional Web-based survey design was selected to determine the relationships among the demographic factor (sex) and the independent variables (burnout, physical activity, perceived wellness). We used SurveyMonkey.com (SurveyMonkey, Portland, OR) to upload the survey instruments and collect data from the participants. Using a purposeful convenience sample, we sent an e-mail to each person listed in the District 9 directory; we described our purpose and included a direct link to the survey's Web site. Participants were instructed to complete instruments that assessed burnout, levels of physical activity, and levels of perceived wellness, which took approximately 15 minutes. We generated follow-up e-mails to people who had not completed the instruments at weeks 1, 3, and 5 to increase the response rate. No incentives were provided to the participants for completing the survey.

Questionnaires

Participants completed a 19-item questionnaire for burnout, a 36-item questionnaire for perceived wellness, and a 16-item activity questionnaire for physical activity and demographics. These instruments can be summed and calculated for a total score for burnout, physical activity, and perceived wellness.¹³⁻¹⁵ The validity and reliability of each instrument's scale and subscale have been established.¹⁴⁻¹⁷ They were used in their original form and not altered in any way.¹³⁻¹⁵ We obtained permission to use all instruments.

Copenhagen Burnout Inventory. The Copenhagen Burnout Inventory (CBI) was used to determine burnout among ATs. This 19-item questionnaire accounts for the following categories of burnout: personal, work, and client. For personal burnout, responses are presented in a 5-point Likert scale: 100 (*always*), 75 (*often*), 50 (*sometimes*), 25 (*seldom*), 0 (*never/almost never*).¹⁵ For work burnout, responses are presented in a 5-point Likert scale, with 100 (*always*), 75 (*often*), 50 (*sometimes*), 25 (*seldom*), 0 (*never/almost never*) for 4 items and 100 (*to a very high degree*), 75 (*to a high degree*), 50 (*somewhat*), 25 (*to a low degree*), and 0 (*to a very low degree*) for the remaining 3 items.¹⁵ For client burnout, the instrument includes the same 5-point Likert scale responses as for work burnout. All 3 subscales can be subtotaled into a score of 0 to 100 and averaged into a total score of 0 to 100, with a higher score indicating a

higher level of burnout.¹⁵ As part of their developmental article, Kristensen et al¹⁵ showed the CBI has an internal consistency or α of .85 to .87 and a correlation of -0.34 to -0.75 with the Medical Outcomes Study 36-Item Short Form. The CBI also was shown to be highly correlated with the Maslach Burnout Inventory (MBI) scales (personal and work on the CBI with personal accomplishment on the MBI, 0.38–0.45; personal and patient on the CBI with depersonalization on the MBI, 0.38–0.52; and work and patient on the CBI with exhaustion on the MBI, 0.75–0.82) and to have an α reliability of .73 to .93.¹⁷ See Kristensen et al¹⁵ for other psychometric data.

Most, if not all, researchers studying athletic training burnout have used or focused on the MBI. For this study, we chose the CBI as the burnout instrument for several reasons. The first reason was the simplistic nature of measuring personal or general burnout, work-specific burnout, and finally client-specific burnout.¹⁵ Using these 3 subscales enables the researcher to determine if burnout is personal and caused by work factors or is from client or patient interactions. The second major reason for using the CBI was its availability in the public domain, which allows for its use free of charge. Third, researchers have shown these instruments have similar outcomes. According to a study among dentists in Australia, the MBI and the CBI identified burnout almost equally.¹⁷

Perceived Wellness Survey. The Perceived Wellness Survey (PWS) follows the multidimensional approach and incorporates the following constructs or parts of health: physical, spiritual, psychological, social, emotional, and intellectual.¹³ The PWS comprises 36 items that are divided into 6 items per construct of health. Sample items for each section include psychological (eg, *I am always optimistic about my future*), emotional (eg, *I sometimes think I am a worthless individual*), social (eg, *My friends will be there for me when I need help*), physical (eg, *I expect my physical health to get worse*), spiritual (eg, *I believe that there is a real purpose for my life*), and intellectual (eg, *I avoid activities that require me to concentrate*).^{13,18} The items for this instrument are scored using a 6-point Likert scale, with responses ranging from 1 (*very strongly agree*) to 6 (*very strongly disagree*). A score closer to 29 indicates a higher overall level of perceived wellness. Perceived wellness scoring for this instrument is complicated; Adams et al^{13,16} provided information on use and scoring. In their research on PWS, Adams et al¹³ showed that the correlations between the subscales and the composite score ranged from 0.3 to 0.7 and the overall internal consistency was 0.91. In pilot data, they also showed that the PWS had a convergent validity ranging from $r = 0.37$ to $r = 0.56$; instruments used included the Medical Outcomes Study 36-Item Short Form, Existential Well-Being Scale, Life Orientation Test, Perceived Social Support From Friends and Perceived Social Support From Family scales, and State Self-Esteem Scale.¹³ For more psychometric data, please see Adams et al.¹³

Baecke Physical Activity Questionnaire. We used the Baecke Physical Activity Questionnaire (BPAQ) to assess overall activity of the participants. This instrument contains 3 subscales and measures perceived physical activity over the 12 months before the study.^{14,19,20} The BPAQ measures total physical activity levels and provides subscale scores for work, sport/exercise, and leisure-time activity.

The first subscale, the Work Index, measures the amount of physical activity in which a person engages during the work day at his or her place of employment. According to Baecke et al,¹⁴ job categories are *low level* (eg, clerical, driving, teaching), *middle level* (eg, factory work, plumbing, carpentry), and *high level* (eg, dock work, construction work, sports). Based on job activities, athletic training can be middle level because of the physical nature of the job (eg, carting coolers, kits) or low level if an AT holds an academic or administrative position. This determination for ATs was based on the examples given by Baecke et al¹⁴ for teachers at the low level and factory/carpentry work at the middle level. The remaining items in the work index assess body position at work (eg, *At work I sit* or *At work I stand*), with the responses *never*, *seldom*, *sometimes*, *often*, and *very often*, and assess loads lifted and fatigue (eg, *At work I lift heavy loads* or *At work I am tired*), with the responses *very often*, *often*, *sometimes*, *seldom*, and *never*. The work subscale was scored according to the Baecke et al¹⁴ calculation of scores for the indices of physical activity.

The second subscale, the Sport Index, includes questions about whether the participants exercise and, if so, what type do they perform and how often. This question measures intensity and time of activity (hours per week, number of months per year). The guidelines of Baecke et al¹⁴ for classifying level of activity intensity define activities as *low level* (eg, billiards, bowling, golf), *middle level* (eg, badminton, cycling, dancing, swimming), and *high level* (eg, basketball, rugby, rowing). After intensity level was identified, the amount of time per week was coded as follows: less than 1, 1 to 2, 2 to 3, 3 to 4, and more than 4, with the corresponding scores 0.5, 1.5, 2.5, 3.5, and 4.5. The number of months per year was coded as follows: less than 1, 1 to 3, 3 to 6, 7 to 9, and more than 10, with the corresponding scores 0.04, 0.17, 0.42, 0.67, and 0.92. This item was asked twice and calculated twice, and the sum was coded as a score from 1 to 5 and reported as the score for this specific item. Four additional items assessed one's comparison with others and exercise as part of leisure time (eg, *During leisure time, I sweat* and *During leisure time, I play a sport*) and included the responses *never*, *seldom*, *often*, and *very often*.¹⁴

The third subscale, Leisure-Time Index, includes 4 items assessing activities, such as television watching, leisure walking, and cycling. Responses included *never*, *seldom*, *often*, and *very often*. As with previous subscales, scoring was performed according to the calculation of indices scores by Baecke et al.¹⁴

Total activity scores were calculated by summing the 3 subscale scores. Each subscale had a maximum possible score of 5, with 5 indicating *high physical activity*. The total score was calculated as a sum of the 3 indices or subscales, and the maximum score was 15. Previous research on the BPAQ showed test-retest correlations between 0.74 and 0.88 and correlations with energy expenditure of 0.56 for men and 0.44 for women.¹⁴ Baecke et al¹⁴ provided additional psychometric data.

Pilot Data

Twenty-three ATs outside the NATA District 9 sampling frame were asked to complete the instrument. Fourteen ATs completed the survey instrument twice, approximately 1

Table 1. Total Scales of Perceived Wellness, Burnout, and Physical Activity Divided by Sex (n = 232 men, n = 158 women)

Variable	Sex	Mean ± SD	<i>t</i> ₃₈₈ Value	<i>P</i> Value
Experience, y ^a	Male	14.80 ± 9.86	6.568	.001
	Female	8.93 ± 6.51		
Time worked, h/wk ^a	Male	55.60 ± 26.04	3.131	.002
	Female	47.86 ± 20.57		
Perceived wellness	Male	16.69 ± 2.77	0.958	.34
	Female	16.41 ± 2.81		
Burnout ^a	Male	38.73 ± 16.90	-4.255	.001
	Female	46.20 ± 17.18		
Physical activity ^a	Male	8.42 ± 1.32	-2.52	.01
	Female	8.77 ± 1.36		

^a Indicates difference.

week apart. All test-retest correlations were greater than 0.6, which is considered the minimum for an instrument to show adequate test-retest validity. Using SPSS (version 16.0; IBM Corporation, Armonk, NY), test-retest correlations for each instrument scale were calculated as PWS ($r = 0.763$), CBI ($r = 0.924$), and BPAQ ($r = 0.924$). The test-retest correlations for each instrument were different for each scale ($P < .001$) and demonstrated that the current survey instrument has test-retest reliability comparable with that of previous investigations.¹⁴⁻¹⁶

Statistical Analysis

The Cronbach α was used to determine each instrument's internal consistency. Participant demographic variables consisted of the following independent variables: hours worked per week, years of experience, and sex. The dependent variables were burnout, perceived wellness, and physical activity and were measured respectively with the CBI, PWS, and BPAQ. Data were downloaded from SurveyMonkey into an Excel (Microsoft Corporation, Redmond, WA) spreadsheet that calculated the total scores and subscores for the dependent variables. A burnout score of 50 on the CBI is considered high, a PWS score closer to 29 is considered healthy, and closer to 15 on the BPAQ means more daily physical activity.¹³⁻¹⁵ Descriptive statistics and significance testing were calculated using SPSS (version 18.0; IBM Corporation). An independent-samples *t* test was used to determine sex differences for burnout, perceived wellness, and physical activity levels. Pearson product moment correlations also were calculated for overall scores regardless of sex for burnout, physical activity, perceived wellness, hours worked, and years of experience. These relationships also were examined separately for men and women. The α level was set a priori at .05.

RESULTS

Instruments' Internal Consistency

The coefficient α or internal consistency of the CBI was 0.944, of the PWS instrument was .937, and of the BPAQ was .620.

Demographics

The means for each instrument are presented in Table 1. An independent-samples *t* test showed that women reported a higher level of burnout than men ($t_{388} = -4.255$, $P =$

.001). In addition, analyses of the subscales of the CBI showed that women reported higher levels of personal burnout (women = 50.48 ± 17.4, men = 41.08 ± 17.48; $t_{388} = -5.22$, $P < .001$), work burnout (women = 46.47 ± 18.10, men = 39.17 ± 17.78; $t_{388} = -4.01$, $P < .001$), and client burnout (women = 41.56 ± 17.31, men = 35.95 ± 16.71; $t_{388} = -3.21$, $P = .001$) than men. These levels are not classified as being in the high burnout category but show that on average men and women experience moderate to high levels of burnout. Women also reported greater levels of overall physical activity than men ($t_{388} = -2.52$, $P = .01$). Analyses of the BPAQ subscales revealed that the higher overall physical activity score for women likely was driven by greater levels of physical activity at work (women = 3.23 ± 0.51, men = 3.08 ± 0.49; $t_{388} = -3.024$, $P = .001$) and leisure-time physical activity (women = 2.55 ± 0.58, men = 2.40 ± 0.63; $t_{388} = -2.39$, $P = .02$). We found no differences between men and women on the overall score of perceived wellness ($t_{388} = 0.958$, $P = .34$). However, the *t* tests conducted on the subscales revealed that men reported greater emotional well-being (women = 4.48 ± 0.64, men = 4.68 ± 0.65; $t_{388} = 3.03$, $P = .003$) and less social well-being (women = 4.84 ± 0.66, men = 4.69 ± 0.67; $t_{388} = -2.07$, $P = .04$) than women. Men reported working more hours per week ($t_{388} = 3.131$, $P = .002$) and having more years of work experience ($t_{388} = 6.568$, $P = .001$) than women.

The Pearson product moment correlations among all the variables are presented in Table 2. The analyses revealed that regardless of sex, increased burnout was associated with increased hours worked and decreased perceived wellness, physical activity, and years of experience. Physical activity was positively correlated with perceived wellness and inversely associated with years of experience. In addition, hours worked was inversely associated with years of experience for women only.

DISCUSSION

Many professionals working closely with clients or patients experience some level of job burnout, potentially resulting in decreased health and wellness. Current research related to athletic training and burnout is minimal and does not mention the health domains and experienced effects of burnout. The purpose of our study was to determine sex differences in burnout, physical activity, and perceived wellness scores among members of NATA District 9. Our findings suggested women experience moderate to high burnout, but men experience moderate burnout. No

Table 2. Correlations Among Variables for All Athletic Trainers, Men, and Women

Variable	Perceived Wellness	Physical Activity	Years of Experience	Hours per Week Worked
Burnout				
All	-0.51 ^a	-0.12 ^b	-0.12 ^b	0.11 ^b
Men	-0.49 ^a	-0.19 ^a	-0.13 ^b	0.12
Women	-0.54 ^a	-0.06	-0.12	0.19 ^b
Perceived wellness				
All		0.18 ^a	0.09	-0.04
Men		0.22 ^a	0.05	-0.08
Women		0.13	0.10	0.01
Physical activity				
All			-0.12 ^b	-0.02
Men			-0.09	0.02
Women			-0.12	-0.03
Years of experience				
All				0.02
Men				0.04
Women				-0.21 ^a

^a Indicates correlation at the .01 level (2 tailed).

^b Indicates correlation at the .05 level (2 tailed).

differences existed between sexes for perceived wellness. Women reported more physical activity than men.

Our findings of higher levels of burnout reported among women are in line with those of other researchers.^{8,21} However, to the best of our knowledge, only 2 studies on sex comparisons have been published. Walter et al²¹ reported higher levels of female burnout in athletic training program directors. Specifically, they experienced higher levels of emotional exhaustion than men. Direct comparison with emotional exhaustion is not possible because Walter et al²¹ used the MBI and we used the CBI. However, similar to the emotional exhaustion findings of Walter et al,²¹ our perceived wellness data showed that women reported levels of emotional well-being that were less than those of men. In addition, both Walter et al²¹ and we reported overall higher levels of burnout for ATs.²¹ Giacobbi⁸ also used the MBI in his national survey of nearly 4000 ATs and found that women reported higher levels of burnout. Direct comparisons with burnout levels of women are difficult because of the lack of evidence in the literature. Our findings of higher levels of burnout in women add to this body of emerging knowledge.

In other populations of health care professionals, women have been shown to have increased job burnout. In a study²² of military mental health care providers (social workers, psychologists, psychiatrists, and residents), being female was linked with higher emotional exhaustion. Although this cannot be compared directly with our findings because different instruments were used, the overall idea that women experience more burnout than men is supported by the findings of Ballenger-Browning et al.²² Hill et al²³ also studied burnout in the general workplace and found that being female was modestly associated with stress and burnout.

Our findings of burnout are similar to the overall levels of burnout in ATs reported by previous researchers. Kania et al⁵ reported that 32% of their total sample (men and women) was classified as having burnout. Whereas most of

the sample was not classified as having burnout, 32% is still a large percentage of ATs reporting burnout in some aspect of their lives. Contrary to us, Kania et al⁵ found that sex, age, and personal characteristics were not related to and did not predict burnout.

Interestingly, no relationship existed between number of hours worked and burnout scores among men in our study. This seems intuitively improbable because in most athletic training burnout research, high levels of burnout are related to high numbers of work hours or lower numbers of hours spent in leisure-time activities.^{6,21,24,25} A plausible explanation for these findings may be related to the greater years of work experience among men in our sample. Indeed, the data revealed an inverse relationship between years of experience and burnout for men only. The longer time spent in the profession may have allowed for adaptations and coping mechanisms or strategies that permitted the AT to reduce burnout and increase job satisfaction through job experience. Capel²⁶ alluded to lower burnout scores related to possible off-season time or time off from the sport. This is one of the major changes in the past 25 years of athletic training. The off season is becoming shorter and shorter, and the expectations of year-round coverage of practices, “fall ball” or “spring ball,” and strength and conditioning workouts are mandatory.

Women and men share a common bond for parenting but present with slightly different roles. Development of agrarian societies changed the role of women from gatherer to homemaker/caretaker whose main tasks involved duties that would enhance the health and productivity of the family unit. Starting in the last century, society’s financial climate moved more and more women into the paid workforce. However, movement into the workforce did not reduce the amount of unpaid time women devoted to household work.²⁷ Recently, Kahanov et al²⁸ showed that parenting and working could be challenging, yet the combination was still enjoyable for 41% of the sample population. The potential conflict of home versus work can lead to decreased energy levels, reducing proficiency as a parent and an AT, and may be a future avenue for studying differences in burnout between women and men.²⁸

Currently, the athletic training literature lacks studies focusing on the perceived wellness levels of ATs, so direct comparison is difficult. However, Groth et al⁹ examined the self-reported fitness levels, nutrition, and alcohol and tobacco use in ATs. Whereas health and fitness habits cannot be compared directly with perceived wellness, Groth et al⁹ showed that decreased physical activity in ATs was associated with decreased perceived wellness in men and women. They showed that recommended nutritional habits were not being followed by ATs, although their alcohol and tobacco consumption was less than that of the general population.⁹ Of the female sample, 47% was considered overweight or obese and 74% of the male sample was overweight or obese according to body mass index (BMI) measurements.⁹ This high result for BMI in men potentially is related to the differences in physical activity levels between men and women we found. Women reported more activity, which may explain lower weight or BMI reported by other researchers.⁹

Several limitations exist in the current study. For example, we used a purposeful convenience sample that precludes generalizability of findings. In addition, other

limitations included the following: (1) the response rate of 25% was low; (2) with any and all surveys, personal bias from participants exists, and this in turn can affect the survey outcomes; and (3) the use of a computer to collect survey responses potentially can result in missing people who do not have access to a computer or had computer problems during that data-collection time frame.

A major limitation with any burnout survey is the potential that people who experience the highest levels of burnout are unable or unwilling to participate. Those experiencing high-level burnout might be unlikely to voluntarily spend even a short time completing a survey, especially about work. Therefore, these results may be underrepresented, and the number of ATs experiencing burnout is likely to be greater than the number we found.

CONCLUSIONS

These findings suggest that female ATs experience moderate to high levels of burnout, and male ATs experience moderate levels. No sex differences in perceived wellness existed. Interestingly, male ATs reported lower levels of burnout although they reported working more hours per week. This may be attributed to the fact that men reported higher levels of work experience. Future research focusing on why women experience higher levels of burnout while working fewer hours is warranted. These findings may lead to better education of female ATs and employers on how to reduce burnout and increase professional longevity and quality of work.

Quality of life and wellness levels among ATs will increase if more physical activity is included in their daily lives, particularly among men. Increased BMI among men in particular possibly can be reduced with a long-term program of incorporating physical activity and thus may reduce the effect decreased physical activity has on their overall health and wellness. Understanding why and how women are able to increase physical activity can lead to changes in male activity habits and improve wellness.

Future directions for burnout research include various avenues. More detailed inspection into the number of ATs experiencing this phenomenon can tell us truly how many ATs have symptoms. More direct contact and on-site survey administration might include those ATs who have symptoms or at least reveal how many people refuse or do not have time to participate. Specifically regarding sex, researchers in future studies should include personality characteristic instruments and thoroughly explore the home and family environments and how these affect burnout, wellness, and activity levels.

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