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Age, Sex, and Setting Factors and Labor Force in Athletic Training

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Context: Occupation or occupational setting shifts might be occurring in the athletic training profession, and differences between sexes might exist; however, little evidence exists to confirm this supposition.

Objective: To evaluate trends in male and female athletic training employment patterns in terms of age and occupational setting.

Design: Cross-sectional study.

Setting: We requested demographic data from the National Athletic Trainers' Association (October 27, 2009) and obtained frequency totals of members by sex across the occupational life span by occupational setting.

Patients or Other Participants: Our sample included 18571 athletic trainers employed in the 3 largest classifications of occupational settings within the profession: college or university, clinical, and secondary school.

Main Outcome Measure(s): We calculated frequencies and percentages to determine demographic and descriptive data. We analyzed the data using an analysis of variance to identify the differences between sexes across age and setting.

Results: We observed trends in occupational setting and sex across ages 22 to 67 years. We identified differences between sexes across the ages 22 to 67 years ($F_{1,18569} = 110818.080$, $P < .001$, $\eta^2 = .068$) and across occupational settings ($F_{1,18569} = 61.908$, $P < .001$, $\eta^2 = .003$), noting a marked decline in female athletic trainers in the workforce beginning around age 28 years and an increase in male athletic trainers in the secondary school setting beginning around their middle to late 40s. We observed differences at the intercept between setting and sex ($F_{1,18569} = 63529.344$, $P < .001$, $\eta^2 = .845$), which were greater when observed across the ages ($F_{1,18569} = 23566787.642$, $P < .001$, $\eta^2 = .939$).

Conclusions: We identified differences between sexes across settings and ages in addition to an overall decrease in the workforce among all professionals. A marked decline in female athletic trainers occurred at age 28 years, yet the male population increased at the secondary school level, suggesting a setting shift. Burnout, fatigue, pay scale, and a misunderstanding of professional culture and job duties might influence the exodus or shift in athletic training.

Key Words: occupational setting, employment, job attrition, work-family balance, burnout, professional preparation

Key Points

- Differences existed between sexes for both occupational setting and age.
- Female athletic trainers tended to leave the profession around age 28 years.
- Male athletic trainers tended to shift into the secondary school setting in their middle to late 40s.
- A general decline of athletic trainers in the workforce occurred after age 30.

National employment trends have indicated an increase in female representation in the workforce from 40% in 1975 to 46% in 2005, with a projection that 51% of the workforce will be female by 2014.[1–5] The economic recession also might have affected labor pool statistics; 82% of the 2.5 million jobs lost since November 2008 were held by men,[4] further increasing the percentage of women in the workforce. Athletic training has incurred similar growth patterns since women first became athletic trainers (ATs) in 1956, with women now representing 48% of the athletic training population. Currently, 97.7% of all National Collegiate Athletic Association (NCAA) institutions employ ATs.[5] However, a closer investigation of the ATs in the college or university, high school, and clinic populations reveals inequity. Less than one-third of NCAA institutions have female head ATs.[5] The populations of men and women appear comparable (22% of women and 23% of men are employed in the secondary school setting, 14% of women and 14% of men are employed in the college or university setting, and 22% of women and 23% of men are employed in the clinical setting), but the longitudinal characteristics of employment have not been investigated.[5] A discrepancy might exist across the occupational life span of the AT.

Similarly, national employment trends have focused on sex as a factor in reduced wages and increased absenteeism for women, which have been attributed to the demands of work, child rearing, caregiving, and additional conflicts resulting from the need to balance work and home.[6–19] Female parents in other health care professions have reported the need for more flexibility for family and parenting responsibilities as important factors for changing employment settings, yet a comparison with men across the spectrum of employment is lacking.[6–19] Among female ATs, 45% stated that they changed job settings after having children.[20] The changes were primarily from the college or university setting and might be based on multiple dynamics, including irregular hours and flexibility of scheduling; regardless, these patterns mimic national data.[12,20]

The precise factors that lead to the shift of women across athletic training settings must be delineated. To better understand the labor force and the sex distribution across settings, male and female employment patterns should be compared. The National Athletic Trainers' Association (NATA) membership data have suggested that female employment decreases over the occupational life span, which might be predictable given the current literature[6–19]; however, an investigation into occupational setting changes over the occupational life span and a statistical comparison between female and male ATs has not been conducted. Family responsibilities might explain, in part, why the female population is smaller than the male population in the general workforce, but workforce and population trends in athletic training have not been evaluated thoroughly. An investigation into the AT occupational life span and population trends between sexes and among occupational settings is warranted. Therefore, the purpose of our investigation was to evaluate trends in male and female athletic training employment patterns relative to occupational setting and age.

METHODS

Research Design

We used a nonexperimental, descriptive research design to observe trends in the NATA membership data regarding sex, occupational setting, and age.

Procedures

Annually, members of the NATA renew membership and update their employment and personal information. These characteristics include age, sex, and category of employment (Table 1). We requested the data from the NATA (October 27, 2009) and obtained frequency cross-tabulations of member age by occupational setting through the October 2009 census. The population of athletic training members included full-time, retired, and nonemployed ATs but excluded graduate assistants and part-time employees. We observed that most ATs (70.4%; n = 18564) were employed in the college or university, clinic, and secondary school setting. Therefore, we narrowed our statistical analysis (analysis of variance [ANOVA]) to 3 occupational settings (college or university, secondary school, clinical) to focus on the 3 largest classifications within the profession; we also included the 7 members who did not report an occupational setting in the statistical analysis. When viewed by age, the percentages of employees in the other settings as defined by the NATA were too small for meaningful statistical analysis, yet with the exception of the no job, retired, and unemployed settings, they were included as descriptive information. Although data were available in summary format whereby the total number of members per category was provided, we recoded the data into SPSS (version 17.0 for Windows; SPSS Inc, Chicago, IL) as individual members with their reported personal and professional characteristics (Table 2).

Participants

Our sample included the 18571 NATA members (9678 men, 8893 women; age range, 22–67 years) who were employed full time in the college or university, secondary school, and clinical settings (n = 18564) or who were employed full time but did not report an occupational setting (n = 7) at the time of the October 2009 NATA census. Only descriptive information was evaluated for the 4994 ATs in the NATA occupational setting categories of amateur, recreational, or youth sports; business, sales, or marketing; health, fitness, sports, or performance; hospital; independent contractor; industrial or corporate; military, law enforcement, or government; professional sports; and other. We eliminated the data regarding the 2821 ATs in the no job, retired, and unemployed settings from the data set used for statistical analysis and descriptive reporting. Because these aggregate data were supplied by a public source, we did not need approval for the study.

Table 1. Occupational Setting Classifications Within the National Athletic Trainers' Association Membership as of October 27, 2009[a]

	Total Membership	
Setting	No.	%
No job	1557	5.9
Amateur, recreational, or youth sports	109	0.4
Business, sales, or marketing	225	0.9
Clinic	7425	28.1
College or university	6434	24.4
Health, fitness, sports, or performance	412	1.6
Hospital	724	2.7
Independent contractor	475	1.8
Industrial or corporate	357	1.4
Military, law enforcement, or government	221	0.8
Other	1601	6.1
Professional sports	870	3.3
Retired	412	1.6
Secondary school	4705	17.8
Unemployed	852	3.2
Total	26379	100.0

[a] Seven members did not report occupational setting.

Table 2. Membership Characteristics of Sample Population (N = 18571) as of October 27, 2009[a]

	Sample Population	
Characteristics	No.	%[b]
Sex		
Male	9678	52.1
Female	8893	47.9
Occupational setting		
Clinic	7425	40.0
College or university	6434	34.6
Secondary school	4705	25.3

[a] The 7 members who reported sex but not occupational setting were included in the statistical analysis.

[b] Indicates percentages were rounded.

Statistical Analysis

We calculated frequencies and percentages to determine demographic and descriptive data. We analyzed the data using an ANOVA to identify the differences between sexes across age and occupational setting (college or university, secondary school, clinical). For the ANOVA, age was a continuous variable to ascertain potential population difference among settings. We used SPSS for statistical analysis. The α level was set a priori at .05.

RESULTS

We identified an obvious decline in the labor force among both male and female ATs in their late 20s and early 30s (Figure 1). Although women accounted for 42.9% of the total sample population, they composed most of the ATs between ages 22 and 28 years, but their presence in the profession drastically declined between ages 28 and 35 years (Figure 1). On the other hand, the size of the male population remained more consistent between ages 27 and 42 years and eventually dissipated across the occupational life span. We identified differences between sexes across ages 22 to 67 years regardless of occupational setting ($F_{1,18569}=110818.080$, $P<.001$, $\eta^2=.068$).

When interpreting the visual representation of data among occupational settings, we continued to see the drastic change in the labor force, especially in the female population (Figures 2–6). However, upon further investigation, the decline among men in the labor force existed only in the clinical and college or university settings. The male population actually increased in the secondary school setting, suggesting that male ATs might change occupational settings in their middle to late 40s from the clinical or college or university to the secondary school setting (Figure 4). We identified differences between sexes across the occupational settings ($F_{1,18569}=61.908$, $P<.001$, $\eta^2=.003$).

Furthermore, we observed differences at the intercept between setting and sex ($F_{1,18569}=63529.344$, $P<.001$, $\eta^2=.845$), which were greater when observed across ages ($F_{1,18569}=23566787.642$, $P<.001$, $\eta^2=.939$). The differences between men and women in the athletic training workforce indicated that the intercept of setting and sex accounted for 85% of the variability in occupational setting change, and this intercept across age accounted for 94% of the variability.

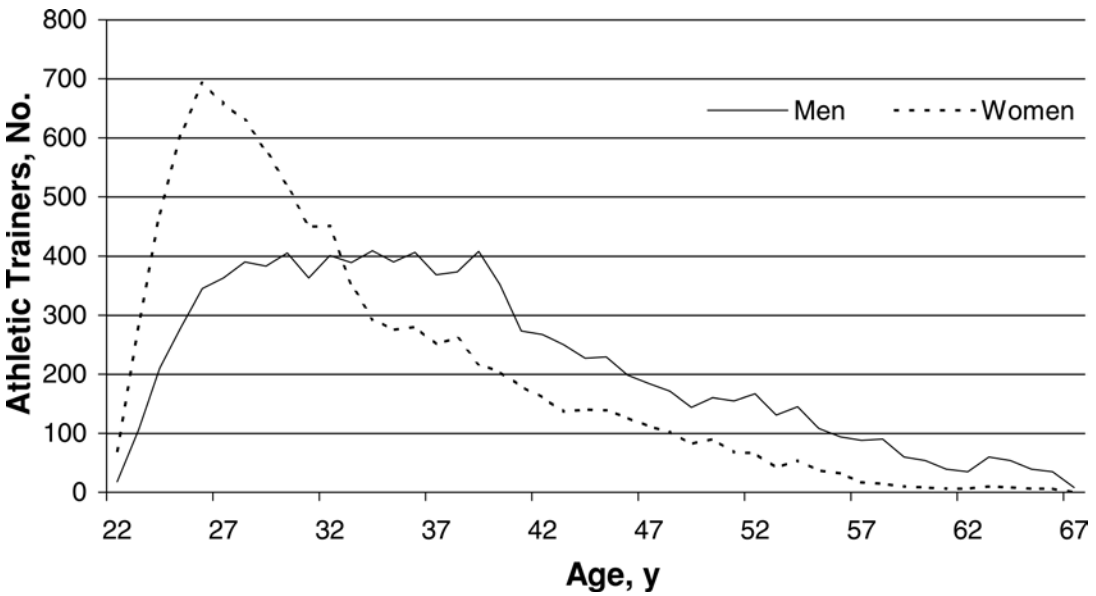

Figure 1. Sex differences across ages 22 to 67 years.

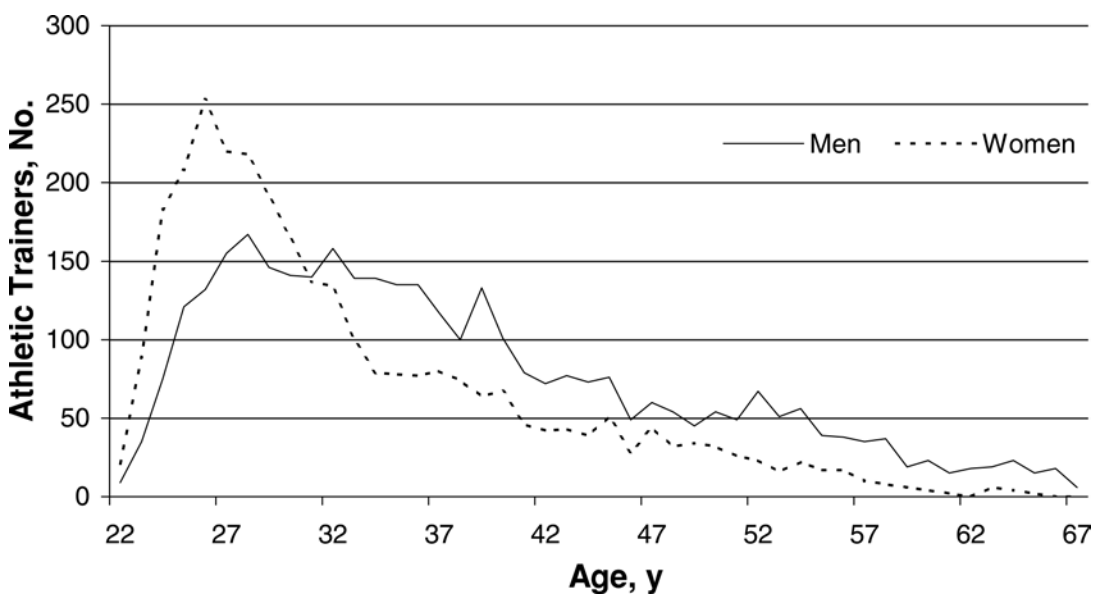

Figure 2. Comparison of sexes in the college or university setting of athletic training.

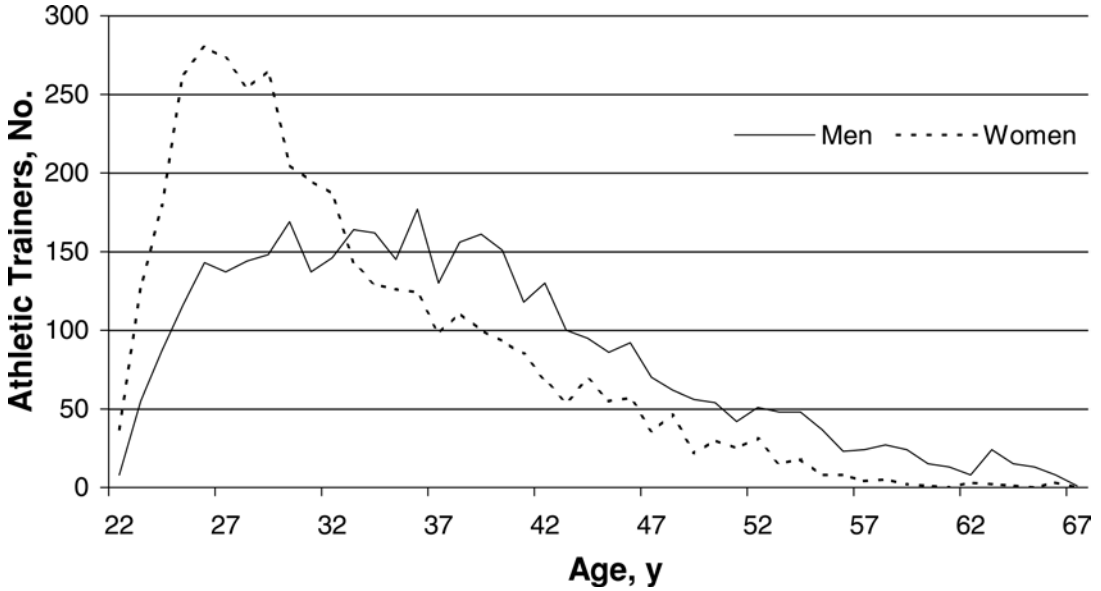

Figure 3. Comparison of sexes in the clinic setting of athletic training.

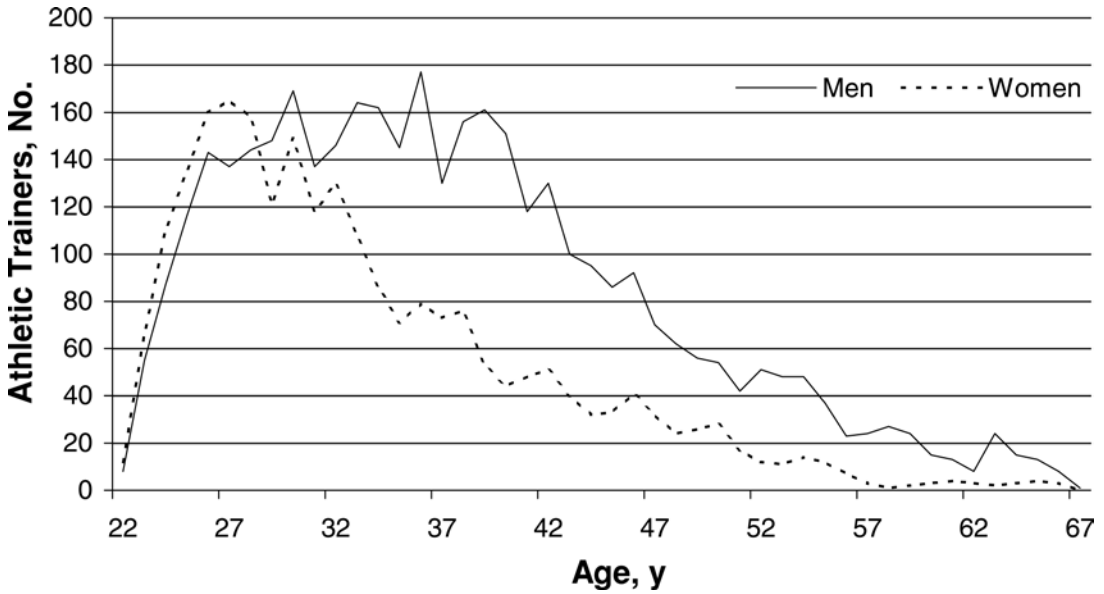

Figure 4. Comparison of sexes in the secondary school setting of athletic training.

DISCUSSION

The data indicated that men and women were different across settings and age. In addition, when sex and setting were considered jointly across age, they accounted for 94% of the variability, meaning that only 6% of the variability resulted from unknown factors. Sex, setting, or age alone accounted for minimal variability (range, 0.3%–7%), indicating that the combination of factors was critical to evaluating employment data. Additional factors, such as burnout, staffing, work schedules, job satisfaction, work-family conflict, or unidentified variables, also might influence the employment changes.[18,20–26] The US Labor Department indicated that people change careers 3 times in a lifetime; however, these data do not account for the differences between men and women or provide a timeframe for the shift in occupation.[2] The remaining 6% of unaccounted variability might result from life responsibilities discussed in the US literature.[10,12,14,15,18,21,23] In the US employment and athletic training–specific literature, authors have cited the same issues regarding the reduction in the female workforce with the increase in family responsibilities because women typically are viewed as the family caretakers.[10–20] In addition, women tend to perceive a greater conflict between professional and family responsibilities[15,25] and greater difficulty reentering the profession after leaving for family obligations.[9,15] Male responses to work and family responsibilities over an employment life span are less understood with respect to athletic training.[9,13,14] However, given the research on female responses, men might perceive the need to continue to work to support the family, and indeed, a reduction in male workforce between ages 28 and 40 years was not found. Research findings regarding traditional sex roles

are conflicting, possibly because of changes in the customary male-female familial roles. Traditional roles might no longer be appropriate because men have assumed more household duties,[26] perhaps explaining the lack of difference between sexes regarding work-family conflict issues in athletic training.[22,23] Although we observed a shift in male employment settings based on the October 2009 NATA data, further investigation into sex and athletic training attrition is warranted. Overall, the population of ATs is saturated during the early years of practice[2,19] and possibly because of several variables, including current professional socialization,[26] professional preparation,[26–28] and life responsibilities.[9,13,14,16,21,23]

Occupational Changes and Work-Family Balance

Changes in occupation with age might be attributed to several factors, but the need to balance occupational responsibilities with parenthood and other life responsibilities appears to be the key among women.[9,13,14,16] However, the shift in occupational setting for men also might be attributed to the same family responsibilities and a desire to participate in family life in addition to work life. Although a general decline in the labor force among both sexes was evident, an increase in male ATs was observed in the secondary school setting at approximately 30 years of age, which might be a result of the decrease in female ATs or an increase in family responsibilities. Discrete information is not available to assess the role of age, family responsibilities, and life changes in male athletic training employment patterns. In most recent US employment literature regarding sex issues, researchers have focused on the female population, which makes identification of the factors affecting general or male employment trends difficult.[1]

Noticeable is the general decline in the number of ATs in the workforce after 30 years of age, which might indicate that some inherent aspects of athletic training are not desirable as people mature in the profession. Reasons for this decline might be the challenge of nontraditional work hours (often exceeding 50 hours per week),[12,16] staffing issues,[21,23] and lack of flexibility,[21,23] all of which might not be conducive to the family responsibilities or life-work balance perspective that might accompany aging. Variables that might contribute to attrition appear to be linked to burnout,[25,26] increased hours worked,[16] work-family conflict,[26] and lack of control over work hours.[23] Women have demonstrated the highest levels of burnout in the college or university setting,[25] probably a contributor to attrition, but research into the relationship between burnout and attrition in male ATs is lacking. Therefore, burnout and factors that lead to burnout should be investigated further regarding the contribution between sexes and retention.

The pressures and perspectives of men that lead to an exodus from the athletic training profession are not well understood. We can only surmise that men's perceptions about work and family balance are similar to those of women. Interestingly, reports of an exodus from other medical fields, such as emergency medicine or any other medical profession with nontraditional work hours, are lacking. In contrast, researchers have shown that low pay relative to job responsibilities is a deterrent to retention in occupational therapy, suggesting that incentives to stay in a profession must exceed incentives to leave.[20]

Occupational Changes and Burnout

Burnout might be another factor associated with professional changes over the occupational life span of an AT. As ATs progress through their careers, burnout[16,23] and fatigue[20,21] tend to be common factors for setting or occupational changes.[22] Burnout in athletic training has been linked to a lack of personal or family time, lack of control over work schedule, and large number of work hours.[16,22,23] Similar findings are supported in the literature on coaching, in which professionals have experienced burnout similar to that in athletic training because of a lack of control over work schedules, number of hours worked, and work-family conflicts.[25–29] In addition, changes occurring in the late 20s through middle 30s among women cannot be explained simply by longevity in the profession. The expectations of the position in all 3 occupational settings (clinical, college or university, and secondary school) seem unlikely, but not impossible, to result in burnout earlier in the AT career path than in other allied health care professions,[21,24] yet a consistent decline in all athletic training settings is evident (Figures 5 and 6). Unknown is the reason for this decline over the occupational life span. In the future, researchers should identify the factors that lead to departure from the profession or occupational setting among men and women. Moreover, strategies to retain these professionals, such as networking, professional development, and professional engagement, should be evaluated for efficacy.[24,28] The NATA's focus on young professional programming continues to evolve and is important to attracting and maintaining that population; however, equally important is the retention of the mature and experienced AT.

We identified differences between sexes across occupational settings and across ages 22 through 67 years. We found not only a distinct difference between the sexes but also an overall decline in the workforce among all professionals. Because of the nature of our investigation, we were able only to theorize that these professional changes are a result of life or family responsibilities,[10–20] burnout,[20,21] fatigue, pay scale, and the actual practice of athletic training possibly not meeting expectations.[13] A follow-up study to the Capel[13] investigation to identify reasons ATs leave the profession is necessary.

Occupational Changes and Professional Preparation

A disconnect between perceived job responsibilities and actual professional expectations might have resulted from recent changes in educational practices. Accreditation constraints might limit real-world experience, thus leading to dissatisfaction after employment begins. To maximize clinical hours, students might participate in clinical education during high–patient–volume times to facilitate optimal hands-on or interactive experiences. However, to maximize their educational opportunities with patients, students might not be socialized into the reality of the everyday work experience, such as downtime, insurance processing, paperwork, inventory, administrative duties, or coach and physician conferences. Thus, young professionals might be disillusioned once they enter the workforce. Increased professional socialization, such as structured mentoring experiences, formal orientation, and staff development, might ameliorate professional disassociation for the young AT.[26,28,29]

Limitations

To assess trends in athletic training employment, we used 1 set of data from 2009, which represented the state of employment at the time of the study rather than athletic training employment over time from 1950 through 2010. In future studies, researchers should investigate athletic training employment

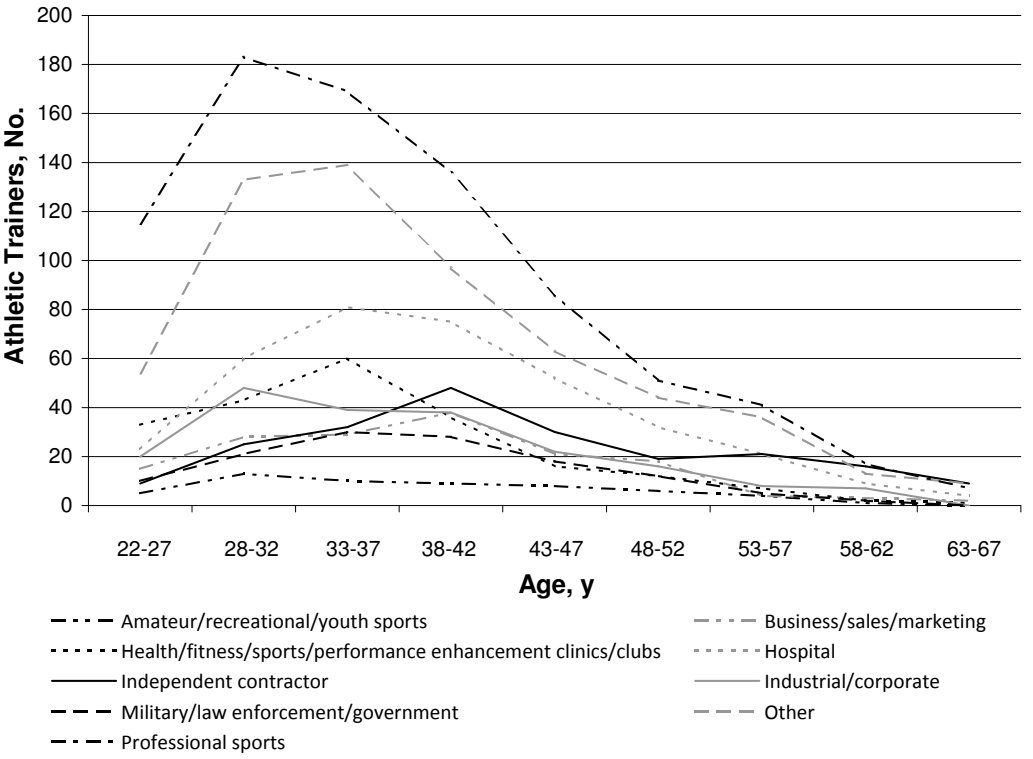

Figure 5. Comparison of female athletic trainers by occupational setting.

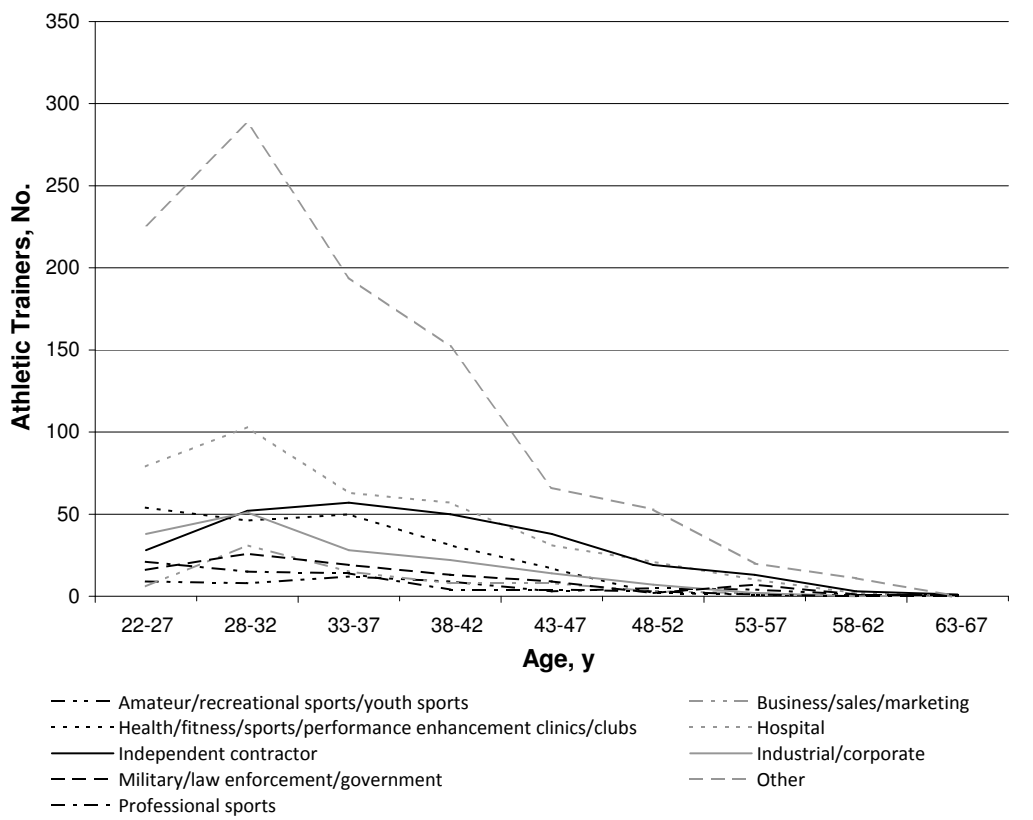

Figure 6. Comparison of male athletic trainers by occupational setting.

over the last 60 years. Our conclusions about trends are based on a synthesis of the literature.

Future Research

The inferences we drew are relative to other professions and US workforce data and must be substantiated through continued investigation of ATs' perceptions of people who have chosen to leave the profession or change employment settings. In the future, researchers also might assess the role of accreditation in the preparation of entry-level clinicians. The NATA data and our findings provide direction for future research.

CONCLUSIONS

The reduction in the athletic training workforce over the occupational life span, the shifting of women out of the profession beginning at age 28 years, and the shift away from the clinical and college or university settings for male ATs in their middle to late 40s is evident. The shift for women might be explained by family obligations, according to the literature, yet evidence to support changes over the span of employment, specifically among men, is not available. Researchers have suggested that factors such as burnout, fatigue, pay scale, and a misunderstanding of professional culture and job duties might influence the exodus from or shifting of settings in athletic training. In the future, researchers should focus on male perspectives on parenting and other family responsibilities to develop better explanations for why these shifts occur. To better understand ATs' employment needs, investigation into the decrease in athletic training employment after 30 years of age is indicated. Moreover, the effect on treatment and patient outcomes of capable practitioners leaving the profession early in their careers is unknown. The influence of lower salaries on retention of ATs compared with other health care professionals with irregular schedules also should be investigated. Understanding employment trends and the demand for ATs has implications for educational advising, for employer management of human capital, and potentially for legislative and government issues.

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