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original research

Preparation of the Professional Athletic Trainer: A Descriptive Study of Undergraduate and Graduate Degree Programs

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Context: The examination of the appropriate professional degree for preparation as an athletic trainer is of interest to the profession. Descriptive information concerning universal outcomes is needed to understand the effect of a degree change.

Objective: To obtain and compare descriptive information related to professional athletic training programs and a potential degree change and to determine if any of these factors contribute to success on existing universal outcome measures.

Design: Cross-sectional study.

Setting: Web-based survey.

Patients or Other Participants: We contacted 364 program directors; 178 (48.9%; 163 undergraduate, 15 postbaccalaureate) responded.

Intervention(s): The survey consisted of 46 questions: 45 questions that dealt with 5 themes (institutional demographics [n = 13], program admissions [n = 6], program outcomes [n = 10], program design [n = 9], faculty and staff [n = 7]) and 1 optional question.

Main Outcome Measure(s): Descriptive statistics for all programs were calculated. We compared undergraduate and postbaccalaureate programs by examining universal outcome variables.

Results: Descriptive statistics demonstrated that 33 programs could not support postbaccalaureate degrees, and a substantial loss of faculty could occur if the degree requirement changed (553 graduate assistants, 642 potentially underqualified instructors). Postbaccalaureate professional programs had higher 2011–2012 first-time Board of Certification (BOC) passing rates ($U = 464.5$, $P = .001$), 3-year aggregate first-time BOC passing rates ($U = 451.5$, $P = .001$), and employment rates for 2011–2012 graduates employed within athletic training ($U = 614.0$, $P = .01$). Linear multiple-regression models demonstrated that program and institution type contributed to the variance of the first-time BOC passing rates and the 3-year aggregate first-time BOC passing rates ($P < .05$).

Conclusions: Students in postbaccalaureate athletic training programs performed better in universal outcome measures. Our data supported the concerns that this transition could result in the loss of some programs and an additional immediate strain on current staff due to potential staffing changes and the loss of graduate assistant positions.

Key Words: athletic training education, entry-level degree, professional education

Key Points

- Students in postbaccalaureate athletic training programs performed better in some key outcome measures.
- A transition from undergraduate to postbaccalaureate athletic training programs could result in the loss of some programs that cannot support a postbaccalaureate degree and may place more strain on staff due to potential staffing changes and the loss of graduate-assistant positions.
- A degree change could result in additional job opportunities within the collegiate setting so that appropriate medical care can be provided as graduate-assistant positions are vacated.

Athletic training education is on the precipice of potential change. Based on the "Future Directions in Athletic Training Education" document released by the Executive Committee for Education (ECE) of the National Athletic Trainers' Association (NATA),[1] a working group was directed to evaluate the most appropriate professional degree to ensure both the durability of the profession and continued improvement in patient outcomes. Based on this evaluation, the working group outlined some of the key findings associated with a degree change.[2] The group made several recommendations and considered several potential effects of the degree change. Some of these considerations were costs incurred by students for their education, work-force–related factors, and the degree level of faculty teaching within athletic training programs (ATPs).

Documented information concerning this topic is limited[1–5]; therefore, discussions primarily have been guided by anecdotal information. The NATA-ECE working group[2] was the first to elucidate individual findings that are of interest to the profession. Additional data from the programs accredited by the Commission on Accreditation of Athletic Training Education (CAATE) would provide more objective information for decision making and analysis. The CAATE annual report is used to collect information from programs; however, the type of information being collected still is undergoing change. Among the compelling arguments supporting a transition to a postbaccalaureate professional degree are the improved profes-

Table 1. Case-Control Groups

Group	Institution Type, No.		Institution Size, Mean ± SD	Athletic Training Cohort Size, Mean ± SD
	Public	Private		
Undergraduate	8	7	13 104 ± 12 809	17 ± 6
Graduate	8	7	13 969 ± 12 847	17 ± 6

sional preparation of students, the ability to select more highly qualified students, an increased likelihood of graduating students remaining in the profession, and aligning ourselves academically with peer health care professions.[1,4]

Therefore, the primary purpose of our study was to obtain descriptive information about ATPs with professional degrees and compare outcomes between postbaccalaureate professional programs and matched undergraduate professional programs. Secondarily, we examined which of these factors predicted success rates for outcomes.

METHODS

Participants

All 364 professional ATP directors were identified through the CAATE Web site and contacted via e-mail, and 178 (48.9%) program directors (163 undergraduate, 15 postbaccalaureate) completed the entire survey. In addition, a case-control design was used after the surveys were submitted. The 15 postbaccalaureate professional program survey respondents were matched with 15 undergraduate professional programs based on overall school size and on answers to questions regarding the number of undergraduate and graduate students and the anticipated class size of the overall program (Table 1). If more than 1 undergraduate professional institution matched the aforementioned criteria for a single postbaccalaureate professional program, then geographic location, based on the NATA district, was used to determine the matching institution. Participation in the survey implied informed consent. The Old Dominion University Darden College of Education Human Subjects Review Committee approved the study.

Survey Instrument

Our Web-based survey was developed and delivered through the Qualtrics online survey mechanism (Qualtrics, LLC, Provo, UT). We used the "2011–2012 Fact Sheet for Physical Therapist Education Programs" from the Commission on Accreditation in Physical Therapy Education[6] as a guide to determine data-collection themes after examining the data and outcomes that physical therapy programs provide annually, as this report is publicly available. The survey then was constructed around 5 themes for data collection, which were institutional demographics (13 questions), program admissions (6 questions), program outcomes (10 questions), program design (9 questions), and faculty and staff (7 questions). The instrument was distributed to 3 experts in athletic training education or athletic training education research, who critiqued the questions for wording and redundancy. We used their feedback to edit and refine the survey. The revised survey was sent to 2 additional experts who completed it and provided feedback on content and wording. This feedback was used to finalize the survey instrument. No additional reliability assessment was completed. The final survey consisted of 46 questions; some questions had follow-up questions displayed based on the initial question response, and the final item was an optional question that allowed participants to identify their institutions for the sole purpose of being removed from the reminder e-mail list. Sample questions for the survey instrument are located in Table 2.

Procedures

In the winter of the 2012–2013 academic year, we sent an e-mail containing the following items to the 364 professional ATP directors: (1) the purpose and importance of the research study, (2) a request for participation, (3) the estimated time to complete the survey, (4) the hyperlink to the survey Web page, (5) the date by which the survey should be completed, and (6) contact information for the researcher. Program directors were instructed to answer survey questions to the best of their abilities. If a program was transitioning from professional baccalaureate to postbaccalaureate, then the program director was instructed

Table 2. Sample of Survey Questions

14.	How are students admitted to your AT program?
15.	What is your planned/anticipated incoming accepted class size for the 2013–2014 academic year?
16.	How many applicants to the AT program did you have for the 2012–2013 academic school year?
17	How many of the applicants from the 2012–2013 applicant pool met the program qualifications?
18.	How many of the applicants were offered acceptance into the AT program for the 2012–2013 school year?
19.	Of the 2012–2013 applicants offered admittance to the AT program, how many applicants accepted the offer?
20.	What degree are the students awarded upon completion of the AT program?
21.	How many students graduated from your AT program in the 2011–2012 academic year?
22.	What is your AT program's graduation rate for the 2011–2012 academic year?
23.	In the 2011–2012 academic year, what was your AT program's first-time pass rate of the BOC certification exam?
24.	What is your AT program's current 3-year aggregate first-time pass rate for the BOC certification exam?
25.	For the 2011–2012 academic year, what was your overall pass rate for all students who took the BOC certification exam?
26.	What is your AT program's current 3-year aggregate overall pass rate for all students who took the BOC certification exam?
27.	For the graduating class of 2011–2012, what was your employment rate for graduates employed within an athletic training setting?
28.	Which of the following assessment measures are currently utilized by your AT program as program outcome measures?
29.	What other, if any, unique metrics are currently utilized by your AT program?

Abbreviations: AT, athletic training; BOC, Board of Certification; exam, examination.

Table 3. Descriptive Program Data by Program Type

	Program Type					
	Undergraduate			Graduate		
Program Data	Mean ± SD	Range	Sum	Mean ± SD	Range	Sum
Admissions						
Anticipated class size, No.	17.5 ± 8.7	4–60	2818	17.3 ± 5.8	10–30	260
2012–2013 Applicants	34.3 ± 65.4	5–690	5494	58.9 ± 34.5	25–150	824
2012–2013 Qualified applicants	20.3 ± 13.9	2–90	3151	37.7 ± 18.1	18–85	528
2012–2013 Offered admittance	18.4 ± 20.6	2–220	2863	26.4 ± 18.0	13–85	369
2012–2013 Accepted admittance	15.7 ± 9.2	2–58	2443	15.8 ± 5.6	7–25	221
Outcomes						
2011–2012 Graduates, No.	10.6 ± 6.5	1–45	1733	11.1 ± 5.2	3–20	167
2011–2012 Graduates, %	93.0 ± 16.7	3–100	NA	95.9 ± 7.9	79–100	NA
2011–2012 First-time BOC exam passing rate, %	83.5 ± 19.9	16–100	NA	98.9 ± 2.4	93–100	NA
3-y Aggregate first-time BOC exam passing rate, %	76.6 ± 18.3	13–100	NA	91.4 ± 8.7	75–100	NA
2011–2012 Overall BOC exam passing rate, %	94.2 ± 11.7	40–100	NA	98.5 ± 3.8	86–100	NA
3-y Aggregate overall BOC exam passing rate, %	92.6 ± 11.0	50–100	NA	95.5 ± 6.9	80–100	NA
2011–2012 Employment in athletic training, %	81.4 ± 22.4	10–100	NA	96.4 ± 9.1	66–100	NA
Design						
Typical length of program, y	2.9 ± 0.5	2–4	NA	2.3 ± 0.8	2–5	NA
Has institution maximum credit cap	NA	NA	84	NA	NA	6
Institution maximum credit cap (when applicable)	94.3 ± 34.7	16–165	NA	85.0 ± 39.4	36–120	NA
Required athletic training credit hours	76.0 ± 23.6	13–129	NA	56.9 ± 9.4	42–70	NA
Has a minimum clinical hour policy	NA	NA	116	NA	NA	11
Minimum clinical hour amount	905.5 ± 293.4	32–1800	NA	1067.3 ± 210.0	800–1400	NA
Has a maximum clinical hour policy	NA	NA	50	NA	NA	5
Maximum clinical hour amount	1660.4 ± 527.6	750–3000	NA	2011.0 ± 296.4	1600–2400	NA

Abbreviation: BOC, Board of Certification; exam, examination; NA, not applicable.

to answer questions based on the current undergraduate status. Participants were given 4 weeks from the date of recruitment to complete the survey. We sent weekly follow-up e-mail reminders, which contained the same information as the initial e-mail. If a participant answered the optional question identifying the institution, then the e-mail address of that individual was removed from the list, and no additional reminders were sent.

Statistical Analysis

Participants indicated they had completed the survey by clicking "submit" on the final screen, and the information was sent automatically to the university's database system. Participant responses were generated in PASW statistical software (version 21.0; IBM Corporation, Armonk, NY). Descriptive statistics were used to calculate means, standard deviations (SDs), and frequencies. Descriptive data were not normally distributed; therefore, we used nonparametric tests where appropriate. Mann-Whitney *U* tests were used to compare all professional undergraduate and postbaccalaureate programs for graduation rate, 2011–2012 first-time and overall Board of Certification (BOC) examination passing rates, 3-year aggregate first-time and overall BOC examination passing rates, and employment rate within athletic training. These outcome measures were evaluated because they are the only objective universal outcome measurements currently available from all programs. We used independent-samples *t* tests for the matched comparisons (15 undergraduate, 15 postbaccalaureate). When the Levene test for homogeneity of variance was different, the adjusted *P* value was used. Linear multiple regression was used to analyze specific variables that contributed to success in the key outcome measurements of BOC examination passing rates, graduation rates, and employment rates. The α level was set at .05.

RESULTS

For some of the open-ended responses, we noted that participants not only answered the questions asked but also documented additional comments on the topic being investigated. Therefore, some of these questions were filtered for extraneous commentary, and only the answers to the intended question were recorded. Descriptive statistics (means ± SDs) for institution and program demographic information are presented for all completed surveys in Tables 3 and 4. Baccalaureate programs had an average of 3.5 ± 5.2 graduate assistants and a total of 553 graduate assistants. Postbaccalaureate programs had an average of 2.9 ± 3.7 graduate assistants and a total of 43 graduate assistants. Of the total reported 596 graduate assistants, 414 served as preceptors within those programs. Within baccalaureate programs, an average of 3.5 ± 2.0 instructors possessed master's degrees, totaling 576 instructors. Within postbaccalaureate programs, 3.2 ± 2.9 instructors possessed master's degrees, totaling 49 instructors. In examining the institutional data, 33 baccalaureate programs did not offer any graduate-level degrees within the college, school, or division of the institution with which they were affiliated. In addition, 11 programs were housed within institutions that did not offer graduate degrees. Given that the potential increase in educational costs was identified as a concern for potential degree transition, we calculated program cost based on reported full-time tuition for undergraduate students. Survey respondents were instructed

Table 4. Descriptive Faculty and Institution Data by Program Type

Descriptive Data, No.	Program Type					
	Undergraduate			Graduate		
	Mean ± SD	Range	Sum	Mean ± SD	Range	Sum
Faculty						
Dual appointment staff per program	5.2 ± 2.8	1–18	849	5.6 ± 3.3	2–16	84
Instructors with bachelor's as highest degree obtained	0.4 ± 1.2	0–8	66	0.3 ± 1.0	0–4	5
Instructors with master's as highest degree obtained	3.5 ± 2.0	0–13	576	3.2 ± 2.9	0–11	49
Instructors with a terminal degree as highest degree obtained	1.6 ± 1.4	0–6	260	2.6 ± 1.3	1–5	39
Graduate assistants per institution	3.5 ± 5.2	0–32	553	2.9 ± 3.7	0–13	43
Graduate assistants who also serve as preceptors	3.7 ± 3.3	0–15	388	2.6 ± 2.3	0–8	26
Institution						
Institutions that do not have a division, college, or school of health professions	NA	NA	62	NA	NA	2
Athletic training programs that are housed in a division, college, or school that do not currently offer a master's degree	NA	NA	33	NA	NA	NA
Institutions that do not currently offer a master's degree	NA	NA	11	NA	NA	NA

Abbreviation: NA, not applicable.

to identify how tuition was calculated for both graduate and undergraduate tuition rates and then subsequently were instructed to identify the specific tuition rate for their institutions. If tuition was determined per credit hour and the per-credit-hour rate was submitted, full-time cost was calculated based on a 12-credit-hour-per-semester full-time undergraduate student rate and a 9-credit-hour-per-semester full-time graduate student rate. If tuition was provided as a standard total amount for full-time students, the submitted full-time amount was used for analysis. The average cost for public and private programs was calculated for the current 4-year degree cost and then calculated with the reported full-time graduate tuition cost for a mean estimate of the cost of 3-year undergraduate/2-year graduate programs and 4-year undergraduate/2–year-graduate programs, respectively (Figure).

Postbaccalaureate professional programs had higher 2011–2012 first-time BOC examination passing rates ($U = 464.5$, $P = .001$) and higher 3-year aggregate first-time BOC examination passing rates ($U = 451.5$, $P = .001$) than undergraduate professional programs. In addition, postbaccalaureate professional programs had higher employment rates for 2011–2012 graduates employed within athletic training ($U = 614.0$, $P = .01$). We found no differences between groups for graduation rate ($U = 1004.0$, $P = .93$), the 2011–2012 overall BOC passing rates for all students taking the examination ($U = 888.0$, $P = .34$), or the 3-year aggregate BOC passing rate for all students taking the examination ($U = 911.5$, $P = .50$).

Linear multiple regressions were performed to assess predictors of the 2011–2012 first-time BOC examination passing-rate percentage, the 3-year aggregate first-time

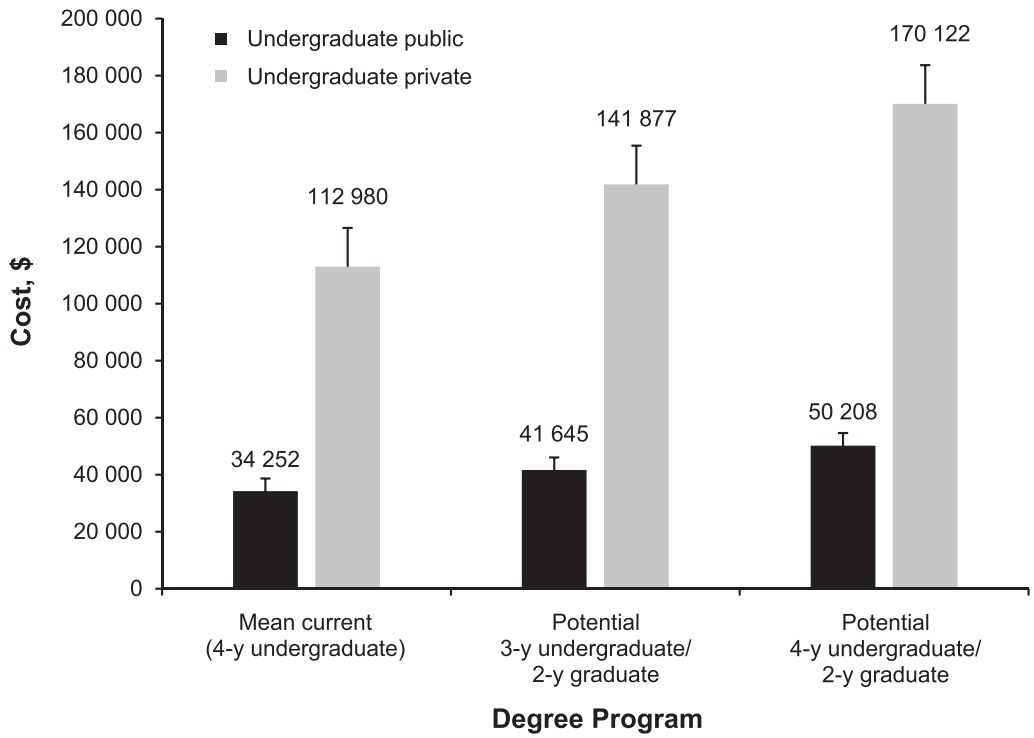

Figure. Potential cost of degree change for current undergraduate students.

Table 5. Case-Control Descriptive Information (Mean ± SD)

Description	Group	
	Undergraduate	Graduate
Graduates, No.	11.27 ± 6.49	11.12 ± 5.18
Graduation rate, %	92.14 ± 15.39	95.86 ± 7.93
Last year's first-time BOC exam passing rate, %	91.20 ± 12.56	98.87 ± 2.39
Last year's overall BOC exam passing rate, %	96.21 ± 7.70	98.47 ± 3.80
3-y Aggregate first-time BOC exam passing rate, %	82.47 ± 17.96	91.40 ± 8.72
3-y Aggregate overall BOC exam passing rate, %	98.29 ± 3.32	95.53 ± 6.87
Employment rate within athletic training, %	85.86 ± 15.87	96.40 ± 9.12

Abbreviations: BOC, Board of Certification; exam, examination.

BOC examination passing-rate percentage, and the 2011–2012 employment rate. The best-fit model demonstrated that program type (postbaccalaureate) and institution type (public) contributed to 5% of the variance of the 2011–2012 first-time BOC examination passing-rate percentage ($P = .004$); program type (postbaccalaureate) and institution type (public) contributed to 10% of the variance for the 3-year aggregate first-time BOC examination passing-rate percentage ($P < .001$); and program type (postbaccalaureate) and 2011–2012 overall BOC examination passing rate contributed to 20% of the variance of the 2011–2012 employment rate ($P < .001$).

Descriptive data for the matched case-control groups are reported in Table 5. The postbaccalaureate professional program group had a higher 2011–2012 first-time BOC examination passing rate ($t_{28} = -2.32$, $P = .04$) and a higher employment rate within athletic training ($t_{20.43} = -2.17$, $P = .042$). A linear multiple regression indicated that group (postbaccalaureate) predicted 13% of the variance in 2011–2012 first-time BOC examination passing rates ($P = .03$).

DISCUSSION

Many potential benefits and concerns have been articulated regarding the potential change to a required postbaccalaureate degree in athletic training. Whereas it is virtually impossible to measure the potential future professional effects this degree change could have, we can review some of the results such a change would have on existing ATPs and compare the outcome measures of existing postbaccalaureate and undergraduate programs.

The outcomes of a degree change are difficult to measure in terms of statistical difference; however, they are still visible within the descriptive data. The loss of graduate-assistant positions is potentially one of the most discussed consequences related to a degree change.[1,4] The effects of losing these positions reach beyond ATPs. Many institutions supplement clinical athletic training staff with graduate-assistant positions, even without an educational program. Graduate assistants also often serve as preceptors within programs, so eliminating these positions would affect student-to-preceptor ratios. The loss of fully or partially funded graduate-assistant positions with the increased educational degree requirement will result in students having increased financial obligations for their education.[1,4] Our observations suggested that at least 553 graduate-assistant positions (approximately 50% of programs reporting) would cease to exist within institutions that support ATPs, and these data did not account for the many other institutions without ATPs that also no longer could hire graduate assistants in the traditionally accepted definition of this role. This has a great potential effect on patient care, as well as on the workload of current staff members. The current graduate-assistant positions possibly could be transitioned to intern positions, allowing students to obtain additional professional experience after degree completion and alleviating some of the strain on program staff with the loss of graduate-assistant positions. However, this shift may cause additional concerns relating to the role of an intern. Graduate assistants are restricted in the number of hours they can work, whereas interns have no restrictions to follow. Consequentially, institutions may merely transition graduate-assistantship funds into intern positions; therefore, the salary amounts associated with these positions will not match the workload required or the degree level achieved. In addition, based on our results, 388 of those reported graduate assistants currently serve as preceptors within the professional programs; their loss could affect student clinical and classroom experiences. The loss of these positions could result in a greater financial effect on students, as most graduate-assistant positions offer some financial incentive for students attempting to complete postbaccalaureate degrees. If the transition is made, students will be responsible for the total financial burden of the higher-level degree and will be graduating without experience as professional athletic trainers. Whereas the potential costs to the student may increase, subsequent outcomes could positively affect the athletic training profession as a whole. The result could be a greater demand for postprofessional or residency programs to supplement the entry-level athletic trainer's professional experience. The loss of traditional graduate-assistant positions also could result in increased job availability for athletic trainers, as many institutions that currently rely on graduate assistants could replace those positions with staff positions.

One of the primary concerns of this potential degree transition is the effect on faculty and programs that cannot support postbaccalaureate degrees at their institutions. The institutions likely would be unable to support this transition because either they do not offer postbaccalaureate degrees or the schools in which the programs are housed do not offer postbaccalaureate degrees. A potential lack of qualified instructional faculty also could occur within the field because some institutions will require that instructors hold a degree a level above the degree of the program in which students are enrolled. Job loss or displacement could result for those who are no longer considered qualified to instruct within their programs.[4] With regard to the institutional capability to support programs, at least 11 ATPs were at institutions that did not currently offer postbaccalaureate degrees, and at least 33 more ATPs currently could not offer postbaccalaureate degrees in their

schools, divisions, or colleges. The ultimate result could be the loss of some existing ATPs and subsequent displacement of instructional staff unless institutions pursue the ability to offer such degrees. In addition, at least 66 instructors currently held bachelor's degrees, and at least 576 currently held master's degrees. Depending on institutional policy, some of these instructors may be unable to continue instruction within a postbaccalaureate degree program, resulting in additional displacement of faculty members and possibly a lack of qualified teaching faculty holding terminal degrees. These considerations are important for the potential transition and especially for the timeline to implement a degree change. When other professions have made a professional degree change, the accrediting body afforded ample time for programs to meet the requirements without imposing penalties.[7]

Standardized outcomes related to baccalaureate and postbaccalaureate professional ATPs have included results on the BOC examination. Researchers[2] have shown that passing rates on the BOC examination are higher among graduates of existing postbaccalaureate programs. Our observations demonstrated a difference in some of the outcome measures, specifically the first-time BOC examination passing rate and the employment rate of graduates within athletic training. Whereas postbaccalaureate programs did show better rates for both outcomes, we observed no effect when examining overall BOC examination passing rates. Even when differences did exist, such as for the first-time BOC examination passing rate, the mean scores for both types of programs were greater than the 70% rate required by the CAATE standards. Interestingly, institution type (public or private) also was a factor in first-time BOC examination success. As we reported, 5% of the variance in the first-time BOC examination passing rate and 10% of the variance in the 3-year aggregate first-time passing rate could be attributed to graduation from a public postbaccalaureate program. These contributions were different; however, a large percentage of the BOC examination data variance that was not explained by the type of institution or program could still be investigated. Ultimately, passing the BOC examination and subsequent employment within athletic training are vital to the success of the profession as a whole; thus, these data should be examined as a degree change is discussed.

Current degree credit restrictions and general education requirements limit the amount of focused time current undergraduate programs can spend on developing the critical thinking skills that enable the student to implement clinical proficiency skills with theory and research-based decision making to create a prospective treatment plan.[8] Investigators[4,8] have noted that such critical thinking is fostered more easily at the graduate-school level because these programs focus the curriculum solely on professional education, thus improving the professional preparation of athletic training students. In addition, certain institutions have credit restrictions that limit the number of required credits within a major. These institutions may have difficulty incorporating the increases in the knowledge, skills, and abilities required within the professional competencies under the existing credit restriction, which is a problem that is less prevalent at the postbaccalaureate level.[4] As seen in Table 3, 84 responding baccalaureate institutions (47%) had an existing credit restriction, with an average credit cap of 94.3 $\pm$ 34.7, so the credit restriction could be a limitation that baccalaureate ATPs face.

Researchers[9,10] have also reported that undergraduate professional programs have difficulty recruiting and retaining students who are committed to remaining within the profession after graduation, which is a problem that is less prevalent at the graduate level. Graduate-school admission requirements are typically more stringent than undergraduate or individual ATP requirements, resulting in a higher-quality student at the initiation of professional education.[5] Furthermore, other health care professions with which athletic training is compared, primarily physical therapy, have moved to a postbaccalaureate entry-level degree requirement. This change could affect the perception of athletic training as a well-educated health care profession by comparison.[4] Other health care professions are labeled as "health diagnosing and treating practitioners," whereas athletic trainers are designated as "health technologists and technicians" by the US Bureau of Labor Statistics' Standard Occupational Classification system.[11] This designation implies that athletic trainers are not prepared to diagnose and treat as autonomous practitioners. Pitney[4] postulated that the transition from the entry-level degree could result in changing the classification of the athletic training profession within the Standard Occupational Classification system, thereby promoting greater recognition from peer health care providers and potentially longer-reaching effects on billing and reimbursement concerns that the profession faces. However, no evidence has demonstrated that the change in education will result in improved patient outcomes or greater "peer" recognition, so this theory is primarily anecdotal.[4]

Many discussions about the education of health care professionals revolve around the comparison of athletic training with physical therapy as a peer health profession. The physical therapy profession outlined similar goals for itself, primarily the increased ability to practice autonomously, as it transitioned from a baccalaureate entry-level degree to postbaccalaureate degrees at the master's and doctoral levels. The rationale for these changes was mainly based on the increasing scope of practice of the profession and greater practice autonomy.[7] In addition, whereas physical therapy did not evaluate patient outcomes before designating a degree change, investigators have documented that requiring an advanced degree did result in greater implementation of evidence-based practice.[12] This profession also faced similar concerns when addressing the potential degree changes: namely, the true need for an increase in degree requirements, the inability to predict the suggested advantages of a degree change, and the potential increase in the public's confused perception of the profession's educational process.[7] During this transition, no authors accurately measured or addressed any of the concerns or goals related to the degree change, and despite resistance to the change over many years, the transition ultimately was pursued and implemented successfully.[7]

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The descriptive information that we collected included information that was readily available for the program

directors to enter into the Web-based survey. Specifically, with regard to the anecdotal concern about the potential increase in tuition cost, evaluating the current cost to each student would be very difficult, especially considering the variance in types of funding available through current assistantships, fellowships, and scholarship opportunities. Other institutional and program components can be evaluated in future studies. Furthermore, the creation and implementation of quantifiable outcome measurements other than the BOC examination results, graduation rates, and employment rates could allow for greater comparison among programs. As the gatekeepers for data, the CAATE and the BOC need to assume an instrumental role in the collection and dissemination of programmatic data.

Moreover, no information about the effects of degree change on patient outcomes is available; however, based on the literature, this factor was not evaluated before the degree change in physical therapy or by other transitioning health-related professions.[7] Researchers should also examine whether patient outcomes are affected by proposed changes in the educational requirements of athletic trainers.

CONCLUSIONS

Many anecdotal potential benefits and concerns exist regarding the determination of what ultimately should be the entry-level degree for the athletic training profession. We demonstrated that current postbaccalaureate ATPs performed better in some key outcome measures; however, the descriptive data supported the concerns that this transition could result in the loss of some programs that cannot support postbaccalaureate degrees and may place additional strain on staff due to potential staffing changes and loss of graduate-assistant positions. However, the degree change also could result in more job opportunities within the collegiate setting, as the vacated graduate-assistant positions would need to be addressed by the administration to provide appropriate medical care.

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