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ORIGINAL RESEARCH

Entry-Level Athletic Trainers' Self-Confidence in Clinical Skill Preparedness for Treating Athletic and Emergent Settings Populations

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Context: Clinical education is an important component of athletic training education. Concern exists regarding whether clinical experience adequately prepares students to perform professional skills after graduation, particularly with patients in emerging settings.

Objective: To determine the confidence levels of athletic training graduates in performing professional skills, providing care to patients in emergent settings, and to suggest improvements in clinical education.

Design and Setting: A descriptive design involving an online survey. The survey was administered via email 2 weeks after the closing of the April 2011 Board of Certification (BOC) examination window.

Patients or Other Participants: All 832 first-time candidates from undergraduate and graduate Commission on Accreditation of Athletic Training Education–accredited programs sitting for the BOC examination during the April 2011 testing window were surveyed. Eighteen percent (n = 166) elected to participate.

Main Outcome Measure(s): Responses were acquired regarding levels of confidence in performing athletic training skills and caring for multiple patient populations. Participants were permitted to suggest improvements in clinical education. A multivariate analysis of variance was used to determine if educational setting played a role in confidence levels. Cluster analysis was used to develop high, moderate, and low confidence groups. Participants' comments were thematically separated into specific categories.

Results: Participant confidence levels were strong in performing athletic training skills on traditional patient populations, although body region was a factor. Lower confidence levels were reported for caring for elderly and special needs individuals, with insufficient clinical experiences stated as the primary cause. Confidence levels for recognizing nonorthopaedic concerns were lower than for recognizing musculoskeletal injury issues.

Conclusions: Participants felt confident in performing athletic training skills, particularly for athletic populations. Confidence scores were lower for other populations, and it is apparent that clinical experience with different patient populations is essential. Participants felt that greater clinical experiences are necessary, with further opportunities in clinical decision making and program administration decisions.

Key Words: Athletic training education, clinical education, confidence scores

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INTRODUCTION

Clinical education is vital to the process of developing competent entry-level health care providers. Several hundred hours of experience are spent in athletic training rooms or other clinical settings developing, practicing, and hopefully mastering skills associated with athletic training. However, little is known about how individuals graduating and entering the profession feel about their clinical experiences, particularly in terms of how those experiences have prepared them to assume the role of an athletic trainer. Furthermore, with the emergence of new professional settings and more diverse patient populations, it is unknown whether recent graduates feel adequately prepared to serve a wider spectrum of patients and clients.

The transition of graduates to practice is a growing concern within the profession of athletic training. The National Athletic Trainers' Association Board of Directors approved the document *Future Directions in Athletic Training Education,* which established several recommendations regarding athletic training education. Recommendation 12 specifically focuses on determining best practices in identifying models that will enhance "transition-to-practice" in athletic training.[1] The need to develop a 'period of orientation' is mentioned as a means to make the recent athletic training graduate better prepared to function independently of preceptor supervision.[1]

Athletic training education has moved from a 'hands-on learning approach,' in which clinical education occurred as a result of 'working' in the athletic training setting, to a more directed learning focus that is based on competency development.[2] The move to a competency-based approach was accompanied by a reduction in the athletic training student's role as a health care provider. The absence of direct supervision with this shift in focus may have been detrimental to student learning through reduced feedback.[3]

Clinical experience and its effect on professional skill proficiency are affected by certain influences. An increased focus on eliminating unsupervised clinical experience through eliminating the 'first responder' role of athletic training students has at least reduced the unsupervised travel of athletic training students with athletic teams and the virtually independent care provided by these same students in the athletic training setting. However, it has been postulated that the requirement of continuous direct supervision may be detrimental to the education of the athletic training students, as they are not afforded the opportunity to develop independence of practice.[4] Supervising athletic trainers, deprived of a free workforce and facing increasing workplace demands, are required to be more active in patient health care.[5,6] This increased role as a health care provider may make student supervision less of a priority and reduce the preceptor's desire to produce a health care provider.[5,6] Additionally, the quantity and quality of clinical experience may play a role. One study[7] noted that many of the hours completed by athletic training students involve minimal learning, while others[8] feel that the quantity of clinical experience is inadequate. This trend may be demonstrated in a study by Carr,[9] who interviewed employers of recent athletic training graduates and noted that 21% of entry-level athletic trainers displayed deficient decision-making skills, which may have led to deficiencies in initiative and employee confidence.

Another issue concerning the development of athletic training skills is the types of clinical experiences available to athletic training programs. The opportunity for students to gain experience in a variety of settings has been cited[7,10] as an important factor in professional development. Clinical education sites sponsoring football provide greater opportunities for response to emergencies and thereby should afford the athletic training student opportunities for development in this area.[5] The competitive level of the college or university attended may result in a difference, with the possibility of major universities preventing direct hands-on care of scholarship athletes on one hand but providing the opportunity for exposure to better facilities on the other.[11]

Finally, with the expanding athletic training scope of practice into emergent settings, the question exists: "Does current clinical education practice prepare students for these new roles?" At the national level, the need to function cooperatively with other health care professionals is cited[1] as a future need in athletic training education. Additionally, the emergent settings present other concerns. These settings may require the care of patients who differ in age and general health and who participate in activities beyond athletics.

Therefore, the focus of this study was to determine whether athletic training graduates preparing to take the Board of Certification (BOC) examination feel adequately prepared and confident enough to assume the roles of an entry-level athletic trainer. These roles include practicing within the 6 professional domains. Additionally, the study addressed the graduates' confidence level in providing health care to populations more characteristically found at emergent settings.

METHODOLOGY

Data Collection

The names and email addresses of all 832 athletic training graduates taking the BOC examination for the first time in April 2011 were obtained from the Board of Certification Inc. These individuals included graduates of both the undergraduate and entry-level master's programs. Within 1 week after receiving her/his examination results, each individual was emailed by the lead author (G.M.), who requested her/his voluntary participation via a link to an anonymous online survey. A follow-up email was sent to each candidate 2 weeks

Table 1. Participant Information

Question	Results
Gender	Male = 59 (35.3%), Female = 107 (64.7%)
What is your age?	Mean = 23.3 y
Did you graduate from an undergraduate or entry-level Master's program?	Undergraduate = 154 (92.2%) Entry-level Master's = 11 (6.6%)
What is your final overall GPA?	Mean = 3.07
Did you pass the BOC on the first attempt?	Yes: 86.2%; No: 13.8%
What was the competitive level of your university/college?	Division 1: 46.1% Division 2: 19.8% Division 3: 32.9%

Abbreviations: GPA, grade point average; BOC, Board of Certification.

after the initial email to assist in increasing the response rate. A total of 166 responses were received (females = 107, males = 59), representing an 18% response rate.

Instrumentation

Five practicing athletic trainers with 10 to 22 years of athletic training student instruction created a SNAP online survey. Survey items were selected by the athletic trainers based on athletic training domains. Additional items were based on patient/client populations that an athletic trainer may encounter when employed at an emergent professional setting. After the item list was finalized, the survey was taken to an on-campus psychometrician for editing and uploading into the SNAP program. The survey was approved by the university's institutional review board, and consent for participation was acknowledged by the participant's completion of the survey.

Table 2. Questions Regarding Participant Perceptions of Confidence in Performing Athletic Training Skills (Rated on a Scale from 1 to 10, with 1 Representing *No Confidence* and 10 Representing *Highly or Extremely Confident*)

What is your confidence level in evaluating lower extremity injuries?
What is your confidence level in performing an on-field evaluation of a lower extremity injury?
What is your confidence level in evaluating an upper extremity injury?
What is your confidence level in performing an on-field evaluation of an upper extremity injury?
What is your confidence level in evaluating the spine or torso?
What is your confidence level in performing an on-field evaluation of a spine or torso injury?
What is your confidence level in developing and implementing a treatment plan using therapeutic modalities?
What is your confidence level in providing sideline care to an athlete suffering a concussion?
What is your confidence level in providing immediate care to an athlete suffering a spinal injury?
What is your confidence level in providing care to a patient suffering a nonorthopaedic illness?
What is your confidence level in developing and implementing a rehabilitation program for the lower extremity?
What is your confidence level in developing and implementing a rehabilitation program for the upper extremity?
What is your confidence level in developing and implementing a rehabilitation program for the back?
What is your confidence level in operating and maintaining an athletic training facility?

The initial section of the survey consisted of demographic questions such as age, gender, grade point average (GPA), BOC examination results (pass/fail), and the level or division of the college attended. The information requested and the results are reported in Table 1.

The second section of the survey addressed the participants' perceived level of confidence in performing different professional skills associated with athletic training. Participants were asked to rate their level of confidence on a scale from 1 to 10 (1 = *no confidence*, 10 = *extremely confident*). Sample topics included the evaluation of knee injuries, providing care for a patient suffering a spinal injury, recognizing a nonorthopaedic condition, developing treatment plans, and operating an athletic training facility (Table 2).

The final section focused on whether or not participants felt confident in providing care to patients and clients in emergent practices. These included care of pediatric, middle-aged adult, elderly, and special needs patients. Participants responded with a "*yes*" if they felt confident. If participants responded "*no*" to any of these populations, they were requested to provide reasons as to why they lacked confidence (Table 3). Finally, participants were afforded the opportunity to offer comments regarding what they felt would improve the clinical situation based on their own experiences.

Data Analysis

Participant data was exported from the SNAP survey into an IBM SPSS Statistics version 20 data sheet. A multivariate analysis of variance (MANOVA) was performed to determine if the competitive level of the participant's university or college significantly affected confidence level data ($P < .05$).

K-means cluster analysis was applied to the perceived confidence data. The K-means cluster was used as it permits the user to determine ahead of time the number of clusters or groupings to be created statistically. Three groups were selected, representing high, moderate, and low confidence

Table 3. Questions Regarding Confidence Level with Athletic Training Administration and Emerging Practice Populations (Yes for *Confidence*, No and an Explanation for *Insufficient Confidence*)

Do you feel able to successfully operate an athletic training facility at this time?
Clinically, do you feel confident in providing care for elderly patients?
Clinically, do you feel confident in providing care for young children?
Clinically, do you feel confident in providing care for patients with special needs?
Clinically do you feel confident in providing care for middle-aged adults?

level groups, and mean scores were provided for each cluster. This procedure was applied to the 14 variables depicted in Table 2.

Data assessing the confidence levels of providing care for different populations were recorded as *yes* or no, with the percentages of each variable recorded. Participants responding with a negative confidence in caring for certain patient populations were permitted to provide a reason for the negative response. These responses were grouped based on theme of the response, with the percentages for each group reported. A similar thematic approach was applied to responses related to the improvement of clinical education.

RESULTS

The MANOVA demonstrated no significant difference ($P < .05$) in perceived confidence among the participants from schools of different competitive divisions. The cluster analyses were able to divide the participants into groups of high, moderate, and low confidence for each of the selected variables. Cluster means, participant grouping, and percentages are listed in Table 4.

The cluster analysis for the evaluation of lower extremity injuries placed 138, or 83%, of the participants into the high confidence group, with an additional 28 participants in the second or moderate level of confidence. Performing the assessment on the field lowered the number of participants demonstrating high confidence to 66% of the participants, with the moderate level of confidence increasing to 32%.

Assessment of upper extremity injuries demonstrated smaller levels of high confidence. Only 47% of participants expressed a high level of confidence in assessing upper extremity injuries, and 42% expressed a moderate level of confidence. On-field assessment of upper extremity injuries resulted in an even lower level of confidence, as only 37% of participants were highly confident of performing this type of evaluation, with 54% expressing a moderate level of confidence in performing this skill.

Similar results were seen during the assessment of spine or torso injuries. Fewer than 30% of the participants were highly confident in performing an assessment of this area, with an additional 59% expressing having a moderate level confidence in doing so. Performing the assessment on the field had an impact on the confidence level of the participants. Fifty-one of the participants were placed into the high confidence group, but the moderate confidence level group included only 86 participants. Thirty of the participants expressed a low level of confidence in assessing spinal injuries on the field. As far as providing immediate care for an athlete who had suffered a spinal injury, 56% were placed into the high confidence cluster, with an additional 33% placed into the moderate confidence group. Analysis of sideline concussion care resulted in better scores of high confidence. One hundred and twenty-two participants were placed into the high confidence group with regard to the ability to care for a patient on the sidelines with a concussion, based on the responses, with 40, or 24%, of the participants grouped in the moderate level confidence.

Participants demonstrated confidence in developing and implementing a treatment plan using therapeutic modalities. One hundred and eleven participants expressed high confidence, and an additional 44 demonstrated moderate confidence. Confidence levels in developing rehabilitation

Table 4. Clusters of Self-Reported Confidence Levels in Performing Athletic Training Skills, with the Mean Representing the Cluster Center and the Location on the 1–10 Scale

	Confidence Level, Mean (n [% Rounded])		
Questions	High	Moderate	Low
Lower extremity evaluation	9 (138 [83])	3 (28 [17])	2 (1 [1])
On-field lower extremity evaluation	9 (110 [66])	6 (53 [32])	3 (4 [2])
Upper extremity evaluation	9 (79 [47])	6 (82 [49])	4 (6 [4])
On-field upper extremity evaluation	9 (61 [37])	6 (90 [54])	3 (16 [10])
Evaluation of the spine and torso	8 (48 [29])	6 (98 [59])	3 (21 [13])
On-field evaluation of the spine and torso	8 (51 [31])	6 (86 [52])	3 (30 [18])
Therapeutic modalities	9 (111 [67])	7 (44 [26])	4 (12 [7])
Sideline concussion care	9 (122 [74])	7 (40 [24])	3 (2 [1])
Immediate spinal injury care	9 (94 [56])	6 (55 [33])	3 (17 [11])
Nonorthopaedic illness	9 (68 [41])	6 (87 [52])	4 (12 [7])
Lower extremity rehabilitation	9 (130 [78])	7 (32 [19])	3 (3 [2])
Upper extremity rehabilitation	9 (106 [64])	6 (55 [33])	3 (6 [4])
Back rehabilitation	9 (86 [52])	6 (67 [40])	4 (14 [8])
Athletic training room operation	9 (106 [64])	6 (50 [30])	3 (11[7])

Table 5. Self-Reported Confidence Levels in Caring for Emergent Populations

Population	Participants Expressing Confidence in Caring for Population, n (% Rounded)	Participants Not Expressing Confidence in Caring for Population, n (% Rounded)
Elderly patient care	91 (54.5)	76 (45.5)
Pediatric populations	132 (80.0)	33 (20.0)
Special needs populations	89 (53.6)	77 (46.4)

programs were dependent upon the body part. As with lower extremity assessment, participants demonstrated higher confidence scores in rehabilitating lower extremity injuries. The participants demonstrated only slightly lower level confidence scores for rehabilitating upper extremity injuries. There was a larger decrease in confidence level in the development of rehabilitation programs for the low back. Only 86 participants were clustered into the higher confidence group, with 67 participants (40%) in the moderate confidence cluster and the remaining 14 participants in the lower cluster.

Participant confidence scores were not as high for the recognition and the provision of care for an individual suffering a nonorthopaedic condition. Only 68, or 41%, of the participants responding to the survey were grouped into the higher confidence cluster, and another 87 (52%) were placed into the moderate confidence cluster. Twelve, or 7%, of the participants were placed into the lower confidence cluster.

The next aspect of the survey generated *yes* or *no* responses regarding the provision of care to patients commonly associated with emerging settings (Table 5). The first inquiry focused on the care of elderly patients. Only 54.5% of the participants felt confident in caring for an elderly population. Comments related to negative responses were categorized into themes. Sixty-three of the 73 comments centered on the absence of any appreciable experience working with this population. One response that was typical of the comments was "We never learned how to deal with elderly patients in any clinical setting or classroom setting." Other comments indicated that "we are athletic trainers dealing almost exclusively with younger athletic populations" or that confidence level would be improved "only if physically active."

On the other end of the age spectrum, participants were asked if they felt confident providing care for young children. Overall, 132, or 79%, of the participants responded to this population positively. There were 29 total comments regarding why the participants were not confident with this patient population. Twenty-three (79%) of the comments were related to the absence of, or minimal direct experience with, this group. A common comment was that "I have not had enough experience working with young children." Less common concerns were related to development ("too many psychological/developmental factors involved") and communication issues ("It will be hard to communicate [with] people [who] cannot really express what is wrong with them"). Two of the participants noted that they felt confident only because of the opportunity to work at a summer youth sports camp.

The next question focused on the care of special needs patients. Slightly over 53% of the participants expressed confidence in caring for this population. The responses related to no confidence were overwhelmingly related to having no experience caring for this patient population. Fifty-two of 65 comments specifically acknowledged having no exposure to this patient population, and 9 comments dealt with the absence of instruction. One comment that reflected most of the responses was "[I] have never been exposed to them and [am] not sure of certain things I should be looking for." Other comments related to the level of education afforded to students in this area, with one participant noting "that isn't a topic that is ever really discussed," while several others stated that they were "uneducated" in dealing with this population.

Themes that ran through noted concerns were inadequate exposure to the different emergent patient populations as well as insufficient opportunity to become involved in the different experiences of an athletic trainer, such as administrative duties. In part, the quality of the preceptor plays a role. One participant who felt that there was inadequate space in the survey to comment on the importance of her clinical experience emailed the primary author directly. An abbreviated section of her quote may serve as the best description of the preceptor's role:

> *I had the pleasure of working under some incredible ACI's in a program that has you in the clinic all 3 years. This was essential. I feel so much more confident and have had so many experiences with injuries and rehabilitations. All of which I can draw from when entering the work force.*

She continued

> *I feel it is also pivotal to have as much clinical exposure as possible, especially so that you are given the opportunity to be taught by older students and to eventually teach younger students. It helps with the entire learning process. I know for a fact that without the incredible and full 3 years of clinical experience I would not have been able to pass my board exam. My ACI's filled the gaps I experienced in my formal, classroom athletic training education.*

Finally, participants were asked to use their own experience to provide suggestions that would improve clinical education. Once again, the comments were organized into themes. Eighty-one of the 167 participants provided suggestions, which were primarily related to the need for more experience over a wide range of athletic training domains. Eleven of the comments expressed a desire for more administrative experience, while 6 commenters felt there was a greater need for more decision making during the student experience. Comments such as "give more opportunities for AT students to make independent decisions and to apply critical thinking" and "allow us to do more on our own to gain experience and confidence in our skills" were examples of the participants' desires to do more while in the clinical setting. These

Table 6. Participant Suggestions to Improve Clinical Education (No. of Repeats on Specific Theme) in Order of Prevalence (n)

More exposure to the administrative aspects of athletic training facilities (11)
Clinical instructors need to allow students to be more hands-on and independent, "less restriction on direct and immediate supervision" (7)
Provide a wider range of clinical opportunities (6)
More rehabilitative experience (6)
Provide a patient population with special needs (5)
Provide a patient population with a wider range of ages (4)
Experience in an industrial setting would be helpful (4)
Have entire semester in a clinical setting such as an orthopaedic surgeon's office (3) or PT clinic (3)
"Let us travel with teams ...." (3)
More emphasis on student decision making, including return to play decisions (2)
More experience with psychosocial issues (2)
Fewer athletic training students at clinical site (1)
More on-field evaluation opportunities (1)
Cover youth sport tournaments (1)
There should be a year of clinical only experience (1)
Longer general medical rotation (1)
Keep the focus on athletic populations because it is the name of our profession (1)

Abbreviation: PT, physical therapy.

comments along with the others were subdivided into specific variables, which are depicted in Table 6.

DISCUSSION

One of the trends throughout the responses given was the need for greater exposure within the clinical experience. Whether it is dealing with different populations, being permitted more hands-on opportunities, or having the ability to become more involved with administrative aspects of the profession, recent graduates would like to have had greater breadth and quality of experiences to improve their skills and become more proficient at making the decisions they will need to make professionally. One aspect of concern is whether or not the setting of the academic program played a role in the education of athletic trainers. Based on the results of this study, the competitive level of the university does not seem to affect the confidence level of entry-level athletic trainers.

Scriber[12] noted that athletic training graduates learned most effectively when they acted independently from any direct supervision. Several participants demonstrated an agreement with this statement, as their comments reflected a desire for more autonomy during the clinical experience. Research[11] suggests that clinical experiences that follow a path of guided autonomy would better serve athletic training education as a means to improve professional skill development. This process would partially remove the preceptor and force the athletic training student to make more decisions on her/his own and would possibly remove the belief that real clinical education occurs on the road while the preceptor stays home.

Ironically, accreditation requirements calling for direct supervision may have an indirect negative effect in this area. The need for constant direct supervision may preempt the athletic training students' development of self-confidence and the independence needed for a transition to professional practice.[4,5] The loss of the athletic training student as a 'labor force' is making the athletic trainer more responsible for actual patient health care, thereby reducing the time available for clinical instruction.[5,6] The reduced role of the athletic training student as a primary caregiver may diminish the clinical instructor's desire to produce quality health care providers.[6]

Shinew[13] assessed the confidence level of entry-level athletic trainers who were already practicing professionally. The lone area of concern was in organization and administration, with only 65% of her participants stating that their clinical education adequately prepared them. Carr[9] noted that athletic trainers entering the profession felt an insufficiency in administrative skills. The results of this study in many cases mirrored Shinew's work. Seventy-eight percent of the participants felt that they could operate an athletic training facility, but 34 participants expressed concerns regarding athletic training room administration.

Overwhelmingly, participants who responded noted the need for more experience in this area. It appears imperative that athletic training students become more involved in administrative aspects such as insurance billing, inventory, purchasing, and communication with coaches and have exposure to the 'background' operations in the athletic training room. However, it appears that upon entering the profession, employers expect 'a learning curve' on the part of recent graduates in administrative areas and have less of a concern related to this responsibility.[9]

In an assessment of other professional domains, Shinew[13] demonstrated confidence levels of 80%, but an assessment of certain skills resulted in confidence levels that varied. High confidence levels in assessment, immediate care, and treatment were influenced by the area of the body part involved. Recent graduates demonstrated a high level of confidence in evaluating and caring for the lower extremity, less confidence with the upper extremity, and even less with care of torso/back injuries. In this regard, participants were apparently affected by the prevalence of specific injuries seen during their clinical rotations. Therefore, planning of rotations may need to take into consideration the types of injuries that occur at the different clinical sites.

Fewer participants were as confident dealing with on-field assessments. As before, the body part involved played a role, with participants demonstrating a high level of confidence in assessing lower extremity injuries on the field, possibly due to the prevalence of lower extremity injuries in athletics. This number was considerably lower in providing on-field assessment of upper extremity injuries and even lower for assessment of spinal/torso injuries. Ironically, although participants appear less comfortable in assessing spinal injuries, they demonstrated much more confidence in caring for spinal injuries on the field, such as with spine boarding and dealing with concussions. It is possible that annual practicing of the emergency action plan would account for the higher confidence in caring for spinal injuries. However, it is apparent that additional effort needs to be made in preparing students to assess upper extremity and spinal injuries in acute situations, either through clinical experiences with higher

injury rates above the waistline or through simulated situations. Fortunately, the participants felt adequately prepared in sideline management of concussions.

Authors of prior studies[7,9] have noted that athletic training students should be exposed to a variety of experiences. Extending the work of the previous studies, this study assessed the level of self-confidence of recent graduates in caring for populations beyond the high school and college level athlete. Most of the participants felt comfortable in caring for most populations, including pediatric, middle-aged, and special needs patients, although additional experience with these populations was considered desirable. However, there was a concern in caring for elderly populations, with less than half of the participants demonstrating high levels of confidence in caring for these individuals. Most of the comments associated with lower confidence scores centered on the minimal or nonexistent experience with this population, as well as the frequent absence of didactic education related to older populations. It should be noted that participants might have been swayed to identify deficiencies in experience with emerging settings as a result of their inclusion in this study.

These results have implications for current attempts to expand professional scopes of practice nationally. In considering responses in caring for different patient populations, most of the participants felt comfortable and, therefore, prepared to handle most patient populations. Related to this, only 41% of the participants were clustered into the high confidence group for recognizing a nonorthopaedic condition. This impacts efforts to expand the scope of practice because of the need to identify the existence of co-morbid conditions that may mimic orthopaedic conditions and that are relatively common in certain populations. Based on our data, additional didactic education and clinical experiences need to be incorporated into existing programs to enable future athletic trainers to be comfortable and more confident in recognizing illnesses.

It should be noted that even in cases in which graduates felt comfortable in caring for different populations, a desire for additional clinical experience was expressed. Weidner and Vincent[8] demonstrated that experience with sports medicine centers is warranted to improve an athletic trainer's ability to function in this type of setting. Concerns include determining the level of experience necessary with each of the emergent populations and the difficulty in identifying and recruiting clinical sites for this purpose. Current accreditation standards call for clinical exposure to different professional settings, although the quality and quantity of time spent at these settings is not stated.[14] Additionally, the *Future Direction of Athletic Training Education* document recommends future athletic training students develop skills in interprofessional relationships,[1] which would come with exposure to these settings. However, it has to be determined whether current athletic training programs can adequately provide proper exposure to these populations without diminishing the experiences in traditional settings, which have represented the backbone of our profession.

A concern with the current study is that the quality of participants responding may not accurately reflect the total population taking the BOC examination for the first time. In this study, 86.2% of the participants passed the examination on the first attempt, which is a greater percentage than the national average, 60.7%, during the 2010–2011 testing period. In addition, 88% of the participants had an overall GPA of 3.5 or better, indicating that most of the participants were high academic performers. In addition, approximately 64% of the participant pool was female, which may have played a role in the results. As certain variables had lower numbers of participants in high confidence groups, it is possible that the true overall levels of confidence would be lower if a broader field of participants participated. Shinew[13] demonstrated that student impressions of clinical education adequacy diminished with multiple failures of the BOC examination and that if the scope of participating participants better reflected the national passing average, lower confidence scores would be expected. Insufficient clinical preparation or a feeling that it is difficult to function professionally may lead to entry-level athletic trainers to leave the profession.[10]

CONCLUSIONS

Recent graduates appear to feel adequately prepared clinically to assume the role of an entry-level athletic trainer, especially with regard to caring for musculoskeletal conditions in most populations. However, participants expressed a need for greater variety of experiences in their clinical education. Many participants expressed a desire for greater autonomy in performing skills and making clinical decisions, both to enhance their ability and to improve their confidence levels. Our participants also demonstrated an appreciation for greater experience with populations common to 'emerging professional settings.'

Based on participant comments, the clinical experience is an important one in the graduate's professional development. Students want to experience many things and to be able to make the decisions, albeit with supervision, that they will be making in their career. Clearly, the preceptor plays a preeminent role in this regard.

Therefore, based on the data and student feedback, more research as well as change must occur in the experience and education of future athletic trainers. It is apparent that preceptors must be aware of the need to permit athletic training students to make clinical decisions and to become involved in the administrative aspects of facility operation. Professionally, with the desired expansion of the profession into the emerging settings, educational programs must recognize the need for placing athletic training students within these settings as part of their clinical experience.

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