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ORIGINAL RESEARCH

Leadership Proficiency: Perspectives of Athletic Trainers New to Practice

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Context: A broad range of knowledge, skills, and abilities related to leadership has been suggested as essential for development during the athletic training education process. Though the importance of these characteristics has been established, researchers have not yet evaluated the self-perceived proficiency levels of new-to-practice athletic trainers (ATs).

Objective: To determine the level of self-perceived proficiency attained on key leadership competencies by new-to-practice ATs and to determine which factors relate to increased levels of self-perceived proficiency.

Design: Quantitative survey research.

Setting: Online questionnaire.

Patients or Other Participants: One hundred seventy-three ATs within their first 5 years of practice participated in the study.

Main Outcome Measure(s): Participants completed a Web-based questionnaire developed by the researchers to determine the self-perceived level of proficiency attained by the new-to-practice AT on 5 key leadership competencies. One open-ended response item allowed participants to suggest educational experience changes that could lead to increased proficiency in the 5 key leadership competencies.

Results: Athletic trainers who completed their professional education at the master's level selected higher self-perceived proficiency levels for the competency *knowledgeable* than those who completed bachelor's degrees to complete their professional athletic training requirements. As years of practice increased, ATs perceived higher levels of proficiency in the competencies of *knowledgeable*, *ethical practice*, and *credible*. Level of self-perceived proficiency ratings for *adaptable and resilient* were significantly lower than those for other competencies, regardless of demographic variables.

Conclusions: Completion of professional education at the master's degree level resulted in increased self-perceived levels of knowledge in new-to-practice ATs. Self-perceived proficiency in the characteristic of adaptability and resilience lags behind other key competencies even as years of practice increase. Instructors could use pedagogical and curricular strategies from other health care professions to increase adaptability and resilience in athletic training students.

Key Words: Competencies, adaptability, resilience, degree change

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KEY POINTS

- Level of professional education program completed and years of practice influence self-perceived leadership proficiency.
- New-to-practice athletic trainers rate their proficiency in adaptable and resilient behaviors lower than that of other leadership competencies.
- Clinical education strategies can be used to increase athletic training leadership proficiency.

INTRODUCTION

The National Athletic Trainers' Association (NATA) has instituted leadership development opportunities for athletic trainers (ATs) for many years in response to findings in literature that leadership skills and abilities are crucial. Benefits of leadership in athletic training include employee and student satisfaction, enhanced working environments, and improved patient outcomes.[1,2] Research shows the practice of leadership enables ATs to enhance the standing of the athletic training profession, adapt to the changing health care environment, and implement evidence-based medicine practices.[3–5]

Kutz[6] identified 49 leadership competencies that should be included in the academic preparation of athletic training students. Through further investigation of these competencies, Handlos[7] established that head ATs employed in the collegiate athletics setting unanimously rated as highly important 5 of the 49 competencies. The leadership competencies most highly valued are *credible*, *ethical treatment*, *ethical practice*, *knowledgeable*, and *adaptable and resilient*. Table 1 displays single-sentence descriptors for each of the 5 competencies.

Preceptors and program faculty evaluate the development of competencies in athletic training students in alignment with the fifth edition of the "Athletic Training Education Competencies."[8] Professional education programs include experiences through which students develop proficiency in the skills and dispositions necessary for completion of the Board of Certification (BOC) exam for ATs. The areas of practice identified and evaluated by the BOC are (1) injury and illness prevention and wellness promotion; (2) examination, assessment and diagnosis; (3) immediate and emergency care; (4) therapeutic intervention; (5) health care administration and professional responsibility. Once ATs enter the field, they no longer undergo formal evaluation in the 6 domains of athletic training. This means that further growth of competencies in new-to-practice ATs is not assessed, despite identification of the early years of clinical practice as a crucial time for the development of professional behaviors. Literature from nursing, physical therapy, and medicine describes an emphasis on additional support and evaluating growth during the first 2–5 years of practice.[9–12] Terminology describing early career practitioners includes *novice* and *new to practice*, but neither term has been well defined by researchers with a specific range of years in practice.[9,11,12] In this study, the operational term *new to practice* aligns with research in a variety of other professions.[13] The term also allows for an examination of changes across years of experience in participants. Athletic training literature has examined issues of transition to practice, professional socialization, and orientation,[14–17] but has not included an examination of competency proficiency in new-to-practice ATs.

Table 1. Competency Names and Descriptors

Competency	Descriptor
Credible	Is believable, honest, trustworthy, and ethical in dealings with patients, peers, and supervisors
Ethical treatment	Treats people equitably and fairly
Ethical practice	Promotes team practices of ethical behavior in the treatment of patients and in the pursuit of organizational goals and objectives
Knowledgeable	Knows, understands, and is capable of performing the details and demands of tasks and roles specific to the profession
Adaptable and resilient	Adapts and copes well with unforeseen changes or volatile circumstances created by patients, peers, supervisors, or the environment

This study aimed to determine the self-perceived level of proficiency achieved by new-to-practice ATs on 5 key leadership competencies related to the domain of health care administration and professional responsibility. The impact of 4 demographic variables on self-perceived proficiency was explored. Demographics included were sex, age, years of practice, and level of professional athletic training degree completed. The level of professional degree completed by respondents is of particular interest because of continued discussion of the impacts of the ongoing transition of athletic training professional education from the bachelor's to the master's degree.[18] In addition to recording the self-perceived proficiency levels, we also gathered suggested education strategies respondents felt could increase levels of proficiency on the leadership competencies as a whole.

METHODS

Design

Participants reported demographic information and assigned a self-perceived level of proficiency to each of the 5 leadership competencies through a quantitative survey design. Respondents used Likert-scale responses to identify the self-perceived level of proficiency for each competency descriptor. The researchers also asked respondents to suggest changes to educational programs that would enable students to achieve advanced levels of proficiency on the key leadership competencies.

Table 2. Participant Demographics

Demographic Variable	No.	% of Participants
Sex		
Female	111	64.2
Male	62	35.8
Age, y		
20–25	86	49.7
26–30	79	45.7
31 or more	8	4.6
Years of practice		
1 or less	29	16.7
2	24	13.9
3	37	21.4
4	66	38.2
5	17	9.8
Educational program		
Bachelor's	134	77.5
Master's	39	22.5

The researchers designed the Web-based questionnaire for this study and included the competency descriptors evaluated for use in previous research.[7] Validation of the survey instrument occurred through pilot testing by directors of professional athletic training programs affiliated with the researchers.

Participants

The participants in this study were certified members of NATA within their first 5 years of practice. Table 2 displays the demographic responses for the 173 completed surveys submitted from the 1000 invitations extended to new-to-practice ATs, a response rate of 17.3%.

Data Collection Procedures

Pacific University and the University of Montana granted institutional review board approval. After obtaining the e-mail addresses of a random sample of 1000 ATs within their first 5 years of practice through the data collection service program of NATA, we delivered informed consent materials and the questionnaire via e-mail to the members of the sample. Members of the sample population received follow up e-mails twice, at 1-week intervals.

Instrument

The researchers used Qualtrics (version XM; Qualtrics, Provo, UT) online survey software for questionnaire development and delivery. The Web-based questionnaire contained 4 demographic questions, including sex, age, years of practice, and level of athletic training program completed. The next 5 items determined the level of proficiency the respondent had achieved for the knowledge, skills, or abilities described. The Likert-scale responses were 1 (*awareness*), 2 (*basic*), 3 (*intermediate*), and 4 (*advanced*). The researchers selected these labels from terms used to evaluate competencies in health care professions.[19] On the final item of the survey, respondents suggested changes to educational programs they believed would allow students to achieve advanced levels of proficiency on the competencies.

The researchers identified the key leadership competencies included in the questionnaire from research establishing the importance of specific leadership knowledge, skills, and abilities in the educational preparation and practice of athletic training.[6,7] In order to avoid biasing responses by including competency titles that could include value-laden words, we presented only the competency descriptor statements shown in Table 1 on the questionnaire.

Data Analysis

We began data analysis with an evaluation of the level of self-perceived proficiency respondents reported for each of the 5 competency descriptors. Next, we conducted inferential statistical analysis to determine the relationships between demographic data and self-reported level of proficiency for each competency. We used GraphPad Prism (version 7; GraphPad, La Jolla, CA) and SPSS Statistics (version 25; IBM, Armonk, NY) for quantitative data analysis procedures with an a priori α level of .05, and NVivo (version 12; QSR International, Melbourne, Australia) to identify common themes among the responses in the written survey comments. An experienced qualitative research practitioner, not affiliated with this study, provided triangulation of the NVivo analysis.

RESULTS

Comparison of Proficiency by Competency

Using a 1-way analysis of variance (ANOVA) with a Tukey multiple comparison test, we examined the self-perceived levels of proficiency the respondents assigned to each competency. Responses indicated that new-to-practice ATs generally feel they have attained an *intermediate* level of proficiency for each of the competencies. The results indicated significant differences at the $P < .05$ level between the mean levels of proficiency assigned to the competencies ($F_{4,858} = 16.77$, $P < .001$). Respondents assigned the competency *adaptable and resilient* a lower self-perceived rating than the other 4 competencies. Results of the ANOVA also demonstrated a significant difference between the mean level of proficiency selected for *knowledgeable* and both the *credible* and *ethical treatment* competencies, which received the highest ratings of proficiency from survey respondents. Table 3 describes the results of self-perceived proficiency level analysis for the competencies.

Impact of Level of Degree Completed on Proficiency

Participants who completed their professional education at the master's degree level reported a significantly higher self-perceived proficiency level for *knowledgeable* (3.64 ± 0.065) than participants completing professional education programs at the bachelor's degree level (3.34 ± 0.078), $t = 2.32$, $P = .022$. The effect size for this analysis ($r^2 = 0.03$) indicates a small effect.[20] As we established that exploring relationships between level of professional degree completed and competency, we further investigated the self-perceived proficiency levels for *knowledgeable* as impacted by years of practice. We found the greatest difference between self-perceived proficiency for the competency *knowledgeable* between respondents in their first and second years of practice after completing their professional education at the bachelor's degree level (3.00 ± 0.83) and first- or second-year ATs graduating from master's

Table 3. Level of Proficiency by Competency

Competency	No.	Mean ± SD	SEM	95% Confidence Interval for Mean	
				Lower	Upper
Credible	172	3.68 ± 0.59	0.04	3.59	3.77
Ethical treatment	173	3.64 ± 0.62	0.05	3.55	3.77
Ethical practice	173	3.57 ± 0.66	0.05	3.47	3.67
Knowledgeable	173	3.41 ± 0.71	0.05	3.30	3.52
Adaptable and resilient	172	3.19 ± 0.05	0.05	3.10	3.29

degree professional education programs (3.55 ± 0.28), $t = 2.49$, $P = 0.01$.

We identified no significant differences between level of professional degree completed and the remaining 4 competencies.

Impact of Years of Practice on Proficiency

To evaluate the impact of years of practice on self-perceived level of proficiency, we conducted a 1-way ANOVA with a Tukey multiple comparison test. The results indicated a significant difference between the self-perceived level of proficiency for the competence *knowledgeable* reported by respondents in their first year compared with those in their third through fifth years of practice.

We also found significant differences between the self-perceived level of proficiency ATs in their first year of practice selected for both *ethical practice* and *credible* compared with participants in their second through fifth years of practice. Table 4 displays significant findings related to years of practice.

Impact of Sex and Age on Proficiency

Using 1-way ANOVA, we identified no significant differences in self-perceived proficiency levels when evaluated against the demographics of sex or age.

Table 4. Influence of Years of Practice on Competency Proficiency

Comparisons	Mean 1	Mean 2	Mean Difference	*P* Value
Credible				
YP 1 versus YP 2	3.24	3.75	−0.51	.01
YP 1 versus YP 3	3.24	3.81	−0.57	<.01
YP 1 versus YP 4	3.24	3.71	−0.47	<.01
YP 1 versus YP 5	3.24	3.94	−0.70	<.01
Ethical practice				
YP 1 versus YP 2	3.03	3.67	−0.63	<.01
YP 1 versus YP 3	3.03	3.78	−0.75	<.01
YP 1 versus YP 4	3.03	3.59	−0.56	<.01
YP 1 versus YP 5	3.03	3.82	−0.79	<.01
Knowledgeable				
YP 1 versus YP 3	2.86	3.62	−0.76	<.01
YP 1 versus YP 4	2.86	3.5	−0.64	<.01
YP 1 versus YP 5	2.86	3.59	−0.73	<.01

Abbreviation: YP, year of practice.

Suggestions for Educational Enhancements

As a final survey item, participants entered open-ended responses to the prompt, "What changes would you suggest to your educational program to help students achieve an advanced level of proficiency in these competencies?" Using NVivo software for coding response frequency, we identified 6 main themes from the responses of new-to-practice ATs. These themes were students, clinical rotations, athletics, academic programs, situations, and experiences. Evaluation of statements in each theme revealed 3 consistent recommendations: use of mock scenarios to provide realistic knowledge application opportunities, increased independence in clinical decision making, and intentional exposure to challenging interpersonal communication situations to allow for increased confidence in working with challenging personalities.

DISCUSSION

Although results indicated that new-to-practice ATs rate their proficiency in each of the 5 competencies at the intermediate level, differences do exist between subgroups of the population. Two demographic variables, level of professional athletic training degree completed and years of practice, significantly influenced self-perceived levels of proficiency for 3 of the key leadership competencies. Self-perceived proficiency levels for competency *ethical treatment* were high across all demographic variables. Although *adaptable and resilient* self-perceived proficiency levels were lowest across all respondent subgroups, the suggested enhanced practices identified by respondents align well with techniques identified in the literature as methods used to improve adaptability and resilience in students and professionals of other health care disciplines.

Level of Self-Perceived Proficiency by Competency

Respondents rated their level of proficiency for *credible* highest of the competencies evaluated, followed closely by *ethical treatment*. This level of confidence suggests that new-to-practice ATs feel prepared to step into professional roles and confidently provide patient care. The competencies *ethical practice* and *knowledgeable* received the third and fourth highest mean self-perceived proficiency levels. Across all respondents, the mean level of proficiency assigned to *ethical practice* and *knowledgeable* was in the intermediate range, indicating a strong preparation in the ability to encourage ethical care while working as part of a health care team and in the fundamental responsibilities of an AT. The mean self-perceived level of proficiency for these 4 competencies was significantly higher than the level assigned to the remaining

competency, *adaptable and resilient*, which received the lowest self-perceived proficiency levels.

Level of Professional Degree Completed

Participants completing professional education requirements at the master's degree level reported higher levels of self-perceived proficiency for *knowledgeable*, defined as the knowledge and capacity to perform the details and demands of athletic training tasks, than those completing a bachelor's degree. This finding suggests that the transition of professional athletic training education from the bachelor's to the master's degree level may result in increased level of preparation for new-to-practice ATs. The difference in levels of *knowledgeable* competence was most significant during the first 2 years of practice, but remained evident even as years of experience increased. An extensive evaluation of potential benefits and challenges occurred before the decision to move professional athletic training education to the master's degree level.[21] Our study provides early evidence that advancement of the professional degree is resulting in enhanced preparation of ATs. In this case the difference is in self-perceived proficiency in knowledge. Future research should explore objective measures of knowledge to examine differences between graduates of the 2 levels of professional education.

Years of Practice Influence Self-Perceived Level of Proficiency

Prior research indicates that athletic training professionals value the development of leadership skills through educational programming and in professional practice.[5–7] Our results demonstrate that self-perceived proficiency levels for 3 of the 5 key leadership competencies, *knowledgeable*, *ethical practice*, and *credible*, increase as years of practice increase. For the remaining competencies, *ethical treatment* and *adaptable and resilient*, increasing years of practice did not increase proficiency. Respondents within each year of experience rated their self-perceived proficiency levels for the competency *ethical treatment* highly, indicating that the ATs entered the profession well prepared in this area. Conversely, respondents in their first through fifth years of practice continued to rate their proficiency levels in *adaptable and resilient* as low. This finding indicates a gap in the professional preparation of entry-level ATs. Other health care professions have addressed the development of resilience and adaptability in students and new professionals. We believe our finding reveals a need for education programs to address the skills of adaptability and resilience to better prepare entry-level ATs to succeed in the workforce.

Adaptability and Resilience Development

Although many definitions of *adaptability* exist, we describe the term as the capacity to create effective change or adjustments in response to changing conditions.[22] Scholars have described *psychological resilience* as the capacity of an individual to respond effectively and create positive outcomes in response to stressful circumstances.[23] Researchers have determined that psychological resilience is not a static trait, noting that educational programming can be used to develop greater levels of resilience.[24,25] In order for faculty and preceptors to encourage the development of resilience, a prerequisite belief that intelligence and personality traits are malleable rather than predetermined is necessary for both educators and students.[26] Students who believe they have the potential to adapt to and incorporate new knowledge demonstrate an increased potential to rebound positively from challenges.[26]

A key component of the concept of resilience is that it can be demonstrated only in the context of adversity.[24,27] The responses of participants in this study indicate that new-to-practice ATs recognize the need for challenging educational opportunities through which they can solve complex problems and address difficult scenarios. Existing research on developing adaptability and resilience reveals strategies that align with the open-ended responses received from our participants. Educators have explored a number of techniques for developing adaptability and resilience in health care students and practitioners.[28–31] Researchers have found evidence that a variety of approaches may be useful in developing adaptability and resilience in both students and practicing professionals.[29] The research findings revealed that the most promising approach may be a combination of strategies including components such as (1) education about resilience, (2) creative problem-solving opportunities, (3) mentoring, (4) psychosocial and mindfulness skill training, and (5) exposure to challenging and unpredictable practice situations.[28–31]

Respondents in our survey emphasized the need for clinical application of knowledge and leadership competency development through mock scenarios and more immersive experiences. The respondents also noted that exposure to scenarios that include communication with difficult patients, parents, or coaches and topics that lead to an examination of ethics or morality would be beneficial to proficiency development.

The clinical education requirements of athletic training programs provide a framework through which students can be exposed to opportunities for growth in the areas of adaptability and resilience. In addition to structuring clinical experiences and mock scenarios that support the development of these competencies, it is essential that athletic training program faculty and preceptors evaluate and encourage student growth in this area.

Limitations and Future Research

The limitation of our research with the greatest potential influence on results is the disparity between the number of respondents completing their professional education at the master's degree level versus the bachelor's degree level. Though statistically significant differences in self-perceived proficiency levels were identified between these groups, the effect size is best described as small.[20] The use of e-mail as a means to deliver the survey may have contributed to lower response rates among the random sample of ATs, which could be another limitation in this research. The strong emphasis on research that exists in the field of athletic training may be leading to e-mail saturation, causing ATs to place a low priority on projects that do not immediately seem to be tied to their primary areas of practice. Future studies should investigate using a setting-specific approach to examining athletic training leadership proficiency to attract greater interest from participants. Additionally, future researchers should consider examining factors that impact proficiency levels as athletic training education transitions to the "2020

CAATE Standards for Accreditation of Professional Athletic Training Programs" and forthcoming release of new educational competencies.[18]

CONCLUSIONS

New-to-practice ATs report high levels of self-perceived proficiency in 4 of the 5 key leadership competencies evaluated in our study. Our results indicate that 2 demographic factors, years of practice and level of professional degree completed, are associated with increased self-perceived proficiency for 3 of the key leadership competencies. Self-perceived proficiency levels increase in the areas of credibility, knowledge, and the ability to promote ethical care within an organization as years of practice increase. Our results suggest that the transition of the professional athletic training degree to the master's level may increase newly certified athletic training proficiency in knowledge of the tasks and demands of athletic training.

Faculty and preceptors within athletic training programs should be cognizant of the finding of self-perceived lack of adaptability and resilience in new-to-practice athletic training professionals. Despite the finding of lower levels of self-perceived adaptability and resilience skills, teaching and learning strategies proven to be effective in other health care professions position athletic training programs well to address this concern. Responses from our study indicate that athletic training students may desire independence in clinical decision making and opportunities to face challenging scenarios that encourage development of confidence and higher levels of proficiency. Previous research has placed a high level of importance on the ability of practicing ATs to demonstrate the key leadership competencies.[6,7] Although the key leadership skills and abilities examined in this research are not formally evaluated by athletic training programs, they represent important developmental tasks of athletic training professional education. Despite a lack of emphasis on these key leadership competencies in athletic training education, new-to-practice ATs reported strong levels of proficiency in 4 of the 5 areas. The final competency, *adaptable and resilient*, represents a topic that should be addressed in the education of ATs. Athletic training program faculty and preceptors can integrate components of existing resilience and adaptability educational models to design clinical and didactic experiences for students. This provides an opportunity to cultivate student confidence and develop necessary professional characteristics.[28]

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