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Secondary School Administrators' Knowledge and Perceptions of the Athletic Training Profession, Part II: Specific Considerations for Principals

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Context: Secondary school administrators fulfill many leadership roles, including creating and implementing policies to help ensure the safety of athletic programs. However, few researchers have examined principals' awareness and perceptions of the athletic trainer's (AT's) role.

Objective: To explore secondary school principals' knowledge of the roles and responsibilities of ATs and perceptions of athletic training.

Design: Concurrent mixed-methods study.

Setting: Cross-sectional online questionnaire.

Patients or Other Participants: Principals (n = 686; age = 48.1 ± 7.8 years, time in position = 7.1 ± 5.8 years) represented public secondary schools across the United States.

Main Outcome Measure(s): The web-based questionnaire was composed of demographics, various quantitative items assessing knowledge and perceived value of ATs, and open-ended questions. Descriptive statistics summarized demographic data. Select quantitative measures are reported as count responses and overall percentages. Responses to open-ended questions were analyzed inductively.

Results: We obtained a 5% response rate (686 of 13 517). Approximately 93% (n = 637) of responding principals considered an AT to be a trusted source of medical information. The most frequently selected skills they believed ATs were qualified to perform were injury prevention (99.1%), first aid/wound care (96.5%), and therapeutic intervention (91.4%). Sixty-three percent (n = 430) of participants considered an AT to be extremely valuable to student-athlete health and safety. Our results indicated that secondary school principals had a vague understanding of AT "training" and appreciated the immediacy of care ATs could provide. They also appeared to use decentralized hiring practices.

Conclusions: Secondary school principals identified ATs as a trusted source of medical information and recognized the role ATs played in the immediate care of athletic-related injuries. However, principals had a limited understanding of the qualifications and educational requirements of ATs. Future professional advocacy efforts targeting this stakeholder group should highlight all medical services an AT provides and emphasize the AT's value in schools that sponsor athletics programs.

Key Words: survey research, medical professionals, high school

Key Points

- Although principals recognized athletic trainers' (ATs') roles in providing immediate care, principals selected injury-prevention programs and preparticipation physical examinations as sport safety measures over employing an AT.
- Principals demonstrated a vague, and at times inaccurate, understanding of the training and educational requirements for becoming an AT.
- Principals relied on others, such as athletic directors and outreach providers, to make appropriate decisions regarding the hiring of ATs and their associated job responsibilities.

In the secondary school environment, the principal is expected to perform a large variety of leadership roles, including political, managerial, and instructional.[1] In this setting, it is often the principal who establishes the culture of the school.[2] The principal is responsible for ensuring that athletic programs are planned and developed to be reasonably safe and are implemented in a sensible and safe manner.[3] Principals have the legal and professional responsibility to provide reasonable administrative supervision of school programs, including athletic activity.[3] In support of this, a Minnesota court held that a secondary school principal was negligent for failing to perform his duty to exercise reasonable care in supervising the development, planning, and administration of the physical education curriculum when a student suffered severe injuries while participating in class.[4] Although physical education occurs during the school day, the secondary school principal plays a large part in the comprehensive duty to plan[5] and is, therefore, responsible for establishing rules and regulations under which all programs, including the athletic program, will be conducted.

Given their duty to plan, principals must see appropriate medical care as a necessity for student-athletes. Currently, all high schools are advised to hire at least 1 athletic trainer (AT).[6,7] In spite of this suggestion, only a reported 37% of public schools[8] and 28% of private schools[9] had access to a

full-time AT, and suburban schools were more likely than both urban and rural schools to hire an AT.[10] When present, ATs are ideally positioned to optimize student-athlete safety during sport participation,[6] but they can also play a large role within the school system as a whole. For example, ATs educate school faculty on appropriate health and safety measures and coordinate the gradual return-to-learn process for student-athletes[11] who have sustained a concussion in sport.

Although the athletic director is the administrator mainly responsible for managing the athletic program, athletic directors report primarily to their principals.[12] According to principals, the 2 most important skills for athletic directors to possess are the ability to successfully work with others and with parents.[12] Additionally, principals want athletic directors to have experience as a certified teacher and as a head coach at the secondary school level.[12] Interestingly, some of the desired skills of athletic directors, including working with others, overlap with skills an AT should possess. Though the data suggested principals' perceptions of desirable athletic director qualities, little is known regarding their perceptions, knowledge, or perceived value of ATs.

In 2003, Gould and Deivert[13] investigated secondary school administrators' knowledge and perceptions of the athletic training profession and found that principals and athletic directors consistently identified the largest number of correct responses for the most relevant tasks of athletic training. Principals also ranked the AT as the most qualified person to treat athletic injuries, and about 80% stated that they believed hiring an AT would at least moderately reduce the risk of liability in their schools.[13] However, principals thought that ATs could be hired at a lower salary than was indicated by superintendents.[13] More recently, Heyer et al[10] found that principals listed the AT as most likely to be designated as the case manager or "point person" who monitors the academic progress of students recovering from concussion and the most likely school designee to communicate with health care professionals when a student-athlete sustained a concussion.

Principals must have adequate knowledge and a thorough understanding of the athletic training profession to make a truly informed decision on the employment of an AT for their school or to support the recommendation of an athletic director to hire an AT. To date, minimal evidence is available on the perceptions of secondary school principals in regard to the role and value of ATs. Therefore, the purpose of our study was to evaluate secondary school principals' level of knowledge regarding ATs' qualifications and responsibilities and explore their perceptions of the athletic training profession. This investigation was guided by the following research questions: (1) What do principals perceive to be the role, education, and responsibilities of the AT? (2) What are principals' perceptions of the value and effect of an AT on physical activity and sport safety?

METHODS

This investigation was part of a larger study that assessed key stakeholders' knowledge and perceptions of athletic training and serves as the second manuscript in a 2-part series summarizing population-specific findings from secondary school athletic directors[14] and principals. We used a cross-sectional online questionnaire that was distributed through Qualtrics to collect data from a nationwide sample of secondary school principals. The use of quantitative and qualitative data-collection methods (closed-ended and open-ended survey questions) was purposeful to allow us to gain a more holistic understanding of the principals' knowledge and perceptions of the athletic training profession. Institutional Review Board approval was granted through the University of Connecticut before the start of data collection.

Procedures

To access contact information for a national sample of public secondary school principals, we created and maintained an online database. Detailed procedures for searching and obtaining the necessary information (first name, last name, email address) were outlined in part I of this series.[14] We used the National Center for Education Statistics website[15] to identify school names and cross-referenced high school athletic or activities association websites with individual school websites to locate contact information. As we collected athletic director contacts, we simultaneously obtained information for the principal of each school and housed it within the database. We identified a total of 13 517 active email addresses for principals across the United States. The questionnaire was administered to principals on a rolling basis at 4 time points over the course of a year (May 2017, October 2017, January 2018, and May 2018). Two reminder emails were scheduled to be automatically sent via Qualtrics to improve the response rate.

Questionnaire Development and Validity

Because athletic director and principal positions are both administrative roles at the individual school level, we used the same questionnaire for both groups. The steps taken to develop and validate the questionnaire, including review by the National Athletic Trainers' Association's Marketing Department and the determination of content and face validity, are described in detail in part I.[14] For content validity,[16] we shared the questionnaire with 2 secondary school principals via a paper-based content validity tool and asked them to score each item for clarity, as well as relevance and importance to our overall aims. After review, we incorporated their feedback before creating an electronic version of the questionnaire on the Qualtrics platform. Face validity[16] was ensured when a member of the research team who completed the web-based questionnaire verified there were no errors (eg, skip logic, 1 versus multiple answer questions) that would invalidate the results. After these 2 validity procedures, the survey was administered to the first group of principals.

Quantitative Data Analysis

All quantitative data collected through the online questionnaire were analyzed using Excel (version 16.27; Microsoft Corp) and the report feature in the Qualtrics survey platform. Demographic data were summarized using descriptive statistics (mean ± SD), and quantitative measures that assessed knowledge and perceived value of athletic training were reported as count responses and overall percentages. The sample was analyzed with all

respondents and then again with dichotomized groups of principals: those who worked at schools with an AT versus those who did not.

Qualitative Data Analysis

We used a general inductive approach[17] to analyze the responses to the open-ended questions because we wanted to allow trends in the data to emerge naturally during the process. We coded the entire sample together; however, the general inductive approach allowed us to observe any possible differences between responses from principals working at schools where ATs were employed at the time of the survey and those working at schools where ATs were not employed. This method of qualitative analysis involved a 4-step process that started with a period of immersion, in which we read through the open-ended survey responses to become familiar with the data. The next step was more critical and involved coding specific data that supported our purpose and research questions. Similar codes were compiled into categories, and then the categories were operationally defined and termed as overarching themes.

To ensure that the emerging themes were not a product of preconceived notions or bias, we enhanced trustworthiness in our findings through multiple-analyst triangulation.[18] Two members of the research team (A.M.P.L., C.M.E.) carried out the analysis independently before meeting to discuss individual interpretations of the data. Conversations ensued via phone regarding coding structure and overall impressions of the data until the researchers came to an agreement on the final emerging themes and how the themes should be presented. We also used methodologic triangulation[19] to enhance the credibility and trustworthiness of our findings. This strategy is discussed in detail in part I.[14]

RESULTS

The principals' responses to the survey questions that specifically assessed knowledge and perceived value of athletic training are presented in Table 1. These items addressed knowledge of ATs' qualifications, principals' beliefs regarding the most important sport safety measures, the role of an AT in reducing liability and saving costs for the school, and the value of an AT for the health and safety of student-athletes. This table breaks down percentage responses by principals who worked at schools in which ATs were employed and those who worked at schools in which ATs were not employed.

Demographics

Approximately 5% of the total sample (686 of 13 517) completed the questionnaire. Seventy-seven percent (n = 527) of the principals who responded to the survey were male, 23% were female (n = 157), and 2 principals preferred not to disclose their sex. We received participant responses from all states except Delaware and the District of Columbia (Table 2). The average age of our respondents was 48.1 ± 7.8 years (n = 685, median = 48 years, range = 27–72 years), and they had worked in their current position for 7.1 ± 5.8 years (median = 5 years, range = 0–35 years). Eight percent (n = 56) of principals indicated they also served in the athletic director role for their school, and 71% (n = 488) worked at schools that employed an AT.

Of the 198 principals working at schools without an AT, a majority (n = 104, 52.5%) stated that a part-time AT should be hired, whereas 45 respondents (22.7%) thought the school should hire a full-time AT, and the remaining 49 (24.8%) did not think the school should hire an AT. To better understand the value placed on the provision of medical care for secondary school student-athletes, we asked principals if they believed it was acceptable to have an athletics program without an AT employed at the school. Of the 686 responses, 272 (approximately 40%) indicated it was acceptable. Additional information regarding the demographics of this sample is outlined in Table 3.

Vague Understanding of AT Training

We specifically asked the principals what they believed were the minimum educational and certification requirements needed to become an AT. Although they recognized that ATs need some level of formal training, they did not necessarily have a strong understanding of the education ATs receive or the requirements to be certified. One participant stated,

> Athletic trainers need to be trained at minimum with a 2-year associate's degree much like a licensed practitioner nurse. They also may need additional training with a 4-year bachelor's degree in sports medicine.

Another principal responded, "The minimum requirement should be a bachelor's degree in training or a related field with additional training in the area of concussion management." Other replies included, "At least a bachelor's degree with a documented number of internship hours," "Bachelor's degree in an athletic training program and probably passing some basic tests for certification," "Two- or 4-year degree with emphasis on anatomy, muscles and bones, and medical procedures and taping?" and "Appropriate certifications and a college graduate. I also prefer those with experience being an athletic trainer." It appeared that the principals' understanding of AT training was influenced by personal interactions with ATs they knew. As one principal described,

> The athletic trainer I know has a master's degree. I assume a master's degree is the minimum degree to find a position. Athletic trainers probably have to pass some state or national assessment, earn certification, and then renew their certification like many other professionals.

Our quantitative data also indicated that principals had a vague understanding of the training ATs receive. Only about half (48.5%) indicated that an AT employed at the school was a top safety measure (Table 1). Of note, this percentage was higher among principals who worked at schools in which ATs were employed compared with those working at schools that did not employ an AT (58% compared with 25.3%). This would have to be further explored, though, as a large percentage of respondents did view an AT as a trusted source of medical information. Although a majority of principals in both our collective and dichotomized samples (>60%) identified *injury prevention*, *first aid/wound care*, *therapeutic interventions*, *emergency care*, and *return-to-play decisions* as qualifications of ATs (Table 1), the

Table 1. Principals' Knowledge and Perceived Value of Athletic Trainers

Question[a]	Responses	No. (%)		
		Athletic Trainer Employed at Principal's School?		
		Yes (n = 488)	No (n = 198)	All Respondents (N = 686)
Who do you consider to be a trusted source of medical information? Check all that apply.	Physician	480 (98.4)	193 (97.5)	673 (98.1)
	Athletic trainer	466 (95.5)	171 (86.4)	637 (92.9)
	Nurse	456 (93.4)	175 (88.4)	631 (92.0)
	Emergency medical technician	424 (86.9)	171 (86.4)	595 (86.7)
	Physician's assistant	413 (84.6)	159 (80.3)	572 (83.4)
	Chiropractor	167 (34.2)	76 (38.4)	243 (35.4)
	Strength and conditioning coach	101 (20.7)	53 (26.8)	154 (22.4)
	Athletic director	59 (12.1)	49 (24.7)	108 (15.7)
	Coach	49 (10.0)	43 (21.7)	92 (13.4)
	Parent	46 (9.4)	21 (10.6)	67 (9.8)
	Principal	38 (7.8)	26 (13.1)	64 (9.3)
Of the following items, which do you consider to be the top 3 important sports safety measures? Please select only 3.	Injury prevention programs	283 (58.0)	117 (59.1)	400 (58.3)
	Preparticipation physical examinations	257 (52.7)	104 (52.5)	361 (52.6)
	Athletic trainer employed at the school	283 (58.0)	50 (25.3)	333 (48.5)
	Protective equipment (eg, helmet, shoulder pads)	151 (30.9)	74 (37.4)	225 (32.8)
	Medical professional present at practices/competitions	159 (32.6)	64 (32.2)	223 (32.5)
	Emergency action plans	136 (27.9)	82 (41.1)	218 (31.8)
	Medical professional available for students during school hours	52 (10.7)	35 (17.7)	87 (12.7)
	Practice/game modifications based on environmental conditions	52 (10.7)	28 (14.1)	80 (11.7)
	Athletic director present at sport events	30 (6.1)	17 (8.6)	47 (6.9)
	Weather monitoring	26 (5.3)	5 (2.5)	31 (4.5)
	Identification of physical hazards on sport fields	12 (2.5)	4 (2.0)	16 (2.3)
	Referee for competitions	8 (1.6)	6 (3.0)	14 (2.0)
	Game/competition security	9 (1.8)	4 (2.0)	13 (1.9)
	Individual designated to provide water to athletes	6 (1.2)	4 (2.0)	10 (1.5)
	Supplements to enhance performance	0 (0.0)	0 (0.0)	0 (0.0)
Do you believe employing an athletic trainer at a high school reduces liability?	Definitely yes	301 (61.7)	57 (28.8)	358 (52.2)
	Probably yes	126 (25.8)	70 (35.4)	196 (28.6)
	Might or might not	41 (8.4)	49 (24.7)	90 (13.1)
	Probably not	15 (3.1)	20 (10.1)	35 (5.1)
	Definitely not	5 (1.0)	2 (1.0)	7 (1.0)
Do you believe employing an athletic trainer at a high school saves the school money (eg, insurance claims)?	Definitely yes	131 (26.9)	12 (6.1)	143 (20.8)
	Probably yes	167 (34.2)	35 (17.7)	202 (29.5)
	Might or might not	130 (26.6)	96 (48.5)	226 (32.9)
	Probably not	53 (10.9)	47 (23.7)	100 (14.6)
	Definitely not	7 (1.4)	8 (4.0)	15 (2.2)
What do you believe is a fair salary for a full-time athletic trainer employed at a secondary school?	Less than $30 000	15 (3.1)	19 (9.6)	34 (4.9)
	$30 0000 000 to $40 000	97 (19.9)	68 (34.3)	165 (24.0)
	$40 000 to $50 000	187 (38.3)	70 (35.4)	257 (37.5)
	$50 000 to $60 000	118 (24.2)	32 (16.2)	150 (21.9)
	Greater than $60 000	71 (14.5)	9 (4.5)	80 (11.7)
In your opinion, what are athletic trainers qualified to do? Check all that apply.	Injury prevention (eg, taping, equipment fitting, education)	488 (100.0)	192 (97.0)	680 (99.1)
	First aid/wound care	478 (98.0)	184 (92.9)	662 (96.5)
	Therapeutic interventions (eg, rehabbing an injury)	454 (93.0)	173 (87.4)	627 (91.4)
	Emergency care	437 (89.5)	170 (85.9)	607 (88.5)
	Make return-to-play decisions	353 (72.3)	124 (62.6)	477 (69.5)
	Clinical diagnosis (eg, injury evaluations)	330 (67.6)	109 (55.1)	439 (64.0)
	Strength and conditioning/maximizing performance	282 (57.8)	138 (69.7)	420 (61.2)
	Administrative tasks (eg, bill insurance companies)	82 (16.8)	49 (24.7)	131 (19.1)
	Diagnose eating disorders/mental health problems	69 (14.1)	29 (14.6)	98 (14.3)
	Other	18 (3.7)	15 (7.6)	33 (4.8)
In your opinion, how valuable is an athletic trainer to the health and safety of student-athletes?	Extremely valuable	368 (75.4)	62 (31.3)	430 (62.7)
	Very valuable	107 (21.9)	87 (43.9)	194 (28.3)
	Moderately valuable	11 (2.3)	40 (20.2)	51 (7.4)
	Slightly valuable	2 (0.4)	8 (4.0)	10 (1.5)
	Not at all valuable	0 (0.0)	1 (0.5)	1 (0.1)

[a] Items are reproduced in their original format.

Table 2. Respondents by State

State	No. of Respondents
Alabama	14
Alaska	12
Arizona	22
Arkansas	9
California	21
Colorado	16
Connecticut	13
Delaware	0
District of Columbia	0
Florida	14
Georgia	14
Hawaii	1
Idaho	8
Illinois	33
Indiana	38
Iowa	24
Kansas	28
Kentucky	13
Louisiana	5
Maine	9
Maryland	5
Massachusetts	18
Michigan	22
Minnesota	22
Mississippi	9
Missouri	18
Montana	6
Nebraska	13
Nevada	4
New Hampshire	7
New Jersey	11
New Mexico	4
New York	20
North Carolina	11
North Dakota	6
Ohio	27
Oklahoma	8
Oregon	3
Pennsylvania	28
Rhode Island	3
South Carolina	5
South Dakota	5
Tennessee	11
Texas	39
Utah	11
Vermont	3
Virginia	19
Washington	14
West Virginia	6
Wisconsin	27
Wyoming	7
Total	686

Table 3. Respondent Demographics

Demographic	Resonse, No. (%) (N = 686)
Sex	
Male	527 (76.8)
Female	157 (22.9)
Prefer not to answer	2 (0.3)
Education	
Bachelor's	2 (0.3)
Master's	461 (67.2)
Doctorate	115 (16.8)
Other[a]	108 (15.7)
Medical certification(s)?	
Yes	37 (5.4)
No	649 (94.6)
Personally know an athletic trainer?	
Yes	521 (75.9)
No	165 (24.1)
Participated in athletics (high school or college)?	
Yes	621 (90.5)
No	65 (9.5)
Control/influence over athletics department budget?	
Yes	456 (66.5)
No	230 (33.5)

[a] Common responses for other forms of education included sixth-year and education specialist degrees.

potential role of the AT in reducing liability did not appear to be well understood, especially by principals working at schools without an AT. More than 87% of principals who worked at schools where ATs were employed indicated that employing an AT would *definitely* or *probably* reduce liability, compared with approximately 64% of principals working at schools that did not employ an AT.

Immediacy of Care

When asked to describe the role of an AT, our participants consistently described their understanding that an AT provides immediate care to student-athletes. As 1 principal commented, "An athletic trainer provides care for immediate injuries and makes recommendations for further medical attention." Another principal said, "[An AT is] a trained, licensed professional capable of overseeing the immediate medical needs of high school athletes." Additional quotes were "a trained and licensed professional who provides immediate care for minor injuries" and "a certified professional employed by the school who provides immediate medical care to our student-athletes."

Many of our participants recognized the multiple roles of the AT, and the idea of having a person on site to provide immediate care continued to arise in their responses. "An athletic trainer is one who provides immediate service to injured students, prepares students for game play, taping, concussion testing, etc, and monitors athletes through their injuries." Another person remarked,

> [An AT is] a trained individual who provides immediate medical care in an injury or crisis situation during an athletic event, as well as providing day-to-day support for athletes to treat and care for injuries as they heal.

Our principals seemed to value the immediate care that ATs were able to provide at their schools, which was evident in the following quotes: "It [having an AT present] impacts safety in a positive manner, as a[n athletic] trainer on site can provide immediate attention to athletes and provide qualified recommendations to parents," and "It [having an AT present] gives students immediate access to a health care professional that can treat and diagnose a potential issue that should be referred on to a physician." One individual summarized the perceived value of an AT by explaining, "The most important aspect of having an athletic trainer at my school is providing immediate attention to a potential injury, whether it be practice or a game."

The value placed on the immediacy of care an AT provides noted in the qualitative data was also apparent in

our quantitative data. For example, almost 93% of all principals (Table 1) expressed that they considered an AT to be a trusted source of medical information (95.5% of those working at school with an AT employed, 86.4% of those working at a school without an AT employed). Additionally, 91% of our sample considered an AT to be *extremely valuable* or *very valuable* to the health and safety of student-athletes (Table 1). Although this finding was influenced to a greater extent by principals who worked at schools with an AT employed, approximately 75% of those employed at schools without an AT selected *very valuable* to *extremely valuable*.

Decentralized Hiring Decisions

In their responses, principals working at schools where ATs were employed regularly described their reliance on other individuals to determine the hiring criteria for and job responsibilities of ATs. As one participant stated when asked what the roles of an AT were, "I would have to look that up or ask the athletic director." Another said, "The athletic trainer attends practice and games working with student-athletes to help them avoid injury. I would [have to] ask the athletic director for a complete list of responsibilities." Principals in our sample also acknowledged the role clinics or hospitals played in ensuring that ATs employed in their school districts had the proper credentials. Responses included, "We look for the hospital to send us qualified individuals. I am not an authority on their certifications," "Our [athletic] trainer is accredited and certified by [the] Mayo Clinic. I do not know the specifics of her background," "Because our athletic trainer is hired by the hospital, I do not review credentials, so I'm not sure about certifications which might be industry standard," "We are contracted with the local hospital for [athletic] training services. I am not familiar with the job responsibilities," and "Whatever the requirements are through the hospital system."

The participants were describing *decentralization*, which explained how decisions were made in their systems and who oversaw specific areas of the organization. When decisions are delegated, the organization is considered decentralized. Although a centralized structure has many advantages, organizations may choose to decentralize because it is often impossible for one person to understand all of the concerns and make all of the appropriate decisions necessary in a sport organization. Based on our participants' feedback, principals seemed to be relying on other individuals (eg, athletic director) or organizations to make decisions regarding the hiring of qualified individuals and establishing specific job responsibilities for the ATs in their schools. "I don't have the job description on hand since they are actually employed by our hospital." Our participants relied on others to oversee the ATs more directly, yet it did not appear to negatively affect their perceived value of the AT. As one person commented,

> We do have a[n athletic] trainer come to our school 2 days a week and at some events. This person is provided by a local hospital and is not paid by the school. I think it is very important to offer [athletic] training services on a daily basis to our student-athletes. I have been a proponent of this in our district; however, the board of education is not willing to pay for these services.

Decentralization appeared to be emphasized when ATs were hired through hospitals or clinics, but this feature is not only characteristic of a single employment model. When ATs were hired directly through the school district, principals discussed depending on the athletic director to make these decisions: "I am not sure [what the educational requirements are] for our athletic trainer since that is coordinated by [the] athletic director and athletic department." Overall, principals identified a decentralized decision-making process, regardless of the hiring strategy used.

DISCUSSION

The purpose of our study was to explore secondary school principals' knowledge of ATs' qualifications and job responsibilities and their perceived value of the athletic training profession. This stakeholder group was specifically selected because of their important role in the creation and implementation of policies at the school level, as well as limited previous literature examining secondary school principals' perceptions of the role of the AT. Overall, our results indicated that secondary school principals recognized the role ATs played in the immediate assessment and treatment of athletic injuries. However, it was clear that they were not as familiar with the educational training ATs are required to complete, possibly because they relied on others to make the hiring decisions and evaluate the performance of ATs in their schools.

Knowledge of Qualifications and Job Responsibilities

As highlighted in Table 1, principals in our study recognized the many tasks and skills ATs are qualified to perform. Injury prevention, first aid/wound care, therapeutic interventions, emergency care, and return-to-play decisions were the highest skills ranked. Although percentage responses for these skills were slightly higher among principals who worked at schools that employed an AT, recognition of these qualifications across our collective sample was wide. As previously indicated, the ability to perform administrative tasks ranked low, as did the ability to diagnose patients with eating disorders or mental health problems. Previous researchers[13] demonstrated that principals may not be aware that ATs require at least a bachelor's degree; 24% believed that ATs were required to have only an associate's degree. Although participants in our sample understood that ATs needed some level of formal training, they did not seem to recognize that all ATs were required to graduate from a program accredited by the Commission on Accreditation of Athletic Training Education and obtain national certification, and they often compared ATs with other health care professionals.

This lack of complete understanding may be related to the decentralized hiring and decision process that we identified in the qualitative responses. A traditional centralized structure in organizations typically uses a control-oriented workforce-management strategy, in which management prerogatives and positional authority are emphasized.[20] Decentralized organizational structures involve a more participatory work environment that often emphasizes flexibility and innovation.[20] Because the principals seemed to be describing the use of a decentralized structure of decision making, at least in terms of athletics, by relying on clinics, hospitals, or individuals in the school (eg, athletic director) to evaluate the AT

candidates, it would make sense that they did not know as much about the training of ATs as they might about teachers. Our participants obviously relied on others to make appropriate decisions regarding the hiring of ATs and determine appropriate job responsibilities. Decentralized structures allow individuals or employees with the most implicit knowledge of a subject greater involvement in decision-making processes, which can improve products and outcomes.[21] Therefore, a principal's lack of full awareness regarding an AT's education and training may not necessarily affect the hiring of ATs in the secondary school setting if other individuals ensure that the AT meets the minimum qualifications. Among our sample, it was clear that hospitals and clinics played a major role in the employment decisions about ATs in secondary schools.

Perceived Value of ATs

The principals appeared to value the role of the AT in their athletic programs. Most participants oversaw a school in which an AT was employed, and more than 75% of those who did not employ an AT at the time of survey completion indicated the desire to hire an AT in some form. Almost 93% noted that an AT was a trusted source of medical information, scoring second only to physicians and ranking just above nurses, and nearly 63% stated that ATs were extremely valuable to the health and safety of student-athletes. The emphasis among our sample on the role of the AT in providing immediate care may help to explain these positive findings. Principals also indicated that injury-prevention programs were the most important sport safety measure, ranking slightly above preparticipation physical examinations and the employment of an AT. The high ranking of injury-prevention programs could be related to liability concerns.[13] Similar to previous researchers,[13] we found that principals believed that hiring an AT reduced liability. Given the value principals placed on injury-prevention programs and earlier studies demonstrating their concerns related to liability, educating this stakeholder group on the AT's role in injury prevention and liability reduction, including developing and implementing injury-prevention programs, emergency action plans, and health and safety policies, could be warranted.

The specific role of ATs in the immediate care of patients with athletic-related injuries was evident in our qualitative results. This factor emerged as an indication that secondary school principals valued having an AT present as an individual available on site to provide care to student-athletes right away. Many of the participants' quotes acknowledged the outward-facing skills ATs provide. Recognition of these outward-facing services was supported by our quantitative data: more than 96% of responding principals believed ATs were qualified to provide first aid and wound care and to prevent injury via means such as taping. Past authors[13] determined that principals characterized the most relevant tasks of the AT as taping and bandaging patients' injuries and evaluating athletic injuries, which mirrored many of the comments we received. The immediacy of care ATs provide also likely highlights a principal's level of comfort in knowing that a trained health care professional at the school can supply various medical services. Although the role ATs play in the management of patients with concussion has been reported by past investigators,[10] our participants did not overtly discuss the AT's role in concussion assessment, treatment, or administration. Moreover, only 19% of our sample indicated that ATs were qualified to perform administrative tasks.

It is important to discuss some of the differences between principals who worked at schools in which ATs were employed and those working at schools in which ATs were not employed. When asked how valuable an AT was to the health and safety of student-athletes, nearly three-quarters of principals working at schools that employed ATs indicated *extremely valuable*, compared with approximately 31% of principals employed at schools without ATs. This could reflect that exposure to the profession created positive impressions. Encouraging is the fact that only 1 principal in our sample who worked at a school that did not employ an AT identified no value in hiring an AT to promote the health and safety of student-athletes.

These principals appeared to value the role of ATs in immediate care and viewed ATs as a trusted source of medical advice, yet 40% indicated that they believed a secondary school could have an athletic program without hiring an AT, and approximately 29% remarked that $40 000 or less was a fair salary for a full-time AT. It is important to note that a fair salary for a full-time AT in a secondary school was described as $40 000 to $50 000 by nearly 38% and $50 000 to $60 000 by approximately 22%. We did not ask respondents how much the ATs employed in their schools were earning, so their perception of a fair salary may not equate to the salaries actually earned by ATs. As the profession continues to advance, it is necessary to educate administrators and decision makers on appropriate compensation for the ATs who bring value and advanced knowledge to secondary school athletic programs. One way to approach this would be for ATs to apply monetary value to the services they provide over a period of time (eg, 1 season, 1 academic year). This could help to justify appropriate compensation and also educate administrators on the cost savings an AT provides. Our results showed that 48.5% of principals at schools without an AT and 26.6% of principals at schools with an AT were unsure about the cost savings offered by an AT. Using Current Procedural Terminology codes for services could help ATs demonstrate their worth via thorough documentation and associating a price tag with the medical care provided. This process would show the cost of services provided by the AT that would have otherwise been billed to patients and their parents or guardians or to the school as claims for athletic injuries. This aligns with the purpose of the secondary school value model to "quantify, articulate, provide outcomes and objectively demonstrate why ATs are vital health care service providers."[21(p1)]

Limitations and Future Research

Although our response rate was low, it is not unusual for survey participation recruited via email to have a small response rate. The nature of email recruitment did not allow us to ensure that all participants received the survey link, as many emails can end up in junk or spam mail folders. Given the nature of survey research, it is possible that our results reflect response bias. That is, principals who were aware of ATs or who worked with ATs may have been more inclined to complete our survey. The percentage of principals in our sample who indicated that an AT was employed in their schools was 71%, higher than the nationwide percentage of ATs working in secondary

schools. It is possible that a preexisting relationship with an AT could have influenced the participants' responses and that their answers might have been different if the majority had not worked with ATs or been exposed to the athletic training profession. Furthermore, because of the survey distribution methods, we were unable to analyze our data based on early versus late responders to determine if response bias was present. Additionally, because this was an unsupervised online survey, there is a chance they could have looked up the "correct" answer instead of recording their true knowledge of the profession. Lastly, another school representative or individual could have completed the online survey on the principal's behalf.

Opportunities for future research in this area are widespread. Using other qualitative data- collection methods, such as individual interviews, would allow participants to provide a more detailed account of their knowledge and perceptions of athletic training and greater depth to their responses. Given the decentralized organizational structure of decision making evident within our sample, future authors should explore who is responsible for ensuring that ATs hired for positions at secondary schools are meeting job requirements, and further, who specifically is establishing those requirements and how that may change based on the employment model (employed by the school district versus outsourced from a clinic or hospital).

Conclusions

Secondary school principals appeared to value the role that ATs played in their schools regarding the health and safety of student-athletes. Also, principals had a basic understanding of the qualifications and responsibilities of the ATs they employed but seemed to rely on others to ensure that the minimum requirements were met for employment eligibility. Recognition of ATs as valuable in the secondary school setting by this stakeholder group is encouraging, as principals play an important role in implementing policies related to student health and well-being. Sadly, 40% of the principals in our study indicated that it was acceptable to have a secondary school athletic program without an AT present, highlighting that our profession still has work to do in advocating on behalf of our patients and their safety.

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