

Youth Athletes' Parents' Perceptions and Knowledge of the Athletic Training Profession

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Context: Parents have unique roles in advocating for their child's health and safety. Such advocacy can improve student-athletes' access to athletic trainers (ATs), yet few researchers have investigated the perceptions of student-athletes' parents regarding athletic training.

Objective: To explore parents' perceptions of athletic training and evaluate their knowledge regarding the AT's role.

Design: Concurrent mixed-methods study.

Setting: Web-based questionnaire.

Patients or Other Participants: Parents affiliated with USA Football representing 36 states ($n = 316$: men = 53.5%, women = 46.1%; average age = 45.6 ± 6.2 years [age provided = 291]) were included.

Main Outcome Measure(s): An online questionnaire was developed and distributed via Qualtrics. The questionnaire contained demographic questions, quantitative items assessing perceived value and knowledge of athletic training, and open-ended questions to provide opportunities for expansion. Descriptive statistics were calculated for the demographic data. Quantitative measures were presented as count and percentage responses. Open-ended responses were analyzed using the general inductive approach, and overall perceptions were supported with participant quotes.

Results: Of 10763 parents, 390 completed the questionnaire (3.6% response rate, 74.8% completion rate). Of the 390, 316 had a child in high school. Approximately 67% ($n = 213$) of respondents considered an AT a trusted source of medical information and "extremely valuable" to student-athletes' health and safety. The questionnaire response *injury prevention* was frequently recognized ($n = 307$, 97.2%) as a skill ATs perform, followed by *first aid/wound care* (91.8%) and *therapeutic interventions* (82.3%). Parents highlighted the AT's role in immediate care and attributed peace of mind and feelings of comfort to having a health care professional readily available for their children.

Conclusions: When asked directly and when discussing their effect on student-athlete health and safety, parents valued ATs. Though various qualifications of ATs were recognized, parents emphasized the importance of having someone immediately available to provide care if and when needed. Educational efforts should focus on ATs as the most qualified health care professionals to provide comprehensive medical care to student-athletes in both urgent and nonurgent situations.

Key Words: survey, high school, medical professionals, health care

Key Points

- Parents of youth athletes indicated that athletic trainers were very valuable to the health and safety of student-athletes and seemed to take comfort in the knowledge that a qualified health care professional was available at the school to immediately treat their child.
- Parents noted that having a medical professional present at practice and competitions was a top safety measure, reinforcing the notion that they wanted someone available to take care of their child's medical needs as soon as possible.
- Beyond a general understanding that athletic trainers provide immediate care, parents also discussed specific skills and qualifications of athletic trainers including triage, making referrals for follow-up and specialized care, early recognition of signs and symptoms of various injuries and illnesses, treatment, rehabilitation, and overseeing the return-to-play process.

Parents and guardians are in unique positions to advocate for their children's well-being. For the purposes of this study, we used *parents* as an all-encompassing term for individuals in caregiver roles. Although parental advocacy takes many different forms, a child's physical, behavioral, mental, and emotional health may be influenced by parental actions and decisions.

Empirical research demonstrated parents' level of activity¹ and support of physical activity² were related to children's activity levels. More specifically, young children were 6.3 times more likely to engage in high levels of activity when receiving parental support.² Additionally, parental support³ and a family sport culture⁴ were factors that cultivated children's sense of enjoyment in sport participation.

Sánchez-Miguel et al³ found that parental support was positively correlated with athletes' enjoyment of the sport and negatively correlated with amotivation, highlighting the influence parents had on the overall sport participation experience.

Although parental support and athlete enjoyment are important aspects of sport participation, a component that cannot be ignored is the level of safeguards in place to ensure that the health and safety of participants is prioritized and to mitigate the inherent risks associated with sport participation. Injuries occur as a result of sport participation, but having appropriate policies and procedures in place to protect participants when injuries do occur allows for expedited treatment and may prevent injuries from becoming more severe. In the secondary school athletics setting, various stakeholder groups influence the extent of health and safety measures implemented to protect student-athletes, including the administration, coaches, medical personnel such as an athletic trainer (AT) if one is employed, and the student-athletes themselves.

One often overlooked, yet powerful, group that could serve as sport safety advocates are parents of student-athletes. Parents are concerned about their children's safety while participating in sports, as evidenced by results from a nonempirical survey⁵ administered to parents by the National Athletic Trainers' Association (NATA). For the parents surveyed, safety was an important factor when making decisions regarding sport participation, with more than half indicating they would prevent their child or children from participating in sports based on possible risks.⁵ Parents were specifically concerned about the risk of broken bones, concussions, heat illness, overuse injuries, strains, sprains, and dental injuries.⁵ The large majority of respondents (91%) indicated they would take precautionary action in relation to their child's sport participation.⁵ The level of care and concern parents have for their child's safety makes them strong candidates for spearheading advocacy efforts related to sport safety and the presence of an on-site medical professional.

Despite these parental concerns and willingness to intervene on their child's behalf, many parents were not taking proper steps to help ensure the well-being of their child during sport participation.⁵ The NATA created a "Parent Checklist for Youth Sports Safety,"⁶ which outlined questions parents should ask before their child engaged in structured or team-based physical activity. One question involved the extent of medical care that was provided to student-athletes during practices and games. The presence of an on-site qualified health care professional (ie, an AT) improves student-athletes' access to medical care and accelerates appropriate responses to emergent and catastrophic situations. The NATA is not the only entity to acknowledge the role parents have in improving health and safety measures for student-athletes. Clines et al⁷ observed that athletic directors identified parents as key influencers in the decision to provide student-athletes access to an AT. To serve as sport safety advocates, parents must first have solid foundational knowledge regarding the athletic training profession and an appreciation for the role of an AT in the secondary school setting.

A search of the literature revealed 1 empirical article that summarized findings regarding parents' perceptions and

knowledge of ATs' roles, responsibilities, and skill sets.⁸ Weitzel et al⁸ showed that parents valued ATs as members of the secondary school athletic health care team, but their knowledge pertaining to the domains of athletic training varied based on previous exposure to the profession. The investigation was geographically specific, involving parents of high school athletes in southwest Michigan schools, and provided a foundation for future research. Therefore, the purpose of our study was to explore youth athletes' parents' perceptions of the athletic training profession and examine their level of knowledge regarding the AT role. In this study, *youth athletes* referred to individuals involved in organized sports under the age of 18. Our investigation was guided by the following research questions: (1) What were parents' perceptions of the value and impact of an AT on physical activity and sport safety? and (2) What did parents perceive to be the role, education, and responsibility of an AT?

METHODS

Procedures

This study was part of a larger investigation examining key stakeholders' perceptions and knowledge of the profession of athletic training. We used a concurrent mixed-methods research design via a cross-sectional online questionnaire to gather information regarding parents' knowledge and perceptions of athletic training. Due to the challenges associated with accessing a large, diverse sample of parents, we contacted the USA Football organization to discuss survey distribution options to their parent affiliates. The national governing body for amateur American football, USA Football oversees the sport experience for youth and high school athletes. To ensure privacy and confidentiality, as well as abide by the rules of the organization, the distribution method of choice was for USA Football to distribute the survey link to parent contacts in their database on our behalf. The link to the survey (Qualtrics International Inc) was sent to all 10 763 parents in June 2017 upon approval from the University of Connecticut Institutional Review Board.

Instrument Development and Validation

To remain consistent across groups being studied as part of the larger investigation, the questionnaire used for the legislator,⁹ athletic director,¹⁰ and principal¹¹ populations served as the foundation for the parent-specific questionnaire. Although a majority of the questions were identical to past versions of the questionnaire, we removed items pertaining to secondary school or district administration (eg, liability reduction, cost savings, AT employment details) to better align content to the role of the parent. The survey was developed by 2 members of the research team, with input from another AT. Knowledge and previous experience working clinically as ATs and as educators in an athletic training program served as the primary facilitators of questionnaire development. After an initial draft, the questionnaire was thoroughly reviewed by leadership in the marketing department at the NATA. The final instrument was composed of 3 sections: (1) respondent demographics (9 questions); (2) quantitative items evaluating parents' perceived value and knowledge of the roles, skillset, and

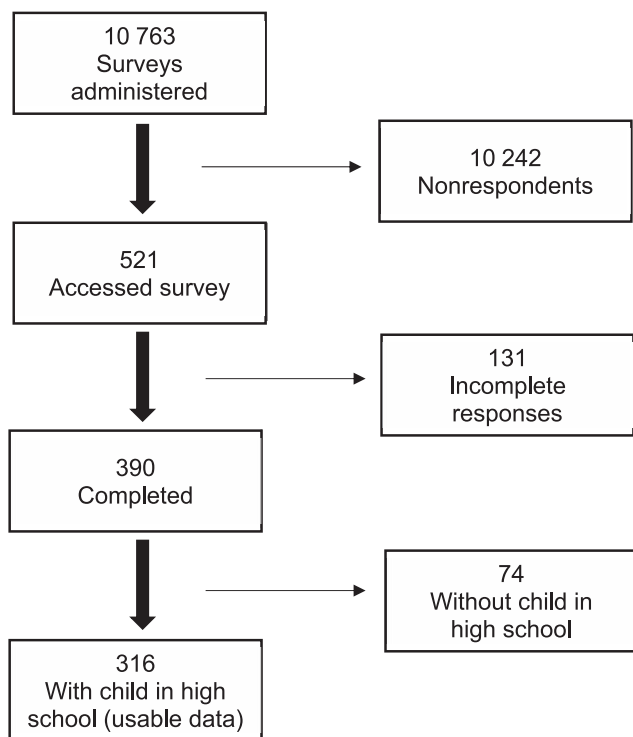


Figure. Survey completion data.

value of an AT (16 items with branch questions as applicable); and (3) open-ended questions allowing parents to expand on their opinions and beliefs (4 questions). The quantitative items in section 2 were guided by the practice analysis (7th edition, Board of Certification for the Athletic Trainer).¹² Open-ended questions were as follows: (1) How do you feel having an AT at the school could/does impact your child's health and safety? (2) In your opinion, what is an AT? (3) What are the outlined job responsibilities of an AT? and (4) What do you believe are the minimum requirements (educational and certifications) to become an AT?

We used 2 procedures¹³ to validate the survey before it was distributed. Three parents with children who were currently or previously in high school reviewed the instrument to provide feedback on the clarity, relevance, and importance of each question to the overall intent of the study. For the purpose of face validity, *clarity* meant that the question was easily understood for both content and intent. *Relevance* indicated that the question was meaningful to achieve the study's purpose. Lastly, *importance* referred to the degree to which each question was critical to achieving the study's purpose. Each item (clarity, relevance, importance) was measured on a 4-point scale (eg, 1 = *not relevant*, 4 = *highly relevant*). If rated ≤ 2 by a majority of the reviewers in relevance or importance, the question was removed from the final instrument. Items lacking clarity were edited based on the feedback provided to ensure content validity. Finally, a member of the research team completed the survey online to review it for flow and correct any errors that would invalidate the results (eg, grammar, display logic, single versus multiple answer).

Quantitative Data Analysis

Quantitative data were analyzed using SPSS (version 25; IBM Corp). We calculated descriptive statistics for the demographic data via this software, which were reported as means and SDs along with frequencies in the form of percentages when appropriate. Count and percentage responses for select quantitative items were obtained through the report feature in the Qualtrics platform.

We were also interested in determining if relationships existed between overall perceptions of ATs and various demographic variables. Due to nonnormal distribution of the data (Kolmogorov-Smirnov values < 0.001 for all variables) and dichotomous variables of interest, we used χ^2 to test for associations between perceptions based on respondents who previously knew an AT versus those who did not, as well as respondents who participated in high school or collegiate athletics (or both) versus those who did not. Odds ratios with 95% CIs were calculated using 2×2 contingency tables to compare the relative odds of selecting specific survey response options based on the dichotomous variables outlined above. The α level of significance was set at $P < .05$ for all analyses.

Qualitative Data Analysis

We analyzed open-ended responses using the general inductive approach¹⁴ to allow trends in the data to naturally emerge through the analysis. Two research team members independently analyzed the data, which entailed assigning codes to pieces of text that related to the purpose of the study. Similar codes were combined to form categories, which were then defined to become the emerging themes in the data. After individual analyses, the 2 members discussed their coding procedures and overall impressions via telephone communication until a consensus was reached. This process, known as *multiple-analyst triangulation*,¹⁵ was 1 method of enhancing trustworthiness in the qualitative research findings. Simultaneous triangulation of the quantitative and qualitative data served as our second credibility strategy. The use of quantitative measures and open-ended items in the questionnaire allowed for the collection of complementary data¹⁶ to strengthen our understanding of parents' perceptions and knowledge of the profession.

RESULTS

Demographics

Of the 10 763 parents to whom the questionnaire was administered, 521 accessed it, with 390 completing it in full. Despite this low response rate ($n = 390/10\,763$, 3.6%), our data were representative of a 74.8% ($n = 390/521$) completion rate. Of the 390 responses, 316 respondents indicated they had a child in high school, either previously or at the time of survey completion, which was required to be included in the data analysis. The Figure includes a schematic for the determination of this response rate. A total of 36 states were represented (Table 1). Demographic data for the respondents are presented in Table 2. We had a relatively even split between men ($n = 169$, 53%) and women ($n = 146$, 46%). The average age of our respondents was 45.6 ± 6.2 years ($n = 291$). Interestingly, 18% ($n = 57$) of respondents held at least 1 medical certification, and

Table 1. Respondents by State

State	No. of Respondents
Alabama	1
Arizona	14
Arkansas	6
California	34
Colorado	9
Connecticut	1
Florida	19
Georgia	10
Idaho	2
Illinois	11
Indiana	12
Kansas	9
Kentucky	6
Maine	3
Maryland	8
Massachusetts	8
Minnesota	8
Mississippi	1
Missouri	11
Nebraska	1
Nevada	2
New Hampshire	3
New Jersey	9
New York	6
North Carolina	12
Ohio	1
Oklahoma	7
Oregon	5
Pennsylvania	3
Rhode Island	1
South Carolina	7
Tennessee	1
Texas	39
Virginia	17
Washington	15
Wisconsin	14
TOTAL	316

approximately 29% (n = 84) were previously asked to provide medical care at a sporting event.

Perceived Value of ATs

Responses to both open-ended and closed-ended survey questions shed light on the parents' perceived value of ATs and their role in maximizing student-athlete health and safety. Specifically, parents in our sample consistently discussed how having an AT present at their child's school made them feel better about their child's safety. When asked how an AT employed at their child's school could or did impact the safety of their child, responses included, "I feel like it is very important; I am glad they require one at the schools now," "I feel comfortable leaving my child in his hands," and "We feel more comfortable that he is available at every practice and game as well as before school and after if needed because of an injury." Another parent stated,

I feel that having an athletic trainer at the school provides comfort to both players and parents. At my son's school, the athletic trainer is always in the weight room and on the field at all times. This provides a huge level of comfort to the parents and players.

Table 2. Respondent Demographics

Demographic	Response, No./316 (% of Total)
Sex	
Male	169 (53.5)
Female	146 (46.2)
Prefer not to answer	1 (0.3)
Education	
High school diploma	59 (18.7)
Associate	30 (9.5)
Bachelor	136 (43.0)
Master	56 (17.7)
Doctorate	11 (3.5)
Other	24 (7.6)
Medical certification(s)?	
Yes	57 (18.0)
No	259 (82.0)
Personally know an athletic trainer?	
Yes	183 (57.9)
No	133 (42.1)
Participated in athletics (high school or college)?	
Yes	264 (83.5)
No	52 (16.5)
Ever been asked to provide medical care at a sporting event if needed?	
Yes	84 (28.5)
No	211 (71.5)

Other parents specifically stated how they felt comfortable having a person at the school who was there to make medical decisions, so that it was not left up to the coaches. As one parent said,

The athletic trainer is empowered to overrule coaches and the athletic director for the child's health. Therefore, I believe my child's safety is placed above competition, which is excellent.

This was echoed in the comments of another parent:

I think the athletic trainer greatly impacts my children's health and safety. They [my children] both feel comfortable going to the [athletic] trainer when they [are] hurt and the coaches have no problem sending the kids to the [athletic] trainer to help with aches and pains. The coaches understand that the [athletic] trainer is helping to keep their athlete on the field/court. The [athletic] trainer also has a great influence on the kids. The kids really listen to what he has to say to help keep their bodies healthy and working for them.

The overall impression was that parents felt better knowing there was someone available to look out for the health and well-being of their children. "It is comfortable as a parent to know there is always going to be someone there if our child needs to be looked at." More than 50% of parents in our sample indicated that a medical professional present at practice and competitions was a top sport safety measure, and 32.6% of respondents selected *athletic trainer employed at the school* as a top sport safety measure (Table 3). Interestingly, a relationship was present between personally knowing an AT (or not) and selecting *athletic trainer employed at the school* as a top sport safety measure (Pearson $\chi^2 = 7.096$, $P = .008$). Parents who previously knew an AT were almost 2 times more likely to consider an

Table 3. Parents' Knowledge and Perceived Value of Athletic Training

Question	Responses	No./316 (% of Total)
Who do you consider to be a trusted source of medical information? Check all that apply.	Physician	306 (96.8)
	Nurse	234 (74.1)
	Emergency medical technician	228 (72.2)
	Athletic trainer	213 (67.4)
	Physician assistant	210 (66.5)
	Chiropractor	93 (29.4)
	Strength and conditioning coach	81 (25.6)
	Coach	57 (18.0)
	Athletic director	47 (14.9)
	Parent	44 (13.9)
Of the following items, which do you consider to be the top 3 important sport safety measures? Please select only 3.	Principal	14 (4.4)
	Injury-prevention programs	190 (60.1)
	Medical professional present at practices/competitions	172 (54.4)
	Protective equipment (eg, helmet, shoulder pads)	147 (46.5)
	Athletic trainer employed at the school	103 (32.6)
	Preparticipation physical examinations	102 (32.3)
	Emergency action plans	87 (27.5)
	Medical professional available for students during school hours	47 (14.9)
	Practice/game modifications based on environmental conditions	41 (13.0)
	Individual designated to provide water to athletes	14 (4.4)
	Weather monitoring	13 (4.1)
	Referee for competitions	12 (3.8)
	Identification of physical hazards on sport fields	9 (2.8)
	Athletic director present at sport events	8 (2.5)
	Supplements to enhance performance	3 (0.9)
	Game/competition security	0 (0.0)
	Less than \$30 000	8 (2.5)
What do you believe is a fair salary for a full-time athletic trainer employed at a secondary school?	\$30 000 to \$40 000	59 (18.7)
	\$40 000 to \$50 000	92 (29.1)
	\$50 000 to \$60 000	90 (28.5)
	Greater than \$60 000	67 (21.2)
In your opinion, what are athletic trainers qualified to do? Check all that apply.	Injury prevention (eg, taping, equipment fitting, education)	307 (97.2)
	First aid/wound care	290 (91.8)
	Therapeutic interventions (eg, rehabbing an injury)	260 (82.3)
	Emergency care	231 (73.1)
	Strength and conditioning/maximizing performance	199 (63.0)
	Clinical diagnosis (eg, injury evaluations)	198 (62.7)
	Make return-to-play decisions	174 (55.1)
	Diagnose eating disorders/mental health problems	47 (14.9)
	Administrative tasks (eg, bill insurance companies)	36 (11.4)
	Other	18 (5.7)
In your opinion, how valuable is an athletic trainer to the health and safety of student-athletes?	Extremely valuable	213 (67.4)
	Very valuable	81 (25.6)
	Moderately valuable	17 (5.4)
	Slightly valuable	5 (1.6)
	Not at all valuable	0 (0.0)

AT employed at the school as a top sport safety measure compared with parents who did not personally know an AT (odds ratio = 1.955; 95% CI = 1.190, 3.214; $P = .010$). Additionally, more than 67% of parents believed that ATs were a trusted source of medical information. When asked directly, a large majority of parents (93%) described ATs as extremely or very valuable to the health and safety of student-athletes (Table 3). From a monetary value perspective, almost half of the respondents suggested that full-time ATs should be paid at least \$50 000, with 21.2% specifically selecting *greater than \$60 000*.

Knowledge of ATs' Roles and Responsibilities

We asked participants to indicate what they believed ATs were qualified to do, and more than half identified ATs' roles in return-to-play decisions, injury evaluations, emer-

gency care, rehabilitation of injuries, first aid and wound care, and injury prevention (Table 3). Parents (63%) also cited the role of an AT in maximizing performance. Most notably, parents shared sentiments about the immediacy of care ATs provided to their children. Responses included, "I feel there is someone there to help my child with injuries immediately," "I think having a[n athletic] trainer there gets the athlete the immediate attention the injury may need," and "It's good to have someone provide immediate care." Other parents were more direct in addressing particular components of the AT role, such as triage and referral. One parent wrote,

It helps having a qualified person they can go to that can focus on immediate concerns/issues and start a triage and care[,] then refer them to other appropriate medical staff.

Some parents even gave specific examples of an AT providing immediate care to their children.

[Having an AT present has a] Big impact. The athletic trainer was on the spot when my son had a concussion blow at spring practice with no football helmet on. They recognized his signs and took action. He received immediate care and I was notified in a timely manner. They put in their concussion protocol for him. This lasted weeks and they were in contact with his physician for release to start the reentry protocol back to working out/monitoring. I feel there was great support and overview with a plan in place to handle and react to the situation. [The AT did a] Very good job.

These examples were echoed by other parents:

The [athletic] trainer has been there to treat my son's ankle & finger injuries. He was also there immediately and help[ed] me through treatment and follow[-]up of my son's concussion.

Although parents in our sample had a general understanding that ATs provided immediate care for various injuries and illnesses and appreciated the on-site presence of a medical professional, they also discussed specific skills and qualifications of ATs in their responses, such as triage, making referrals, early recognition of signs and symptoms, treatment, rehabilitation, and overseeing the return-to-play process.

DISCUSSION

Parents play a large role in their child's development through the adolescent years.¹⁷ From supporting and encouraging their success in academic endeavors and extracurricular activities to taking a more official role within the school system, such as volunteering for Parent Teacher Associations or booster clubs, parents have been and continue to be major influencers and advocates for their children. For parents of children who currently participate or have participated in athletics, such advocacy could include optimizing health and safety during sport participation. A crucial sport safety measure is the employment of an AT in the secondary school setting. To better understand if parents can serve as advocates for the employment of ATs, we must first understand their knowledge and perceived value of the athletic training profession.

Value

The parents of youth student-athletes valued the athletic training profession when asked directly and through their responses to various open-ended questions. Our results allowed us to quantify the number of parents who perceived ATs to be *not at all valuable* to *extremely valuable* and gain a deeper understanding of what they found most valuable about an AT. Based on our qualitative findings, the greatest value for parents was 2-fold: (1) the presence of an AT provided parents with peace of mind and comfort and (2) they saw value in the presence of a health care professional to immediately provide care to student-athletes if and when they were injured. The synergy of these 2 values is

important. The immediacy of care aspect an AT provides contributed to a sense of security and comfort for parents, knowing their child would be taken care of. This may explain why more parents selected *medical professional present at practices/competition* than *athletic trainer employed at the school* as a top safety measure.

Our finding that a majority of parents did not consider an AT employed at the school as a top safety measure compared with other more frequently selected measures, such as injury-prevention programs and protective equipment, should be explored further. Parents indicated that a medical professional present at practices and games was a top sport safety measure. Parents' emphasis on the general presence of a medical professional over an AT employed at the school may have reflected previous experience. Simply having an AT employed at the school did not guarantee that an AT or another medical professional would be present at practices or competitions. Parents clearly wanted someone on-site (AT or otherwise) to provide medical care to their children when they needed it. Our qualitative data helped support the value parents placed on having a medical provider present to immediately address the needs of student-athletes. Parents consistently discussed having an AT present at games and practices as producing a positive impact on their child's safety. We did not specifically ask our respondents if they considered an AT to be a medical professional, yet the majority described an AT as a trusted source of medical information, and the open-ended responses seemed to point to this as well.

Previous authors^{10,11} who examined secondary school administrators' perceptions of top safety measures offered an interesting contrast to the parents' perceptions. Only 33.8% of athletic directors identified a medical professional present at practices and competitions as a top safety measure, with preparticipation physical examinations, AT employed at the school, injury-prevention programs, and emergency action plans all receiving more responses.¹⁰ Similarly, 32.6% of principals cited a medical professional present at practices and competitions as a top safety measure, with injury-prevention programs, preparticipation physical examinations, AT employed at the school, and protective equipment rated as top safety measures more frequently.¹¹ These differences may illuminate stakeholder-specific priorities while also possibly highlighting the value of a parent as an advocate for ATs. Top safety measures for administrators, unsurprisingly, were mostly related to administrative measures and strategies for mitigating risk and reducing liability. Parents also selected injury-prevention programs as a top safety measure, but having a person on-site to provide immediate care to their child if needed was more valuable to them than many of the administrative items deemed important by principals and athletic directors. If parents believe an AT can help keep their child safe, they have the potential to be a strong voice in advocating for hiring and retaining ATs in their children's schools.

The value parents placed on having a medical provider on-site is an avenue for professional advocates to explore further and consider using as a way to build support for AT employment. Previous researchers¹⁸ showed that parent associations had more influence on setting standards and policies related directly to their own children than professional development and teacher hiring. Additionally, the same investigators¹⁸ found that principals viewed

influence from parent associations as positively impacting their own influence in establishing curriculum. Knowing that parents value having a medical provider on-site and have the most influence in regard to policy decisions that directly affect their children, national groups such as the NATA secondary school committee or “At Your Own Risk”⁶ (NATA public awareness campaign) could target education at parents and highlight the AT as a medical provider. In doing so, members of national advocacy groups can engage with a new group of advocates who will fight for the presence of ATs on the sidelines of youth sports.

Although the effect of parents advocating for the hiring of ATs is currently unknown, numerous examples exist of parents, after losing a child, becoming advocates and effectively championing change. For example, the McNair Foundation was instrumental in the adoption of the Jordan McNair Safe and Fair Play Act, which required institutions within the University System of Maryland to implement health and safety precautions for heat illness, brain injury, and rhabdomyolysis, among other conditions.¹⁹ Laurie Giordano championed the Zachary Martin Act in Florida in honor of her son who died of exertional heat stroke,²⁰ and recently, the Mangine family established the Matthew Mangine Jr. Foundation to promote awareness, education, and safety related to cardiac events in youth sports.²¹ These are just some of the many examples of parents becoming change champions and advocates for maximizing health and safety in sports.

The perceived value parents had of the AT role was also evident in their responses regarding appropriate compensation. Compared with secondary school administrators,^{10,11} parents of student-athletes had higher perceptions of the worth of an AT in dollars and cents. About half of our sample selected salary ranges that aligned with or exceeded the average salary reported in the most recent NATA salary survey for a secondary school AT with athletic responsibilities²²: \$52 868. Whereas 49.7% of parents selected more than \$50 000, only 37.5% of athletic directors¹⁰ and 33.6% of principals¹¹ believed a sufficient salary for a full-time AT was more than \$50 000. Perhaps the perceptions of AT worth among parents were positively influenced by their experiences witnessing an AT provide care to their injured child firsthand or represent the parents’ lack of involvement in school budgetary decisions. This exposure of viewing an AT delivering care, as some parents described in the earlier quotes, was something that secondary school administrators may not have experienced, especially if the school in which the administrator worked did not already have an AT employed. The high regard in which parents seemed to hold ATs emphasized what passionate advocates parents could be, especially if they felt their child had received high-quality care.

For ATs, this was an important result, because direct exposure to the athletic training profession likely had a positive effect on individuals’ knowledge and perceptions, especially if the exposure was a positive experience. In our sample, we saw a relationship between parents personally knowing an AT and selecting *athletic trainer employed at the school* as a top sport safety measure: those who knew an AT were 2 times more likely to consider AT employment a top sport safety measure compared with parents who did not know an AT. This finding may have provided support

for the argument that direct exposure can positively influence individuals’ overall perceptions. Parents’ interactions with ATs, either through preseason meetings or one-on-one conversations stemming from their child’s injury, provided insight into ATs’ qualifications, skills, and responsibilities. Additional knowledge gained through these interactions can help support and promote a higher perceived value of the profession. The relationship between knowledge of ATs’ roles and responsibilities and perceived value was reported previously in a sample of state legislators.⁹

Parents’ lack of knowledge or awareness of the role and qualifications of an AT over and above other health care professionals who provided medical coverage for athletic events (eg, physicians, nurses, emergency medical technicians) may explain why they did not consider an AT employed at the school a top safety measure. A significant portion of parents identified strength and conditioning and maximizing performance as qualifications of ATs. Misconceptions of an AT as a “trainer” (ie, personal trainer, fitness trainer) or strength and conditioning coach was also apparent among state legislators,⁹ and although we did not directly explore this aspect, it may serve as justification for parents not considering AT employment a sport safety measure. However, this was probably not the driving factor because most respondents considered an AT a trusted source of medical information and spoke highly of their experiences with ATs in their child’s school, an improvement from 2015, when 61% of parents sampled did not trust the AT’s opinion 100% of the time.⁸

Vandermark et al²³ found that athletic directors most often hired emergency medical services in place of ATs in secondary schools. School administrations have also relied on coaches, based on their certifications and trainings, as well as the parents of student-athletes with occupations in the health care industry, to provide medical care instead of hiring an AT.²³ Based on our work and that of previous investigators,²³ educational efforts for parents should focus on the AT as the most appropriate and qualified health care professional to provide comprehensive medical care to student-athletes. The importance of a multifaceted approach to health care via a sports medicine team, composed of ATs, physicians, physical therapists, nurses, and emergency medical services, and the role of the AT within that team, should also be emphasized.

Knowledge

To gauge parents’ understanding of the AT role, we provided a list of responsibilities based on the practice analysis.¹² Our sample of parents appeared to have a solid understanding of the more well-known or frequently seen responsibilities ATs fulfill as part of their role, such as injury prevention, wound care, and therapeutic interventions. Knowledge scores were highest among parents who had previously interacted with ATs as a result of both their own injuries and their child’s injuries, compared with parents who had interactions with ATs due to 1 of the 2 aforementioned reasons and parents with no previous interactions.⁸ Direct exposure appeared to be a key facilitator for improving knowledge regarding the roles and responsibilities of ATs. This could provide an explanation for the administrative component of the AT

role being basically unrecognized by our sample. If parents are not exposed to responsibilities in the Healthcare Administration and Professional Responsibility domain during their interactions with ATs, including patient care documentation, budgeting, and policy development and implementation to mitigate risk,¹² they are less likely to associate such tasks with the AT role. Therefore, educational efforts should focus on these crucial, yet often unseen, skills that ATs must possess to practice clinically.

Beyond the specific skills that comprise the AT role, parents also focused on the immediacy of care that occurred with the presence of an AT. The emphasis on immediate care was in a more global sense, irrespective of care provided during emergency situations. An AT, especially if employed full time, provides immediate care to all injured athletes, regardless of the circumstances surrounding the injury (severity, sport, emergent versus nonemergent, acute versus chronic, etc). Parents spoke more about ATs' responses to a variety of injuries (eg, concussion, musculoskeletal), not necessarily to their role in responding to immediate life-threatening situations. These injuries mirrored specific concerns related to sport participation that have been previously reported, particularly concerns with their children sustaining fractures, sprains, strains, and concussions.⁵ Seeing ATs who responded promptly and effectively to injuries that were of utmost concern to parents likely contributed to their positive perceptions of the profession, reinforcing the linkage between knowledge and value. Despite the critical role ATs played in preventing injuries and illnesses and reducing long-term sequelae, few parents asked about the availability of an AT or another qualified health care professional during practices and games.⁵

Variability in the level of knowledge our sample had regarding the full scope of an ATs' skills and responsibilities may explain why only 67.4% of respondents considered an AT to be a trusted source of medical information. Moving forward, efforts should be made to educate parents on the role of the AT in emergent and catastrophic situations, as well as an AT's skillset for evaluating injuries and illnesses and identifying differential diagnoses. This will enhance parents' understanding of the comprehensive skillset of an AT, demonstrate the importance of AT employment in secondary schools, and ultimately provide the knowledge parents need to serve as advocates for the health and safety of student-athletes during sport participation. Such advocacy includes but is not limited to inquiring about the presence of an AT at their child's practices and games, and if one is not present, having a discussion with school administrators about the importance of an on-site certified medical professional (ie, an AT) to prioritize student-athlete health and safety.

Limitations and Future Research

This study was not without limitations. Survey research may include response bias, such that parents who were most interested or knowledgeable in the topic were more apt to participate. For example, participants were gathered from a database of parents affiliated with USA Football. As football is a contact sport warranting the provision of on-site medical personnel, parents responding to the survey may have inherently had more interactions with ATs before

their involvement in this study. Additionally, the response rate was 3.6%, and we only received data from parents in 36 states. Thus, the findings cannot be extrapolated to all parents with children who participated in secondary school athletics. A variety of factors can affect an online survey response rate, including the survey length and structure, outdated contact information, internet access, personal interest in the topic, follow-up communications such as reminder emails, and the presence or absence of incentives.²⁴ Although many of these factors were outside of our control (eg, the list of contacts was managed by USA Football and we were unable to send reminders due to the distribution method), it is important to consider how they may have influenced the results. For example, given the electronic method of data collection, we were unable to collect data from individuals without internet access. Additionally, because the survey was written in English, our data may not be representative of the perceptions and knowledge of parents who use English as a second language.

Regardless of these limitations, the results provided valuable insight into parents' perceptions and knowledge of athletic training. Specifically, many parents valued the profession, despite having varied knowledge of the exact roles and responsibilities. Future investigators should focus on the perceptions and knowledge of athletic training of parents in states that were not represented in this study. Additionally, similar research aimed at gathering information from parent populations outside of those affiliated with USA Football would be valuable. Data collection occurred when the professional bachelor's in athletic training degree was most prevalent, so it would be interesting and worthwhile to conduct a similar examination with the entry-level master's degree as the new standard to see if that alters parents' perceptions of the profession. Most importantly, effective means of educating parents about athletic training to further increase their perceived value and knowledge of the profession are needed as well as explorations of the effectiveness of parental groups as advocates of athletes' health and safety.

CONCLUSIONS

Based on our findings, parents valued ATs and their role in optimizing student-athlete health and safety. More specifically, our sample of parents emphasized the comforting feeling that comes with knowing someone is there to immediately attend to injuries that occur. Although ATs certainly fill this role, parents appeared to be comforted by the presence of any medical professional, so long as medical supervision was provided at practices and competitions. Continued educational efforts for parents regarding the importance and added value of an on-site AT compared with other health care professionals and first responders (eg, emergency medical services, physicians) are warranted. In regard to their familiarity with AT roles and responsibilities, parents recognized the more well-known or observable components of the AT role, including injury prevention, wound care, and therapeutic interventions. Participant responses revealed that knowledge of ATs' roles and responsibilities was influenced by previous experience and interactions with ATs. A number of parents recalled specific instances in which an AT provided care to

their child and played a large role in the recovery process, which highlights the link among exposure, perceived value, and knowledge of roles and responsibilities in our sample. As parents become more knowledgeable about the role and value of ATs, they may feel empowered to advocate for their child's health and safety and approach school administration regarding the hiring of ATs. Consequently, the potential for improved employment rates of ATs is greater, thereby contributing to the goal of giving all student-athletes access to timely, effective, and patient-centered medical care.

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