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Indiana Secondary School Athletic Directors Perceptions of Athletic Training Services and Influences on Hiring Athletic Trainers

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Purpose: The purpose of this investigation was to examine ADs perceptions on satisfaction of current care provided, factors influencing the hiring of ATs, and the roles and responsibilities of ATs. **Methods:** We used a mixed methods design with an online survey (Qualtrics®, Provo, UT), which we distributed to Indiana secondary school ADs (n = 410) with publicly available emails. The survey remained open for 5 weeks with reminder emails sent weekly. We used a panel (n=2) with experience in survey research and/or the secondary school setting. The survey included both quantitative (7 items) and qualitative (8 items) data. Participants were asked to share their perceptions on the roles/responsibilities of ATs as well as experiences with the challenges, barriers, and benefits of hiring ATs in open-ended questions. We used Kruskal-Wallis one-way ANOVAs to compare employment status, type of employer, and school size on satisfaction. We coded the open-ended responses using inductive coding with multi-analyst triangulation and auditing to establish trustworthiness. **Results**: We identified significant differences relative to employment status of the AT on satisfaction with overall care, whereby those with full-time athletic training services were more satisfied with care than those with per-diem, part-time services (p=0.010). When participants were asked about factors influencing the decision to provide services ADs reported liability, cost, and workload as major considerations. **Conclusions:** Consistent with previous research, financial challenges continue to play a role in the hiring of ATs in the secondary school setting, participants also identified the benefits of ATs in promoting safety, reducing liability, as well as the increased workload and cost. Access to qualified athletic healthcare continues to be a public health concern in America and all stakeholders should reconsider how to offer both a comprehensive athletics program and the healthcare needed to ensure safety in that participation. ***Keywords:*** *Barriers, Healthcare, Athletics*

INTRODUCTION

Access to an athletic trainer (AT) in the secondary school setting is limited; 35% of secondary schools have a full-time AT, and 30% have a part time AT.[1,2] With the versatility in skills of ATs, previous literature has shown great benefits to including ATs in the rural healthcare setting.[3] Previous literature has shown that secondary schools with larger enrollments are more likely to provide athletic training services (AT services), whereas schools with smaller enrollment are less likely to provide AT services.[1] This becomes particularly challenging in states with large rural communities such as Indiana, where there are nearly 200 schools with less than 500 students enrolled.[4] Healthcare delivery in rural areas pose barriers to access and time required to travel for services.[5,6] Pecha, et al. looked at the influence of adding a rural healthcare rotation to an athletic training residency program and found the program was beneficial to both the hospital and AT by providing care to more patients and increasing patient outcomes.[3]

Within the secondary school setting Athletic Directors (ADs) are a primary stakeholder for all athletics-based decisions including hirings.[7] Mazzerole, et al. identified that ADs cited three reasons for not providing AT services: budget restrictions, small school size, and lack of knowledge of the role an AT provides.[7] The ADs lack of knowledge can affect access to AT services. Previous research shows secondary schools without access to AT services experienced 1.2-1.7 times the number of injuries, 3-5 times higher rates of preventable chronic injuries, and 4.5 times higher concussions rates.[8] Moreover, these injuries could have gone undiagnosed, potentially leading to more injuries.[9]The purpose of this investigation was to examine Indiana secondary school ADs perceptions of athletic trainers' quality of care and hiring barriers. Similar investigations have used ADs as their target population; however, this study is the first to look into satisfaction with the current care provided by ATs.[7]

METHODS

Design

We used a cross-sectional study design.

Participants

The selection of the ADs was based on their responsibility regarding majority of athletics-based decisions.[3] Indiana secondary school ADs (n=410) were contacted for participation in the study. The contact information of the ADs was found through the Indiana High School Athletic Association (IHSAA) School Directory, a publicly available website. The participants fit into the following inclusion criteria: currently holding the position of AD and currently at a secondary school in the state of Indiana. Those who were not currently an AD in the IHSAA were not contacted for the study.

Instrumentation

The tool was constructed from multiple studies and underwent two rounds of review by experts in the field of secondary school athletic training.[7] Experts had several years of experience in rural healthcare and secondary school athletic training. **Table 1** provides the questions from the instrument.

Demographic Items (Measurement)
How many years have you been the Athletic Director at your secondary school? (Nearest Whole Year)
What is your current student enrollment for students in grades 9-12 at your school? (Nearest Whole Number)
What setting is your school in? (Rural, Suburban, Urban)
Healthcare Satisfaction Questions (Scale, Measurement)
How satisfied are you with the overall care that is provided by the AT services at your current institution? (5 Point Likert Scale, 1 = Extremely Dissatisfied, 5 = Extremely Satisfied)
How satisfied are you with the medical care at sporting events? (5 Point Likert Scale, 1 = Extremely Dissatisfied, 5 = Extremely Satisfied)
Athletic Healthcare Questions (Scale, Measurement)
In your opinion, what are the roles and responsibilities of an athletic trainer in the secondary school? (Open Response)
Who employs the athletic trainer(s)? (School or School District, Hospital System or Clinic, National Contract Service, Other or unsure)
How many athletic trainers are present at your school? (Nearest Whole Number)
What, if any, rules are in place from your school district or athletic league/conference that require medical services be provided at athletic events? (Open Response)
What factors influenced your school's decision to provide AT services? (Open Response)
What factors influenced your school's decision to not provide AT services? (Open Response)

Table 1. Instrument Question Breakdown and Scoring

The IRB approved this study. ADs at all IHSAA secondary schools (n=410) were invited to participate. Each AD received an email sent via Qualtrics® (Provo, UT), with a link to the survey. Reminder emails were sent each week for four weeks or until the instrument was completed. The tool was a total included 16 items questions, with 2 items about AD satisfaction of care answered on a 5-point Likert scale (1=Extremely Dissatisfied to 5=Extremely Satisfied). The two items that assessed satisfaction of care investigated immediate care provided (e.g. acute and emergent management) and the overall care provided by the athletic trainer.

Analysis

Statistical analysis was completed using SPSS (Chicago, IL). Kruskal-Wallis, non-parametric one-way analyses of variance was used to calculate differences AT employment status, AT employer, campus type, school enrollment, and community setting on satisfaction with overall care provided and satisfaction with emergency care. Chi-squared analysis to determine significant differences between community setting and access to other school-based healthcare providers. Significance was set at $p < 0.05$ a-priori. Qualitative analysis was completed using a coding team. The initial reading of the data allowed for a general understanding of the data. Secondary reading of the data was intended to create a codebook. Common themes were identified and coded with a term to represent the meaning.

RESULTS

A total of 72 (n=410) ADs responded to the survey, which 63 (16.5%) completed the questionnaire in its entirety. The demographic data is presented in **Table 2**. Over 75% of the respondents (n=49, 77.8%) indicated they had an AT present at their school regardless of employment status (full-time, part-time, or as needed (per-diem)). Of these 49 participants 69.4% (n=34) indicated having a full-time AT, 10.2% (n=5) indicated having a part-time

AT, and 20.4% (n=10) indicated having a per-diem AT. The employer of the AT varied (school/school district, n=12, 24.5%; hospital system or clinic, n=36, 73.5%; and other/unsure, n=1, 2.0%). A total of 69.4% of respondents indicated only having 1 AT (n=34,), while 14.3% indicated having 2 ATs (n=7), and 2% indicated having 3 ATs (n=1).

Characteristic (No. Reporting)	**Frequency (%)**
Years of Experience (n=54)	
0-5	26(48)
6-15	19(35.2)
16+	9(16.7)
Enrollment (n=54)	
1-261	8(14.8)
262-546	16(29.6)
547-1353	17(31.5)
1354+	13(24.1)
School Setting (n=53)	
Rural	14(26.4)
Suburban	14(26.4)
Urban	25(47.2)
Employer of Athletic Trainer (n=50)	
School or School District	12(24)
Hospital System or Clinic	37(74)
National Contract Service	0
Other or Unsure	1(2)
Employment Status of Athletic Trainer (n=46)	
Full-Time	34(74)
Per Diem/PRN/Injury Checks	5(11)
Part-Time	5(11)
No Athletic Trainer	2(4)
Number of Athletic Trainers Present (n=45)	
1	34(76)
2	9(20)
3	2(4)
Title 1 Public School	
Public-Title 1 Campus	24(51)
Public-Not Title 1 Campus	11(23)
Public-Unsure or Title 1 Status	12(26)
Private School	6
Charter	0

Table 2. Demographic Information

We identified significant differences ($\chi 2 = 9.160$, df=2, p=0.010) between the employment status groups in satisfaction with overall care provided. Those with full-time AT services (mean=4.82 ± 0.58) were more satisfied with care than those with per-diem (mean=4.40 ± 0.55) or part-time care (mean=4.30 ± 0.95). There was no significant difference between employer (School or School District, Hospital System or Clinic, National Contract Service, Other or unsure) on satisfaction with immediate care (p = 0.508).

Conversely there was a significant difference ($\chi 2$=9.798, df=2, p=0.007) in the satisfaction of overall care when broken down by the employer of the AT. Those who have an AT hired by a hospital/clinic or a school system were more satisfied with the overall and immediate care provided (mean=4.86 ± 0.35). We did not identify any significant differences in satisfaction of emergency care between groups of employers of the AT (p=0.247).

There was no statistically significant difference in satisfaction of overall care (p = 0.718) or satisfaction of immediate care (p=0.665) between Public School Status (Title 1 funded, non-Title 1 funded, private, or charter). Similarly, there was no statistically significant difference in satisfaction of overall care (p = 0.256) or satisfaction of immediate care (p=0.648) between school setting (Rural, Suburban, Urban). There was no significant differences found when comparing school setting to other Health Care Providers (HCPs) available (p=0.208).

There was a significant difference between IHSAA classifications of enrollment and overall satisfaction with care ($\chi 2$=10.497, df=3, p=0.015) where the smallest schools are least satisfied (n=7, 4.00/5.00 ±1.00). In addition, significant differences between IHSAA classifications of enrollment and sport classifications ($\chi 2$=10.157, df=3, p=0.017) where the smallest schools (<500 students) were least satisfied (n=7, 4.29±0.49).

Four main themes emerged: cost, liability, workload and safety.

Cost

Sub-themes related to cost of an AT included affordability and cost of resources. One participant stated they did not provide AT services due to, "lack of funding." Another participant that provided AT services stated, "Cost. Our school cannot afford to have a full time Athletic Trainer, so we contract with a local health organization…" Participants' responses included both cost of the

AT as well as the need for appropriate resources for the AT.

Liability
Another benefit that was indicated with having an AT was protecting the organization, the coaches, and the ADs. When it came to decision-making, one participant noted the need for an AT was, "most likely liability issues. The fact that a coach could re-insert an injured player into a game instead of having an informed, medical consideration played a huge role." The participants' responses related to having a qualified healthcare provider on site.

Workload
Responses related to workload mentioned the ATs workload management and number of hours the AT was working. One participant stated, "The sheer number of teams and athletes practicing/playing at the same times makes it hard for our athletic trainer to be at everything." When asked about challenges regarding providing services, one participant responded, "Budgets, demand of job, hours/workload for 1 [athletic] trainer." Both number of student-athletes/teams as well as hours worked were frequently cited.

Safety
Safety responses were related to injury prevention and protecting the student-athletes. When asked about conference rules regarding medical coverage, a participant stated, "We don't have any set rules, however we make it a point to have an [athletic] trainer available and on campus whenever we are hosting a home athletic event." This represents how the safety of the student-athletes is important during competition. The results emphasize the need for qualified and trained providers.

DISCUSSION
Indiana has 424 secondary schools, 56% (n=236) had a full-time AT, 29% (n=123) had a part time AT, and 15% (n=65) had no AT available.[1] The results from this study are consistent with previous investigations looking at secondary schools' access to AT services.[1] Participants were asked to rank their satisfaction of first aid and emergency care, and overall care provided by the AT. All participants stated they were satisfied with both first aid and emergency care as well as overall care. Full-time ATs and ATs hired by a hospital or clinic higher yielded satisfaction of overall care.

Cost
We identified that ADs continue to reference cost as a barrier to the hiring of ATs. Research has shown AT services in the secondary school setting is correlated with median household income (MHI) where the higher the MHI the more likely the student-athletes were to have access to AT services.[10] MHI is higher in urban compared to rural areas in majority of the United States.[11] Previous research regarding ADs barriers to AT services cited cost of the AT as a barrier,[7] yet in the current study participants cited cost of resources and supplies as a barrier to providing AT Services. Previous research has indicated that ATs with smaller budgets (<$5,000) focus primarily on preventative measures compared to patient care and treatment.[12]

Liability
Participants stated that the decisions regarding return to play after injuries were taken off the coaches and placed on a trained professional. ATs are able to provide care, negating liability from untrained personnel, and as trained healthcare professionals they are able to keep the student-athletes safety a priority.[7]

Workload
The NATA released a consensus statement in 2014 for recommendations for appropriate medical care in the secondary school setting with 11 recommendations necessary for quality care.[13] ADs in our study reported that there were not enough ATs for the current workload in their schools. Often there are multiple events occurring at the same time, but that demand is also in conflict with the ability to provide treatment and rehabilitation. ATs often find themselves prioritizing based on injury risk, which can leave other patients with a lack of care. Events with multiple sports cause ATs to multitask and balance locations, personnel, supplies and facilities which consequently jeopardizes student-athlete safety.

Safety
The Board of Certification has set 6 Standards of Practice that ATs must follow, as well as stay

informed and up to date.[14] One standard is prevention, defined as, "implementing measures to prevent and/or mitigate injury, illness and long-term disability."[14] Previous research has shown that within the secondary school setting, a considerable amount of time is spent providing preventative measures such as taping and bracing.[9] These prevention measures can reduce the time that the AT spends providing more primary prevention measures.[15] The ADs in our study cited the safety of student athletes as a major motivator for the hiring of an AT, but by implementing more primary prevention measures, ATs can provide higher quality care and keep student-athletes safe.

Limitations

There was a small pool of ADs, several of which did not have AT services. Future qualitative research should be completed on a nationwide scale to gain understanding about the affect
geographical location has on access to care.

CONCLUSIONS

ADs indicated ATs were well qualified to provide athletic healthcare and were satisfied with the care provided. As is consistent with previous research, financial challenges continue to play a role in the hiring of ATs. Access to qualified athletic healthcare continues to be a public health concern in rural communities and all stakeholders should reconsider how to offer both a comprehensive athletics program and the healthcare needed to ensure safety in that participation.

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