Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association

Volume 8 | Issue 2 Article 5

June 2022

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Recommended Citation

Arredondo, Sam G. DAT, ATC; Rivera, Matthew J. DAT, LAT, ATC; and Eberman, Lindsey E. PhD, LAT, ATC (2022) "Secondary School Athletic Trainers’ Perceived Confidence In Providing Independent Medical Care Within Differing Healthcare Delivery Models," *Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association*: Vol. 8: Iss. 2, Article 5.
DOI: https://doi.org/10.25035/jsmahs.08.02.05
Available at: https://scholarworks.bgsu.edu/jsmahs/vol8/iss2/5

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Secondary School Athletic Trainers Perceived Confidence in Providing Independent Medical Care Within Differing Healthcare Delivery Models

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Purpose: The aim of this study was to evaluate athletic trainers' confidence and ability to deliver independent medical care in the secondary school setting. **Methods:** A cross-sectional survey design was used with open- and closed-ended questions using a tool that was modified from a previously validated tool used within the collegiate setting; the tool was adapted through content expert validation. **Results:** Athletic trainers perceived themselves as confident in providing independent medical care through the school district healthcare delivery model (n=109/121, 90%) more often than those functioning within the hospital/clinic outreach model (n=85/`30, 65%). **Conclusions:** Despite not having nationalized legislation and having variable support structures in place, secondary school athletic trainers are confident in providing independent medical care even when their direct supervisor may not be a healthcare provider. This is contradictory to similar findings within the collegiate setting governed by National Collegiate Athletics Association legislation enforcing independent medical care. **Key Words:** *Independent Medical Care, Autonomy, Healthcare Models, Secondary School*

INTRODUCTION

The National Collegiate Athletics Association (NCAA) has passed legislation intended to protect the health of student-athletes, which mandates the implementation of an athletics health care administrator (AHCA) at each institution, who is responsible for overseeing the administration of healthcare.[1] Further, this protection of student-athlete health and safety requires that athletic trainers and team physicians have unchallengeable medical authority.[1,2] This legislation was created to mitigate the athletic trainers' perception of pressure by coaches, administrators, and other medical professionals to return student-athletes to participation and the potential of facing repercussions in response to disagreement.[3] The mitigation of this pressure is thought to improve the quality of decision-making for providers and overall healthcare delivery. The role of the AHCA is designed to ensure appropriate healthcare and overall wellness of students who participate in athletics at any level within the NCAA. These efforts intend to move away from the common athletic healthcare model which involves a reporting structure in which the athletic trainer reports to the athletic director or a coach, which can create a conflict of interest.[4-6] Even with legislation in place, a survey from 2019,[7] revealed that only 51.73% of college and university athletic trainers follow the mandated structure for independent medical care. This same survey also reported that approximately 36.62% of college and university athletic trainers felt that coaches influenced hiring practices of sports medicine staff and 29.95% of these athletic trainers felt they received pressure from non-medical staff on medical decisions.

Though efforts have been made within the collegiate setting, secondary schools currently have no such legislation to ensure appropriate, independent medical care for their student-athletes. Through independent medical care, secondary school athletic trainers (SSATs) would be supervised by a healthcare professional through innovative models of employment.[8,9] Of all SSATs, roughly one-third (36%) are employed by a hospital, clinic, or outreach facility.[10] Athletic trainers who are not employed within this model may fall into a traditional athletics healthcare model where their supervisor is not a healthcare provider, which may hinder their ability to provide independent medical care since there is no legislation that is

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consistent with what is required at the collegiate level.[11] Because there is no consistency in reporting structure in place for the secondary school setting, there is an even greater need for a framework to establish independent medical care. There is also evidence that athletic training services available to high school student-athletes can depend on the employment and healthcare model the SSAT works within with higher services and injury rates for those directly employed by the school district.[12]

Secondary school athletic trainers are often within a reporting structure in which they are supervised by an athletic director or coach, which may create role conflict as their direct supervisor may not have any medical training and the focus may then be the competitiveness of the team rather than individual healthcare. Formal legislation in place for independent medical care within the secondary school can help prevent instances in which a coach may influence returning a student-athlete too soon following injury. The concept of independent medical care could also support alignment with previous investigations where athletic directors indicate that safety is a major concern for student-athletes.[13]

The COVID-19 pandemic presented challenges to independent medical care in how it directly affected athletics participation such as SSATs transitioning of job duties and inability to provide any direct patient care.[14] Additionally, the increased number of stakeholders that have to be notified if a student-athlete tests positive can also increase the likelihood that there will be a breach in independent medical care. This may create an ethical dilemma for the SSAT to uphold a policy they may not agree with or were not able to provide their input and impact their ability to provide independent medical care free of bias.

Although there are benefits and barriers to both independent medical and traditional athletics models, both may face circumstances that affect their ability to make independent medical decisions that are best for their patients.[5-6, 8] Currently, there is no evidence on the adoption or understanding of independent medical care in the secondary school setting. With little formal support for independent medical care through legislation, SSATs may face challenges to their medical decisions from supervisors without medical training dependent on the healthcare delivery model which could have an impact on the care secondary school student-athletes receive. Therefore, the purpose of this study is to explore the confidence and decision-making authority of SSATs in providing independent medical care of differing employment models. Secondarily, we aimed to examine the influence of COVID-19 on the confidence and decision-making authority of SSATs in providing independent medical care.

METHODS

Design

We used a concurrent mixed-methods survey design with open and closed-ended questions to evaluate independent medical care and the influence of COVID-19 on decision-making in the secondary school setting.

Participants

A total of 4500 athletic trainers were identified using the National Athletic Trainers' Association (NATA) database as currently working at the secondary school setting. This study was deemed exempt by the Institutional Review Board and the participating SSATs provided consent before responding to the survey.

Instrumentation

We developed an online, web-based survey (Qualtrics®, Provo, UT) focused on characteristics of independent medical care in the secondary school setting as well as

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involvement in decision-making concerning COVID-19 and its impacts on sport participation (Appendix). Our tool was modified from a previously validated tool to evaluate independent medical care in the collegiate setting.[1] This tool was adapted for the secondary school setting with vernacular changes. The areas of interest included perception of confidence in providing independent medical care, decision-making, and reporting structure of the SSAT for time-loss injuries, and support and structure in place to support independent medical care provided within their place of employment as well as how COVID-19 impacted their ability to provide independent medical care, if at all.

Procedures

We used the NATA database to send emails to SSATs that included an introduction letter as well as a link to the survey. After the initial email, a follow-up email was distributed weekly, reminding potential participants to complete the survey. The survey was closed after four weeks.

Upon clicking the link to participate, the participant navigated to a question on inclusion criteria that assessed if the participant was currently practicing in the secondary school setting. After indicating yes, they then agreed to consent to participate in the study. Participants completed a 29-item questionnaire that included their model of healthcare delivery, decision-making authority, structure and support in place within their workplace to provide independent medical care, their level of confidence in providing such care, and any impact COVID-19 may have had on their ability to provide independent medical care.

Data Analysis and Trustworthiness

Partial data was used in the descriptive analysis of demographic data, health care delivery model, and confidence scales. We used IBM SPSS Statistics® (Armonk, NY) to analyze quantitative data using frequencies, means, and standard deviations to characterize the central tendencies of our data. Open-ended questions were evaluated using general inductive coding process of analysis. Responses were read initially to orient the primary investigator to the data followed by the use of inductive coding to determine themes in the responses for open-ended questions. A codebook was then created by the primary investigator and applied to correlating open-ended questions. Saturation was achieved through repetition of major themes and responses. Trustworthiness of the codebook was established using internal auditing and reviewed by co-investigators. (AAA,BBB).

RESULTS

A total of 269 participants (age=40±12 years; experience=16±11 years) responded to our survey (6.7% response rate). Those working within a hospital/clinic outreach health care model represented the largest portion of respondents (n=130, 48%) followed by the school district model (n=121, 45%). Models such as internal contractor (n=9, 3%), external contractor (n=4, 1.5%) were reported less frequently. Participants indicated that they were confident (n=106/226, 47%) or very confident (85/226, 38%) in providing independent medical care. Participants within the school district healthcare model rated themselves as confident in providing independent medical care even when hired by the same entity as coaches and administrators (109/121, 90%) while SSATs working within the hospital/clinic outreach model rated themselves as confident in providing independent medical care less often (n=85/130, 65%). Athletic trainers also considered themselves or an overseeing physician as the ultimate decision-making authority (n=152, 57%), yet participants often felt the need to report time-loss injuries to coaches and athletic directors (n=185, 69%).

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Data analysis revealed three themes with two sub-themes for each (Figure 1).

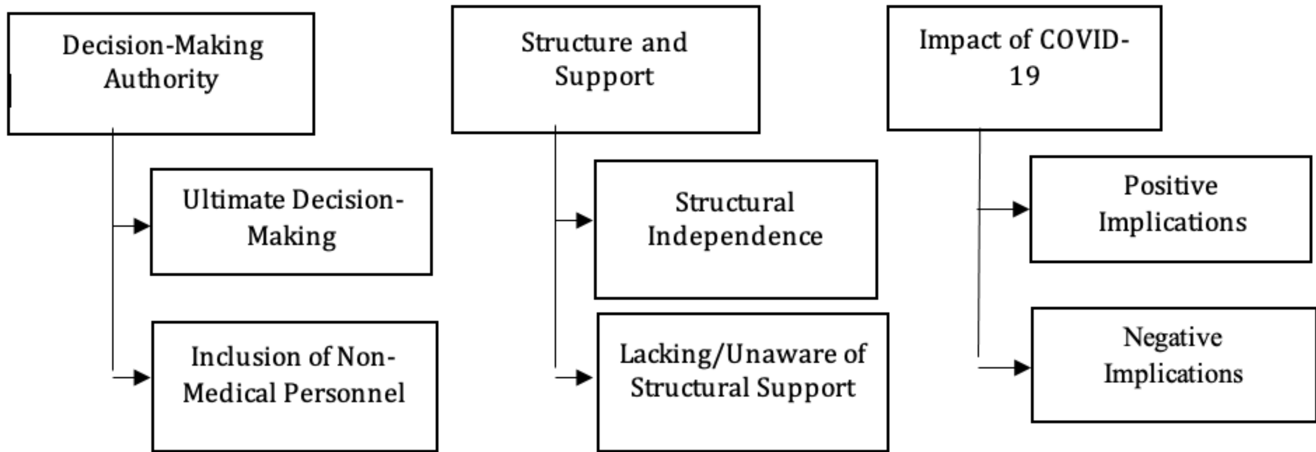

Figure 1. Themes and Sub-Themes

Decision-Making Authority

Participants felt they had the ability to ensure student-athletes followed a proper return-to-play protocol within their medical care (Table 1). They also provided examples in which they were the decision-making authority or shared that authority with a physician while others encountered some challenges to their medical care or included others in the decision-making process who had no medical background. Participants also chose to include coaches and administrators in the care of the student-athlete despite these individuals having no medical training. In other instances, the idea of independent medical care was challenged by including those without any medical background in decision-making and healthcare.

Ultimate Decision Making
"I have the final say on [return-to-play]. If a physician is involved in the injury, that same physician can release the athlete back to me for final [return-to-play]. If no physician was involved, it is still me. Not in any case can an outside source overrule my [return-to-play], however I will not overrule to return an athlete who does not have clearance from their physician back to my care." -Sally, School District Model
"If the athlete's injury is diagnosed and treated only by the athletic trainer, then the ultimate decision to return to play is by the athletic trainer. If the athlete is at some point under the care of a physician, release by the physician is required before return to play."-Susan, School District Model
Inclusion of Non-Medical Personnel
"That's a tricky question. I am the ultimate decision maker. At least as long as I have buy-in from the coaches. Fortunately, I've not had an issue in over 17 years. And, then there's parents who will go over my head to administration. They are quite supportive. But, I sometimes need to make a compelling case. There have been a few occasions where, under duress, I've modified my decision. In none of these cases was the changes particularly dangerous to the athlete in question and the background was documented." -Mark, School District Model
"Coach and AD. Ats may or may not be informed depending on how the individual/parent(s) has chosen to handle their treatment." -Jane, Hospital/Clinic Model

Table 1. Decision Making Authority

Structure and Support

Participants stated that they, along with team physicians and administrators, were the ones who ensured independent medical care within their facility (Table 2). Although SSATs often felt supported to provide independent medical care through their administration and team physicians, there is an apparent lack of consistency in terms of structural support in place to ensure implementation regardless of the healthcare model. While some SSATs received more support than others for providing independent medical care, some still were unaware or unsure of how independent medical care can be ensured within the secondary school setting. Those who were employed outside of the school district cited this as a contributing factor for their ability to remain independent while support for those employed through the school district came from the administration.

Structural Independence
"We have a school board backed authorization and policy that the Athletic Trainer has final decision on the return to athletics determination for an athlete. If a physician is seen outside, then we require documentation from that physician as the first step in RTP. The [athletic] trainer then proceeds with evaluation and functional assessment to determine athlete's status and to set guidelines and procedure to accomplish return to play. I have a team Doctor who is an orthopedic who can also and often is involved and also has input when needed on return to play if there is an issue. The team Doctor and [athletic trainer] have the final say." -Jessica, Hospital/Clinic Model
"*Not being employed directly by the school has helped. The AD is not my boss and coaches are not really my coworkers*." -Jasmine, Hospital/Clinic Model
"*We are not paid by the school district so this allows for us to operate without coaches, athletic directors, etc, impacting our medical decisions."* -Joan, Hospital/Clinic Model
Lacking/Unaware of Structural Support
"*Unsure. There may be resources out there (publications) but I am not aware of any of those."* -Scott, School District Model
"*There is no definitive independent medical care structure besides the [standardized operating procedure] implemented at the high school*."-Joe, Hospital/Clinic Model
"*Since I'm a one-person show there is no structure. As far as support, my administration will back me up on any decision I make because they know I won't make one that puts an athlete (or the district) at risk. Coaches understand the chain of command within the athletic department via our [emergency action plan], which defines everyone's role."*-Shawn, School District Model

Table 2. Structure and Support

Impact of COVID-19

The COVID-19 pandemic has also created additional instances for negative and positive implications on independent medical care (Table 3). Participants' responses included not having been provided the opportunity to help establish policies involving COVID-19. This presents a direct challenge to independent medical care provided by SSATs who are unable to enact or provide guidance in policy creation and are forced to follow medical policies that did not take their professional education and experience into account. Others had the opportunity to display their ability to develop and implement policy. The pandemic presented unexpected challenges to the independent medical care of SSATs that resulted in varying experiences of ability to practice as well as provide independent medical care.

Negative Implications
"We are having difficulties implementing a [return to play] protocol as our school district did not involve the sports medicine team when creating their own protocol."-Roy, Hospital/Clinic Model
"*The pandemic took [independent medical care] almost completely away with the [athletic trainer] not being included in the medical decisions unless the campus athletic director/head football coach or sport coach decides to include us.*"-Roger, School District Model
"*The school district decided to place the Human Resources director in charge of COVID response across the board."* -Anne, Hospital/Clinic Model
Positive Implications
"It has showcased that athletic trainers are the primary medical decision makers in developing COVID-19 protocols and safety guidelines within our Academy."-Jesse, School District Model
"*People have been turning to me for policy making and enforcement. Which makes me glad that they see and value me as a health care professional*." -Scott, School District Model

Table 3. Impact of COVID-19

DISCUSSION

There is currently no legislation of structural support at any level of organization (national, state, or local) that ensures the delivery of independent medical care within the secondary school setting. This study aimed to identify levels of confidence of SSATs to deliver independent medical care in different health care models as well as decision-making authority and support and structure to allow for independent medical care. The participants had several years of experience and were found to function in either the hospital/clinic outreach health care model or school district model. Within the hospital/clinic outreach model, the SSAT is employed by a larger healthcare system in which their supervisor is another medical professional while in the school district health care model, SSATs are employed by the same entity that hires coaches and administrators with little to no direct supervision by medical professionals employed by the same entity.[21] This can potentially cause role conflict within the SSAT in which they are responsible for providing independent medical care but also the one who oversees and manages that care without input from a supervising medical provider.[16] When the SSAT is forced to oversee the care they provide individually, it conflicts with the traditional role of healthcare administrators in which they do not provide patient care, but rather supervise those who do.[22] One participant stated that his location lacked structure and support for independent medical care and that they must "stand [their] ground [without] backup or support." If participants did not have strong administrative support or standardized operating procedures within their workplace, many others noted experiences similar to these. While some do have standards in place, they lack consistency in order to be implemented with high levels of success.

Independent medical care within the secondary school setting is extremely important while providing services to individuals that may be highly influenced by those around them. Athletic trainers may at times be the only healthcare professional that these students see regularly and as such must maintain the ability to provide care independently for their patients without the influence of coaches, administrators, and at times, other medical professionals who may not be acting in their best interest.[17] Within this study, SSATs working within the school district model perceived themselves as confident more often than those within the hospital/clinic outreach model. Those

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working within this model are usually supervised by those with little or no medical background or training which may allow for this level of perceived independence as they function primarily as the school's athletic healthcare provider with the knowledge and skills to make medical decisions without repercussions. In comparison, those functioning within a hospital/clinic outreach model may not perceive themselves as independent at an equal rate when not directly involved through school employment. The support for athletic trainers within the school district model may be a result of the value athletic directors place on employing them within the secondary school.[18] Participants functioning within an outreach model are also more likely to possess policies and procedures written by their employer than those hired within the school district which may influence the feelings of autonomy within the hospital/clinic outreach model.[19] Additionally, those working within the hospital/clinic model may be splitting their time among multiple workplaces while those working within the school district model spend their time entirely at one location and may teach courses throughout the day allowing for more consistent interaction with those working within athletics. Working within the school district model may also allow for coaches, who are often educators, to better understand the qualifications and education needed to be an athletic trainer.

Participants perceived themselves as confident in providing autonomous, independent medical care, yet still included coaches within their reporting structure for time-loss injuries greater than ten days (n=185, 69%). This brings to question how SSATs are able to maintain a high level of confidence in providing independent medical care while feeling the need to report these injuries to coaches and administrators. For example, one participant working within a school district model stated that *"[Students] sign in to [the documentation system] and I pass on to coaches a daily treatment log."* The inclusion of non-medical personnel in care of student-athletes may have reasons beyond accountability as this may align with approval-seeking behavior of collegiate athletic trainers in an effort to build rapport with coaches who may look favorably on returning student-athletes as quickly as possible.[20-22]

Although numerous SSATs discussed having support from their administration, they were either unaware or acknowledged there was no structural support in regards to providing independent medical care. This aligns with previous investigations looking at athletic trainers working in the secondary school setting where the athletic trainers felt some form of isolation in their transition to practice.[23] Without legislation in place support in place to support SSATs, they may perceive their level of confidence differently in providing independent medical care. With the limited policy to ensure SSATs are able to make medical decisions independent of influence from others, these SSATs may not feel similar levels of pressure as those within collegiate athletics[4,21] but still experience negative workplace environments similar to the collegiate setting but to a lesser degree.[24-27] Bullying within the workplace can result in self-doubt which could potentially have an impact on independent medical care.[25] Though SSATs may feel they are able to make independent decisions, with these pressures that may influence decision making, there is a need for both increased confidence and legislative efforts to help support SSATs in their ability to make independent decisions.

The lack of consistent structural supports brings attention to the need for continued integration into the medical system in which athletic trainers play a large role in the physical activity of high school student-athletes. Since athletic trainers are often the

primary healthcare provider within secondary school athletics, local policies and procedures must be established to ensure they are involved in all aspects of health and safety. When evaluating how COVID-19 affected independent medical care, some participants noted either their lack of inclusion in development of policies and procedures while others were quite involved with this process. These findings are not consistent with a previous investigation in the college and university setting where athletic trainers were commonly integrated into policy development and implementation regarding COVID-19.[28] The COVID-19 pandemic has demonstrated that without supportive legislation in place, athletic trainers may find themselves upholding health policies that they were not directly involved in. Many participants noted that COVID-19 resulted in them being furloughed due to not having athletics either prior to or during data collection. Those that were furloughed had a close relation with feeling that they did not have a chance to be included in development in policies and procedures. A participant in the school district model who mentioned not having any say in COVID-19 policies also described feeling that they have no support for implementing independent medical care. Another participant working within the hospital/clinic model stated that they "were not part of creating COVID-19 policies and [were] denied the ability to implement a [return-to-play] protocol for COVID-19 confirmed cases." With consistent structural support, future instances such as these may be reduced or eliminated by empowering athletic trainers in policy development for school and athletic healthcare.

Limitations

Participants within this study chose not to answer all questions which may have affected data collected on the perception of confidence in providing independent medical care. A low response rate may not be completely representative of all SSATs.

This study was performed during the COVID-19 pandemic in which SSATs may not have been providing direct patient care and a considerable number of athletic trainers were not working due to school closures.[14] Additionally, data collection during the pandemic has influenced research participation and response rates.[29] Those who were furloughed or not working may also not have been checking their email regularly. Due to these limitations, participants may have chosen answers based on memory with possible confirmation bias due to their inability to involve current lived experiences including furloughs or layoffs affecting their survey answers.

Future Considerations

Although SSATs perceived themselves overall as confident in providing autonomous care even when employed by the same entity as coaches and administrators, it is still unclear how this is achieved without consistent structural support in place. While SSATs are able to still provide a high level of independent medical care within the two most commonly utilized healthcare models, there are still concerns of reporting injuries and patient care to individuals not directly involved in the health of the student-athletes. Additional research should be considered to establish how SSATs achieve independent medical care without consistent structural support as well as the impact on the healthcare delivery model on the perceived need to report to coaches and administrators within specific healthcare models.

IMPLICATIONS FOR CLINICAL PRACTICE

Participants perceived themselves as confident overall in providing independent medical care despite not having any legislative support to ensure this. Those employed within the school district healthcare model

perceived themselves as more confident more often than those employed within the hospital/clinic outreach model despite being employed as the same entity as coaches and administrators. Despite high levels of confidence, SSATs failed to display consistency in how independent medical care is delivered. It is imperative that SSATs understand the definition and integration of independent medical care in order to recognize when decision-making can be influenced. Legislation may provide added benefit to SSATs who already feel confident in providing independent medical care and support those SSATs who may have struggled in achieving this before. Although national legislation may not be possible, local legislation that provides consistent structural support to all SSATs within the designated area may provide some benefit in ensuring high school student-athletes are provided care that is autonomous of influence from coaches and administrators.

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