

Challenges Faced by Collegiate Athletic Trainers, Part II: Treating Concussed Student-Athletes

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Context: Conflict between athletic trainers (ATs) and other stakeholders can occur because of competing interests over medical decisions regarding concussion. However, we are unaware of any studies specifically exploring these situations across various collegiate athletic affiliations.

Objective: To investigate the challenges faced by ATs when treating concussed student-athletes.

Design: Qualitative study.

Setting: Online questionnaire.

Patients or Other Participants: A total of 434 ATs (267 women, 166 men, 1 missing data; age = 27.73 ± 3.24 years, experience = 5.17 ± 2.67 years) completed the questionnaire (response rate = 14.47%). Our participants represented multiple employment settings within intercollegiate athletics.

Data Collection and Analysis: We sent an online questionnaire to 3000 ATs working in the collegiate and university setting across the United States. A survey expert verified face, content, and construct validity of the questionnaire in 2 rounds of review, and 3 ATs completed a content-validity tool before we finalized the survey. We analyzed the qualitative data using a

general inductive approach and ensured trustworthiness through multiple-analyst triangulation and peer review.

Results: When we examined the responses from our participants regarding their work with student-athletes who had sustained concussions, we found 2 major themes, each with subthemes. First, educational efforts appeared to be only modestly effective because of a lack of honesty, noncompliant actions, and coach interference. Second, return to learn was challenging because of a lack of communication among stakeholders, athletes being anxious about needing accommodations, and difficulty convincing faculty to provide reasonable accommodations.

Conclusions: Based on our findings, we recommend continued efforts to improve the culture surrounding concussion in collegiate athletes. Athletic trainers should include key stakeholders such as coaches, student-athletes, parents, faculty, and other educational administrators in their educational efforts to improve the policies and culture surrounding concussion treatment.

Key Words: organizational conflict, conflict of interest, mild traumatic brain injury

Key Points

- Collegiate athletic trainers faced challenges when treating student-athletes with concussions because of a lack of honesty regarding symptoms, noncompliant actions by student-athletes during the return-to-play process, and coach interference.
- Assisting student-athletes through the return-to-learn process after concussion was challenging because of the level of communication required of all stakeholders, including professors, medical staff, and the student-athletes themselves.
- Collegiate athletic trainers perceived that professors were unaware of appropriate academic accommodations for student-athletes who had sustained concussions, which complicated the return-to-learn process.

Athletic trainers (ATs) are health care providers for the physically active who are often charged with recognizing and examining student-athletes with potential concussions, treating student-athletes after concussion, and determining return-to-play timelines. In this role, they are charged with making decisions in the best interest of student-athletes, but these decisions are often difficult because of student-athletes' desire to play and the coaches' desire to have them play. For ATs, conflict may occur with student-athletes, parents, coaching staffs, or other stakeholders because of competing interests when making concussion-related medical decisions.¹

Given the potential for conflict over medical decisions, ATs and other team health care providers should not be supervised by coaches or nonmedical athletic administrators.¹ In addition, the job security of health care providers should not be influenced by coaches. Athletic trainers who reported to athletic directors described a lower quality of life due to pressure to make decisions in the interest of coaches and not necessarily the student-athletes.² However, many health care providers report to team officials, especially at the highest level of National Collegiate Athletic Association participation.² Indeed, health care providers lacked the autonomy to make decisions that were truly in the best interest of their

student-athletes, especially when dealing with concussion diagnoses.³

Further complicating concussion care, many such injuries go unreported by student-athletes. In 2004, more than half of high school football players in a large study⁴ failed to report concussions, mainly because they did not believe injuries were serious, did not want to miss participation time, or were not aware of the seriousness of the injury. Similar reasons for nondisclosure have been observed in other studies.^{5,6} Despite efforts to improve knowledge and attitudes regarding concussion, reporting remained problematic almost a decade later as more than 50% of concussions in football, soccer, lacrosse, and cheerleading athletes remained unreported in 2013⁵ and almost 70% of concussed football and soccer players in Washington state reported playing while symptomatic.⁷ Recently, collegiate football players were also found to report concussions at a much lower rate (47%) than other injuries (80%).⁸ Other researchers studying participants with broader sports backgrounds suggested a much lower rate of unreported concussion (11.8%), but these authors relied on the participants' understanding of what was and was not a concussion.⁹ Although these investigations highlight the challenges of diagnosing patients with concussions, the presence of ATs was associated with increases in the diagnosis rate and the implementation of safe return-to-play protocols.¹⁰ Coaches believed it was more acceptable to allow athletes to continue playing after a concussion, depending on the importance of the event, than to disqualify them from further participation.¹¹ The disconnect between coaches' beliefs and current best practice for a patient with concussion¹² provides grounds for organizational conflict.

Despite the potential conflict between ATs and other stakeholders over medical decisions regarding concussion, we are unaware of any researchers who have specifically explored these situations across various collegiate athletic affiliations. Therefore, the purpose of our study was to investigate the challenges faced by ATs when treating student-athletes with concussions. We were particularly interested in differences in potential organizational conflict and decision making after student-athletes' concussive injuries encountered by ATs working at institutions of higher education with various athletic affiliations. Our research questions were (1) What, if any, were the challenges ATs face when examining and treating student-athletes with possible concussions? (2) Under what circumstances, if any, did ATs encounter conflict with coaches when examining and treating student-athletes with possible concussions? (3) Did ATs believe student-athletes were forthcoming regarding potential concussive symptoms? and (4) Under what, if any, circumstances did ATs fear retribution when making decisions regarding student-athletes with possible concussions? We believed that ATs would face conflict with coaches when making participation decisions for student-athletes, especially during playoffs. We also hypothesized that student-athletes would be less willing to be forthcoming regarding potential concussion symptoms, especially during playoffs. Finally, we thought ATs would make decisions regarding student-athletes with possible concussions based on the fear of being sued.

Table. Survey Questions^a

1. What challenges, if any, have you faced when working with your concussed student-athletes and their return to play?
2. Can you reflect on a time when a coaching staff member questioned your decisions regarding concussed student-athletes? Can you describe what happened?
3. Are the student-athletes you work with generally forthcoming regarding potential concussions?
 - a. How often do you believe student-athletes hide their symptoms to continue playing (eg, 50% of the time, 25% of the time)?
 - b. Why do you believe they do this?
4. Have you ever made a concussion diagnosis due to fear of being sued?
 - a. If yes, please explain the situation.
 - b. Can you explain why you feared being sued?

^a Items are presented in their original format.

METHODS

As part of a larger study investigating organizational conflict and health care decisions (part 1),¹³ we collected data regarding the challenges faced by ATs when treating student-athletes with concussions. The National Athletic Trainers' Association provided a list of 3000 randomly selected ATs working in collegiate athletics in the fall of 2018. Our Web-based questionnaire included open-ended questions (Table) and was distributed along with a recruitment e-mail and institutional review board–approved consent form using QuestionPro Inc (Beaverton, OR). To improve response rates, we sent reminder e-mails 1 and 3 weeks after the initial e-mail asking those who had not yet completed the questionnaire to do so.

Participants

Of the 3000 ATs recruits, 434 completed the questionnaire (response rate = 14.47%). Most of the participants were female (62%, $n = 267$); the remainder were male (38%, $n = 166$), except for 1 respondent who did not report sex. Our participants were 27.73 ± 3.24 years old and had 5.17 ± 2.67 years of experience as ATs. Although most were employed by National Collegiate Athletic Association Division I–affiliated athletic departments (46%, $n = 199$), they represented multiple employment settings within intercollegiate athletics.

Questionnaire Development

We developed the questionnaire to answer our research questions in the current and larger study (part 1).¹³ The questionnaire was built upon the aims of the study, as well as some of the previous literature,^{1,3,14} social media reports, and editorial articles on the organizational culture surrounding player medical care and safety and health. Details on survey development and data collection can be found in part 1.¹³ The questions that served as the basis for this study are in the Table.

Data Analysis

We analyzed the qualitative data using a general inductive approach.¹⁵ Through this process, 2 members of the research team (T.G.B., A.M.P.L.) independently read the transcripts multiple times and coded them. After the multiple-analyst triangulation, the 2 researchers discussed

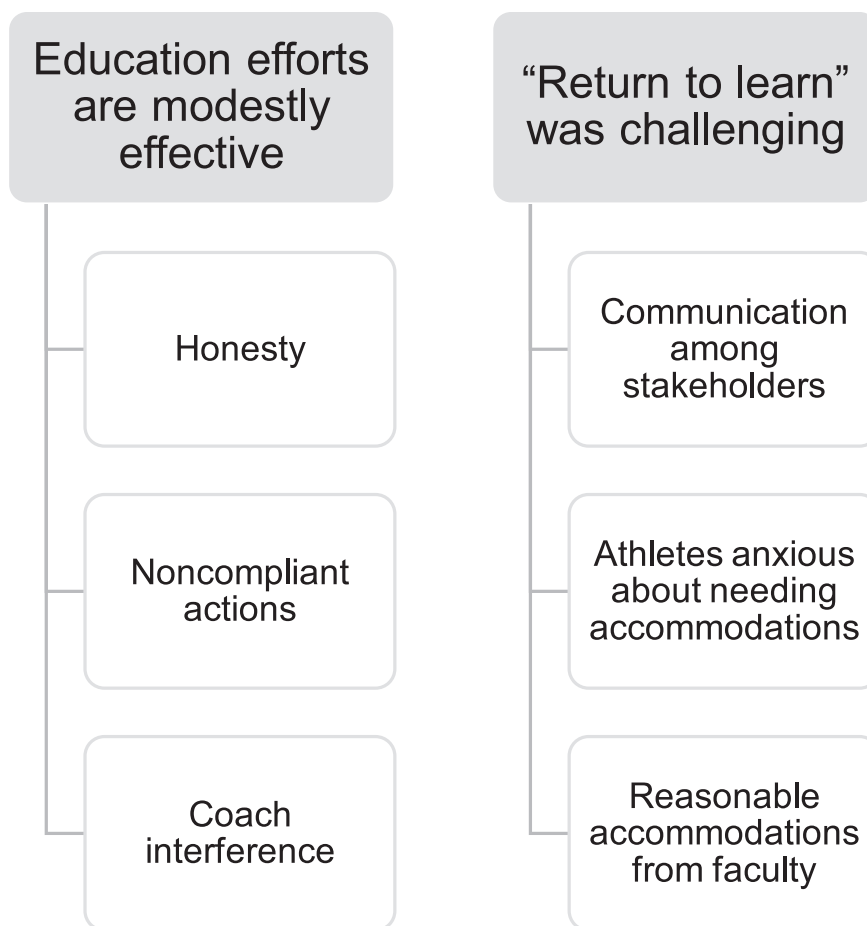


Figure. Challenges surrounding concussion treatment and return to play after injury.

their coding structures via conference call. Negotiations ensued until the researchers were in 100% agreement on the coding structure, including condensing the common codes into themes and subthemes. Our final trustworthiness strategy was to provide the coding structure, the fully coded transcripts, and the presentation of the results to an expert peer reviewer with extensive experience in qualitative data analysis. The peer reviewed the documents and verified the coding structure and presentation of results.

RESULTS

When we examined the responses from our participants regarding their work with student-athletes who had sustained concussions, we found 2 major themes, each with subthemes (Figure):

1. Education efforts appeared to be only modestly effective.
2. Return to learn (RTL) was challenging.

The themes are defined and supported with quotes in the following sections.

Education Efforts Appeared to Be Only Modestly Effective

Our participants discussed several specific challenges they faced when treating student-athletes with concussions that suggested educational efforts have been only modestly effective in improving the sport culture surrounding this

injury. This theme was defined by 3 distinct but related subthemes. First, respondents noted that honesty (being “truthful about symptoms”) was clearly a concern for student-athletes. One participant explained,

The biggest challenges we face with concussion and athletic training is having the student-athlete be truthful and approach the athletic training staff about a possible concussion rather than hiding it from athletic trainers who might just be trying to help. The student-athlete owes it to her or his future to see a game is just a game and not being truthful with a concussion can cost them [sic] her or his future.

Similarly, another AT commented that

the most challenging aspect is to get athletes to fully disclose their symptoms to you in order to ensure that they are getting the adequate return-to-play guidelines based on their condition. On top of that, you need to reassure an athlete that you are only there to help them return to full health and not to hold them out from play.

One participant suggested that student-athletes were forthcoming initially but not after they learned the intricacies of the return-to-play protocol. “Athletes usually have a problem with the length of the protocol. They want to go back immediately after they ‘feel good’ and not take

the appropriate steps.” Similarly, an AT stated that her biggest challenge when treating student-athletes with concussions was

getting the athletes to be honest about their symptoms during the return-to-play protocol. They are honest at initial injury, but as they start to be able to participate more they tend to underplay their symptoms to get back to [full] participation faster.

Student-athletes were not forthcoming about their symptoms because of the desire to play and outside influences. “Some athletes find it more important to continue playing than report symptoms.” One AT felt that student-athletes did not want to look weak or let their team down and face pressure from coaches to play, especially when they did not outwardly appear to be injured.

It is their trustworthiness regarding symptoms. Sometimes I am pretty sure that they have convinced themselves that they “feel good enough” and thus report being asymptomatic. Often times I see this being caused by outside pressure (eg, teammates, coaches, friends), that say “Hey, you’re good, right?!” and in their attempt to “be tough” (or appear so), they report being asymptomatic when they might still have a headache or be photophobic, etc.

Our second subtheme describes noncompliant actions of student-athletes throughout the return-to-play protocol in areas other than being forthcoming regarding symptoms. Examples of this subtheme included student-athletes not limiting their activities of daily living and participating in activities outside of sport practice during recovery that were not allowed. One respondent perfectly summarized this theme by stating,

Our biggest challenge is the student-athletes following instructions when away from the athletic venue to assist in the recovery of their concussion. These instructions often hinder their life outside of athletics, whether it be socially or academically, and without someone holding their hand, often times no one knows how compliant they have been when away from the medical care being given.

Another AT specifically discussed screen time.

Getting them to comply with absolute rest, no text messaging, computers, etc. Screen time is just a part of life to them. Asking them to not use their cell phone is like asking them to not use their hands.

Alcohol use was also mentioned as a potential problem. A clinician stated that one of the biggest problems he saw when treating student-athletes with concussions was “getting honest responses about what the student-athlete was doing outside of the athletic training clinic en route to recovery (ie, drinking on the weekend).” Finally, exercise was also a concern. An AT stated, “I have [run] into athletes who are in the return-to-play stages at the university rec center working out.” Overall, participants felt that student-athletes “not understanding the importance

of rest” was a problem. Athletic trainers believed that student-athletes failed to abide by the physical and cognitive rest limitations of the return-to-play protocol. Indeed, “they believe they know their bodies and will do as they want when it comes to return to activity.”

The final subtheme was coach interference. Participants noted that coaches did not agree with concussion diagnoses, told athletes not to see the athletic training staff, and were impatient with the return-to-play protocol. The first example was extreme but summarized the challenges faced by ATs when treating student-athletes with concussion:

Last year, a football coach at a small National Association of Intercollegiate Athletics historically black college that I worked for tried to overrule my decision that an athlete had a concussion. He refused to speak or listen to me, so that he could say that he never went against my recommendations. When I took the athlete’s helmet, he told the athlete to get someone else’s. Finally, I got the athletic director involved, and the coach figured his best course of action was to berate me and the physician on the sidelines. The athletic director stepped in again and [defused] the situation. The athlete had no recollection of the second half of the football game and was sent to the hospital. The athlete did not return to play for the rest of the season because of lingering postconcussive symptoms.

Another participant noted obvious conflicts of interest within the athletic department of the institution at which she is employed. She explained trouble she had experienced with one coach:

One coach will regularly tell his student-athletes not to see the sports medicine staff. He also has called physicians questioning them and asking why his student-athletes have not had MRIs [magnetic resonance imaging scans], CTs [computed tomography scans], etc. This coach is a big problem but is successful. He also is very close to the athletic director and is an assistant athletic director himself.

Other ATs noted conflict over “return to play with coaches” because “coaches want to speed up the 5-day return-to-play protocol.” Others observed that coaches tried to hide student-athletes from clinicians after a big hit in order to protect their playing status. One participant stated, “I have had coaches put kids back into play knowing they took a head impact without having them evaluated.” Overall, coaches attempted to circumvent concussion protocols in various ways.

Return to Learn Was Challenging

Our respondents noted difficulty in assisting student-athletes in managing their academic responsibilities when concussed. For instance, “Each concussion is unique and challenging. Ensuring they [student-athletes] transition not only back onto the field but back into the classroom is quite challenging at times.” This theme was further defined by 3 distinct subthemes. First, a lack of communication among stakeholders made RTL challenging. Indeed, the root of this difficulty appeared to be “communication between profes-

sors, student-athletes, and medical staff.” One AT described, “It is difficult to communicate with an academic adviser and professor that a student-athlete may need time away from the classroom.” The lack of a “point person” on the academic side defined this difficulty in communication for some. One participant remarked,

[There’s] no real communication on if or who I should talk to about return to classroom. I don’t know if I should be communicating with professors. Usually I tell the athletes to tell their professors, and if they have questions, just to e-mail me.

Second, student-athletes tended to be anxious about needing accommodations for missing class, assignments, or both. Regarding RTL, student-athletes sometimes had an “unwillingness to take the cognitive-rest component of recovery seriously.” One participant noted, “I have had challenges with athletes adhering [to] taking time off of school. They believe that they need rest from physical activity but have a hard time taking off of school.” This difficulty was magnified at certain time points in the academic semester. For example, a clinician responded, “We face more issues with academic accommodations. Athletes feel pressured not to fall behind in class, especially at the end of the semester.” Feelings of trepidation over missing classes or assignments often led to student-athletes performing academic work when they should not have, decisions that hindered recovery. For instance, “We have a return-to-learn protocol in place but if the athlete is stubborn in not following academic advice, then symptoms linger for longer than they should.” One AT suggested student-athletes’ feelings of frustration could potentially prolong recovery as well: “My biggest challenge is trying not to allow an athlete’s frustration of not being able to play or attend school not get to the point that it prolongs the recovery process.”

Third, ATs described the difficulty of getting professors to “understand” the needs of concussed student-athletes and to make reasonable accommodations for them while they recover. Simply put, “The coaches and sport administrators have been great, but there seems to be a disconnect with professors.” Further, when asked what challenges she faced when treating student-athletes with concussions, one participant replied, “Challenges I have had are on the academic side and trying to get professors to understand and make some accommodations for the concussed athlete.” Interestingly, getting appropriate modifications for student-athletes seemed to be a challenge regardless of whether a protocol for RTL was in place. A clinician stated, “Dealing with needed academic accommodations and the professors at the university not wanting to follow protocol and physician recommendations was one of her frustrations.” Perhaps professional development, outreach to faculty, or both could ameliorate understanding for faculty. A lack of education appeared to be part of the problem. One response summed this up: “Most of our professors are great about helping with extensions and moving tests, but some professors don’t understand it completely and give athletes a hard time.”

According to our sample, 2 of the biggest barriers that ATs continued to face regarding concussion return to play

were providing coaches and athletes with effective educational interventions and instituting RTL protocols.

DISCUSSION

Education Efforts Appeared to Be Only Modestly Effective

Despite evidence supporting an improved culture surrounding concussion in sport from recent educational efforts,^{6,16–18} we found that health care professionals continued to struggle with concussion-management decisions and interactions at the collegiate level. Not surprisingly, ATs felt that student-athletes were not forthcoming regarding concussive symptoms, both initially and throughout the recovery process. The perceptions of our participants regarding reporting behaviors of student-athletes are consistent with the literature^{4,5,9} suggesting that student-athletes frequently failed to report symptoms of concussion. Various reasons have been provided for student-athletes’ failure to report symptoms despite understanding the importance of doing so, such as not wanting to miss playing time, finding coaching staffs unapproachable, or thinking their concussion symptoms had a different cause.⁶ However, other researchers⁴ observed that student-athletes failed to understand the severity of concussions. Therefore, the opportunity for improvement via educational outreach remains, especially with male athletes, as they were less likely to report symptoms than females.¹⁹ Yet despite recent educational and awareness efforts, some athletes or coaches with certain personal attributes prioritize competitiveness and success over anything else. Outreach must extend beyond knowledge to improve effectiveness because increasing knowledge alone may not provoke behavior change.

When student-athletes did report symptoms and were removed from participation, our ATs noted noncompliance by the student-athletes with return-to-play protocols. These results are supported by 2 previous studies^{20,21} that showed concussed student-athletes failed to follow discharge instructions. It is important to recognize that disclosure of symptoms is not a one-time event. Rather, student-athletes must be forthcoming about symptoms during the entire recovery process. Concussion education for student-athletes is required by the National Collegiate Athletic Association.²² Despite this requirement, student-athletes often felt pressure from teammates or coaches to play,^{4–6} making the decision to disclose injury information and follow concussion protocols difficult. However, when symptoms were disclosed and proper treatment was sought, student-athletes were able to return to sport more quickly.^{23,24}

Our participants noted conflict with coaching staffs over several aspects of concussion management. Coaches seemed to disagree with concussion diagnoses at times. This finding parallels the work of previous authors^{6,17,25} who determined that coaches had difficulty identifying concussions. Respondents also spoke about coaches being impatient with return-to-play protocols and telling student-athletes not to see the medical staff to be examined for concussion. We speculate that these coaches’ feelings were based on the fact that they did not want athletes to be kept out of participation, especially competition, for an extended period. In a previous study,¹¹ coaches believed that athletes could continue playing during more important events even if they had sustained a concussion.

Return to Learn Was Challenging

Cognitive rest is an important aspect of concussive care, as too much or uncontrolled exertion may cause symptom recurrence or provocation,^{26,27} potentially leading to prolonged recovery.^{28,29} All of our participants were providing health care within collegiate athletics. In intercollegiate athletics, we think intermediaries between the athletic training staff and faculty may need to be engaged more effectively. At the secondary school level, school nurses can assist in the RTL process, although ATs have reported conflict with secondary school teachers regarding RTL and obtaining appropriate accommodations for student-athletes with concussions.³⁰ We suggest involving faculty athletic representatives and academic support staff in the RTL process. In our experience, they can enhance communication between the athletic training staff and faculty, leading to a more seamless RTL. Our hope is that improving communication between the athletic training staff and faculty will assist in easing student-athletes' feelings of anxiety and unease regarding the need for appropriate accommodations during the RTL process. We believe professional development for faculty on the needs of concussed student-athletes can improve the understanding and flexibility demonstrated in the classroom during RTL. According to our participants, faculty concussion knowledge became problematic when they attempted to secure appropriate accommodations for student-athletes with concussions. Perhaps including administrative leaders, such as the provost or dean of the faculty, in meetings with faculty athletic representatives, academic support coordinators, and ATs can aid in the development of appropriate RTL protocols for concussed student-athletes.

In previous research,³¹ almost 45% of student-athletes with concussions returned to school prematurely and had a recurrence or worsening of symptoms. The authors³¹ noted that clear guidelines on RTL for these student-athletes need to be developed in collaboration with health care providers, teachers, and school administrators to assist them in returning to school without exacerbation of symptoms and lengthening of full recovery. Moreover, many student-athletes have followed physician guidelines on when and how to return to the classroom but still suffered setbacks. Indeed, evidence to guide clinical practice for RTL is limited and an area ripe for exploration. We believe the current "Consensus Statement on Concussion in Sport"¹² is a starting point for protocols on returning students to the classroom. Other investigators^{14,32,33} have also presented protocols and timelines to assist clinicians in managing student-athletes with concussions as they return to school. The key consistent recommendation among the protocols is taking care not to aggravate symptoms or prolong recovery through symptom recurrence. Common accommodations among the protocols include excused absences, the ability to take breaks throughout the day, and modification of any activity that causes the student-athlete to become symptomatic.

Limitations and Future Directions

Although we believe our study was an interesting and important step in identifying the challenges faced by ATs when providing care to student-athletes with concussions, our work had limitations that are important to consider when interpreting our results. Our methods were qualita-

tive, which makes the findings difficult to generalize to a broader population. Specifically, care should be taken to avoid generalizing to ATs treating student-athlete populations outside of collegiate athletics. The frustrations and difficulties faced by ATs treating professional, secondary school, or youth athletes may vary substantially because of different resources, organizational structures, and other factors. We recommend collecting similar data from ATs treating these populations.

Also, we only investigated ATs. Although ATs are key health care professionals treating student-athletes, a more robust account of treatment would lead to further understanding. Interviewing additional stakeholders such as physicians, coaches, student-athletes, and parents would provide further insights into perceptions of concussion and concussion care.

We also used an online medium to collect our data, which made follow-up with participants impossible. Telephone interviews would likely provide more thorough responses by allowing for probing and gathering of additional detail.

It is also possible that sampling bias is reflected in the results. Perhaps ATs who had negative encounters regarding concussion care were more likely to respond to our questionnaire and those without negative experiences were not interested in participating.

Finally, the reasons for the feelings of our participants regarding concussion education remain unknown. Future researchers should determine whether the explanation for our findings is subpar educational interventions or resilient personality traits of athletes or coaches and should continue to examine how different educational mechanisms may improve outcomes and change perceptions. In addition, the personality traits of key stakeholders should be evaluated to understand how they may alter adherence to concussion care.

CONCLUSIONS

Athletic trainers face many challenges when treating concussions in student-athletes. Clinicians fear that student-athletes are not forthcoming regarding symptoms of concussion, are noncompliant regarding the return-to-play process, and must deal with the meddling of coaches who at times undermine the athletic training staff. Interestingly, our participants also noted difficulty managing the RTL process. The root of this difficulty was a lack of communication among stakeholders, which made student-athletes anxious about requesting accommodations. Based on our findings, we recommend continued efforts to improve the culture surrounding concussion in collegiate athletes. Athletic trainers should include key stakeholders such as coaches, student-athletes, parents, faculty, and other educational administrators in educational efforts to improve the policies and culture surrounding concussion treatment.

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