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Feedback in Clinical Education, Part II: Approved Clinical Instructor and Student Perceptions of and Influences on Feedback

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Context: Approved Clinical Instructors (ACIs; now known as preceptors) are expected to provide feedback to athletic training students (ATSs) during clinical education experiences. Researchers in other fields have found that clinical instructors and students often have different perceptions of actual and ideal feedback and that several factors may influence the feedback exchanges between instructors and students. However, understanding of these issues in athletic training education is minimal.

Objective: To investigate the current characteristics and perceptions of and the influences on feedback exchanges between ATSs and ACIs.

Design: Qualitative study.

Setting: One entry-level master's degree program accredited by the Commission on Accreditation of Athletic Training Education.

Patients or Other Participants: Four ACIs and 4 second-year ATSs.

Data Collection and Analysis: Individual, semistructured interviews were conducted with participants and integrated with field notes and observations for analysis. We used the constant comparative approach to inductively analyze data and develop codes and categories. Member checking, triangulation, and peer debriefing were used to promote trustworthiness of the study.

Results: Participants described that feedback plays an important role in clinical education and has several purposes related to improving performance. The ACIs and ATSs also discussed several preferred characteristics of feedback. Participants identified 4 main influences on their feedback exchanges, including the ACI, the ATS, personalities, and the learning environment.

Conclusions: The ACIs and ATSs had similar perceptions of ideal feedback in addition to the actual feedback that was provided during their clinical education experiences. Most of the preferences for feedback were aligned with recommendations in the literature, suggesting that existing research findings are applicable to athletic training clinical education. Several factors influenced the feedback exchanges between ACIs and ATSs, which clinical education coordinators should consider when selecting clinical sites and training ACIs.

Key Words: assessment, evaluation, pedagogy, preceptors

Key Points

- Both Approved Clinical Instructors (ACIs) and athletic training students (ATSs) recognized feedback has an important role in clinical education for several reasons.
- Several characteristics of the learning environment influenced ACI-ATS interactions and student learning and should be considered when selecting and improving clinical sites, pairing ACIs and ATSs, and educating ACIs to give good feedback.
- Researchers need to continue investigating the roles that patient volume, supervision, ACI workload, ACI experience, personalities, and similar factors have on student learning and feedback.

Approved Clinical Instructors (ACIs; now known as preceptors) are responsible for providing feedback to athletic training students (ATSs) during their clinical education experiences.[1,2] Feedback provides information to students about their performances that they can use to improve and refine their clinical skills, reasoning, and professional behaviors.[3–6] Several suggestions for providing effective feedback have been given in athletic training[3,7,8]; however, current research on the actual use of feedback in athletic training clinical education is limited.

Much of the existing research on feedback in medicine[5,9] and nursing[10] is based on student and instructor perceptions of feedback. Whereas students and instructors agree that feedback is important,[9,10] researchers[5] have found several disagreements over what students, instructors, and experts believe is good feedback. In addition, instructors and students often have different perceptions of the feedback that actually is given in clinical education settings. Clinical instructors often believe they provide effective feedback more often than instructors of medical students do,[9,11,12] and these opinions are frequently different from what is observed by a third party.[11] These differences may stem from an inability of instructors to self-assess their behaviors or an inability of students to recognize feedback.[13,14]

In addition to perceptions of feedback, several investigators in the areas of medical[15–17] and athletic training[18,19] education have examined the factors that influence the feedback exchanges between clinical instructors and

students. These investigators have found that several factors influence how feedback is given and received in the clinical education setting, including interpersonal and communication abilities of clinical instructors,[15,16] their abilities to adjust feedback based on student needs,[18] and their past experiences as teachers and learners.[20] In addition, student receptivity to feedback,[21] the clinical environment,[17] and the degree of supervision[19] have been found to influence the feedback exchanges between students and teachers. These aspects of the student-instructor relationship further complicate the delivery and use of feedback in clinical education. Therefore, the purpose of our study was to gain understanding of the complex feedback interactions that occur in athletic training education by investigating the current characteristics and perceptions of and the influences on feedback exchanges between ATSs and ACIs. The findings related to the characteristics of the actual feedback that is being provided were presented in part I of this study. In part II, we include the findings specific to the perceptions of and influences on feedback.

METHODS

The methods described in part I also apply to this portion of the study. In addition, we conducted semistructured interviews with each participant after all observations were completed. These interviews provided most of the findings about the perceptions of and influences on feedback. Findings also are supported by the data collected from observations and field notes as described in part I of this study. We asked both ACIs and ATSs questions about their general interactions, feedback exchanges, and past experiences with athletic training education. Feedback statements from the audio clips of the ACI-ATS observations recorded in part I also were played during each interview to stimulate conversation and clarify statements made by the participants. Feedback statements were selected purposefully from the audio-recording sessions and were played for the ATS and his or her ACI. Interview guides were reviewed by peer debriefers and tested with 1 ACI and 1 ATS before use with participants. Interviews were recorded with an audio recorder (Zoom H2; Samson Technologies, Hauppauge, NY) and transcribed verbatim. All transcriptions were completed within 72 hours of the actual data collection. The primary investigator (S.N.) conducted and transcribed all interviews. The ACI interview guide is presented in Appendix 1, and the ATS interview guide is presented in Appendix 2.

In addition to the forms of trustworthiness (triangulation, peer debriefing, and rich description) described in Part I, additional layers of member checking were added to the interviews to improve credibility of the data. The recordings of feedback exchanges were selected to allow participants to clarify statements and ensure the researcher was interpreting the statements as the participants intended. At the end of the interview, the researcher presented the 3 most prominent concepts that emerged from the interview to give the participants the opportunity to clarify and elaborate on the researcher's initial interpretations. Trustworthiness also was strengthened with the additional source triangulation of the participants' thoughts solicited in the interviews.

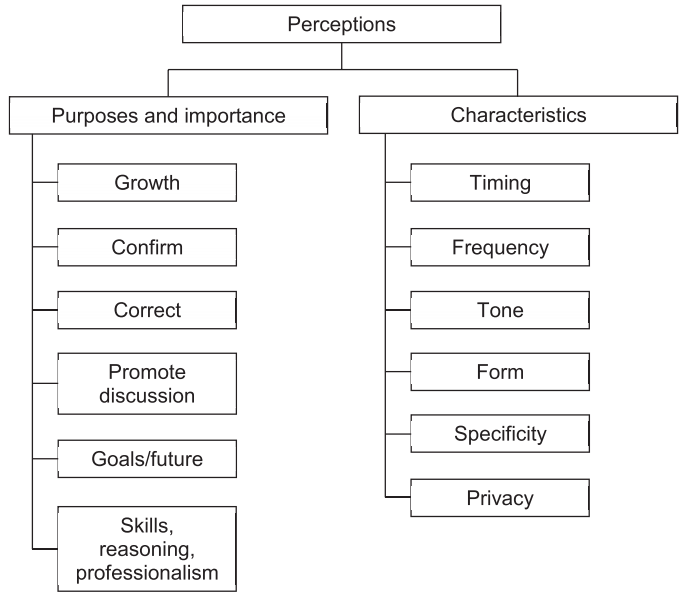

Figure 1. Approved Clinical Instructors' and athletic training students' perceptions of feedback during clinical education experiences.

RESULTS

Perceptions

Two primary categories emerged from the interview data that revealed the perceptions of ATSs and ACIs about the purposes and characteristics of effective feedback (Figure 1).

Purposes and Importance of Feedback in Clinical Education. The ATSs and ACIs described that feedback was important for several reasons during clinical education experiences. Participants indicated that it helped ATSs grow, confirmed and corrected behavior, facilitated deeper discussion, and helped ATSs with their goals and careers. They discussed the importance of feedback during clinical education experiences, stating it was important, necessary, and a vital part of the learning experiences of ATSs. Carl gave a comprehensive description of what feedback meant to him during his education:

> I think it's crucial to the educational process. Because without feedback, you don't know what you're doing right and what you're doing wrong. You can just be doing everything totally wrong and think it's okay, so you keep doing it that way. The feedback helps you correct or keep doing what is right or wrong (Carl interview, lines 201–206).

Lisa described why she thought feedback is important to learning processes of ATSs:

> I think it's the most important part. Because how are they going to learn if you just, if they just do what they think is right? If you don't correct them or help them to steer them in the right direction, they're not going to know if they're doing the right thing or not (Lisa interview, lines 74–81).

In both of these statements, the participants strongly associated feedback with knowing correct and incorrect behavior, which was a dominant theme throughout all interviews. Students said that feedback confirming their behaviors helped them gain confidence, and ACIs gave confirming feedback to acknowledge that ATSs did something well. Maggie discussed that reinforcement from her ACI Lois helped her know when she was doing well so she could do the same thing in the future:

> I think it's also, it helps me to get reinforcement from her. Say things like: "You did a really good job of cueing this patient." . . . So then in my head, I'm like, "Okay, that was something good, and I'll use it again in the future," (Maggie interview, lines 265–269).

Corrective feedback helped ATSs recognize their weaknesses or what they were doing wrong. Students said their ACIs also guided them on how to improve their behaviors when they gave corrective feedback. The ACIs described their different reasons for providing corrective feedback. Some emphasized the ATSs needed to change their behaviors for the future, others because the patients were in discomfort. Peter described why he thought providing ATSs with corrective feedback is necessary: "Correct it. Stop it. . . . You don't want to develop bad habits," (Peter interview, lines 916–917). Students also described that corrective feedback signaling change in their behaviors was particularly important. It appeared that they often expected correction on some of their behaviors, such as completing a skill for the first time (Brian interview, lines 784–786). In other situations, they were not expecting to be corrected because they were very confident in the skills they were performing, and this is when feedback was particularly helpful (Carl interview, lines 477–479).

In addition to providing feedback that confirmed or corrected behaviors, participants provided other reasons for why feedback was helpful. Chris discussed how feedback from Lisa has helped him grow and think differently during his clinical experience: "It's never to embarrass me. It's always to make me grow and to make me think about things that I'm doing or things that I've done," (Chris interview, lines 651–654). The ACIs described that they wanted to encourage and empower ATSs to learn and improve during clinical education experiences, and they provided feedback to help meet that goal. Meg explained that she "give[s] a lot of suggestions. . . I try to give him suggestions that he could implement [in clinical practice] pretty soon," (Meg interview, lines 1244–1251).

Both ATSs and ACIs associated feedback with discussion rather than 1-directional comments from ACIs. Similarly, participants described that feedback often sparked deeper discussion about the topic, and part of the purpose of providing feedback to ATSs was to give them information or detail about their performances. Meg illustrated this with her example of what ideal feedback is: "I think the kind of feedback that could then force dialogue. . . could then maybe talk about, you know, have it lead to other things," (Meg interview, lines 843–851). Students also suggested that having daily discussions about their performances would be an ideal way to receive feedback.

The ATSs noted feedback had a strong influence on their future behaviors as ATSs and professionals. Students also noted feedback helped them realize how they were doing in relation to their personal goals or the expectations of their ACIs for them. During 1 of the member-checking audio playbacks, Chris talked about how feedback from Lisa helped him recognize his progress toward personal goals and gave him information on how to continue progressing toward them:

> I think that really helped me to set my standards higher for myself, and then that feedback is helpful to remember where I'm at and to help me progress down that road (Chris interview, lines 1330–1333).

The ACIs also discussed that they gave feedback to help ATSs move toward goals or let them know how they were doing in relation to their goals as ATSs and clinicians. Peter, in particular, challenged Brian in areas that would help Brian with his goal of working in a rehabilitation clinic setting, and he related much of his feedback to patient outcomes. When reflecting on 1 feedback statement he gave to Brian, Peter said he gave feedback to "make sure he's meeting that goal for that treatment for the patient," (Peter interview, lines 667–668).

The ACIs described giving feedback to ATSs whenever it was needed, and the feedback they gave was not limited to the specific educational goals of the clinical site. Therefore, ACIs often gave feedback on the clinical reasoning and general professional behaviors of ATSs in addition to their clinical skills. Students also recognized their ACIs gave them feedback on more than their clinical skills. Brian described that Peter often gave feedback on his process of making decisions while working with patients. He believed this type of feedback from Peter was the most helpful feedback he received because it helped him develop as a professional: "I think that's the most helpful, clinical decision-making type feedback," (Brian interview, lines 681–682). Similarly, Maggie also gave insight to the feedback she received about her clinical skills when she described how feedback has changed as she has progressed through the athletic training program (ATP):

> Like at the beginning you're getting feedback on just doing skills. . . like: "Can you do this test? Here's the way to do this test," . . . those kind of things. Whereas now, it's more using those skills effectively, and that's what I'm getting feedback in. Am I being effective? (Maggie interview, lines 340–348).

Characteristics of Effective Feedback. Participants discussed several characteristics of feedback during their interviews often when they were discussing preferences for giving and receiving feedback. These characteristics included the timing, frequency, tone, form, and specificity of feedback.

The ACIs and ATSs overwhelmingly agreed that immediate feedback was more effective for ATSs than delayed feedback because it was easier for them to discuss the performance and correct incorrect behavior. Whereas ACIs preferred to give immediate feedback, they sometimes would delay it because a patient was present or they did not have time. Students also described that immediate feedback was much easier to apply than delayed feedback, and they became discouraged if they found out they had

been doing something wrong for weeks without knowing. Brian frequently related his need for immediate feedback to treating the patient effectively, which was very important to him:

> Ultimately my goal is patient outcome. Like if he corrects me: "You're not doing something right." I want to know immediately. Just like I don't want to repeat myself, but it's going to affect how a patient might feel that day and how they might feel in the future (Brian interview, lines 1390–1394).

Students also referred to the frequency of feedback their ACIs gave, but their comments were inconclusive about the ideal frequency of feedback. Students said they wanted and needed feedback but too much feedback also could be unhelpful. Brian summarized why infrequent feedback was unhelpful to him:

> So, I mean, the absence of feedback would be the worst feedback. Sometimes. 'Cause like you're. . . as a student you're left in limbo. Like well, did I do a good job? Did I not do a good job? (Brian interview, lines 733–736).

At another point in the interview, Brian said: "Sometimes they [past ACIs] gave too much feedback," (Brian interview, line 928). Brian's conflicting statements provide examples for the indecisiveness of the ATSs about the ideal frequency of feedback. However, these ATSs reported that they were satisfied with the amount of feedback their current ACIs provided.

All 4 ACIs mentioned they are cognizant of the tone of the feedback they give to ATSs. The ACIs described the importance of creating positive interactions with ATSs by balancing feedback provided with a negative tone and that provided with a positive tone to prevent discouraging ATSs. Students noted both positive and negative feedback from their ACIs was helpful and said their ACIs gave mostly positive feedback. Carl described that his ACI Meg gave critical feedback, but it was helpful to him: "Well, with Meg, she is very critical, but I think that helps me a lot," (Carl interview, lines 116–117). Chris was the only ATS who had an overwhelming preference for positive feedback, stating that feedback from Lisa was often harsh, critical, and negative and sometimes was upsetting. In general, ATSs seemed to expect both positive and negative feedback from their ACIs, and they appreciated a balance of delivering feedback in both ways.

When asked about preferred forms of feedback in the interviews, participants discussed spoken, nonspoken, and written feedback. (Participants used the terms "verbal" and "nonverbal," but they meant "spoken" and "nonspoken." As we did in part I, we use "spoken" and "nonspoken" in this article.) The ACIs and ATSs preferred spoken feedback to other forms because it was easy to give and receive immediately. The ACIs also liked giving nonspoken feedback to help clarify what they were saying, and it also could be given immediately. Chris commented on a specific feedback exchange related to a rehabilitation exercise he was leading, saying that one of the reasons it was so effective was because of the combined forms of feedback:

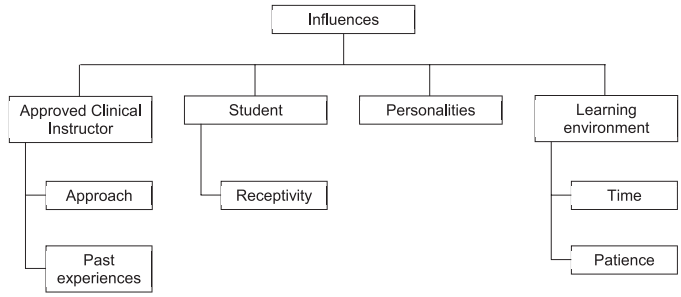

Figure 2. Approved Clinical Instructors' and athletic training students' perceived influences on feedback during clinical education experiences.

> So the fact that she could add all 3—visual, hands on, and auditory—just telling me what I am doing while she is showing me and then getting me to do it, really helped out (Chris interview, lines 811–813).

The ACIs also would give nonspoken feedback to allow the ATSs to be more autonomous. Both ACIs and ATSs thought that giving spoken and nonspoken feedback was easier than written feedback. Students often mentioned that an issue with written feedback was that it usually is delayed, which made it unhelpful. Similar to the ATSs, ACIs thought written feedback was not very useful because their ATSs did not respond well to it.

Students commonly mentioned their ACIs gave feedback with different degrees of specificity. They described how feedback with more detail or specifics on their performances was more helpful for improving their future performances than general statements that only confirmed or corrected their behaviors. The ATSs also indicated that feedback from their ACIs often was supported by a reason or evidence, which they found very helpful. Brian described why he liked that much of Peter's feedback was supported with evidence:

> Because the literature supports why you should be doing something or why you shouldn't be doing something. And I think that's a big thing with feedback (Brian interview, lines 1676–1678).

The ACIs did not speak as extensively about the details of their feedback as ATSs did; however, they noted they liked providing feedback that gave ATSs information about how to improve.

Factors That Influence the Delivery and Acceptance of Feedback

Four main categories emerged from the data about factors that influence the delivery and acceptance of feedback: the ACI, the ATS, the personalities, and the learning environment (Figure 2).

The ACI. The experiences and approaches of ACIs to ATSs influenced the way they delivered feedback to ATSs. All ACIs mentioned their experiences with other ATSs or their current ATSs as influencing the way they interact with their ATSs and give feedback. Meg and Lisa also considered their experiences as ATSs themselves when discussing how they approached ATSs. Meg described her

experiences as an ATS help her determine what expectations she has for her ATSs during their rotations. Lisa mentioned that her lack of experience as an ACI influenced the way she interacted with her ATS. Lisa often discussed her position as a first-year, first-semester ACI and how she struggles with asserting herself because she is the same age as the students:

> So I like to assert myself as someone who is more knowledgeable than them just because that has to be my position, I feel. And I struggle with that a lot (Lisa interview, lines 288–290).

She also noted that she is occasionally unsure whether the feedback she gave an ATS was correct but she always consulted a reference to make sure she was correct.

All ACIs described having an approach to ATSs, whether it was specific to providing feedback or more general to their clinical teaching. When discussing his or her general approach, each ACI had a progression for the ATS throughout the semester, such as to become more autonomous or work on a specific skill set. All ACIs focused on giving ATSs more responsibility throughout the semester, and all described that they tried to collaborate with the ATSs and treat them as clinicians. Although all ACIs described having general approaches to ATSs, they also discussed that adapting their feedback and teaching was part of what they do as ACIs. Peter commented on how he adapts the experience of the ATS based on how he or she is doing in the beginning and what his or her needs are: "Their role in the beginning is to observe. And then my role is to create an individualized rotation based off of them," (Peter interview, lines 51–54). For example, he noted that Brian was capable of high-level clinical reasoning, so he focused his clinical teaching and feedback on this aspect. These ACIs described several different ways that they individualize clinical teaching and feedback to their ATSs, suggesting this is a regular part of what they do as ACIs.

The ATS. Students recognized that their receptivity to feedback influenced the feedback exchange between them and their ACIs. All ATSs gave examples of situations where their receptivity to feedback from their ACIs varied. They described that, if they disagreed with the feedback their ACIs gave, they were less likely to try to use that feedback (eg, the student thought he was right, but the ACI said he was not). Carl talked about how he is not as receptive to feedback with which he disagrees:

> If there's something. . . questionable, like if I think it's right and she gives me feedback saying it's different, I. . . maybe tend to not like lean towards that feedback as much (Carl interview, lines 211–215).

Students also mentioned certain situations or skills where they were more receptive to feedback, usually because they thought they needed improvement in that area. Receiving feedback during new learning situations was also important to ATSs, and they strongly desired supervision and feedback from their ACIs during these occasions. Much more than any other ATS, Maggie sought out Lois's feedback on what she was doing. This prompting of feedback led to several feedback exchanges between Lois and Maggie. Prompting or questioning Lois's thoughts often led to longer discussions about what she was doing in addition to specific feedback on Maggie's performance.

Personalities. Related to both ATSs and ACIs, participants indicated that the personalities of ACIs and ATSs influenced their feedback interactions. The ACIs described they have a personal preference for giving feedback a certain way but often adapt their feedback to how their ATSs seem to receive feedback the best. Participants described how personalities set a general tone for their interactions, which then influence the way they discuss feedback. Maggie talked about the process of getting to know her ACIs and how that influenced the way she responded to their approaches to feedback:

> Yeah, I think there's a lot of just getting used to the other person as a person too, like their personality and them. . . I'm sure that Lois had to feel out my personality too and maybe think about how I'm going to respond best to the feedback she gives me, like how she's going to present it. And I don't know if she did or not, but. . . yeah, I think it's a lot about personalities or could be (Maggie interview, lines 886–892).

For Lisa and Chris, their personality differences became a barrier during their feedback exchanges. Chris talked repeatedly about how he preferred to give and receive feedback in an indirect, supportive fashion, but he thought Lisa, his ACI, preferred a more direct, critical approach (Chris interview, lines 588–593). Both Lisa and Chris gave examples of their personality conflicts and how the conflicts hindered feedback exchanges during clinical education to the point that Lisa noted she gave less feedback later in the semester (Lisa interview, lines 600–601).

The Learning Environment. The ACIs believed the biggest influence on their delivery of feedback was the time they had available to give feedback. Several ACIs described being rushed or having other responsibilities that limited their abilities to give feedback, causing them to delay or forget to give feedback altogether. A large administrative load and several other responsibilities limited the time Meg and Peter had available to give feedback, whereas Lisa described that her large patient load was the biggest factor that made her too busy to give immediate feedback. Meg described how she was so busy that she had to give feedback right away or she would not have time later: "I mean, again it comes back to there's so much going on with my job and my life that sometimes if I don't do it then, then it doesn't happen," (Meg interview, lines 582–589). Similar to the ACIs, most ATSs mentioned that time was a factor in how much or often they received feedback or how they responded to it.

The ACIs also mentioned that the patient was an influence on when and how they gave feedback. Often, the presence of a patient determined whether the ACI gave feedback at that moment or how he or she gave feedback. Sometimes, the ACI would consider which patient was present before providing feedback to the ATS. Often, the ACI determined whether to give feedback based on whether the patient was in pain or could have been harmed. Lois provided an illustration about a specific situation where she provided feedback in the presence of a patient: "Umm, well, that pretty much was a necessity because the patient was in some discomfort," (Lois interview, lines 579–580).

The ACIs said they never hesitated to give corrective feedback to an ATS when the patient potentially could be harmed. Meg, in particular, said that she tries to protect the athletes so they continue to trust the ATSs who are caring for them (Meg interview, lines 510–511).

Students also noted that the presence of a patient influenced how they responded to the feedback. They often recognized that the delivery and privacy of feedback were related closely, and they were much more sensitive to negative and corrective feedback in the presence of a patient. Students usually did not like receiving negative or corrective feedback in front of patients because they were afraid of looking incompetent; however, most of the time, ATSs mentioned their ACIs tried to give these types of feedback in private or away from the patients.

DISCUSSION

Perceptions of Effective Feedback

Purposes and Importance of Feedback. The ACIs and ATSs in our study believed that feedback has an important role in clinical education. Our participants' opinions coincide with findings by other researchers in medicine[9] and nursing,[10] which show that students and clinical instructors believe that feedback is important. These findings are promising considering the importance of feedback in clinical education. If ACIs and ATSs recognize its role in clinical education, they may be more likely to give and receive feedback.

In addition to describing the importance of feedback, participants described that feedback had several purposes in their education. Similar to recommendations in education[22] and medicine,[4] ACIs and ATSs in our study most strongly associated feedback with helping ATSs recognize when they were doing something right or wrong. Without feedback, ATSs may continue performing clinical skills and making clinical decisions with uncertainty and lack of confidence even if they are performing well.[4] In contrast, an ATS who is not corrected may treat patients inappropriately, compromising patient care. This corrective feedback is particularly important for novice students who are developing their foundation of clinical competence.[4]

The ACIs and ATSs also strongly associated feedback with guiding ATSs toward their goals for their careers or smaller goals for their current clinical rotation, which is supported by research in classroom[22,23] and clinical[4] education. Participants in our study also associated feedback with discussion, which promotes ATS input and further learning, rather than just a statement from an ACI.[4,24] Lastly, ACIs and ATSs described the importance of providing feedback to continually improve performance on communication skills, professional behaviors, and clinical reasoning in addition to their clinical skills. These findings also have been mentioned in medicine,[4] athletic training,[25] and clinical education[26] as reasons for providing feedback, which shows these ACIs and ATSs understood why feedback is important to clinical education. We also observed our ACIs give feedback to ATSs for these reasons, which further shows they understood the importance of effective feedback.

Characteristics of Feedback. Participants in our study discussed several characteristics of the feedback ACIs provided, including the timing, frequency, tone, form, and specificity. The ACIs and ATSs preferred immediate feedback because they thought it helped facilitate student learning and changed behavior immediately, potentially improving patient outcomes.[22,25] Similarly, Glover[6] found third-year nursing students thought one of the most helpful characteristics of their preceptors' feedback was that they received it immediately after their performances. We also observed our ACIs provide more immediate than delayed feedback. Whereas ACIs and ATSs in our study preferred immediate feedback, they both thought some situations warranted more delayed feedback to avoid embarrassing the ATS. These findings suggest that, although immediate feedback usually is preferred and may lead to more learning, immediate feedback may not be appropriate in every situation.

Researchers[22,23,27] in education have concluded feedback promotes more learning when it provides details on how to improve rather than just correct the behavior. Similar to the findings of Bing-You et al[15] in medicine that students preferred specific, constructive feedback to vague feedback, participants in our study preferred specific feedback from their ACIs because it gave them more information on which to improve. Whereas ACIs did not comment extensively on the specificity of feedback they provided, they often were observed giving specific feedback in addition to general feedback statements to ATSs. Approved Clinical Instructors should continue to provide enough detail in their feedback to help students improve without overwhelming them.[4]

Similar to participants in the physical education[28] and chiropractic education[29] literature, our participants discussed the frequency of feedback, but they were unable to quantify or describe their ideal frequency of feedback. Whereas ACIs in our study provided feedback much less frequently than clinical instructors in another study in athletic training,[30] ATSs generally were satisfied with the frequency of feedback from their ACIs. Considering that ATSs and ACIs believed immediate feedback was best, the ideal frequency may depend on what the ATSs are doing throughout their rotations rather than how long they are at their rotations.

The ACIs and ATSs often mentioned the tone or delivery of feedback they gave and received during clinical education experiences. Similar to medical students,[15] our ATSs preferred receiving positive, encouraging feedback and sometimes would ignore feedback that they viewed as judgmental or negative. Despite this preference for positive feedback, ATSs noted negative feedback still could be helpful to their learning as long as it did not embarrass them in front of patients. Participants had different ways of discussing the tone of feedback. Students in our study often interchanged the terms *critical*, *bad*, and *negative* when describing corrective feedback and feedback with a negative tone. Other researchers[6,15,23] discussing the tone of feedback also have used different words and phrases to describe the purpose (corrective versus confirming) and tone (negative versus positive) of feedback, leading to confusion about instructors' and students' actual beliefs about the tone of feedback. More consistent terminology is needed in research studies to facilitate comparisons of the delivery and purposes of feedback. In addition, researchers need to consider the importance of interpreting the meaning

of participants' word usage to ensure their voices are described accurately.

Participants described that they gave and received feedback in several different forms, including spoken, nonspoken, and written. Both the ACIs and ATSs preferred spoken and nonspoken feedback to written feedback because it was usually more immediate and, therefore, more helpful than written feedback. When discussing written feedback, ACIs almost always associated this type of feedback with the required documents of the program, suggesting that they do not have their own informal ways of providing written feedback to ATSs. During our observations, our ACIs primarily gave spoken feedback and never gave written feedback. Perhaps if ACIs used more immediate, informal ways of providing written feedback, such as clinical encounter cards,[31–33] ATSs and ACIs would think more favorably of written feedback. Research on preferred forms of feedback in clinical education is lacking, but our findings show a strong preference for oral feedback by both ACIs and ATSs. Approved Clinical Instructors should be encouraged to provide spoken feedback to ATSs soon after their performances in addition to supplementing their spoken comments with nonspoken feedback when appropriate. Researchers also should investigate ATSs' and ACIs' use and opinions of written feedback in clinical education. In addition to being a required component of ATPs, written feedback could be a critical piece of overall program assessment related to student learning outcomes in the clinical setting. Additional study is warranted to determine the most effective means of collecting written documentation from ACIs.

The ACIs and ATSs in our investigation did not have a preference for giving or receiving feedback in a public or private setting; rather, their preferences depended on the situation. Students did not want to be embarrassed by feedback in front of patients, but they did want to know when they were doing something incorrectly. Similarly, ACIs thought it was important to protect patients and alert ATSs of incorrect behavior, but they were sensitive to maintaining the trust of patients and the confidence of ATSs. The ACIs appeared to do this during our observations by waiting to give more negative feedback until the patient was no longer present. To our knowledge, researchers have not examined the preferences for delivery of feedback in public and private settings in relation to the presence of a patient. However, our findings suggest that ACIs should consider the situation and ATS when determining whether to give feedback in front of a patient or in a private setting.

Perceptions of the ACI and ATS. The ACIs and ATSs in our study had similar perceptions of "ideal" feedback. In addition, our participants had similar perceptions of the feedback interactions that "actually" occurred during their clinical education experiences. This is contrary to findings in studies of surgical residency[12] and ambulatory medicine,[13] in which researchers have found that clinical instructors and students typically have different opinions of feedback. Specifically, Sender Liberman et al[12] reported attending surgeons believe the feedback they give to residents is timely and high quality, whereas most residents disagreed. Much of the existing research on feedback is based on the perceptions of instructors and students provided in surveys,[13] interviews,[34] and evaluation forms,[5] which may lead to misunderstandings of the actual feedback that is occurring. Researchers have suggested that these discrepancies occur from a lack of understanding and agreement about what feedback is,[14] differences in individual preferences, inability of instructors to self-assess the feedback they provide,[13] or inability of students to recognize feedback.[13] Our participants seemed to understand the concept of feedback when instructed to define it in the interview. Their understanding of feedback was confirmed through examples they provided during their interviews that illustrated they had a good understanding of what feedback is in addition to the ability to recognize and accurately assess feedback.

Investigators in emergency[13] and internal medicine[34] also have found discrepancies between experts' recommendations of feedback and students' perceptions of ideal feedback, leaving students dissatisfied with feedback. This dissatisfaction often occurs because students prefer positive, encouraging feedback to corrective feedback, although specific, corrective feedback usually leads to more learning.[5] In contrast to the existing literature, our ATSs were satisfied with feedback from their ACIs, which mostly was aligned with recommendations of experts. All ATSs noted that corrective, even negative, feedback was helpful to their learning. They seemed to prefer feedback that helped them rather than feedback that made them feel better. Only Chris was concerned with negative feedback, saying he sometimes just liked getting feedback that made him feel good.

We do not know why the results of our study differ from those in most of the existing literature on perceptions of feedback of clinical instructors and students. Perhaps the difference is related to our methods, which included an in-depth account of not only the perceptions of ATSs and clinical instructors but also the actual feedback that was occurring. We may have captured a more thorough understanding of actual and perceived feedback than other researchers have. In addition, we conducted our study within 1 ATP. Therefore, the similarities in actual and perceived feedback may be due to the way ACIs were trained to provide feedback and ATSs were taught to evaluate ACIs. Researchers should use similar methods across multiple programs to gain a broader understanding of actual and perceived feedback in athletic training clinical education.

Influences on Delivery and Acceptance of Feedback

The ACI. Experts in clinical education have established that good clinical instructors must be able to assess student needs and adapt their teaching accordingly,[34,35] and our ACIs discussed different ways of approaching ATSs and adapting their feedback to the needs of the ATSs. When discussing their approaches to clinical teaching and feedback, our ACIs described that their approaches were influenced by their experiences as teachers and learners. These findings are similar to those in ambulatory medicine,[34] where clinical instructors described that, when not taught otherwise, their knowledge of learners came from their experiences as teachers and learners. Because the experiences of clinical instructors have such a strong influence on their approaches to clinical teaching, athletic training educators should expect that ACIs are

going to teach ATSs differently. The ACIs mentioned that their participation in the program's ACI training and other workshops also provided a basis for how they teach and provide feedback to ATSs, and for most ACIs, it was their only formal training for educating students. Given that ACI training is often the only formal education clinical instructors have and may be the only time ACIs learn about giving feedback, clinical instructor educators must ensure the quality of these workshops.

The ATS. Students in our study recognized that their receptivity to feedback influenced the feedback exchange, indicating they desire feedback when they are in a new environment or are doing something new. The ACIs should be perceptive as to when ATSs may need more or less feedback. Students also noted that they did not use feedback from their ACIs with which they disagreed. Bing-You et al[15] similarly found medical students did not use feedback given by their clinical instructors if they believed the instructors lacked knowledge or experience in the topic area. The feedback-seeking behavior of students is another aspect of their receptivity to feedback. Teunissen et al[16] investigated feedback-seeking behavior of medical residents and found that students were more likely to seek feedback if they thought it would help them reach their goals, improve their behaviors, or boost their self-esteem. Whereas all ATSs in our study recognized these potential benefits of feedback, Maggie was the only ATS to frequently seek out feedback from her ACI. Students should be encouraged to request feedback from their ACIs to improve their performances.

Personalities. Our participants described that personality influenced their feedback exchanges and general interactions in the clinical setting. Whereas no researchers, to our knowledge, in clinical education have investigated the influence of personality on feedback, interpersonal relationships and communication skills have been identified as standards and criteria for selecting and training ACIs.[35] Rich[36] also found that the approachability of the ACI may influence teachable moments in clinical experiences of ATSs. Knowing more about the potential influence of personalities on clinical education and feedback could help clinical education coordinators pair ACIs and ATSs to promote better student learning.

The Learning Environment. Time limitations and patient presence were parts of the learning environment that influenced the feedback exchanges between ACIs and ATSs. Time was the biggest challenge for our participants when giving and receiving feedback, which was attributed to a high patient volume and competing responsibilities of the ACI. Researchers in athletic training have found that lack of time may negatively influence the quality of supervision[19] and is a barrier to taking advantage of teachable moments during athletic training clinical experiences.[36] Researchers[37] in athletic training also have found that ACIs in the collegiate setting often experience role strain, which influences how they take advantage of teachable moments.

Even if ACIs had time to give feedback, ATSs said they needed time to think about the feedback, which they often did not have. Medical students also had this problem and said that often they were so busy that they could not take full advantage of the feedback they received.[37] This finding is a concern because, whereas high patient volume provides more learning experiences for ATSs, too much volume may inhibit learning. Educators and clinical education coordinators need to consider the other responsibilities of ACIs and patient volume when assigning ATSs to clinical education experiences. In addition, educators should consider that an ATS's level in the ATP also may influence whether the learning experience with an ACI at a particular site may or may not be a good fit. If a more experienced ATS does not need as much feedback as a less experienced ATS,[3] a clinical rotation with higher patient volume and less time for feedback may be an appropriate experience for the ATS.

The ACIs and ATSs described that the presence and characteristics of the patient often influenced how they delivered and responded to feedback. The ACIs indicated that, whereas they understood the importance of maintaining the ATSs' confidence, they prioritized protecting patients and maintaining patients' trust of ATSs. The ACIs also mentioned that they would give ATSs feedback differently based on who the patients were, and ATSs said they were more comfortable receiving feedback in front of some patients than others. This suggests that the demeanor of the patient and his or her relationship with the clinician also may influence the feedback exchange. If ACIs build good rapport with their patients and involve ATSs in this relationship, feedback exchanges may occur more comfortably in front of patients. No research is available, as far as we know, on the influence of patients on feedback exchanges in clinical education. Suggestions for effective feedback include protecting the trust and confidence of the ATS,[15] which could be compromised when giving feedback in front of the patient. Clinical instructors and educators should consider that patients might be another influential factor on ACI-ATS interactions and their feedback exchanges.

IMPLICATIONS AND CONCLUSIONS

The ACIs and ATSs recognized that feedback plays an important role in clinical education for several reasons. Athletic training clinical education coordinators should continue to educate ACIs about the importance of feedback in clinical education experiences. Preceptor training should include guidelines for giving effective feedback in addition to recommendations for adapting clinical teaching and feedback to ATSs. Educators also should consider teaching ATSs how to recognize and use feedback to maximize their clinical education experiences. Preceptor training should include discussion and problem solving with case studies to emphasize the situational nature of clinical teaching and feedback.

Several factors influence the feedback exchanges between ACIs and ATSs, complicating the use of feedback in this setting. Athletic training faculty should consider ACI and ATS personalities when pairing ACIs and ATSs for clinical education experiences. Matching ACIs and ATSs appropriately can facilitate effective feedback exchanges and promote ATS learning, but more information is needed in this area. Clinical education coordinators should consider the overall learning environment when considering clinical sites, including patient volume, other duties of the ACI, and potential learning opportunities for ATSs. The ACIs also should be taught how to continue to give good feedback in challenging learning environments.

RECOMMENDATIONS FOR FUTURE RESEARCH

Investigators should continue to assess the characteristics and perceptions of feedback that is occurring in different athletic training programs, including the delivery and use of feedback. More research on feedback in athletic training will provide more support for the way ACIs are educated and evaluated. The results of our study and others demonstrate that several characteristics of the learning environment influence ACI-ATS interactions and ATS learning experiences. Researchers need to continue investigating the roles that patient volume, supervision, ACI workload, ACI experience, personalities, and similar factors have on ATS learning and feedback. Learning more about these factors can help clinical education coordinators select appropriate clinical sites and educate ACIs, as well as improve existing clinical sites.

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Appendix 1. Approved Clinical Instructor Interview Guide

Main questions

1. Tell me about your interactions with your athletic training student during their clinical education experiences.
2. Tell me about the roles that you and your student have during your interactions.
3. How would you define feedback?
4. How would you describe the role of feedback in athletic training clinical education?
5. In what ways do you provide feedback to athletic training students?
6. How do you think your students respond to the feedback that you give them?
7. What factors influence your approach to providing feedback to athletic training students?
8. Do you face any challenges when providing feedback to athletic training students? If so, what are they?
9. If there is an ideal way to provide feedback to athletic training students, describe what that might look and/or sound like.

Member checking

10. Member checking (3 audio clips)
    a. Tell me about this interaction between you and your athletic training student in this segment.
    b. Tell me about why you chose to provide feedback to the student in this segment.
    c. What factors influenced the way you provided feedback to your student in this segment?

Closing

11. Do you have any other comments you would like to share regarding feedback?
12. It appears that these are a few key points that emerged from your responses: (list/describe). Would you agree with this? Are there any key points you think I have missed?

Background information

13. What educational activities related to clinical teaching have you participated in, including courses, workshops, or conferences?
14. What are your credentials related to your current position (eg, ATC, PT)?
15. How many years of experience do you have as a certified athletic trainer?
16. How many years of experience do you have as an ACI?
17. If you were a clinical instructor before becoming an ACI, how many years did you have that role?
18. About how many students have you supervised as an ACI?

Abbreviations: ACI, Approved Clinical Instructor; ATC, certified athletic trainer; PT, physical therapist.

Appendix 2. Student Interview Guide

Main questions

1. Tell me about your interactions with your current ACI during your clinical education experiences.
2. Tell me about the roles that you and your ACI have during your interactions.
3. How would you define feedback?
4. Please describe the feedback given to you by your ACI.
    a. What do you think about this feedback?
5. Describe the most helpful feedback given to you by your ACI.
6. Describe the least helpful feedback given to you by your ACI.
7. Do you use the feedback given to you by your ACI? How?
8. How would you describe the role of feedback during your clinical education experiences?
9. What factors influence the way you respond to feedback given by your ACI?
10. If you could describe the most ideal feedback you could possibly get from an ACI, what would that be?

Member checking

11. Member Checking (3 audio clips)
    a. Tell me about this interaction between you and your ACI in this segment.
    b. What do you think about the feedback your ACI provides in this segment?
    c. How did you respond to this feedback? Why?

Closing

12. Do you have any other comments you would like to share regarding feedback?
13. It appears that these are a few key points that emerged from your responses: (list or describe). Would you agree with this? Are there any key points you think I have missed?

Background information

14. How many years have you been involved in athletic training, including observation experiences?
15. How many ACIs have you had in the past?
16. How many clinical rotations have you had in the past?

Abbreviation: ACI, Approved Clinical Instructor.