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ORIGINAL RESEARCH

Clinical Preceptors' Perspectives on Clinical Education in Post-Professional Athletic Training Education Programs

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Context: Clinical education is the interaction between a clinical preceptor and student within the clinical setting to help the student progress as a clinician. Post-professional athletic training clinical education is especially important to improve these students' clinical knowledge and skills. However, little research has been conducted to assess the pedagogical principles for clinical education at this level or what factors are necessary to enhance the clinical skills and decision-making abilities of post-professional students. Therefore, exploring the perspectives of clinical preceptors involved in post-professional education will help educators understand what strategies are necessary to improve post-professional athletic training education programs (PPATEPs).

Objective: To qualitatively investigate clinical preceptors' perspectives and experiences regarding clinical education within PPATEPs.

Design: Consensual qualitative research (CQR) with an emergent design.

Setting: Telephone interviews were conducted with all participants.

Patients or Other Participants: Eleven collegiate post-professional clinical preceptors (7 males, 4 females; average age = 38±7.3 years; average years as an athletic trainer = 15±6.6 years) who were affiliated with a PPATEP were interviewed, representing 11 out of 16 PPATEPs.

Data Collection and Analysis: Interview transcripts were coded for themes and categories. Triangulation included a consensus process by the research team and member checking to verify the data.

Results: Data analysis yielded four themes relating to clinical education in PPATEPs: importance of clinical education, clinical preceptor responsibilities, clinical preceptor qualities, and barriers to clinical education. Participants indicated that clinical education was important for students to develop clinical skills and give them opportunities to make patient care decisions, and that several fundamental responsibilities and qualities contribute to being an effective clinical preceptor at the post-professional level.

Conclusions: Post-professional clinical preceptors recognized that an appropriate balance between autonomy and guided practice in clinical experiences fostered an effective learning environment which allowed post-professional students to improve their clinical and decision-making skills beyond their entry-level skill set. Preceptors should also demonstrate attributes of a clinician, educator, and communicator to be an effective mentor.

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INTRODUCTION

Athletic training clinical education originated from the medical education paradigm for training prospective physicians.[1,2] During experiences with direct-patient care, medical students received professional preparation and attained clinical skills through the dissemination of knowledge from clinical teacher to student.[3-5] Similar health care professions, such as physical therapy and nursing, have become more structured and organized in developing clinical education experiences, transitioning from unstructured learning experiences to constructive, outcomes based clinical education.[2,6] Clinical education involves a transfer of knowledge, and entails the ability to apply learned concepts in various, sometimes unfamiliar, situations.[7] The development and evolution of clinical education in other health care professions has provided a framework on how to approach athletic training clinical education.[2]

Athletic training clinical education is described as the process of attaining relevant psychomotor, critical thinking, decision-making, and professional skills through time spent in a clinical setting with patients.[2,8] Weidner[9] stated that, while the model and content of athletic training clinical education is progressing, the process of transferring knowledge must not be ignored. Furthermore, implementation of clinical education relies heavily on the interaction between the instructor and student during a student's clinical experiences.[2] Weidner[9] acknowledged that the style of information delivery dictates how successful students will be at retaining information. Therefore, to improve clinical education, the preparation and qualifications of clinical preceptors and student learning are key issues that need to be addressed.[10] Clinical preceptors are individuals associated with post-professional athletic training education programs (PPATEP), and their responsibilities are to manage, mentor, consult, and provide feedback that will strengthen post-professional students' current foundation of clinical practice.[11]

At the post-professional level, clinical education creates an environment for students to not only improve their technical and evaluative skills, but to further develop their problem solving and critical thinking skills as well.[12] Post-professional clinical education offers a higher level of training and preparation beyond entry-level competencies.[13] The most current policies regarding post-professional athletic training education are from the National Athletic Trainers' Association (NATA) 2002 Standards and Guidelines for Post-Certification Graduate Athletic Training Education Programs.[13] The Standards and Guidelines[13] reflect an emphasis on diversity of curricular content and clinical experiences by identifying points of program distinctiveness. Programs are expected to focus on advanced knowledge and skills related to both practice and research in athletic training.[13] According to the Standards and Guidelines,[13] post-professional athletic training education should focus on mastery of subject matter, critical thinking, theoretical understanding, proficiency in research and/or creative activities, service orientation, and a diverse representation of perspectives to produce a clinician who possesses greater critical thinking skills and enhanced clinical decision-making.[14] The Standards and Guidelines[13] currently state that clinical education is a recommended component for a PPATEP. While there are specific standards in place for incorporating clinical experiences into a PPATEP, such as providing students opportunities to develop skills beyond the professional competencies, those experiences are not regulated.[13]

The issue of clinical education in PPATEPs lacks extensive research, and there is limited support to guide the content that post-professional programs must provide regarding clinical education. Seegmiller[15] identified indicators of quality in post-professional programs as perceived by athletic training educators, and found that clinical education was one of the major contributors to program quality. Neibert[16] reported that post-professional graduates believed the clinical experience was essential to their mastery of subject matter and clinical decision-making. Furthermore, Henry et al[17] found that additional time to complete a degree, compounded with factors such as clinical experience, affected satisfaction levels of post-professional athletic training students.

It is important to understand educational practices in athletic training to ensure that clinicians continue to improve their skills, advance practice knowledge, and engage in current standards of practice as determined by both the NATA and Board of Certification (BOC).[18] Therefore, the purpose of this study was to use a qualitative research approach to explore clinical preceptors': 1) knowledge about post-professional clinical education; 2) views on post-professional clinical education; and 3) impressions of future post-professional clinical education. Ultimately, the goals for this study were to construct emergent themes and patterns from participants' shared experiences and identify what is significant about clinical education in post-professional athletic training education.

METHODS

Participants

We used randomized sampling and criterion sampling to solicit clinical preceptors for participation in this study.[19] Preceptors were selected for participation based on the following criteria: 1) currently affiliated with a PPATEP; 2) assigned as a clinical preceptor to a post-professional athletic training student; 3) had a minimum of a masters degree; 4) currently practicing as an athletic trainer; and 5) have been working in their current setting for at least 3 years. Candidates were randomly solicited from clinical sites that were affiliated with each PPATEP during the 2010-2011 academic year, including colleges and universities, high schools, clinics, and military institutions. Candidates were contacted via e-mail, explaining the purpose of the study

and asking for their participation. If the candidate did not respond via email, the primary researcher followed up with a phone call to establish contact. Additional preceptors at that same clinical site were randomly solicited if a candidate did not respond, chose not to participate, or failed to meet the predetermined criteria. If no one agreed to participate at a selected affiliated site, a different clinical site was randomly chosen, and the selection process repeated. Once a candidate agreed to participate, he or she completed a brief demographic questionnaire to ensure all predetermined criteria were met. Following completion of the questionnaire, a telephone interview was scheduled.

Fifty-eight clinical preceptors were contacted over an 8-month period; 11 of which (7 males, 4 females representing 11 of the 16 PPATEPs) participated in the study. The average participant age was 38±7.3 years, with a range of 31 to 53 years. Ten participants possessed a master's degree and one a doctorate.Total years of experience as an athletic trainer averaged 15±6.6 years, ranging from 9 to 29 years. All but one of the participants held positions at the Division I collegiate level, with the other at a Division III school. The clinical preceptors were informed that participation was completely voluntary, and provided verbal consent when they agreed to perform the telephone interview. All participants were given pseudonyms to maintain confidentiality (Table 1).

The Human Subjects Review Committee at the University approved this study.

Design

We used consensual qualitative research (CQR) as the main approach to explore clinical preceptors' experiences. CQR focuses on the use of multiple researchers, the process of reaching a consensus amongst the research team, and a way of examining data across all cases.[20] CQR provides an in-depth, descriptive investigation into what these individuals viewed as important principles, beliefs, and ideas based on their experiences in clinical education. We also used an emergent design, which welcomed the ability to change and adapt the interview process in accordance with emerging results.[21] As data were collected, different ideas emerged and observations evolved, allowing researchers to better understand it.[20,21] Researchers were guided by a set of interview questions, but were not constrained to a particular investigative path, because deviations from the interview process were considered meaningful data.[21,22]

Procedures

Telephone interviews were conducted using a semi-structured interview protocol to obtain insight on clinical preceptors' knowledge, experiences, and beliefs regarding post-professional clinical education. The interview protocol consisted of a series of 10 open-ended questions inquiring about participant knowledge, viewpoints, and considerations for post-professional clinical education (Table 2). As part of the emergent design, the interview protocol was flexible and the

Table 1. Participants' Demographic Information

Participant Pseudonym	Age	Sex	Degree	Years of Experience	Setting	Division
Agtarap	38	Male	Masters	15	College/ University	I
Bell	34	Male	Masters	12	College/ University	I
Brunett	50	Female	Masters	27	College/ University	I
Garcia	39	Male	Masters	16	College/ University	I
Harris	31	Male	Masters	9	College/ University	I
Jun	33	Female	Masters	11	College/ University	I
McPherson	32	Male	Masters	10	College/ University	III
Rodriguez	37	Male	Masters	14	College/ University	I
Schapiro	34	Male	Masters	13	College/ University	I
Dr. Sheets	53	Female	Doctorate	29	College/ University	I
Stratton	33	Female	Masters	14	College/ University	I

Table 2. Semi-Structured Interview Protocol

1. Please discuss how you would define clinical education versus clinical experience at the post-professional level.
2. Are you familiar with the clinical education standards for post-professional athletic training education programs set forth by the NATA *Standards and Guidelines*
3. What do you believe is the role of the clinical preceptor as it relates to clinical experience?
4. What do you believe is the role of the post-professional student as it relates to clinical experience?
5. Clinical education, which includes clinical experiences, is currently not required in post-professional athletic training educationprograms. Do you believe clinical education should be required or remain a recommendation? Please explain.
6. What qualities do you believe should be required of an athletic trainer to become a clinical preceptor for post-professional students?
7. What qualities would you expect from post-professional athletic training students?
8. Which aspects of clinical education, if any, would you like to see change in your current institution?
9. How should clinical preceptors provide evidence of the development of a post-professional student's skills and knowledge?
10. Please identify clinical education components that you feel should be emphasized within an accredited post-professional athletictraining education program.
* Note: Regardless of response, the standards were reviewed following this question to ensure all participants fully understood theStandards and Guidelines

questions and protocol evolved throughout the study.[20,21] The semi-structured nature permitted the researcher to ask each participant probing questions during the interview to explore their responses and clarify certain points. Furthermore, participants did not receive the interview protocol beforehand, so their responses were not premeditated. Prior to data collection, a panel of three athletic trainers with expertise in qualitative research and post-professional clinical education assessed the interview protocol to ensure that initial questions were relevant to the research aims and that no major topics were overlooked. A pilot interview was conducted with one of the individuals on the panel so that the primary researcher could become comfortable with the interview protocol prior to data collection.

Telephone interviews were audio recorded via a digital recorder (Sony Corporation, New York, NY) connected directly to the telephone. Verbal consent for recording the interview digitally was given prior to any questioning. Participants were asked to perform the interview in a comfortable and quiet environment, preferably their office.

Data Analysis

The CQR method involved three central steps to analyze data:1) responses from interview transcriptions were coded and key words were extracted; 2) key words were then grouped together to form categories; and 3) a cross analysis of data sets was performed to develop themes to describe the patterns within the categories (Figure 1).[20] Cross analysis included examining and comparing all participants' data to extract common themes. This portion of the data analysis was performed by all three members of the research team to reach consensus and limit the influence of researcher bias.[20] Hill et al[20] noted that the interpretation of qualitative data requires multiple perspectives, opinions, and levels of awareness to increase the approximation of the truth and be free from researcher bias.

As part of the consensus process, members of the research team openly discussed their interpretation of the data. This allowed their different perspectives to influence the data reduction and enhance the credibility of the analysis. Following discussion, each member's themes and categories were merged to conceptualize the consensus process. To ensure the trustworthiness of the data, the consensus process was substantiated by data triangulation through the use of multiple randomly selected participants, an auditor, and member checking. By using randomly selected participants, the research team was unaware of their clinical education experiences and could not predict how they would respond to the interview questions. The auditor double-checked the research team's work by being involved in the study but outside the consensus process, and provided

Figure 1. Consensual qualitative research (CQR) data analysis process

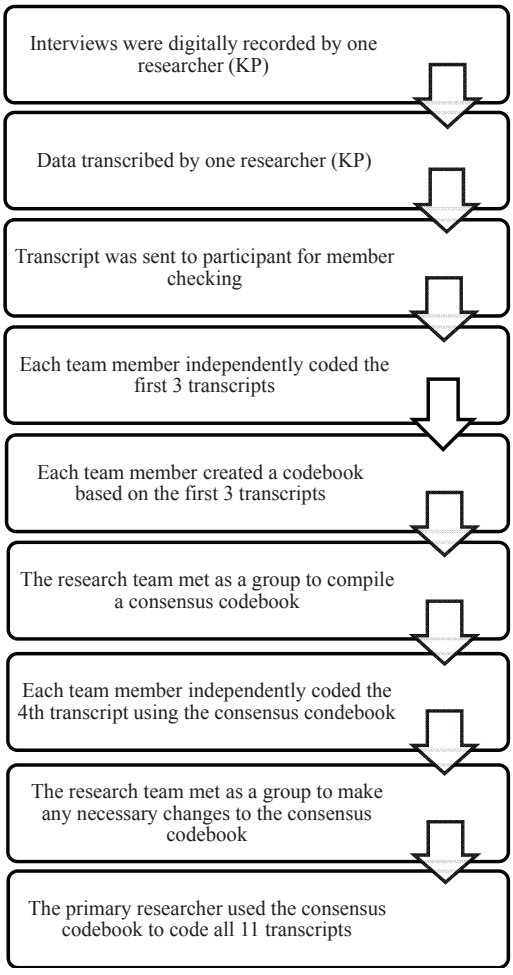
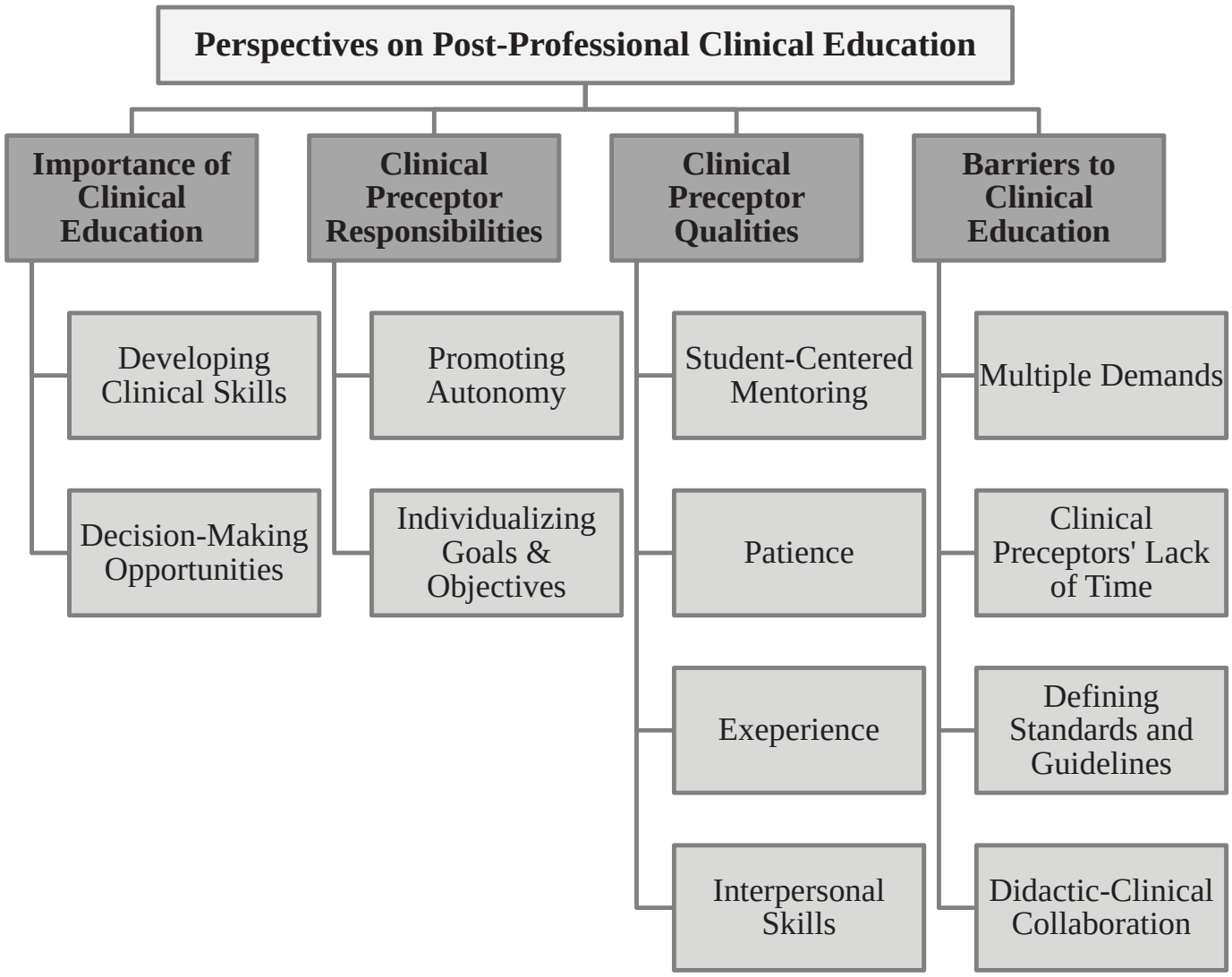


Figure 2. Conceptual Framework of Clinical Education Themes and Associated Categories



additional feedback that kept the research team focused. For this investigation, the auditor was an athletic trainer with experience with qualitative research, CQR procedures, and post-professional athletic training clinical education. Member checking involved the participant examining their transcribed telephone interview for accuracy.[20] They were encouraged to add comments and elaborations, but could not remove content from the original transcript.

RESULTS

After coding and the triangulation process, several themes emerged in relation to clinical education in PPATEPs: importance of post-professional clinical education, clinical preceptor responsibilities, clinical preceptor qualities, and barriers to post-professional clinical education. These themes were broken down into categories to propose what clinical preceptors viewed as important concepts and perspectives within post-professional clinical education (Figure 2).

Importance of Post-Professional Clinical Education

The importance of post-professional clinical education to post-professional students' development emerged as a significant theme. Responses regarding this theme fell into two categories: 1) further development clinical skill sets and 2) decision-making opportunities. Clinical preceptors discussed how students need and benefit from clinical experiences at the post-professional level. Many clinical preceptors recognized that their post-professional students were novice practitioners, and that practice was essential to improving clinical skills and decision-making.

Developing Clinical Skill Sets

Several participants noted that their post-professional students possessed entry-level skills and knowledge to practice as an athletic trainer, but that they must go beyond this level by learning more about injuries, surgical procedures, and how to reach an outcome through different means.[13]

I think it's for [post-professional students] to broaden what they've learned through their undergraduate experiences; be willing to accept new and different ideas and build upon those; really learn to develop their own identity within how they want to treat athletes, how they want to treat injuries, how they want to create their own niche and how they are going to [handle] things. (Schapiro)

From the clinical education side of things, the [professional] students coming out now have a better basis and better program than what I had. But I think they are probably lacking somewhat in the clinical experience side of things. It's not necessarily good or bad, it's just different. I think it's definitely a good thing that the better the clinical education you have, probably the better the clinical experience you're going to have in the long run…it's just a matter of being able to take that knowledge that they have and transitioning it into the clinical experience. (Rodriguez)

Decision-Making Opportunities

Exposure to opportunities that allow students to make patient care decisions autonomously was seen as an advantage to post-professional clinical education because it helps them gain confidence in their ability to make decisions regarding a treatment or intervention without direct supervision.

I think you would be at a huge disadvantage to have an athletic training post-professional program without incorporating a significant amount of clinical education and experience. Academically I think our students are getting the basic education that they need. However, clinically, they are not able to do that as much in the undergraduate setting. We have graduate assistants, staff athletic trainers, and then we have undergraduate students – by the time the undergraduate student has an opportunity to make a decision, it's already gone through a funnel of people. And so for someone to go to a [post-professional] program and still not be able to make decisions and be on their own and have that ability to work independently with a team or athlete or patient would definitely serve as a huge disadvantage. (Stratton)

I think just giving them the ability to have experiences doing evaluations and seeing injuries, and being the first to evaluate them, I think that hands-on [experience] is more valuable than anything you're going to learn in a book. (Jun)

I think the graduate student's role is to try to get as much experience as they can. I think it is to try those skills that they learned and to keep expanding on them so they can get better at it. Try and make some decisions and get some confidence in your in your skills and also to expand your role and knowledge. And then ask for help when you do need it.(Dr. Sheets)

Clinical Preceptor Responsibilities

The responsibilities clinical preceptors believed were necessary to mentor a post-professional student emerged as the second theme, the most important of which were promoting student autonomy and individualizing goals and objectives. Most participants agreed that to be an effective clinical preceptor, commitment to these responsibilities helped provide a learning environment for student development as a clinician.They also expressed that being a preceptor requires finding the balance between being an overbearing supervisor and an apathetic one.

Promoting Autonomy

The most often agreed upon aspect of post-professional clinical education was providing autonomy during clinical experiences. While this category overlaps with a previous one (ie, decision-making opportunities), clinical preceptors indicated they should not only provide the opportunity for autonomy, but should facilitate the behavior as well. Since the post-professional student should be certified, he or she must be capable of performing all the duties and fulfilling all responsibilities associated with being an athletic trainer.[13] Thus, while direct supervision is not required at the post-professional level, clinical preceptors indicated they were available for consultation if need be.

[Post-professional students] should function as athletic trainers. They should do everything an athletic trainer should do. They should go about their day like they have no one else to bounce ideas off of and have to make decisions in regards to management, treatment, evaluations, and emergency care like they are the only ones there; however, knowing the fact that if they do get into a pinch, they have other members to fall back on and to ask questions about, to bounce ideas off of. They should be able to function independently. (McPherson)

You need to…allow them to make decisions, watch and even discuss with them their problem solving process…you have to let them make mistakes, but you have to be there to sort of head the big ones off at the pass; sort of observing from afar but having some interactions and discussions after they have had the opportunity to make the decision and execute a plan…I think we also provide them with a level of independence or autonomy to be able to experience those things on their own. I think they're still learning; they're just starting to get a feel for things so we really try and encourage [autonomy] and try to develop their overall skills. (Agtarap)

Well I think as a clinical preceptor, it's my responsibility to allow the graduate assistants the opportunity to thrive in a clinical experience; give them the opportunities to be able to hone and practice their skills on a level that [the clinical preceptor] is observing but not commandeering and not mandating [their] own ways of doing things. (Harris)

Individualizing Goals and Objectives of the Students

A common role for clinical preceptors was to evaluate and provide feedback for post-professional students. This involved developing goals to work towards by assessing students' strengths and areas that needed improvement. Goals and evaluations were benchmarks for measuring student development; outcomes were obtained via observations made by the clinical preceptor, as well as having the post-professional student perform self-assessments.

I believe it is to help the student assess their clinical skill sets. Provide them the opportunity to make self-assessments and then to set goals relative to where that student is currently at with their clinical skill; and provide them with the necessary opportunities to learn new skills…then also to practice those new skills so they feel confident in performing them. (Brunett)

I like to get their perspective on things as a preceptor. It shouldn't just be my view, it should be their view. If there's something that they

really want to work on, I need to know that; I can't just assume… what are their goals and how can I help facilitate that with them. (McPherson)

Clinical Preceptor Qualities

Another theme that emerged from the data was the qualities that a clinical preceptor should exhibit. Aside from the recognized responsibilities for functioning as a clinical preceptor, qualities refer to distinct characteristics or traits that a clinical preceptor should possess. Participants noted that a mentoring approach, patience in dealing with post-professional students, experience as a clinician, and interpersonal skills are categories that make a clinical preceptor successful at facilitating a positive learning environment. Participants described these qualities as having an impact on how their post-professional students learn.

Student-Centered Mentoring

Mentoring is portrayed as the process of guiding the student's vision and professional advisement to help them transition into the workforce. Student-centered mentoring combines providing autonomy with the student's individualized goals and objectives, where students have enough space to prosper on their own, but also receive meaningful guidance.

I think there needs to be more of a mentorship relationship with the preceptor than a person who is just a colleague, or a person who checks in on you every couple of weeks or you call them when there's a problem…I think the important part of learning and making somebody better is in the middle of finding what things you can tweak to make better…give them opportunities to be autonomous and be athletic trainers…we feel like we have a little bit more interaction with [our post-professional students]…so that we can provide that guidance and leadership; develop that relationship as a mentor so that over the two year period they make the transition from student to staff member. (Bell)

My feelings are that it's almost a mentor type relationship…I see my role here working with graduate students is to give them guidance…it's walking that fine line between not letting them get completely away but also let them have the chance to be able to learn and experience things [on their own]. (Rodriguez)

One who can foster growth, one who understands that yes, there is a task that needs to be done, but there's also always an opportunity to learn…I think there are some preceptors out there that use the mantra: well this is how I did it and this is the way you're going to do it. That's not education in my idea. (McPherson)

Patience

Students at the post-professional level are expected to have entry-level skills and knowledge. However, it is important for clinical preceptors to remember that these students are novice practitioners, and that mistakes are inevitable. To facilitate a positive learning environment and provide autonomy, preceptors must have patience and allow the student to make patient care decisions independently, regardless of whether the action is executed as efficiently as possible.

There are those times where I can look at a [situation] and can almost, through experience, kind of see the result…you could almost foresee where the grad student may have a problem or there might be a concern there, but you have to have patience to be able to take that step back and allow them to experience it…allowing them to gain their experience without trying to jump in even though you know it might be a little bit more efficient that way. (Agtarap)

I think it's also very important to provide mentoring when needed, but also to let them go and make mistakes on their own…I think learning that way is actually much more enhanced by doing that. (McPherson)

Experience

Experience as a practicing clinician was as an important quality a clinical preceptor should possess. Participants agreed that the ability to adequately mentor post-professional students improved with experience in the field. While a specific duration of clinical experience was not identified, participants indicated that years of experience influenced the quality of student mentoring.

If you're assigning a graduate assistant to a clinical preceptor who's maybe one year ahead of them in terms of in the profession, not to say that there's not a lot for that preceptor to offer the student, but there's certainly an advantage to someone who's been out 4-5 years; who has seen more things…who can better understand the nuances. (Agtarap)

I feel like I do a better job of [mentoring] the more experience I get…experience definitely is something that would be beneficial just because the more you see the more insight you have to pass on. (Rodriguez)

Interpersonal Skills

This category relates to a clinical preceptor's ability to interact with the post-professional student in a way that promotes a positive learning environment. Communication skills and an encouraging attitude are a few characteristics that were identified to facilitate effective learning. It is important for clinical preceptors to exemplify these characteristics, so that the students know they have a support network when they experience adverse situations.

I definitely feel that they should be one heck of a communicator…they need to be able to articulate how to do things in a very constructive manner. They need to be able to provide constructive criticism and not [degrade] them...I feel [preceptors] should be empathetic and understanding of the situations that [post-professional students] are in. (McPherson)

I think one important thing is that you have to kind of reach out to them a little bit…reaching out to them and remembering that they're still relatively young and learning. (Rodriguez)

Barriers to Clinical Education

An important theme that became apparent through data reduction was barriers to clinical education. Clinical preceptors recognized several challenges that an individual or program may face when requiring a clinical education component in a PPATEP: 1) multiple demands on the post-

professional student; 2) clinical preceptors' lack of time;3) difficulties with defining standards and guidelines; and 4) obstacles with the collaboration between didactic and clinical settings. Participants who identified these barriers as aspects in their affiliated PPATEP would consider modifying them in order to enrich quality and enhance the effectiveness of post-professional clinical education.

Multiple Demands on the Post-Professional Student

Each PPATEP has different points of distinctiveness, in which different aspects of athletic training education are emphasized (ie research, education, or clinical skills).[13] Post-professional students often serve as a graduate assistant, and may have teaching and research responsibilities as well. When students attempt to accomplish the responsibilities of being a student and a clinician simultaneously, there is the potential for clinical education to suffer.

I think a disadvantage could be how they structure their program and require all of those things: the teaching, the research, the class work, as well as the clinical side. The students may get spread a little thin. If your program is structured that way and your student doesn't have good time management and struggles with wearing all those hats, then that may be a disadvantage of adding on another requirement. But it certainly can be done and I think it all goes together as long as it's organized and students have some lead time. (Bell)

I think with all the demands that we put on the graduate assistant, their clinical experiences sometimes will get pushed to the side based on some of the academic requirements that we have… thesis…[comprehensive exams]…teaching. (Stratton)

Clinical Preceptors' Lack of Time

Several participants indicated that a lack of time due to teaching loads, clinical duties, or both, limited their interaction with post-professional students in the clinical setting. Preceptors noted that the intent to provide a solid clinical experience was there, but that their numerous other duties often cut the student-mentor interaction time short.

It's just more about the workload I guess having the release time to be able to function effectively as a mentor, or a preceptor; to have the ability to structure your day so you can actually do that. (Brunett)

I think what would be very helpful is just having more time to mentor them and teach them rather than spending all that time taking care of players. (Garcia)

In clinical education I would probably like to see that [clinical preceptors] have more time but I don't know if that's ever going to happen…I would like to be able to spend time and show [the student] more things. But I don't have that time, I have to work football. (Dr. Sheets)

Defining Standards and Guidelines

Other results revealed that it is also necessary to identify the difficulty in defining the extent and nature of the knowledge and skills clinical education should provide at the post-professional level. The Standards and Guidelines[13] states that if a program does decide to offer a clinical education component, then there must be a structured, formalized plan to ensure learning opportunities and student development assessments take place. However, the content and structure of the formalized plan is left open for individual programs to design based on the strengths of their faculty and facilities available.

I think one of the hardest things to do is to establish what are the advanced clinical skills that these [post-professional students] want to learn, or that you feel they should learn. So what is an advanced clinical skill? It's very difficult since it's not really defined anywhere. Now we have the role delineation to tell us what an entry level skill is [at the professional level], but I think advanced clinical skills seem to be somewhat more place dependent…do people get to self-select what they want to learn, or is there really a basic minimum? I think if clinical education was to be a required part of [post-professional curricula] that would probably be the first challenge. (Brunett)

Collaboration between Didactic and Clinical Settings

Clinical preceptors expressed that a lack of collaboration between what the post-professional students were learning in the classroom and what they were experiencing during the clinical education component was another barrier to clinical education. A disconnect between the didactic and clinical settings may inhibit the clinical experience. If preceptors are unfamiliar with concepts their student is learning in the classroom, they cannot accurately mentor application of that knowledge in the clinical setting. Conversely, the preceptor may assume that the student has learned certain skills in the classroom, potentially reducing their confidence when he or she cannot perform the skill as expected within clinical practice.

I think what I saw was that disconnect between what was going on clinically with patient care and what was being taught in the coursework, and that there wasn't a lot of collaboration between faculty and clinicians…I had the opportunity over the last five or six years to work with our program director and kind of change the culture of how the clinicians view their role, and how the graduate students view their role based on just having people be more engaged with the process; get involved with the teaching component, being involved with the research component, and try to

Table 3. NATA Standards and Guidelines for Post-Professional Athletic Training Education Programs, 2002[13]

Clinical Education Standards and Guidelines
PPATEPs that choose to offer a clinical education component must have a formal, organized and structured plan that should reflect provisions for progressive development of clinical skills and knowledge and a system for measuring student achievement.
The purpose of clinical experience at the post-professional level is not just to provide a workforce for the institution or affiliated site but more notably it is to provide an educational opportunity for the graduate student.
Clinical experiences at the post-professional level must allow for a level of responsibility that s compatible with the credentials and expertise possessed by the graduate student, which translates into opportunities to develop their administrative and decision-making skills during their clinical experience.

make it more integrated…I think the logistics of taking the structure that you have and making sure that there is that collaborative approach between their academic and clinical work, to have that somehow connected, is also one of the bigger challenges. (Brunett)

You're teaching [new concepts] to the graduate students but you're not necessarily going over it with the people that oversee them. It's hard to do something new when the knowledge is so fresh and new that not everyone knows about it; or there hasn't been enough research done on this technique…I think that the graduate program needs to go out to the clinical preceptors and meet with them a little bit more often to go over some of the stuff…I think that everyone has not enough time and always more things to do than time to do them but I think it's probably something important that needs to be done everywhere. (Jun)

DISCUSSION

Clinical education is not currently a required component of post-professional athletic training education programs, and thus is not strictly regulated.[13] Programs that do provide a clinical education component must have a formal plan with structured experiences that offer advanced learning opportunities.[13] However, with such loose standards, it is difficult to either assess clinical education quality or specify the focus of clinical education at the post-professional level. Therefore, we sought to gain a better understanding of this topic by examining essential elements of post-professional clinical education from a critical viewpoint: the clinical preceptors. Three of the four themes that emerged from this study (importance, clinical preceptor responsibilities, and clinical preceptor qualities) correspond with the principles outlined in the Standards and Guidelines for Post-Professional Athletic Training Education Programs[13] (Table 3). Although the majority of participants were not familiar with the clinical education component within the Standards and Guidelines,[13] the themes that emerged from the data do support the principles and philosophy of the NATA Executive Committee for Education and the Post-Professional Education Council in regard to post-professional clinical education. PPATEP administrators should ensure that their clinical preceptors are familiar with the clinical education guidelines, since preceptors influence post-professional students' learning.[2] These themes illuminate the clinical education relationship between the clinical preceptor and the post-professional student. It is important to understand this relationship to improve clinical education quality in PPATEPs.

Importance of Clinical Education

Participants highlighted the importance of post-professional clinical education by indicating that it provides students with the opportunity to further develop their clinical skills, as well as refine the entry-level skills they learned at the professional level. While knowledge can be gained through a didactic component via lectures, course work, and simulated clinical situations, learning through exposure to actual patient care should also be valued.[23] In regards to the evolution of professional nursing practice, Edmond[23] suggested that clinical education should be regarded as highly as academic learning. A better understanding of clinical education through a more rigorously analyzed and integrated culture of clinical education was essential to advancing nursing practice,[23] which is an approach that can be taken with post-professional athletic training clinical education as well.

The ability to make decisions regarding patient care is a skill that must be developed. Clinical preceptors noted that post-professional students seem to have adequate knowledge to make clinical decisions, but their thought process needs to be more certain. Participants added that this uncertainty might be a result of their limited opportunities to make autonomous clinical decisions as novice clinicians due to the length of a professional program, rather than a lack of clinical skills or knowledge. The purpose of clinical experiences at the post-professional level is to provide ample opportunities to make independent clinical decisions regarding patient care.[13] Neibert[16] described this as "learning in a low-pressure, low-consequence environment."[(p. 387)] Thus, clinical preceptors believe that clinical experience is essential to building confidence and gaining the experience needed to make effective patient care decisions, which in turn will reduce the distance between what they do not understand and what they do understand.

Distinguishing the Role of the Clinical Preceptor

In medical clinical education, Ullian et al[24] proposed that medical residents associate their clinical teachers with four roles: person (provides support and shows commitment towards residents), physician (expert in content area, role model for residents), teacher (facilitates learning, knows how to convey information), and supervisor (approachable, stimulates development, gives feedback). The authors suggest that clinical teachers approach and emphasize different roles based on their interaction with residents as well as the clinical learning environment.[5,24] While the learning environment depends on the teacher, learner, and physical setting, teacher behavior plays a crucial role.[25]

With similar findings, Sutkin et al[26] conducted a systematic review of literature pertinent to the question, "What makes a good clinical teacher in medicine?" The authors examined published literature (including essays, surveys, qualitative investigations, observational studies, and empirical data) which yielded more than 400 descriptors of good clinical teaching in the field of medicine.[26] The authors grouped these descriptors into 49 themes, which yielded three broader clinical educator categories: physician characteristics (competent, professional, experienced), teacher characteristics (provides feedback, actively involves students, stimulates learning), and human characteristics (communication skills, enthusiastic, patient).[26] They suggested that clinical teaching is multifactorial and highlighted by non-cognitive attributes, such as personality typology, emotional states, and relationship predispositions.[26] The authors argued that to maximize teaching effectiveness, a clinical educator must depend less on the acquisition of cognitive skills and knowledge and formulate attributes that inspire, support, and actively involve students.

The themes that emerged as responsibilities and qualities for clinical preceptors are comparable with clinical teacher characteristics in medical clinical education. Clinical education should involve "clinician-teachers who not only supervise students in their development of technical skills and applied knowledge but also serve as role models of the values and attributes of the profession and of the life of a professional."[26(p.452)] The clinical preceptor's role

in post-professional clinical education is different than professional undergraduate education because students are practicing athletic trainers and do not require constant, direct supervision.[13] Participants in this investigation perceived post-professional students as staff athletic trainers, performing at similar capacities in regards to patient care. Nonetheless, clinical preceptors indicated that post-professional students are still entry-level athletic trainers and have more to observe and learn. Participants indicated that their primary role as a clinical preceptor is promoting autonomy and providing the post-professional student with the independence to make clinical decisions and further develop their clinical skills. Providing autonomy, however, does not infer minimal communication from the clinical preceptor. Instead, the clinical preceptor must still be available for guidance and consultation. Participants agreed that clinical preceptors actively participate in the formulation of individualized clinical objectives and goals as a way to communicate needed areas of improvement.

Post-professional athletic training clinical education also has similarities to pharmacy residency training, where the preceptor oversees students involved in a pharmacy practice experience, and is viewed as a vital component of student's learning experiences.[27,28] Skrabel et al[29] examined the benefits of mentorship in pharmacy residencies from the perspectives of preceptors, students, and the profession. They indicated that essential traits of effective preceptors were: 1) being flexible and open to suggestions; 2) helping build confidence and identify weaknesses; 3) offering constructive feedback; 4) being encouraging and enthusiastic;and 5) challenging students daily.[28,29] The American Society of Health-System Pharmacists (ASHP) has guidelines for preceptor qualifications, credentials, and development in relation to pharmacy residency training. Preceptors in pharmacy residency programs must demonstrate their desire and aptitude for clinical teaching, as well as their abilities to provide feedback and evaluate resident performance.[30] Preceptors must also demonstrate their continual pursuit to refine their teaching skills.[30] Furthermore, in an attempt to emphasize the mentoring process, Marrs & Rackham[28] believed that pharmacy students should be exposed to mentorship opportunities during their residency training. Developing mentorship skills at this level is proposed to improve the quality of instruction and training of pharmacy students, contributing to the posterity of the profession.[28] This approach promotes opportunities for the students to establish a foundation for mentorship, while still receiving feedback from their preceptors on how to obtain the most effective results.

Mentoring a student to improve his/her limitations involves assessing those issues, implementing a correction strategy, and monitoring progress.[13] This student-centered mentoring is an essential component to post-professional students' clinical experience.The shift in the educational paradigm of teacher-oriented to student-centered learning applies to the clinical realm, as well as to the didactic domain.[31] Instead of the clinical preceptor influencing the post-professional student with what they need to know and how they should carry out certain tasks, the focus should be on the student's needs and the areas in which they can improve.[25] Clinical preceptors must find balance between being too controlling and being too apathetic as a clinical teacher.

Barriers to Clinical Education

Students in post-professional athletic training programs often fulfill the roles of student and graduate assistant, and may also have teaching and research responsibilities as well. Participants in this study viewed these multiple demands as a barrier to clinical education, because stress can precipitate a decline in clinical experience quality. Additionally, it is important to remember that both post-professional students and clinical preceptors have multiple demands on their time. Since clinical preceptors are clinicians first, they often feel that there is not enough time to mentor studentsproperly to ensure effective learning.

The difficulty of defining the extent and nature of the knowledge and skills clinical education should provide emerged as another barrier to clinical education. The current Standards and Guidelines[13] do not describe a specific structure for clinical education, only mentioning that a formal plan must be utilized, and that clinical experiences must offer effective learning opportunities. This openness leaves room for interpretation, which participants acknowledged makes it difficult to standardize what clinical education should entail in regards to competencies and proficiencies andmethods for monitoring and assessing student progress at the post-professional level. A program's clinical education plan depends on the framework in which it operates and what resources (eg, faculty, clinical coordinator, and clinical preceptors)the program has available. Participants reported that it is important to communicate and integrate what post-professional students are learning in the classroom into their clinical experiences. Thus, emphasis should be placed on all components (ie, clinical practice, education, research) of the PPATEP equally[32] to expand the graduate student's depth and breadth of knowledge and skills to function in clinical, teaching, administrative, and research environments.[13]

LIMITATIONS

The clinical preceptors that participated in this study constitute a sample that may not be representative of the entire population of clinical preceptors associated with PPATEPs. Although attempts were made to recruit clinical preceptors from all programs, only 11 of the 16 PPATEPS were represented, as some candidates from affiliated clinical sites declined to participate, some did not meet the set of predetermined criteria, and others did not respond to emails and phone calls. In addition, the clinical preceptors who took part in this study were all from the university/ collegiate setting, with the majority working in Division I athletics. There are PPATEPs that use clinical preceptors in other NCAA divisions, NAIA institutions, high schools, therapy clinics, and professional sports. Clinical preceptors in different settings may have different perspectives to offer in regards to clinical education and clinical experiences at the post-professional level.

CONCLUSIONS

In regards to the Standards and Guidelines,[13] the data reflect what the NATA Post-Professional Education Committee currently identify as desirable characteristics of clinical education (Table 3). Participants recognized that clinical education allowed clinical skills to improve and post-professional students to make autonomous

decisions regarding patient care. Clinical preceptors should demonstrate attributes of a clinician, educator, and communicator to foster an environment where a post-professional student can effectively develop and build on their entry-level skills, while providing a balance of autonomy and guidance.[24,26] The clinical environment should be managed so that decisions can be made without repercussions, with assistance always available.To ensure that clinical preceptors are aware of and understand clinical education standards and guidelines, there should be specific objectives within the NATA Standards and Guidelines[13] that establishes the role of the clinical preceptor.

Future research should investigate post-professional students' perspectives on clinical education in PPATEPs. Themes from post-professional student perspectives can be compared with clinical preceptor perspectives to identify aspects of clinical education that should be emphasized and integrated to enhance clinical education. Further investigations should determine whether the clinical preceptor role influences student learning – does it help acquire skills and apply knowledge to patient care? If so, which characteristics stand out? Additionally, how can clinicians develop into effective mentors? Should methodologies for educating professionals be expanded, or will developmental workshops suffice?These are important questions to explore, as clinical education in athletic training continues to evolve and challenge how we educate clinicians.

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