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ORIGINAL RESEARCH

Student Perceptions of Standardized Patient Use in Athletic Training Education

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Context: Though commonplace in medical education, standardized patients (SPs) have only recently been introduced into athletic training curricula. Limited research exists on students' perceptions of SPs as an evaluative and learning tool.

Objective: To determine how students interact with SPs within their curricula and to explore students' perceptions of SP experiences.

Design: Consensual qualitative research.

Setting: Individual phone interviews.

Patients or Other Participants: Nine athletic training students (5 professional baccalaureate, 4 professional postbaccalaureate; 8 females, 1 male; age = 23.89 ± 3.33 years) enrolled in the final semester of their program.

Main Outcome Measure(s): Semistructured interviews were recorded, transcribed verbatim, and coded into themes and categories. To ensure trustworthiness, we used member checks and multiple analyst triangulation.

Results: Two themes emerged regarding the perceptions of the SP experiences: (1) encounter characteristics and (2) perceived value. Participants described typical SP encounter characteristics, including the environment where they occurred and the format and content of the encounter. Standardized patients were used to provide exposure to orthopaedic evaluation, general medical conditions, and emergency situations. Students felt SPs were valuable for improving both clinical and soft skills. Most participants felt the encounters were authentic and that they were able to transfer skills learned into their clinical practice. Students expressed desire for more SP encounters throughout their curriculum to increase preparedness for clinical practice. Challenges associated with SP experiences included difficulty interacting with peers in group encounters and limitations in the accuracy of the portrayals. Overall, participants perceived SP encounters to be positive and worthwhile experiences.

Conclusions: Programs should ensure that SP experiences are authentic, applicable, and emphasize the development of soft skills, such as communication. Based on the demonstrated benefits of SP encounters for students, athletic training faculty should consider exploring ways to incorporate SPs into their curricula.

Key Words: Clinical education, simulated patients, qualitative research

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Student Perceptions of Standardized Patient Use in Athletic Training Education

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KEY POINTS

- Standardized patients are increasingly being used in athletic training programs for teaching and assessment of clinical skills.
- Standardized patients are a valuable tool for consistently improving clinical and soft skills of athletic training students in a standardized, simulated environment.
- Athletic training students find standardized patient encounters authentic and valuable to their professional development.

INTRODUCTION

Standardized patients (SPs) have been used as an educational tool to provide a consistent approach to professional preparation by several health care professions.[1–4] Standardized patients differ from simulated patients, which are often used in role play scenarios to portray a large variety of conditions.[4,5] Standardized patients are individuals formally trained to portray an injury or illness's symptoms and effects in a consistent or standardized fashion to multiple students.[4] Introduced by Barrows[6] in 1964, SPs have been used primarily in medical education for the past 50 years.[1,7,8] Initially implemented to provide students experience with neurological examinations,[6] SPs have evolved into tools which provide a variety of benefits to not only medical students,[1,7,8] but to students in other health care programs, such as physical therapy,[3,9] nursing,[2,10] and pharmacy.[11,12] They have been used for both teaching[1,6,7,13] and assessment,[6,7,13] with particular emphasis on clinician-patient communication[1–3,7] and clinical skills.[3,14] Though SPs often portray common pathologies, they also allow students to gain more experience with uncommon scenarios that they may not encounter in their clinical experience, such as emergency care.[4–6,9,15,16] Standardized patients provide a consistent and uniform method for both teaching[1,6,7,13] and assessment[6,7,13] to improve communication[1,3,7,17] and clinical skills[3,14] with continued emphasis on providing valuable feedback[1,8,18] to the student. As the benefits of SPs become more apparent, their use has become more widespread in other health care programs, including athletic training.[4,13,19]

Traditionally, the majority of patient encounters within athletic training clinical education include simulated or real-world encounters, and only recently has the use of SPs been introduced into some athletic training curricula.[4,19,20] The purpose of clinical education is to develop competent and confident clinicians,[20] so the use of SPs should be explored in athletic training in order to determine if the benefits of SPs translate across health care professions. Current research indicates that SPs in athletic training education have improved students' self-reflection and confidence in clinical skills as well as psychosocial intervention and referral skills, though long-term results remain unclear.[13,14,20,21] Armstrong and Jarriel[14] found an increase in student confidence ratings after SP encounters, particularly in terms of improved clinical decision making and communication skills. However, there is limited research available on students' perceptions of SP encounters as a mechanism for developing clinical skills. Walker and Weidner[13] reported that SP encounters provided a worthwhile experience for both learning and assessment with an increase in confidence as a result of these encounters. Because only a small cohort of students from 1 institution were investigated, additional research identifying a broader perspective of students from multiple institutions is warranted. It remains unclear how these experiences translate into how students are able to treat patients in real-world encounters. Additionally, much of the existing literature on SP usage in athletic training education focuses primarily on student confidence,[13,20] while there is a lack of understanding of the overall student perceptions of SPs encounters. Understanding student perceptions of their experiences with SPs is critical in evaluating the efficacy of SPs as a tool for teaching and evaluating athletic training skills. In order for SPs to be widely implemented across athletic training curricula, we must first have an understanding of how students are interacting with SPs as well as in what ways, if any, students are finding these interactions valuable to their learning. Findings therefore suggest additional research investigating the different methods SPs can be used to teach and evaluate skills. Therefore, the purpose of this study was twofold: (1) to determine in what capacity students are interacting with SPs within their curricula and (2) to explore student perceptions of SPs in athletic training education.

METHODS

Design

This study was a qualitative research design performed and analyzed in the consensual qualitative research (CQR) tradition. Consensual qualitative research was developed as an integration of phenomenology, grounded theory, and comprehensive process analysis.[22,23] The combination of these approaches allows for an increased emphasis on a multiple-investigator consensus process to garner a diverse perspective on the meaning of the data.[22] The use of open-ended questions through semistructured interviews guides the data collection process.[22–24] Several investigators are used in the data analysis process for consensus on the meaning of the data by separately analyzing it before convening for discussion and analysis.[22,23] This methodical approach enhances the representation of the data within the results, with the goal of gaining multiple perspectives in order to enhance the understanding of the meaning of the data.[22,24] This ensures accurate representation of the data while diminishing any individual researcher bias.[24] Additionally, CQR uses an auditing process through both internal and external auditors in order to further ensure accuracy of the data.[22,24] All components of this study were approved by the institutional review board prior to data collection.

Table 1. Participant Characteristics

	Age, y	Sex	Cohort Size	Total SP Encounters	SP Frequency per Semester	Length of Program	Program Type	Type of Encounter	NATA District
Emma	23	F	20	4	1	2	PB	IPE, G	9
Lena	22	F	20	4	1	2	PB	IPE, G	9
Hayleigh	32	F	13	4	1	3	B	A, I/G	9
Mariana	22	F	14	8	8	3	B	T, I/G	4
Teri	22	F	21	7	2	2	B	A, I	9
Daphne	26	F	20	8	3	2	PB	A, G	8
Jude	22	M	20	8	2	2	B	A, I	9
Monte	22	F	5	36	6	3	B	T/A, I/G	4
Courtney	24	F	12	4	1	2	PB	A, I	6

Abbreviations: A, assessment; B, baccalaureate; F, female; G, group; I, individual; IPE, interprofessional education; M, male; NATA, National Athletic Trainers' Association; PB, postbaccalaureate; SP, standardized patient; T, teaching.

Participants

Participants were recruited based on a previous study which identified athletic training programs who are currently using SPs within their curricula.[25] For inclusion into this study, participants must have undergone at least 1 SP encounter within their curriculum at the time of the phone interview. Though random sampling of the identified population is encouraged by the CQR process,[22] the small number of accessible individuals who met our inclusion criteria prevented a random sampling of our population of interest. Snowball sampling was also used during data collection by asking participants to inform other eligible students within their program to contact the primary researcher if interested in participation. Nine students within the final semester of their program (5 professional baccalaureate, 4 professional postbaccalaureate; 8 females, 1 male; age = 23.89 ± 3.33 years) were interviewed. Our participants represented athletic training programs from multiple geographic regions across the United States, with over half from the southeastern district. Additional demographic data regarding the participants, athletic training programs, and the SP encounters can be found in Table 1.

Table 2. Student Interview Protocol

1. Can you tell me the specific content and learning objectives for the SP encounters you have experienced in your program?
2. Based on your knowledge and experience, how would you describe a typical SP encounter in your program?
3. Do you feel the SPs are realistic encounters? If yes, why; if no, why not?
4. Describe any forms of feedback, if any, you receive with each SP encounter.
5. Can you describe for me the most beneficial SP encounter you have experienced and why you felt it was the most beneficial encounter?
6. Can you describe for me the least beneficial SP encounter you have experienced and why you felt it was the least beneficial encounter?
7. Why do you think your program uses SPs?
8. What have you found to be the benefits, if any, for you in using SPs in your education?
9. Can you describe any skills, if any, in which SP encounters have helped your learning process?
10. Do you feel SP encounters have had any negative effects on your learning?
11. Can you describe for me any other type of simulated patient encounters your program has exposed you to?
12. If you were to provide tips to other athletic training students about SP encounters, what would you say?
13. Do you have any additional comments or experiences you would like to share or elaborate on at this time?

Abbreviation: SP, standardized patient.

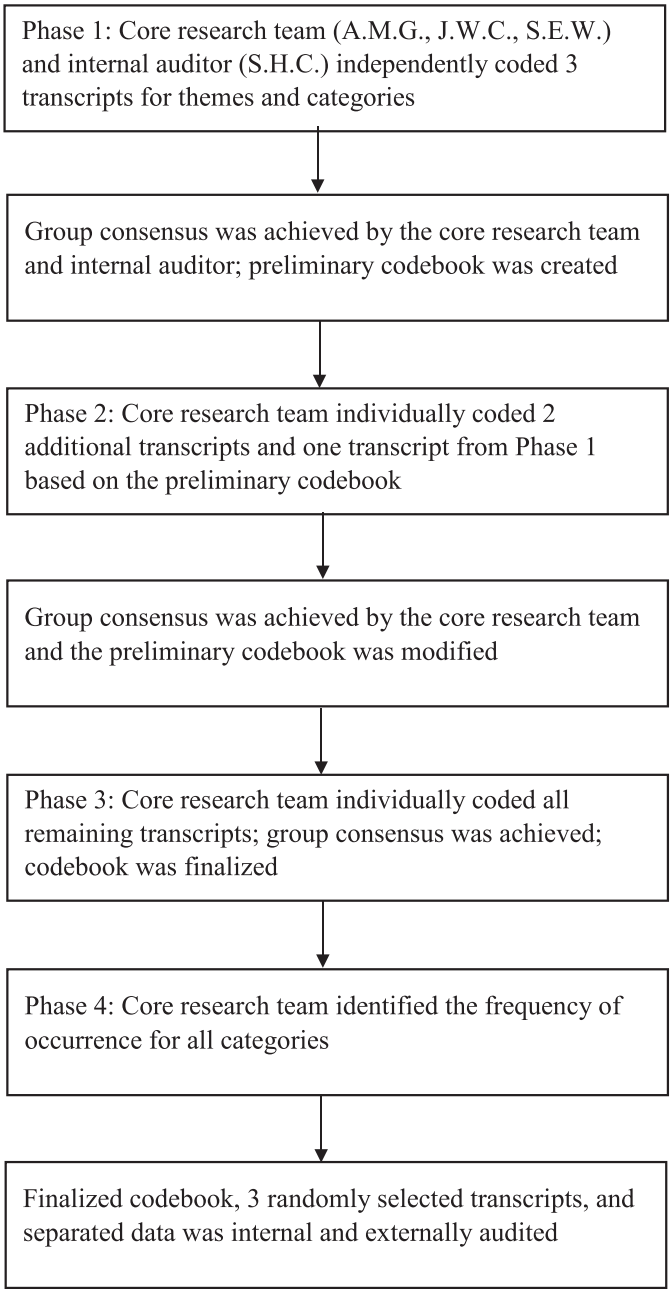
Instrumentation

The semistructured interview protocol included 20 open-ended questions. The first 7 questions pertained to demographic questions relating to both the student and their program (Table 1), with the final 13 questions relating to the perceptions and understanding of the student's SP experience (Table 2). The protocol was developed by the primary researcher based on the purpose of the study. The aim of the protocol was to determine the content and learning objectives associated with the SP encounters as well as how students felt about the engagement they had within the encounters and the realism of the encounter itself. Based on our review of the literature pertaining to SP use within athletic training curricula,[4,13,14,19] programs use SPs as an assessment measure of students' clinical evaluation abilities as well as soft skills, such as increased confidence. In line with the CQR process,[22] the questions within our interview protocol were developed based on this previous research.[4,13,14,19] The protocol was reviewed for content and clarity by 2 other members of the research team (S.E.W., B.L.V.), both of whom were trained in qualitative research design. The primary researcher, who was formally trained in qualitative interview techniques, performed pilot testing through interviews with 2 senior-level students at 1 southeastern regional institution, and necessary modifications were made to create the final interview protocol.

Procedures

Students who responded to the recruitment email from their program directors were screened for inclusion criteria and an interview was scheduled. Once consent was obtained, the primary researcher performed the interviews via phone, which lasted 20 to 45 minutes. All interviews were completed from January to June 2016. All interviews were audio recorded (DreamSky Mini Digital Drive Pen Drive Disk [8GB]) and transcribed verbatim by a professional transcriptionist. Two

Figure 1. Consensual qualitative research.



members of the research team (A.M.G., J.W.C.) reviewed recordings and cleaned the transcripts for accuracy.

Data Analysis and Management

All of the research team members were trained in the CQR process by an expert in CQR (C.E.W.). Data were analyzed using the CQR method with a 5-person research team consisting of the primary researcher, 2 additional core research team members (A.M.G., S.E.W.), an internal auditor (S.H.C.), and an external auditor (C.E.W.). Consensual qualitative research consists of 4 phases, as outlined in Figure 1. The first 3 phases of CQR involve independent coding of data among multiple research team members followed each by a group consensus to create preliminary and finalized codebooks.[22] The consensus process allows for multiple analyst triangulation, and the variety of viewpoints helps to decrease researcher bias and gain a better understanding of the meaning of the data.[22] Phase 4 consisted of frequency counting of categories, which assigns a numerical value to the number of participant cases in which each category was identified (Table 3).[23] Frequency counting allows a depiction of representativeness of the data by determining how often each category was applied across the sample.[24] Data saturation was confirmed via Phase 1 of data analysis combined with the internal auditing process. No new data were found, and it was determined based on this process that data saturation was reached. Demographic data were analyzed using the SPSS (version 22.0; SPSS Inc, Chicago, IL). In order to maintain anonymity, participants were assigned pseudonyms, and all identifying information was removed from the transcripts prior to data analysis. Data was secured and made accessible only to members of the research team in order to maintain participant confidentiality.

Table 3. Participant Cases by Category

Category	Frequency[a]	No. of Participant Cases
Encounter characteristics		
Environment/setup	General	8
Format	General	9
Evaluation/grading	General	8
Feedback	General	8
Perceived value		
Purpose	General	9
Skills gained	General	8
Training/authenticity	General	9
Benefits	General	9
Challenges/shortcomings	General	9
Other viewpoints/tips	General	9

[a] Frequency component: general, all or all but 1 case.

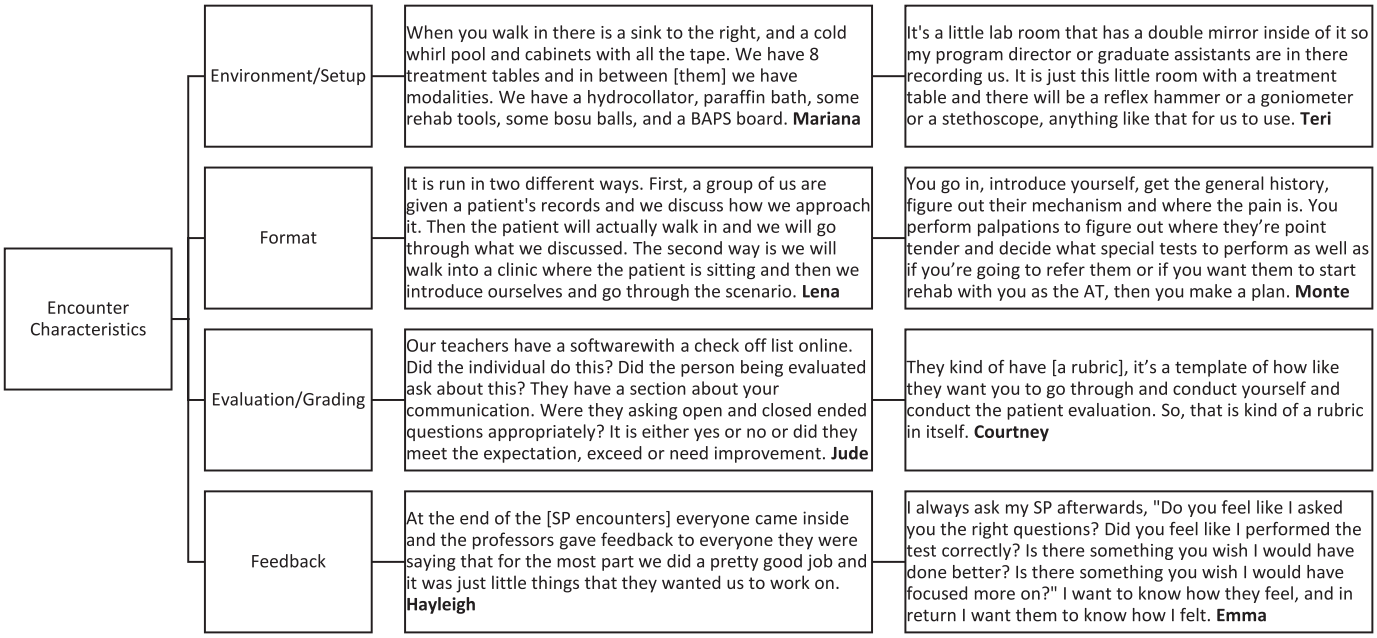
Trustworthiness

Several strategies were implemented in order to establish trustworthiness of this study. First, transcripts were e-mailed to each participant to ensure accuracy of the interviews as a method of member checking.[23] As described by the CQR process, member checking not only allows participants the opportunity to check for accuracy, but further to comment on how well the data analysis represents the experience they described.[22] Four participants responded to the member-checking e-mail, and all 4 indicated that their transcripts were accurate representations of the interview. Additionally, the use of CQR includes several researchers, which allows for multiple-analyst triangulation of the data throughout the research process.[22,23] The research team, which included both an internal and external auditor, used a consensus process throughout data analysis and coding in order to ensure accuracy of data representation as well as decrease individual researcher bias. This process allowed multiple perspectives to investigate the meaning of the data.

RESULTS

Two themes emerged from data analysis: encounter characteristics (Figure 2) and perceived value (Figure 3). Encounter

Figure 2. Encounter characteristics. Abbreviations: AT, athletic trainer; BAPS, biomechanical ankle platform system; SP, standardized patients.

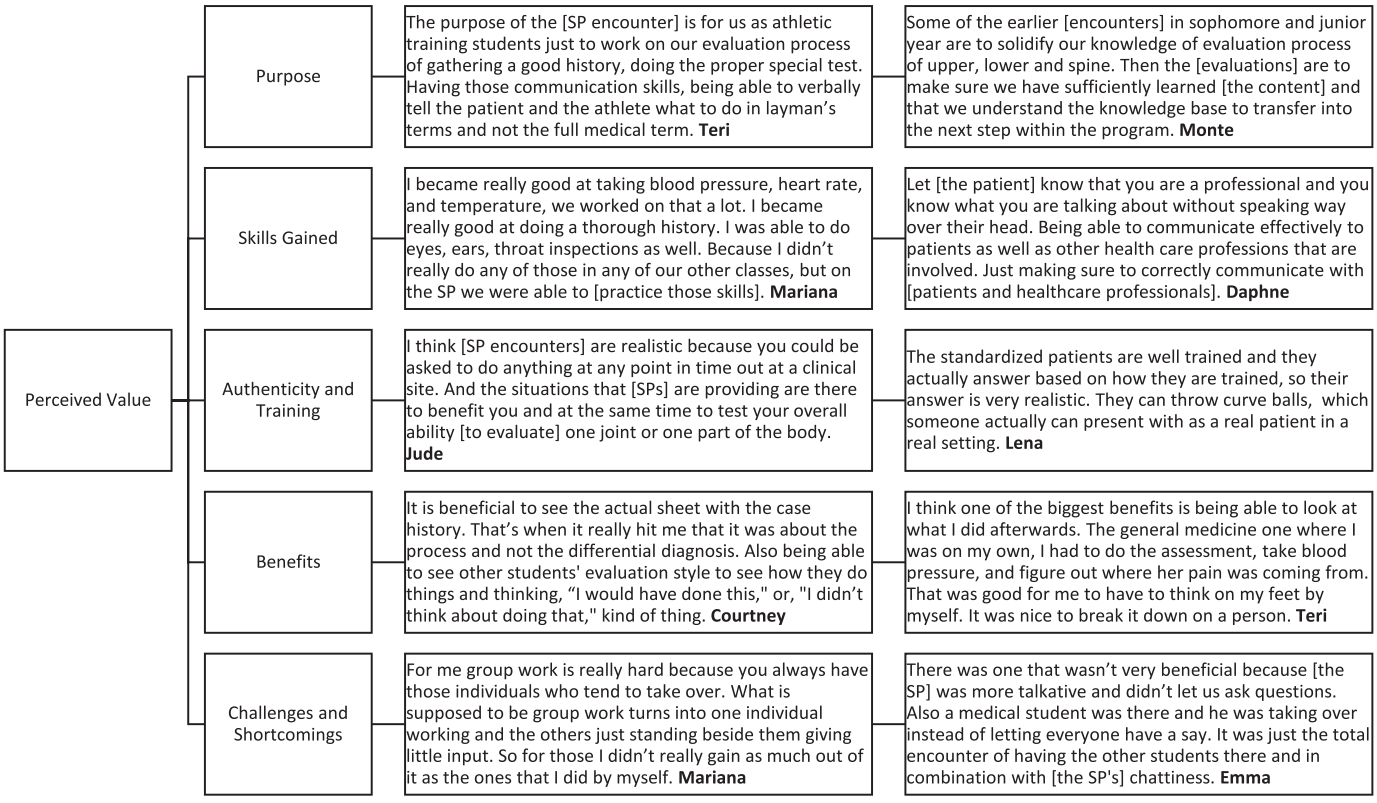


characteristics were subdivided into 4 categories: environment and setup, format, evaluation and grading, and feedback. Perceived value was subdivided into 5 categories: purpose, skills gained, SP training and authenticity, benefits, and challenges and shortcomings. Frequency of each category was divided into 4 components: general, typical, variant, or rare (Table 3). All of our categories were considered general, as they were discussed in 8 to 9 participant cases.

Encounter Characteristics

Environment and Setup. Students described the environment in which their SP encounters took place, including the location and setup of the encounter. Most encounters occurred in a classroom, simulation lab, or mock clinic mimicking the setup of an examination room in a physician's office or athletic training facility. For example, Emma

Figure 3. Perceived value. Abbreviation: SP, standardized patients.



described, "This last [SP encounter] we did was in an office type setting, so they had the tables that are in doctor's offices." Participants indicated that the mock lab included a window or 1-sided mirror so the student and SP could go through the encounter with the faculty or instructors sitting in another room to observe. Most of the participants indicated that all necessary supplies to execute an encounter were provided to them by the faculty conducting the encounter. The amount and extent of equipment provided to the students varied based on the type of encounter, but could include tables, rehabilitation equipment, and vital sign or emergency assessment tools.

Format. Format referred to the type of encounter (individual versus group, teaching versus assessment), specific class content, and learning objectives, as well as how the encounter was conducted from start to finish. Specific content discussed were musculoskeletal/orthopaedic evaluation (ie, anterior cruciate ligament tear, shoulder impingement, acute ankle sprain), general medical skills (ie, temperature, ears/nose/throat, blood pressure), and emergency medical situations (ie, heat illness, asthma attack, anaphylaxis). Most students indicated that the format of each encounter included receiving patient information, obtaining a history, and performing an evaluation which would include special tests and the use of evaluative tools (ie, sphygmomanometer, otoscope, ophthalmoscope) to obtain a differential diagnosis. While most participants voiced similar formats as described above, Hayleigh experienced a unique SP experience where students went through multiple stations of both SPs and simulated patients as a culminating evaluation during her senior year:

> *We had 5 or 6 stations, and it was not just me, it was maybe 5 or 6 other classmates doing it at the same time. So, I might have been at station 1 and then there was 4 other classmates at stations 2 through 5, and then we rotated.*

Each station included a different scenario ranging from triage management to heat illness to emergency care, and participants progressed through each encounter until they had completed all rotations. Two students expressed that they had participated in interprofessional encounters, which focused on a collaborative evaluation of a specified injury as well as teaching the other health care professionals in the encounter about what athletic trainers do.

Evaluation and Grading. This category focused on how the encounter was scored or what grade was earned. While 7 participants stated that their encounters were worth a participation grade, 2 commented they were graded on specific content or objectives, often using checklists to ensure they went through the entire encounter as expected. Daphne indicated that "we actually will get written results that we will get to look at, but we don't get to necessarily keep because they keep those in our student files."

Feedback. All 9 participants experienced some sort of feedback, either written or oral, from the SP, instructor, faculty members, or peers. Mariana indicated that the SP encounter would use a "time out" approach where she could pause the encounter to receive feedback as she progressed through the evaluation. However, all of the other participants were required to complete the encounter in its entirety prior to receiving feedback. Four students described class discussions and feedback from instructors and/or SPs, while 3 others expressed that they would individually seek out feedback on their performance and how things could be improved. For example, Emma would seek out feedback from the SP after the encounter because:

> *I want to know how [the SP] feel[s], and in return I want [the SP] to know how I felt, or whether it was good or whether I had more questions about why [the SP] did something or how [the SP] did it.*

Several participants described the debriefing that occurred in class following the SP experience. Mariana described, "The class would watch, and then as a whole, we would discuss what happened, how the [SP encounter] could have been better, or what else could have been done." Finally, in addition to oral feedback, participants reported receiving written feedback from their professor in addition to a graded evaluation. For example, Jude indicated:

> *But [our professor] does provide feedback and writes things down on her evaluation of us. [Our professor] will write words about different things you can improve on or something you did right or your areas of strengths and weaknesses.*

All 9 participants valued the feedback they received and indicated that it was one of the most positive aspects of their experience because they were able to reflect on the encounter, which they feel helped improve future encounters with both SPs and real patients.

Perceived Value

Purpose. This category focused on the perceived purpose of each encounter and why participants felt that SPs were used within their curricula. Participants discussed what the perceived objectives were of each encounter, including goals of the encounter and what they felt they were supposed to take away from the encounters. Emma differentiated between the purposes of different encounters by saying that:

> *The first 2 were the evaluating skills, to teach you how to do it, but the second-year encounters were for [the students] to teach [evaluation skills] to other people on another body.*

As such, the purpose of each SP encounter varied based on the student's level within the program. Early encounters focused on specific learning content (ie, musculoskeletal palpations and special tests) to ensure competence in basic clinical skills in preparation for clinical experiences. Subsequent encounters focused on the student demonstrating their ability to bring all of these clinical skills together combined with clinical decision making to evaluate a patient and determine a treatment or referral plan using everything which was previously learned. Though orthopaedic evaluations were a focus, students also had the opportunity to experience unique cases and other conditions not as commonly seen in athletic training. Lena said:

> *[SP encounters] give us a chance to work with another population that is not what we typically see. So, this is a chance to see the difference in that and just try to give us the chance to be comfortable.*

Standardized patients provided repetition with orthopaedic and general medical evaluation and diagnosis, including practice on communication with patients throughout the evaluation process.

Skills Gained. This category centered on specific skills, both clinical and professional, that the student felt the SP encounters fostered. Our participants expressed that they noted improvement in clinical skills as a result of practice within their SP encounter, including history taking and palpation as well as taking blood pressure, temperature, and heart rate. Mariana found that:

> *I became really good at taking blood pressure and heart rate and all of our—and temperature, we worked on that a lot. I became really good at doing a thorough history. I was able to do eyes, ears, throat inspections as well.*

In addition, soft skills were also discussed, including improved communication, confidence, and critical thinking, which led to an overall improvement in clinical decision making. Emma felt that "[SPs] helped me a lot with explaining what I'm doing and why I'm doing it and maybe why [the patients] are feeling what they are feeling." Jude mirrored the same sentiment when he said that SP encounters helped him to foster both communication and clinical skills in terms of taking a thorough patient history: "I think SPs help teach you to take a better history and to ask a lot of questions because you will find out a lot of beneficial things if you just continue to ask questions."

Standardized Patient Training and Authenticity. This category focused on the overall realism of the experience for the student. Students discussed how they felt the SP portrayal was and how well it related back to a real-world experience. They commented on the authenticity or lack thereof in specific encounters and how those encounters have translated into skills they have had to incorporate into the real world in their clinical setting. Most participants were pleased with the level of realism the SP provided. For example, Lena said that "The [SPs] are well trained, and they actually answer based on how they are trained. So, their answer is very realistic." Emma mirrored the same thought and felt that, overall, SPs are very well trained to portray their case:

> *They [SPs] are pretty well trained on what should hurt, what shouldn't hurt, or what kind of symptoms they're [the SP is] experiencing. So, as long as you are asking the right questions, they [the SP] will give you the right answer.*

In terms of translating these experiences into real-world scenarios, our participants felt that SP encounters were relatable and mirrored a real-world scenario quite well. Several participants specifically noted that, based on the authenticity of the SP experience, they were able to improve their real-world patient interactions in their clinical assignment. Using what they learned in an SP experience, students went into real patient evaluations with a better understanding of how to ask the right questions and proceed through the evaluation. While some students felt that there were some limitations in the SP portrayal in terms of exhibiting specific signs and symptoms, most students agreed that there was high authenticity within most of the SP encounters they had experienced.

Benefits. Within this category, participants voiced how the SP encounters benefited or helped them in their development as an athletic training student. Participants often cited individual encounters which were beneficial to their learning and explained why those specific encounters stood out above the rest. Others described overarching ways in which their SP encounters have collectively benefited them or helped them to grow in their professional development. Mariana explained that SP encounters are beneficial because "[SP encounters have] really boosted my confidence and made me feel more comfortable going into a setting and wanting to do it [patient evaluation]." In addition to experience with evaluation, participants were also provided the opportunity to develop their interpersonal skills with patients. Participants described similar beneficial experiences and found that SP encounters were valuable to their learning and growth clinically and personally. By being in charge of the encounter and planning the patient care, most participants found that having the opportunity to go through an entire evaluation from beginning to end was beneficial for giving them more experience with patient interactions.

Challenges and Shortcomings. Though most students voiced positive dialogue about their experiences with SPs, they also expressed some challenges or shortcomings as well. Just as they had cited their most beneficial SP experience, students were also asked to describe their least beneficial encounter and why they thought it was the least beneficial. While none of the participants indicated that the SP encounter had any negative effects on their learning, some described ways in which specific encounters hindered their overall experience. One of the overarching expressions voiced by 4 of our participants was that they did not enjoy group encounters as much due to 1 student being more likely to take over and lead the entire encounter, with others not getting as much out of it. In 1 of these instances, the student felt that she could have benefited more from an individual encounter since only 1 person in the group was doing most of the interaction. Another challenge was based on the available supplies seen prior to beginning the SP encounter. Hayleigh said that the intervention became obvious, and the student did not have to critically think as much about the plan of care. In other circumstances, the encounter was not realistic or generalizable to a real-world experience due to obvious answers and/or limitations in the SP portrayal of a particular illness or injury.

DISCUSSION

Though commonplace within other medical programs, SPs have only recently been introduced into athletic training curricula.[4] Previous research[13,14,20] in this area has found that SP encounters are beneficial for improving clinical and communication skills, but limited research exists on whether the students experiencing these encounters find them beneficial.[13] Therefore, the purpose of our study was to explore the student perceptions of their SP experiences. Through qualitative interviews with 9 athletic training students, we were able to gain insight on how students perceive their SP encounters within athletic training curricula as well as whether they have found the experiences beneficial.

Encounter Characteristics

Our participants described several encounter characteristics (environment/setup, format, evaluation/grading, feedback) associated with their SP experiences which were congruent with the current literature on the use and implementation of SPs within both athletic training and other medical curricula.[2–4,10,19] The environment where SP encounters are typically occurring is consistent with the setting in which the health care

practitioner would practice.[4,6,9,15] For our participants, encounters occurred within a classroom or simulation lab mimicking the setup of an athletic training facility or physician's office, which is consistent with the facilities that offer SP encounters. Participants indicated that they had access to most of the necessary supplies for the encounter (ie, modalities, evaluation equipment, rehabilitation tools). The format and types of encounters being used are also consistent with other medical professions' use of both teaching and evaluative encounters.[3,6,10] Our participants would experience teaching encounters early on in order to be exposed to specific learning content, with evaluative encounters followed in order to assess competency with course content. Our participants experienced a variety of evaluative, teaching, and interprofessional SP encounters encompassing a broad range of course content (ie, orthopaedic evaluation, general medical skills, emergency medical situations).

In terms of evaluation and grading, other professions have been regularly incorporating graded encounters for comprehensive examination or for evaluation of particular course content.[3,6,10] Previous research within athletic training has indicated that evaluative strategies are also being used.[5,19] However, only 2 of our participants were evaluated based on performance of skills in evaluative encounters, with 7 of our 9 participants graded solely on participation for primarily teaching encounters. Finally, in line with research from peer professions,[1,3,8,11,18] our participants found significant value in the feedback provided after each encounter in order to enhance student reflection and improvement. Previously, nursing students indicated that the feedback they receive following an SP encounter is one of the most valuable aspects of their SP experience.[18] Similarly, several of our participants indicated that receiving feedback from multiple sources was one of the most valuable components of the entire experience.

Perceived Value

While the encounter characteristics our participants discussed were consistent with the current literature on how SPs are being used (ie, environment, format, feedback) in health care education,[4,9,15,19] the bulk of our data provided new insight into the perceived value the participants had based on their experiences. Participants voiced positive dialogue within several different content areas: purpose of encounter, skills gained, SP training and authenticity, benefits, challenges and shortcomings, and tips and other viewpoints. Within each of these categories, our data have supplemented previous research[13,20] and demonstrated a broader perspective on how students are responding to SP use within their respective programs.

Participants consistently expressed that the perceived purpose of SP encounters was to provide students with a tool to practice their skills and gain valuable feedback in order to translate these skills into real-world practice. Previously, students of medicine,[1,7,8] physical therapy,[3,9] nursing,[2,10] and pharmacy[11,12] have found SPs to be valuable for improving communication[1,3,7] and clinical skills[3] while gaining increased experience with both common and uncommon pathologies.[6,9,15] Standardized patients provide athletic training students with the opportunity to gain experience with injuries or illnesses not commonly seen in the clinical setting, but also have been found to improve ease of evaluation and diagnosis with commonly seen injuries.[4,5] Consistent with these findings,[4,5] our participants felt that SP encounters improve both professional (ie, communication, clinical decision making) and clinical (ie, history taking, palpations, special tissue tests) skills. Participants felt that these skills were enhanced because of the authenticity of an SP, indicating that SPs were well trained, and the encounters provided an authentic experience which really felt like a real-world encounter.

Benefits expressed by participants were consistent with those expressed by students in other disciplines.[1,3,8,11,18] Previously, athletic training students found SPs realistic and worthwhile for lower extremity evaluation skills and improving future evaluations.[13] Our participants also found value in being able to go through an entire evaluation from start to finish in order to form a differential diagnosis. Though all of our participants had experience with other simulated encounters (ie, peer-to-peer evaluation, high-fidelity simulators, partial task trainers), SPs were found particularly valuable because they seemed more authentic. However, some participants found it challenging to go through an encounter in which the SPs did not have the actual condition because it was difficult to demonstrate objective clinical findings due to a lack of positive special tissue tests. Additionally, group encounters were found to be more challenging than individual encounters due to potential differences between the students performing the group encounter. Despite these challenges, participants voiced mainly positive feedback about their experiences, with several participants expressing a desire to experience more SPs within their curricula.

Limitations and Future Research

Though we were able to identify a broad perspective from students across multiple institutions, our research remains limited in its generalizability to all athletic training students because only a small handful of athletic training programs are currently implementing SPs within their curricula. Our small sample size mirrored the population of interest due to the fact that SPs have not yet been widely implemented across athletic training curricula. As more programs begin to implement SPs, further research should be performed to determine if our findings are consistent among a larger sample of students. Additionally, as we transition to a postbaccalaureate professional degree, research should be performed to explore master's students' perceptions of SP use within the curricula. Four of our participants were from postbaccalaureate programs; however, the remainder of our participant pool came from the baccalaureate level. This exploratory qualitative study provided insight into student perceptions of their SP experiences, but additional research should examine the impact of SPs and other simulations have on objective outcomes (ie, competency assessment, objective structured clinical examination, skill development) in order to demonstrate their benefit as compared to other educational strategies.

CONCLUSIONS

Based on the demonstrated benefits of SP encounters from our participants, athletic training educators should consider finding ways to implement SPs into their curricula. Programs should ensure that SP experiences are authentic, applicable, and emphasize the development of soft skills, such as

communication, during the experiences. Standardized patients have been shown to be a valuable tool for improving professional and clinical skills of athletic training students consistently in a standardized, simulated environment.[4,13,20] Our research has demonstrated that participants also find value and benefit in SP encounters as part of their professional development. Our participants have been able to translate lessons learned from SP encounters into real-world settings and feel that the experience and feedback they get as part of the SP encounter has improved their interactions with their patients in clinical practice. These findings are consistent with that of other medical professions[1,3,7,8] and demonstrate that the proposed benefits of SPs translates well across professions.

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