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Integration of an Inclusive Health Care Curriculum for Sexual Health and Gender Minorities

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Context: Research suggests that athletic training students lack knowledge and experience providing care to transgender patients. Additionally, research has identified a lack of comfort with sexual health screening in peer health professions.

Objective: To assess how a curriculum, including a standardized patient (SP) encounter, influenced attitudes and skills in working with sexual health and gender minorities.

Design: Prospective observational study.

Setting: Simulation lab.

Patients or Other Participants: Twenty cisgender postbaccalaureate professional athletic training students (females = 16, males = 4; age = 23 ± 2 years).

Intervention(s): The intervention included a focused curriculum on transgender health care and sexual health. In a culminating SP encounter, one group ($n = 10$) interacted with a cisgender woman and the second group ($n = 10$) with a transgender woman.

Main Outcome Measure(s): The students completed a postintervention survey. Instruments included the Attitudes Towards Transgender Patients tool, which is divided into 3 subscales: clinician education, transgender sport participation, and clinician comfort; and the Sexual Health Knowledge and Attitudes and Sexual History-Taking instruments, which evaluated the effectiveness of the sexual health curriculum on knowledge, attitudes, and comfort. The investigator and SP actor evaluated the SP encounters. Data were analyzed using descriptive statistics, nonparametric Mann-Whitney U , and 1-way analyses of variance.

Results: We identified a significant difference between those completing a transgender SP encounter (mean = 5.30 ± 2.11) and those completing the cisgender SP encounter (mean = 3.50 ± 0.97) on the clinician education subscale ($P = .035$). There were no differences between groups on the transgender sport participation ($P = .70$) and clinician comfort ($P = .32$) subscales. On the SP actor evaluation, we found no significant differences ($P = .08$).

Conclusions: The curriculum and SP encounter influenced knowledge, attitudes, and comfort when working with gender minorities and screening for sexual health.

Key Words: Transgender, standardized patient, patient-centered care

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Full Citation:

Schulman EH, Eberman LE, Crossway AK, Nye EA, Uriegas NA, Connell SA, Winkelmann ZK. Integration of an inclusive health care curriculum for sexual health and gender minorities. *Athl Train Educ J*. 2022;17(4):251–261.

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KEY POINTS

- Incorporating a diverse curriculum focused on minority populations, such as transgender individuals, improves athletic training students' attitude, knowledge, and skill for patient care.
- Athletic training students lack comfort and know-how when engaging patients in conversation related to sexual health.
- Because of the intricacies of sexual health, sex, and gender identity, athletic training programs need to incorporate educational modules throughout the curriculum to inspire and integrate inclusive, patient-centered care behaviors.

INTRODUCTION

Transgender is an umbrella term for individuals whose gender identity, gender expression, or gender role differs from cultural expectations based on the sex they were assigned at birth.^{1,2} In the United States, over 1.5 million Americans identify as transgender, with the most common age group being children aged 13 to 17 years ($n = 149\,750$).³ However, according to the American Civil Liberties Union, 20 legislative bills were introduced or active in 2020 that prohibited health care for transgender youth.⁴ The health care needs of transgender patients differ from those of cisgender patients.^{5,6} *Cisgender* is a term used to describe an individual whose gender identity and/or gender expression aligns with the sex assigned to them at birth.^{1,2} Some key aspects of transgender health care include hormone therapy, gender-affirmation surgeries, and interventions specific to mental and sexual health.⁶ To effectively deliver high-quality patient care, health care providers must have empathy for and understanding of the challenges faced by transgender patients. Transgender individuals are often responsible for educating their health care providers on not only their specific health care needs but also general competencies such as gender identity and privacy.⁷ Transgender individuals also tend to face discrimination from health care providers for varied reasons.^{7,8} As a result, the likelihood of transgender individuals seeking health care decreases.

Athletic trainers (ATs) are skilled health care providers who uphold standards of professional practice by the Board of Certification, which states that they must “render quality patient care regardless of the patient’s age, gender, race, religion, disability, sexual orientation, gender identity or any other characteristic protected by law.”⁹ The National Athletic Trainers’ Association, an optional member organization, includes sex, sexual orientation, and gender identity in its code of ethics.¹⁰ Previous research has identified knowledge and practice gaps by ATs relative to transgender health care, with a call for professional and continuing education.¹¹ Moreover, the majority of professional athletic training program directors and athletic training students have felt

that transgender health care should be included in the athletic training curriculum.^{12,13} However, these individuals identified a lack of guidance as a key factor in limiting the incorporation of transgender health care into teaching by program directors and providing care by athletic training students.^{12,13} This lack of comfort and confidence stems from limited experience with transgender patients.^{11,14} Although currently it cannot be assumed that all athletic training facilities have transgender patients, there is an increasing proportion of transgender-identifying youth.³ Athletic trainers need education specific to transgender patients to improve whole-person and patient-centered care.

Simulations, specifically the use of standardized patient (SP) encounters, have been effective at improving the delivery of patient-centered care.^{15,16} Standardized patients are actors carefully recruited and trained to take on the characteristics of a real patient, thereby affording the student an opportunity to learn and be evaluated on learned skills in a low-risk simulated clinical environment.¹⁷ Providing students the opportunity to work with standardized transgender patients can create unique opportunities that can translate to an increase in clinician confidence when working with transgender patients.^{18–20} The purpose of this study was to assess how an inclusive care curriculum, including an SP encounter, influenced athletic training students’ attitudes and skills when (1) treating a transgender patient and (2) conducting a sexual health screen.

METHODS

Study Design

We conducted a prospective observational study with a cohort of postbaccalaureate professional athletic training students over an academic year. The variables of interest were knowledge, attitude, comfort level, and competency when working with transgender patients and specifically when addressing any sexual health needs. We used the Criteria for Reporting on Development and Evaluation of Professional Training interventions in Healthcare to report the training and teaching methods for this study.²¹

Participants

A total of 20 cisgender athletic training students (age = 23 ± 2 years; range, 21–28 years) enrolled in a professional, postbaccalaureate athletic training program at a southeastern institution participated in this study. Participant demographics are presented in Table 1. The participants were randomly allocated into 1 of 2 groups.

Intervention

The specific curriculum was integrated across 2 athletic training courses in a professional postbaccalaureate athletic

Table 1. Demographics (N = 20)

Demographic Variable	No. (%)
Gender	
Female	16 (80)
Male	4 (20)
Trans man	0 (0)
Trans woman	0 (0)
Nonbinary or genderqueer	0 (0)
Hometown	
Large metro (city of 1 million population or more)	0 (0)
Mid-sized metro (city of 250 000–1 million population)	8 (40)
Small metro (city of fewer than 250 000 population)	12 (60)
Prefer not to answer	0 (0)
Ethnicity	
Hispanic or Latino	0 (0)
Not Hispanic or Latino	20 (100)
Prefer not to answer	0 (0)
Race	
American Indian or Alaska Native	0 (0)
Asian	1 (5)
Black or African American	1 (5)
Native Hawaiian or other Pacific Islander	0 (0)
White	17 (85)
Biracial	1 (5)
Prefer not to answer	0 (0)

training program. The curriculum was designed by a content expert in athletic training with doctoral training in curriculum and instruction. In addition, it was reviewed by the host institution's faculty annually to ensure that it aligned with the Commission on Accreditation of Athletic Training Education standards for didactic education and was assessed by the researcher team, who have experience as educators for athletic training students.

The courses' objectives related to this study are shown in Table 2. The first course took place in the fall semester of 2020 and was titled Behavioral Health and Wellness. This class focused on enhancing patient care through the understanding

of behavioral differences in physical fitness, nutrition, and mental health. The instructor for this course used a large amount of literature, supporting works, and evidence-based material to deliver the content for mental health and specific to transgender patient populations.^{22–26} As part of the course, all students engaged in Safe Zone training conducted by a trained facilitator from the University of South Carolina Office of Multicultural Student Affairs. Although similar Safe Zone ally trainings are available from other organization,²⁷ the specific training involved a presentation and group discussions to educate all individuals (allies and members of lesbian, gay, bisexual, transgender, and queer [LGBTQ+] community) about LGBTQ+ topics including identities, gender and sexuality, and applying self-reflective practice to one's prejudice, assumptions, and privilege.²⁸ The training provided a safe and open place for participants to ask any questions they might have and worked as an introduction/starting point for students into transgender-specific material. The presentation was delivered in person for most participants and synchronously online for those socially distancing during the COVID-19 pandemic. The following week, as part of their class, the participants learned about mental health-specific issues regarding transgender individuals, including greater rates of depression and suicide.

The second course, conducted during the spring semester of 2021, was titled Clinical Pathology and Pharmacology. This class taught examination of the body systems to understand medical diagnostics, the interventions used for various populations, and the legality of those interventions for physically active populations. During this course, the students focused on primary care, with specific curricular content throughout the semester on transgender issues such as hormones and hormone therapy, athletic organizations' policies for transgender student-athletes, surgical procedures, sexual health, binding and taping, and inclusive medical documentation. The educational tools incorporated in this course were created from existing literature on the topics.^{11,29–32}

All students enrolled in the study had had previous SP encounter experience in the athletic training program. Before the SP encounter for this study, the students engaged in mock scenarios throughout both semesters. A mock scenario was an SP encounter done in class, as practice, in which multiple

Table 2. Course Objectives

Course	Objectives
Fall 2020: Behavioral Health and Wellness	<ul style="list-style-type: none"> • Describe and detail common behavioral and mental health conditions • Discuss and execute interventions related to pathology and general wellness • Provide interdisciplinary care, including the identification of referral needs for patients in crisis
Spring 2021: Clinical Pathology and Pharmacology	<ul style="list-style-type: none"> • Possess foundational knowledge in pharmacology, including the general concepts and differences in the legal regulation of nonprescription, prescription, and classified medications • Practice health care in a manner that is compliant with the Board of Certification Standards of Professional Practice and applicable institutional/organizational, local, state, and federal laws, regulations, rules, and guidelines • Perform an examination to formulate a diagnosis and plan of care for patients with health conditions commonly seen in athletic training practice • Advocate for the health needs of clients, patients, communities, and special populations

Table 3. Standardized Patient Presenting Case

Patient Demographics	Case Background	Presenting Situation	Social History	Current Exam Findings
Cisgender Female	<ul style="list-style-type: none"> • Patient comes in with a burning when urinating. • Has had 3 different sexual partners within the last year, 1 partner within the last month. Does not always practice safe sex. 	<ul style="list-style-type: none"> • Sexual health concern 	<ul style="list-style-type: none"> • 20 years old • Collegiate softball player • Inconsistently takes birth control 	<ul style="list-style-type: none"> • Irregular periods • White vaginal discharge • Appears in good health otherwise • HR = 72 • BP = 114/76
Transgender Female	<ul style="list-style-type: none"> • Patient comes in with a burning when urinating. • Has had 3 different sexual partners within the last year, 1 partner within the last month. Does not always practice safe sex. 	<ul style="list-style-type: none"> • Sexual health concern 	<ul style="list-style-type: none"> • 20 years old • Collegiate softball player • Consistent with hormone replacement therapy 	<ul style="list-style-type: none"> • White penile discharge • Appears in good health otherwise • HR = 72 • BP = 114/76

Abbreviations: BP, blood pressure; HR, heart rate.

students evaluated the patient together, often doing 2 or 3 in a day. The instructor or teaching assistants were able to give immediate feedback and help guide evaluations as needed. The mock scenarios focused on topics that had been covered in class that week to reinforce the topics learned. Transgender-inclusive mock scenarios included a patient using they/them/their pronouns with a splenic rupture and a coach asking about recruiting a transgender athlete while using problematic terminology.

SP Encounters

Both SP encounters were created following a comprehensive approach. The primary investigator developed both cases, which had a diagnosis of chlamydia. The cases were developed in collaboration with the professional literature and contained information on the patient's current medical history, sexual history, past medical history, social history, and family medical history.³³⁻³⁵ The cases were then reviewed by the senior author, who had training and experience in SP case development. Finally, an internal athletic training educator on the research team reviewed the final cases for face validation to ensure that the information in the cases matched the aims and objectives for the course. The cases were also expertly validated by a member of the LGBTQ+ community for inclusion and representativeness. The SP cases for the research study are summarized in Table 3. The SP encounter followed similar principles to a case that could be possible in future clinical practice but may not be present during the student's clinical experiences while in the program.¹⁶

Next, the research team recruited and trained college-aged students from campus to portray the SP cases. Specifically, the course instructor recruited a transgender student from the University of South Carolina Office of Multicultural Student Affairs in consultation with its staff to minimize the exploitation of the transgender community while maximizing the fidelity of the encounter. The training sessions included written instructions on how to act during the assigned scenario, as well as assessment methods they might encounter, discussion on how to respond in the event of a clinical exam or question, and methods for providing feedback through the evaluation sheet. On the day of the SP encounter, the research

team held a review session before the start of the sessions to ensure the SP actors were prepared for the case. The SP encounters were held individually in a classroom and evaluated using simulation capture in real time. All encounters were video recorded so that the student, instructors, and researchers could review their scenarios. The SP encounters were evaluated without grade penalties for level of care and were used solely for the students to practice patient care and get feedback.

Instruments

Postintervention Survey. To collect data for this study, an online survey (Qualtrics) was created by combining 4 different instruments and questionnaires upon completion of the intervention. Definitions of terminology were provided throughout the survey for clarification. The survey was integrated into the participants' coursework but would not affect their grade. It was stated verbally and written at the start of the survey that only completion of the survey was required for full credit and that students' specific answers would not affect their grade. The participants' names and demographic information were collected, but all data were deidentified before analysis. Each of the integrated instruments were randomized and appeared in a different order for all participants when they took the survey. We will detail the 4 instruments using in the student survey.

Attitudes Toward Transgender Patients. First, the Attitudes Toward Transgender Patients (ATTP) tool focused specifically on the athletic training students' attitudes when working with transgender patients.³⁶ The 10-item instrument was divided into 3 domains, all of which had previously been validated in practicing ATs: clinician education (CE; Cronbach $\alpha = 0.901$), transgender sport participation (TSP; Cronbach $\alpha = 0.833$), and clinician comfort (CC; Cronbach $\alpha = 0.675$) as a baseline to then determine areas that need to be covered in continuing education.³⁶

Sexual Health Surveys. The 2 sexual health instruments focused on health care providers' comfort, knowledge, and training when discussing sexual health with transgender patients.^{37,38} The Sexual Health Knowledge and Attitudes

Survey was created for medical students to evaluate the effectiveness of a new curriculum focused on sexual health, with some questions pertaining to LGBTQ+ issues.³⁷ The instrument was 24 questions broken into 2 parts: ten 10-point Likert scale items and a 14-item knowledge assessment consisting of multiple choice and true-or-false questions.³⁷ We achieved an acceptable internal consistency ($\alpha = 0.768$) for this instrument.

The other sexual health instrument, the Sexual History-Taking Survey, was 10 questions geared towards medical students, residents, and fellows to assess their knowledge, comfort, and previous training when taking a sexual history with LGBTQ+ patients.³⁸ Both of the sexual health instruments underwent minor grammatical changes to fit the participant population for this study. We achieved an acceptable internal consistency ($\alpha = 0.694$) for this instrument.

SP Debrief. The final instrument used was the SP debrief reflection, which consisted of 17 questions adapted from the debrief used by the University of South Carolina College of Nursing. The questions evaluated how the individual was prebriefed, felt during the encounter, and debriefed, and the overall experience of the SP encounter. The questions were measured on a 5-point Likert scale (1, *strongly disagree*; 2, *disagree*; 3, *neutral*; 4, *agree*; 5, *strongly agree*).

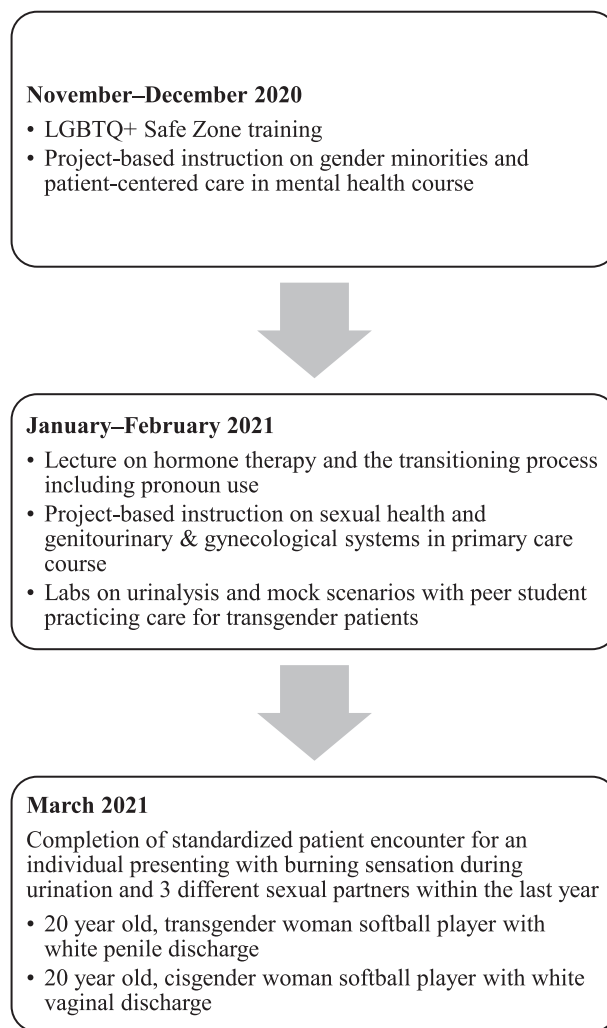
SP Encounter Evaluation

To evaluate the SP encounters, the primary investigator, and the patient actor each completed an assessment tool respective to their viewpoints on the student performance.

Evaluator Checklist. First, the SP encounter was evaluated using a checklist approach used in other athletic training simulation research³⁹ that focused on patient-centered care components, history, and evaluation components, as well as discussing findings and next steps. An evaluation rubric was used to gauge the athletic training students' skills during the encounter to assess for gaps to address with the students afterwards. The evaluation rubrics consisted of multiple components, including (1) communication and interpersonal skills, (2) data gathering, (3) patient education, and (4) overall performance.³⁹ The evaluations used for this study were completed by the primary investigator using a yes/no checklist by watching in real time and reevaluating the SP encounter recording later. The students self-evaluated while watching their own video after the debrief for personal improvement, but data were not collected.

Patient Satisfaction Tool. The research team used the valid and reliable American Board of Internal Medicine's Patient Assessment Survey questionnaire^{40,41} to evaluate the athletic training students' performance during the SP encounter. The questionnaire consisted of 10 questions graded on a 5-point Likert scale from *excellent* (5) to *poor* (1). Scores at *average* (3) or above on the tool were considered passing. The questionnaire was used to assess the athletic training students' interpersonal skills, patient-centered care, and overall professionalism. Both the SP actor and athletic training students completed the questionnaire. The SP actors were first trained by a member of the research team on how to complete the tool in terms of expectations and scoring. The SP actors then completed the questionnaire after each encounter. The athletic

Figure. Overview of educational intervention.



training students also completed the questionnaire after the debrief.

Procedures

In fall 2020 and spring 2021, the transgender and sexual health curriculum was integrated across 2 professional athletic training classes. After the completion of the didactic portion of the inclusive care curriculum, the athletic training students were randomly selected for 1 of 2 SP encounters. Before the start, a prebrief note was provided via email on the course and encounter objectives and a brief presenting situation. The primary investigator and the actors evaluated each participant based on a predetermined rubric to assess the participant's skills. Two days later, a single debrief session was held with both groups of learners (cisgender SP and transgender SP) together using the Diamond Debrief model.⁴² The debrief was a group discussion in which the athletic training students were guided by the instructors to explain the SP encounter, where they struggled, and future care practices. After the debrief, the online survey was provided in March 2021 (Figure).

After the conclusion of the spring 2021 semester, the University of South Carolina Institutional Review Board granted approval for the study, and deidentified data from the

surveys and SP encounters were extracted from the learning management system for analysis.

Statistical Analysis

Data were analyzed using SPSS (version 28; IBM Inc). In addition to measures of central tendency for the post-intervention survey instruments and SP encounter evaluations (mean, mode, standard deviation), the researchers conducted Mann-Whitney *U* tests on all survey data and SP encounter evaluations to analyze differences between the 2 groups. One-way analyses of variance were conducted to explore differences between and within the groups on the sexual health knowledge and attitudes instrument and the sexual history-taking instrument.

RESULTS

Attitudes Toward Transgender Patients

The results of the ATTP instrument were broken up into the 3 domains. A lower score was indicative of a more positive attitude towards transgender individuals.³⁶ The overall means for each domain were calculated: CE = 4.4 ± 1.85 , on a scale from 3 to 15; TSP = 7.3 ± 2.92 , on a scale from 3 to 15; and CC = 8.45 ± 3.10 , on a scale from 4 to 20. We identified a significant difference between those completing the transgender SP encounter (mean = 5.30 ± 2.11) and those completing the cisgender SP encounter (mean = 3.50 ± 0.97) on the CE subscale ($U = 24.000$, $z = -2.113$, $P = .035$). There were no differences between groups on the TSP ($P = .70$) and CC ($P = .32$) subscales.

Sexual Health

No significant differences were found between or within groups ($df = 1.18$, $F = 2.104$, $P = .164$) at all data points. For both groups, there was a low comfort level (mean = 5.58 ± 1.98) when looking at external male and female genitals for medical purposes. In addition, no significant differences were identified between the cisgender and transgender SP encounters for any of these items. After all intervention methods, 80% ($n = 16$) of the athletic training students felt they needed additional training in taking a sexual history. The breakdown of the preferred training formats is shown in Table 4.

SP Encounter Checklist, Debrief, and Satisfaction

There were no significant differences found between groups on the SP encounter checklist in each of the 4 sections. On the communication and interpersonal skills section, the groups had comparable, positive outcomes (cisgender group = 13.4 of 16, 83.8%; transgender group = 13.2 of 16, 82.5%). The students' performance relative to data gathering, although not statistically different between groups ($P = .201$), was 11.25% lower for those working with the transgender SP (5.6 of 8, 70%) than those working with the cisgender SP (6.5 of 8, 81.3%). The patient education section of the evaluation was the lowest for both groups (cisgender group = 4.1 of 6, 68.3%; transgender group = 4.3 of 6, 71.7%). Finally, the overall performance indicated that knowledge was shared and information flowed freely in both groups, with performance scores of 4.1 of 5 (82%) for the cisgender group and 4.0 of 5 (80%) for the transgender group.

Table 4. Preferred Educational Format for Those (n = 16 of 20) Wanting Additional Training in Taking a Patient's Sexual History

Educational Format	No. (%)
Didactic lectures	3 (18.8)
Videotape examples	6 (37.5)
Online module	1 (6.3)
Standardized patients	5 (31.3)
Patient panels	1 (6.3)

The results from the SP debrief reflection are presented in Table 5. The athletic training students agreed that the SP encounter provided an opportunity to apply knowledge and skills from class ($n = 19$; 95%) while also being challenged in thinking, reasoning, and judgment skills ($n = 18$; 90%). The students also found that the debrief provided an opportunity to reflect on their SP performance ($n = 18$; 90%) and helpful feedback to improve future performance ($n = 16$; 80%). Overall, 18 students (90%) felt the SP encounter and debrief were valuable and contributed to their learning.

On the SP actor evaluation, we found no significant differences overall ($P = .08$); however, on the SP actor item "encouraged you to ask questions; answered them clearly; never avoiding your questions or lecturing you," we identified a significant difference ($U = 22.00$, $z = -2.342$, $P = .019$) whereby those who worked with the cisgender SP actor scored higher (3.20 ± 0.63) than those working with the transgender SP actor (2.40 ± 0.70). Table 6 depicts the analysis for both the SP actors' and learners' scores separated by group.

DISCUSSION

With the population of those who openly identify as transgender increasing, it is important for ATs and athletic training students to be knowledgeable, skillful, and comfortable when working with transgender patients.³ We developed and incorporated a transgender-specific curriculum for professional athletic training students in the hopes that it would improve their overall care. Simulations by way of SP encounters have been found to be a valuable teaching method and provide a realistic patient encounter for athletic training students in a wide variety of topics.^{15,16} Outside of athletic training, nurses have effectively used SP encounters to increase competence and improve transgender patient care.^{18,20} The data suggest that the experience focused on gender minorities and sexual health achieved the purpose of the study and exposed students to unfamiliar patient cases they were unlikely to encounter consistently during clinical education.

Transgender Patient Care

A slight majority of practicing ATs report being comfortable treating transgender patients, including using the patient's declared pronouns and educating the individual about their sport participation, but only half of these participants felt competent in doing so.¹¹ The ATTP tool scores participants in 3 domains, with lower scores indicating a more positive attitude towards transgender individuals. In our study, both intervention groups of athletic training students had averages lower than the validated study for the CE and TSP domains

Table 5. Standardized Patient Debrief (N = 20)

Reflection Prompt	No. (%)		
	Agree (Strongly or Somewhat)	Neutral	Disagree (Strongly or Somewhat)
The purpose, objectives, and expectations of the simulation were clear.	19 (95)	0 (0)	1 (5)
There was enough information provided at the beginning of the simulation to provide direction and encouragement.	16 (80)	3 (15)	1 (5)
I felt supported in the learning process.	17 (85)	2 (10)	1 (5)
I felt empowered to make clinical decisions.	15 (75)	4 (20)	1 (5)
I developed a better understanding of how to prioritize my assessment and interventions.	14 (70)	4 (20)	2 (10)
I gained experience in communicating with patients, family, and/or health care team members.	18 (90)	1 (5)	1 (5)
I had an opportunity to apply my knowledge and skills from classroom and clinical learning.	19 (95)	1 (5)	0 (0)
I had an opportunity to practice my clinical decision-making skills.	20 (100)	0 (0)	0 (0)
I was challenged in my thinking, reasoning, and judgment skills.	18 (90)	2 (10)	0 (0)
The debriefing process provided an opportunity to verbalize my feelings before focusing on the scenario.	16 (80)	1 (5)	3 (15)
Debriefing provided an opportunity to reflect on my performance during the simulation.	18 (90)	1 (5)	1 (5)
Debriefing provided an opportunity to discuss decision-making and clinical judgment.	18 (90)	1 (5)	1 (5)
Debriefing included helpful feedback to help improve my performance.	16 (80)	3 (15)	1 (5)
I feel better prepared to recognize and respond to changes in my real patient's condition(s).	15 (75)	4 (20)	1 (5)
The human SP with which I worked portrayed the patient in an accurate and believable way.	19 (95)	0 (0)	1 (5)
The SP provided feedback that was both positive and helpful to me.	15 (75)	3 (15)	2 (10)
My experience with the SP was valuable and contributed to my learning.	18 (90)	1 (5)	1 (5)

Abbreviation: SP, standardized patient.

on the ATTP tool, which demonstrates a strong positive attitude toward learning about transgender topics and acceptance in sport participation.³⁶ However, when comparing the 2 groups in our study, the athletic training students working with the transgender patient had higher scores on the CE as compared with the students who worked with the cisgender patient.

Similar findings have been identified in medical students. For example, a majority of medical students reported feeling comfortable caring for LGBTQ+ patients, but approximately half felt more comfortable as a result of their medical school training.⁴³ Even with the improved comfort due to trainings, two-thirds of the students rated their LGBTQ+ curriculum as fair or poor, which led to them feeling insufficiently prepared.⁴³ This demonstrates that any LGBTQ+ education incorporated is beneficial, but improvement of the curriculum can even better prepare students of any medical or health profession. The transgender-specific education incorporated in our study increased student comfort when caring for transgender patients.

The findings also suggests that although the students had positive attitudes to learning, some of the students felt they did not need or did not want further training in caring for transgender patients. The reason for this may be experience bias, wherein they feel they have overestimated their skills or have provided care once and are now sufficiently prepared for

all future scenarios.⁴⁴ The concern, though, lies in the fact that the athletic training students demonstrated less skill in data gathering from the transgender SP encounter. The lack of skilled data gathering when working with transgender individuals can lead to a lack of appropriate patient care,⁴⁵ but the students who had the transgender SP encounter were less likely to seek out further educational materials. This finding suggests the need for continuing professional development, even for current students, which focuses on identifying areas of needed growth and evaluation of one's skills rather than self-identifying areas of strengths or interests.⁴⁶ In a study by Rhoten et al,⁴⁷ self-confidence was the only significantly correlated item when implementing LGBTQ+ training for health care providers. Even when confidence rises from a single encounter, continued learning is still necessary when working with transgender patients. Although the athletic training students were exposed to working with transgender patients, additional training for transgender-specific patient care is needed throughout the curriculum. Clinicians who are not competent in certain areas can deflect or avoid questions by the patient, create an environment where the patient will withhold information critical for their patient care, or inhibit patient inquiry.⁷

Sexual Health

In 2018, the Centers for Disease Control and Prevention reported 2.45 million new cases of sexually transmitted

Table 6. Patient Satisfaction Score on 5-Point Likert Scale (1 = Poor, 5 = Excellent)^a

	Cisgender Case		Transgender Case	
	SP Satisfaction (n = 1)	Learner Satisfaction (n = 10)	SP Satisfaction (n = 1)	Learner Satisfaction (n = 10)
How was the performance at. . .				
Telling you everything; being truthful, up-front, and frank; not keeping things from you that you should know	3.4	3.8	2.7	3.5
Greeting you warmly; calling you by the name you prefer; being friendly, never crabby or rude	3.8	4.1	3.2	3.9
Treating you like you are on the same level; never “talking down” to you or treating you like a child	3.2	4.4	3.2	3.6
Letting you tell your story; listening carefully; asking thoughtful questions; not interrupting you while you are talking	3.0	3.6	2.9	3.6
Showing interest in you as a person; not acting bored or ignoring what you have to say	2.9	3.8	2.8	4.0
Discussing options with you; asking your opinion; offering choices and letting you help decide what to do; asking what you think before telling you what to do	3.4	3.1	2.6	3.3
Encouraging you to ask questions; answering them clearly; never avoiding your questions or lecturing you	3.2	3.4	2.4	3.6
Explaining what you need to know about your problems, how and why they occurred, and what to expect next	3.2	3.4	2.7	3.2
Using words you can understand when explaining your problems and treatment; explaining any technical medical terms in plain language	3.4	3.7	2.8	3.6
Overall professionalism	3.1	3.4	2.6	3.7

Abbreviation: SP, standardized patient.

^a The SP actor and learners were instructed that a 3.0 on the 5-point Likert scale was passing/average.

infections in the United States, which included an increase of cases of gonorrhea by 63% since 2014.⁴⁸ Previous research has identified that college students are considered an at-risk group, with 60% to 80% of all US college students engaging in a at least 1 sexual encounter during their college years.^{49–51} Moreover, athletes at all levels of participation have been linked to risky sexual behavior and violence associated with anger, aggression, and substance use (ie, alcohol consumption).^{52–54} Specifically, in sports medicine, if we combine these two at-risk groups, we can identify collegiate student-athletes as a high-risk population because of risk-taking behaviors associated with athletics. Sexual health screening is vital in sports medicine, as it has been linked to behavioral health issues such as anxiety, depression, and fear.⁵⁵

Overall, we identified that the inclusive health care curriculum in this study increased the students’ comfort regarding sexual health. The SP encounters provided the students with a risk-free environment to further develop the skills they learned through lectures, projects, class discussions, and mock scenarios. On the SP encounter checklist completed by the primary investigator, the participants scored poorly in the domain of patient education. The 6 items within the patient education domain of the tool included strengths of the students, such as providing information on a future treatment plan and communicating a differential diagnosis to the patient in an understandable way (n = 19, 95%), yet fewer than half used supporting materials to help communicate the condition (n = 9 of 20, 45%). In addition, students from both groups (cisgender and transgender patient encounters) struggled to discuss short- and long-term goals (n = 12 of 20, 60%), with even fewer incorporating the patient into the goal setting (n =

7 of 20, 35%). We believe the low patient education scores for both groups are due to a lack of comfort when discussing sexual health diagnoses. Interestingly, previous research¹¹ identified that certified ATs felt they were competent in counseling transgender patients on sexually transmitted infections. Although these questions may be uncomfortable for some ATs and athletic training students to ask, an SP encounter provides a safe place for the individual to practice asking important overall health questions. Previous literature with first-year medical students reported that practicing a thorough sexual history for 10 minutes in a transgender simulation was the most useful instructional strategy, despite uncertainties about how to progress.⁵⁶ It is vital educators create opportunities with psychological safety, or the feeling that a student can contribute and participate without punishment or shame.⁵⁷

The purposeful planning of the SP actors as cisgender and transgender individuals required the students to explore sexuality, gender identity, and sex assigned at birth. The SP encounter, regardless of group, increased students’ comfort when discussing sexual health with a patient. Previous research⁸ identified that only 45% of LGBTQ+ teenagers are comfortable talking to their primary care physician about their personal life and only 35% have had their physicians discuss safe sexual practices. Athletic training students can benefit from continued training in both the classroom and clinical experiences on sexual health, regarding gender identity, which will benefit patients from all backgrounds. Improving patient comfort can lead to positive relationships between clinician and patient, which can in turn lead to the patients seeking out care when needed.²⁶ Conversely, if the

patient does not feel the clinician will be accepting of them and their needs, they might forego accessing care, which could lead to negative health outcomes. After all intervention methods, most students still felt further training would be beneficial. As seen in Table 4, the students thought videotape examples and SP encounters would be the most useful strategies to further aid their learning. We suggest program administrators consider developing screening, data gathering, and patient education media aids to supplement learning when real-time clinical experiences do not arise.

It is essential that athletic training students learn that whole-person health care is a multifaceted approach that incorporates all dimensions of wellness, including sexual health.⁵⁸ Sexual health care encompasses physical and mental wellness intertwined with emotional and social responses guided by sexuality and gender identity.⁵⁹ The participants in our study were provided an opportunity to practice comprehensive sexual health care through the SP encounter. Successful students asked essential sexual health questions such as if the individual was sexually active, what type of sex they engaged in (oral, vaginal, anal), with whom they had sex with (men, women, both, another), and how many sexual partners they had had.⁶⁰ Although these questions were necessary to gather information for the case and provide optimal outcomes, some students may have not felt comfortable exploring sexual health. We suggest athletic training programs incorporate resources and training on sexual health screenings in their curriculum. One helpful tool from The National Coalition for Sexual Health⁶¹ provides the “8 P” questions to ask regarding sexual health relative to partners, practices, history of sexually transmitted infections, protection, pregnancy, pleasure, problems, and pride.

Limitations and Future Research

Our study was not without limitations. Because of budget, time, and room availability, we were able to hire only 1 SP actor for each group. Although they were both trained to act and evaluate in the same way, simulations vary slightly from case to case with the questions asked, test performed, and outcomes of the scenario. Because of the constraint of hiring only 1 transgender actor, the researchers do not know how the results would be altered with a patient who was nonbinary, gender nonconforming, or transgender male. Learners may be less comfortable or less prepared treating some transgender patients over others, especially those who do not fit into the gender binary. An additional limitation of our study is that it took place with 1 cohort of learners at a single university, which limits the external validity of the study; however, this is typical of simulation and SP research.^{16,62}

Additionally, the study was conducted in 2020–2021 during the COVID-19 pandemic. The students in this cohort had decreased patient interactions leading up to the start of the intervention because of starting clinical rotations later than typical. This could have caused a lack of competence and clinician comfort in patient evaluations, which could have decreased patient satisfaction. However, the courses described in the curriculum were both delivered face-to-face with the traditional in-person learning experiences.

Future research should investigate how multiple SP encounters enhance patient care regarding sexual health and transgender individuals for athletic training students. In addition,

similar methods should be developed and implemented for credentialed ATs as part of continual professional development over an extended period. We believe simulation-based learning is an essential next step to safe space ally trainings being incorporated throughout the profession. Mock patient scenarios can provide benefit for ATs with the opportunity to explore the skills and knowledge gained from the training.

CONCLUSIONS

The data indicate that curricular content and intentional training via SP encounters designed for transgender patients and sexual health education improved athletic training students' knowledge, attitudes, and comfort when engaging patients and peers in these areas. The higher score on the attitudes tool by students working with the transgender patient shows that they felt they did not need or did not want further training in caring for transgender patients. However, students demonstrated less skill in data gathering from the transgender SP encounter. The students who received transgender care training but did not encounter a transgender patient were more likely to want more learning about transgender education. Even when confidence rises from a single encounter, continued learning may be necessary in working with transgender patients. Considering the complexities of sex assigned at birth, gender identity, sexuality, and sexual health, athletic training programs need to incorporate trainings and educational modules throughout the curriculum to inspire and integrate inclusive, patient-centered care behaviors.

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