

A Practical Approach to Health Literacy: A Primer for Athletic Training Educators

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Context: The Commission on Accreditation of Athletic Training Education has an educational standard to address the need for competence in health literacy.

Objective: The purpose of this paper is to introduce foundational health literacy knowledge and evidence-based tools to apply in athletic training and present examples of assignments to instruct and assess health literacy from a model professional athletic training program.

Background: Health literacy is “the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others.”¹ Most patients will experience moments of poor health literacy; therefore, clinicians should use health literacy universal precautions to improve patient decisions and outcomes. These health decisions range from practicing health promotion behaviors, understanding when and how to use health services, and participating in shared decision-making about treatments or procedures. These same health decisions apply to athletic training patient populations. Athletic trainers (ATs) should demonstrate effective health literacy skills; therefore, professional athletic training programs must instruct athletic training students on essential concepts and tools.

Description: Examples of how one professional athletic training program instructs and assesses health literacy across the curriculum are discussed; including didactic lessons, rubric criteria development, a comprehensive health literacy project, and learning objectives for simulation-based experiences.

Clinical Advantage: Education drives clinical practice. Incorporating health literacy through didactic presentation and assessment of application may develop health literacy competence and prepare athletic training students to provide optimal care when transitioning to practice.

Conclusion: Health literacy universal precautions are recommended for all health care professionals to provide quality care. Introducing and assessing these concepts during education will prepare future ATs for successful integration of health literacy into clinical practice. Furthermore, these concepts and tools should be shared with preceptors to reinforce during student clinical experiences.

Key Words: Patient education, transition to practice, interpersonal communication

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Full Citation:

Madden M, Tupper J. A practical approach to health literacy: a primer for athletic training educators. *Athl Train Educ J.* 2022;17(4):339–348.

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KEY POINTS

- Health literacy is an essential component of reaching national health care goals and achieving quality care.
- Health literacy skills of health care professionals may increase with formal education or training; therefore, the integration of health literacy should be prioritized in professional athletic training programs.
- This article may serve as a primer to introduce several evidence-based tools and concepts to support faculty wishing to integrate health literacy into athletic training education.
- Incorporating health literacy content and assessment across curriculum may prepare students to competently use health literacy universal precautions in clinical practice.

INTRODUCTION

Healthy People 2030 is a federal initiative that identifies public health priorities to help individuals, organizations, and communities across the United States improve health and well-being across a 10-year timeframe.¹ According to Healthy People 2030, personal health literacy is the “degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others.”¹ This definition emphasizes people’s ability to use health information rather than just understand it; focus on the ability to make “well-informed” decisions rather than just “appropriate” ones; and incorporate a public health perspective into decision-making. Similarly, Osborne describes health literacy as “a shared responsibility between patients, or anyone on the receiving end of health communication, and providers, or anyone on the giving end of health communication. Both must communicate in ways the other can understand.”^{2(p2)} This definition shows that providers have a responsibility to have the necessary health literacy skills to ensure that patients understand the health information being communicated by the clinicians.

The Board of Certification (BOC) *Practice Analysis* (PA) 7, which describes contemporary clinical practice domains and tasks, embeds concepts and outcomes related to health literacy.³ For example, in order to ensure the adoption of health behaviors and risk management strategies in “Domain 1: Injury and Illness Prevention and Wellness Promotion,” ATs serve as an accessible form of patient education and provide educational resources for stakeholders.³ In the forthcoming BOC PA 8 (effective in 2024), health literacy is specifically identified as a responsibility under the renamed “Domain 1: Risk Reduction, Wellness and Health Literacy.”⁴ Effective communication of diagnoses and treatment options and consideration of patient values are essential in “Domain 2: Examination, Assessment & Diagnosis” and “Domain 3: Immediate and Emergency Care.”³ Providing clear information and instructions during rehabilitation and treatment

protocols in “Domain 4: Therapeutic Interventions” is essential for patient compliance and follow-through.³ Health literacy elements of “Domain 5: Healthcare Administration and Professional Responsibility” are documentation, such as patient forms (health history questionnaires or consent forms), and communication with other providers on the interprofessional health care team.³

In the United States, only about 12% of adults have the health literacy needed to navigate the health care system.⁵ Therefore, approximately 9 out of 10 adults will experience some difficulty when seeking care. The reasons for low health literacy are complex and understudied; many factors may determine health literacy, including a patient’s social determinants of health (eg, culture, native language, education, socioeconomic status, age), patient engagement, and a person’s ability to navigate a complicated health care system.^{2,6} Because of the staggering percentage of patients who will experience low health literacy in their lifetime, it is essential for health care providers to approach health literacy as they would other aspects of care, such as bloodborne pathogens. For example, health care providers use universal precautions for bloodborne pathogens by treating all blood as if it were infected to ensure the best level of protection and care for patients and providers. In health literacy, the same approach can be used by implementing health literacy universal precautions in which they treat all patients as if they may have trouble fully understanding the health information being communicated.⁷ The Agency for Healthcare Research and Quality (AHRQ) developed a Health Literacy Universal Precautions Toolkit, which describes 21 health literacy tools to support health care professionals.⁷

A provider’s ability to effectively communicate with patients is critical for optimal outcomes, but health literacy levels of patient education materials^{8,9} and health care providers¹⁰ may be deficient. For example, one study found that patient education materials available through the American Academy of Orthopedic Surgeons website were typically 3 or more academic grade levels above what is recommended, thereby making much of the information too advanced for most patients.⁸ Another study showed that almost half of the health care provider participants (ie, physicians, nurses, medical assistants, other nonphysician roles in a clinic setting) overestimated their health literacy skills.¹⁰ The researchers demonstrated an improvement in participants’ skills through formal training.¹⁰

Development of health literacy skills is a critically important component of the athletic training student’s preparation for clinical practice.¹¹ In athletic training, the Commission on Accreditation for Athletic Training Education (CAATE) specifically includes health literacy in the educational standards, stating that professional programs must “identify health care delivery strategies that account for health literacy and a variety of social determinants of health.”^{12(p11)} Educators should understand the resources and tools that

Table 1. Examples of Evidence-Based Resources

Resource	Location
AHRQ <i>Health Literacy Universal Precautions Toolkit</i>	https://www.ahrq.gov/health-literacy/improve/precautions/toolkit.html
Plain language dictionaries and resources	https://www.plainlanguage.gov/ https://www.cms.gov/outreach-and-education/outreach/writtenmaterialstoolkit https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/plain-language/plain-language-getting-started-or-brushing https://apps.lib.umich.edu/medical-dictionary/ (widget may be uploaded)
Consumer health information (web-based resources)	https://medlineplus.gov/ https://www.merckmanuals.com/home https://familydoctor.org/ https://healthychildren.org
Checking for understanding	https://www.ahrq.gov/health-literacy/improve/precautions/tool5.html
Cultural humility or sensitivity	https://www.ahrq.gov/health-literacy/improve/precautions/tool10.html https://thinkculturalhealth.hhs.gov/clas https://ethnomed.org/ https://www.aafp.org/about/policies/all/cultural-proficiency-position-paper.html https://www.hrsa.gov/about/organization/bureaus/ohe/health-literacy/culture-language-and-health-literacy
Interprofessional communication	https://www.ahrq.gov/teamsteps/instructor/fundamentals/module3/ebcommunication.html#ref4
Shared decision-making	http://www.ihl.org/resources/Pages/Tools/Ask-Me-3-Good-Questions-for-Your-Good-Health.aspx
Training videos	https://thinkculturalhealth.hhs.gov/resources/videos

are available to effectively teach health literacy skills and connect across the domains of athletic training professional practice. However, there is a lack of specific athletic-training resources, including information on foundational concepts, definitions, and tools. The purpose of this paper is to prepare athletic training educators to meet required educational standards for health literacy. The authors introduce some of the important concepts of health literacy and instructional strategies and recommendations for popular tools or resources (Table 1) that athletic training educators may integrate into curriculum and assessment.

DESCRIPTION OF EDUCATIONAL TECHNIQUE

Health literacy concepts and techniques should be integrated throughout athletic training curricula to address the new 2020 CAATE educational standard (Standard 57).¹² Including health literacy information and skills in multiple courses allows for greater understanding and frequent practice by athletic training students. It is also important to align with the contemporary expertise of course instructors or invite an expert on health literacy to present. Educators should first formally introduce foundational knowledge on health literacy before assessing more complex learning objectives, such as applying health literacy skills independently. The following sections describe educational techniques to support implementation and assessment of health literacy, including the development of rubric criteria, didactic instruction modules, and course activities (eg, simulation-based experiences, problem- and project-based learning). Examples of how health literacy is woven throughout a model professional athletic training education program are provided.

Patient Education Project and Health Literacy Rubric Criteria

Rubric criteria (Table 2) were developed to assess athletic training students' health literacy competence in some of the elements essential to athletic training clinical practice. The following section presents the health literacy-specific criteria included in the rubric along with context for assessment methodology. These descriptions also act as a primer to guide the development of didactic instruction modules.

Plain Language

One essential principle in both written and verbal communication is the concept of using plain language (ie, words that are easy for everyone to understand). It is best to avoid medical jargon and abbreviations in conversation with patients to ensure understanding.^{2,7} There are some readily available plain language dictionaries and other useful resources through credible organizations and websites (Table 1). Another example of language that may be open to interpretation is the use of words that can be subjective, such as "suggest" or "might." The patient may find these too vague to follow or understand.² It is helpful to be clear and concise, especially when people are anxious or injured. Also, words that imply measurement or scale, such as "minimal" or "moderate," which are often used with pain scales, may need to be qualified and quantified for better understanding and consistency.² For example, the advice to get "adequate" sleep at night can be interpreted differently. Providing patients with more concrete parameters can help with compliance and outcomes.

Table 2. Patient Education Project and Health Literacy Rubric Criteria

Term	Description
Plain language	Uses appropriate vocabulary, numbers, and understandable concepts.
Visual aids	Uses visual aids to support patient understanding. Visual aids are clear (ie, recognizable, appropriate font, text size, and color choices).
Consumer health information (ie, web-based resources)	Selects a credible online resource (ie, reliable source, relevant/supports care plan).
Checking for understanding ^a	Frequently checks for patient understanding (ie, teach-back method). Reinforces and/or corrects information as necessary.
Cultural humility or sensitivity ^a	Accurate and thorough consideration of social determinants of health relevant to patient case in care plan. Is aware of, asks about and/or addresses cultural customs and preferences.
Interprofessional communication ^a	IP communication is clear, actionable, and free from errors. Appropriate IP communication strategy is implemented based on situation and expectations. When required, SBAR is appropriately organized, communicates all relevant and critical information, conveys professionalism, and contains minimal to no terminology errors.
Shared decision-making ^a	Provides transparent patient education regarding condition and care options (eg, explaining rationale for diagnostic testing, therapeutic interventions, referrals) through elements of informed consent. Gains continuous consent throughout encounter. Invites questions and/or patient self-advocacy.

Abbreviations: IP, interprofessional; SBAR, Situation, Background, Assessment, and Recommendation; SDOH, social determinants of health.

^a Primarily assessed during simulation-based activities.

Additionally, ATs should be mindful of the potential need for conceptual understanding required to grasp conditions, treatment options, and care plans. Anatomy, physiology, and biology, as well as numeracy concepts in pharmacology and nutrition can be challenging for patients. Providers should be able to explain these concepts in more accessible ways using plain language to increase patient understanding.

Visual Aids

One strategy that can support understanding of conceptual information is to use visual aids. Clinicians should build a personal collection of images or drawings to illustrate anatomical structures, signs and symptoms of injuries, and physiology of illness. Additionally, visual aids can be used to provide home care or discharge reminders as many patients and caregivers prefer written materials in addition to verbal instructions.¹³ Clinicians may perceive certain phrases or descriptors as common or universal, but that is not always true for the patient. For example, the names of certain exercises (eg, “dead bug”) may differ between health care providers or other information sources. It is helpful to provide website sources that include visual aids. If internet access is a challenge for the patient, the clinician may take photos or videos of either the patient or themselves performing the exercises during the appointment to create visual reminders and cues.¹⁴ The AT can print a supply of visual aids in advance of discussions with patients or have copies on file so that they are easily retrieved from a laptop, tablet, or phone.

Consumer Health Information (Web-Based Resources)

ATs can also prepare health education resources by compiling some reliable and credible web-based resources, such as MedlinePlus¹⁵ that patients can explore later. By partnering with patients as consumers of health information, ATs can reduce confusion when navigating or interpreting internet-

based information. Researchers found that patients prefer when clinicians provide suitable websites to support patient education.¹⁶ The key is to be prepared in advance with ready access to commonly recommended information fact sheets and trusted online resources.

Checking for Understanding

Checking for understanding is an essential step to ensure clear communication and patient safety. While there are many strategies, the teach-back method is commonly used in many health care professions.^{17,18} The teach-back method puts responsibility on the provider to ensure patient understanding, while still actively engaging the patient. The key strategies in the teach-back method are to use open-ended questions and demonstrations with the patient.^{17,18} The AT starts by checking for understanding using phrases that emphasize provider responsibility (for instance, “I want to make sure I explained that clearly” and “Can you repeat that back to me?”). In the case where the patient is expected to perform a skill independently, the provider asks the patient to practice or demonstrate with supervision. Next, as the patient repeats or demonstrates instructions, the AT should find opportunities for positive reinforcement or corrective information. The process of checking for understanding continues until both the clinician and the patient are satisfied.^{17,18} If the AT needs to provide excessive correction or the patient is having trouble understanding, the AT should take that opportunity to figure out why and determine how they can adjust their communication so that the patient understands. For example, the AT should first address concerns if the patient is upset or anxious about the injury or illness, identifying whether there may be a cognitive or sensory impairment or difficulty, making accommodations for cultural differences or preferences, or modifying the environment if it is loud and distracting.

Before the patient leaves the appointment, the AT should end with one more open-ended question to invite questions or need for any further clarification.¹⁹ For example, asking the patient, “What questions do you have for me?” removes the ability to answer with a “no,” and it shows the patient that questions are welcome.¹⁹ Health care appointments can be stressful, and patients may forget their questions, or they may not have the confidence to engage in discussion for fear that they may not understand the jargon or concepts. Cultural or generational differences may also play a role in what is acceptable in terms of asking questions to authorities or providers. It is important to create a culture that invites questions, and to partner with and empower patients in their care.¹⁹

Shared Decision-Making

Health literacy techniques can also improve shared decision-making. Empowering patients through health literacy can increase self-advocacy and encourage active engagement in care plans and the informed consent process.⁶ Improved patient outcomes are connected to both patients asking questions and speaking up during appointments and to the shared decision-making process.⁶ ATs can support patients by giving them tools for asking questions or by offering to act as a liaison during appointments with other health care providers to help with understanding medical forms and complex concepts or procedures (eg, informed consent).

Athletic training students are instructed and assessed on the following shared decision-making elements.

Ask Me 3. Empowering the patient to ask questions can be accomplished through an easy-to-use, patient-driven strategy called “Ask Me 3.” This tool was developed and trademarked by the Institute for Healthcare Improvement.²⁰ Ask Me 3 is designed to ensure that patients leave health care appointments with the most important information they need to participate in their care, reduce stress or anxiety, and improve outcomes.

As described by the name, there are 3 questions patients are encouraged to ask²⁰:

1. What’s my main problem?
2. What do I need to do?
3. Why is it important for me to do this?

These questions help the patient to understand their diagnosis and treatment options in plain language and to ask as many follow-up questions as needed.^{19,20} Patients should also be encouraged to take notes and/or ask for written instructions.²⁰ When a patient understands their condition and treatment options with possible outcomes, they may be more likely to engage in the care plan. This tool can be especially helpful if the treatment recommendations require any risks or changes; including additional documentation or consent, invasive procedures, medication, or other significant impact on their life. Shared understanding is important, particularly if patients are asked to make a behavior or lifestyle change.

Informed Consent. Informed consent is the process of a patient agreeing to health interventions or procedures;

however, researchers believe that most patients consent without being truly informed.²¹ Conditions for informed consent include having a thorough understanding of one’s condition and the diagnostic and treatment options along with the risks and benefits of these options.^{21,22} Unfortunately, medical and insurance forms are notoriously difficult to understand because of the use of medicolegal language.^{6,21} Many patients sign consent forms or agree to care without fully understanding the information or their rights as a patient.²¹ ATs should be aware of the forms provided to patients, especially when working in physician practice, clinic, and hospital settings where patients are likely undergoing medical procedures or testing. Traditional athletic training settings also require patients to complete complicated forms, such as health history questionnaires and consent-to-treat forms. ATs can ensure informed consent with patients by reviewing forms for readability and understanding before use. In addition, the AT should take time to read through forms with patients during appointments, checking for understanding and addressing questions.

Informed consent may also be verbal, such as when discussing the risks and benefits of different interventions and return to play options. Health decisions involving return to play may present challenges²³ if a decision needs to be made quickly (eg, during an athletic competition or emergency care situation),²³ under external pressures (eg, sport or team culture),²³ in the case of a minor,²² or social determinant of health considerations (eg, health insurance access, health literacy level, transportation).²⁴ It is still essential that the AT present all information completely and that patients engage in appropriate levels of shared decision-making.²³ ATs should develop effective strategies ahead of time in order to provide and gain informed consent in these scenarios.

Interprofessional Communication. Health literacy may also be described as provider-to-provider communication as many health care professions and clinicians might use different terms and acronyms, procedures, and protocols. The goal of effective provider-to-provider communication is shared understanding and language using health literacy techniques, such as plain language, and other tools to avoid communication errors.^{25,26} Interprofessional (IP) communication and teamwork are especially important in athletic training as ATs work in constant collaboration with physicians and other health care providers.²⁷ Clear communication and transitions between health care providers are closely associated with patient safety, therefore it is important to ensure that handoff instructions and other communication is clear.^{25,26} Practicing closed-loop communication, similar to checking for understanding with patients, ensures that the information received is accurate.^{25,26}

Another IP communication tool recommended for use is the Situation, Background, Assessment, and Recommendation (SBAR).^{26,27} When using the SBAR technique,²⁶ ATs will concisely and clearly provide information on the *situation*, including introducing themselves and their qualifications, the patient’s demographics, and relevant contextual information such as the problem, signs and symptoms, and the primary concern. Next, in the *background*, the AT includes the most significant information related to the situation (eg, objective findings), the patient’s personal history, and the clinical interventions provided with their results. In the *assessment*,

Table 3. Examples of Sim-IPE SBE Cases and Objectives

Case Topic	IP Collaboration	Learning Objectives or Needs Assessment	Health Literacy Rubric Criteria
C-spine with equipment removal	EMS	Understand roles & scopes of practice of AT & EMS; activate EAP effectively; demonstrate equipment removal and SMR for patient with suspected c-spine injury	IP communication (eg, closed-loop communication)
Exertional heat stroke	EMS	Understand roles & scopes of practice of AT & EMS; activate EAP effectively; demonstrate “cool & transport” of patient with EHS	IP communication (transition of care)
Orthopedic evaluation	NP	Understand roles & scopes of practice of AT & NP; demonstrate effective SBAR to patient’s primary care provider	Shared decision-making (with patient for referral); IP communication (SBAR documentation)
Mental health concern	Social work	Understand roles & scopes of practice of AT & LCSW; activate psychological concerns EAP or P&P referral	Shared decision-making (with patient for referral); IP communication (SBAR handoff)
Evaluation for deaf patient (condition based on educational standards)	ASL medical interpreting	Understand roles & scopes of practice of AT & medical interpreting; demonstrate effective communication with patient & interpreters; identify need for cultural sensitivity & considerations	IP communication; plain language; cultural humility or sensitivity
Asthma	Pharmacy	Create an asthma action plan with patient & pharmacist; provide patient education on medication safety; instruct patient on peak flow meter and inhaler administration techniques	IP communication; checking for understanding

Abbreviations: ASL, American Sign Language; AT, athletic trainer; EAP, emergency action plan; EMS, emergency medical services; IP, interprofessional; LCSW, licensed social worker; NP, nurse practitioner; P&P, policy & procedure; SBAR, situation, background, assessment, and recommendation; SBE, simulation-based experiences; Sim-IPE, simulation-enhanced interprofessional education; SMR, spinal motion restriction.

the AT describes their initial impression and/or differential diagnoses and current disposition of the patient to help inform the *recommendation*, which is usually a more specific request or referral for the next steps of care.

Cultural Humility (or Sensitivity)

Another key health literacy skill is cultural humility or sensitivity. The National Culturally and Linguistically Appropriate Services standards provide a blueprint for health care professionals and organizations to “provide effective, equitable, understandable, and respectful quality care and services that are responsive to diverse cultural health beliefs and practices, preferred languages, health literacy, and other communication needs.”²⁸ ATs must consider how religion, culture, ethnic customs, and other factors may impact the way that health advice is received.^{2,7,24} The AT should be familiar with common cultural practices with respect to diet, interpersonal contact, and decision-making that could impact the treatment course. For example, eye contact and physical touch may be considered offensive in some cultures.² While it is critical to avoid stereotyping any individual patient, the AT may address cultural differences by respectfully inquiring, “Is there anything I should know about your culture, beliefs, or religious practices that would help me take better care of you?”⁹

An awareness of the use of idioms (ie, sayings and phrases) that are common to the English language is important. Words, gestures, and phrases are not always universal and may create confusion when a patient is trying to follow a conversation. For example, “feeling blue” doesn’t represent the same sad emotion in all cultures, so someone may not pick up on the expression as a question about depression.² These sayings can be so ingrained that it requires intentional awareness and training to avoid creating confusion and misunderstanding in communication with patients. There are numerous cultural humility training resources available to health care professionals (see Table 1 for examples). Short training videos, tip sheets, and websites that provide detailed information on specific cultural customs and beliefs that may impact the health care of certain individuals may be accessed online and incorporated into educational preparation and continuing education.

Didactic Instruction

The model professional athletic training program organizes the health literacy concepts and skills described above through several module presentations:

- Module I: Introduction to Health Literacy, which provides an overview of health literacy definitions and

literature, the connection to quality care aims, and an overview of foundational principles and skills (ie, plain language, visual aids, health consumer information).

- Module II: Approaches to Patient-Centered Care (part 1), which introduces cultural humility and social determinants of health definitions,²⁴ concepts, and implementation strategies.
- Module III: Approaches to Patient-Centered Care (part 2), which introduces both tools for checking for understanding and concepts and techniques for shared decision-making (ie, empowering patients, asking questions, and informed consent).
- Module IV: Professional Responsibility and Communication, which uses the AHRQ *Health Literacy Universal Precautions Toolkit* health literacy assessment for providers,⁹ and IP communication strategies (ie, closed-loop communication, SBAR).

The model professional program begins didactic instruction with broad health literacy concepts (modules I and II) in the first semester to set a foundation for application of information in future courses. Additional health literacy concepts and specific tools (modules III and IV) are then continuously threaded throughout the curriculum. For example, in courses related to examination and assessment, and therapeutic intervention, athletic training students are introduced to specific tools such as SBAR, teach-back method, and Ask Me 3, as well as the informed-consent process. This design allows for scaffolding of health literacy outcomes as students progress through the curriculum. Courses in which to integrate modules may be selected based on faculty expertise and course learning objectives. Individual programs and educators should decide which and/or how much content to present in each module, and where modules best align in their curriculum.

Simulation-Based Experiences

Simulation-based experiences (SBE) are carefully designed and controlled to create realistic learning environments for health care students to practice skills safely and autonomously.²⁹ Essential elements of the SBE include developing appropriate learning objectives and assessment tools; incorporating intentional design of the environment and/or case (eg, faculty/content expert(s) create scripts and context); providing students with pre-brief or orientation to the activity and expectations; supervising and facilitating student SBE performance to maintain safety and fidelity; and a conducting a structured debriefing session to discuss learning objectives and student performance (eg, discuss what went well, what should be done differently).²⁹ While some SBEs may use equipment such as manikins or other resources such as simulated participants (SPs) to mimic patient encounters and interactions, there is a broad spectrum of experiential learning activities that may be implemented by professional programs that do not have access to resources or simulation-trained faculty. For example, applying best practices to case studies, role-playing, or partnering with other health care education programs can be implemented with minimal resources.³⁰

This model professional athletic training program integrates SBEs using SPs consistently throughout the curriculum, including 2 immersive simulation-based weeks and at least 2

SBEs in each clinical course in which cases (ie, SP scripted responses, objective findings, environmental and physical fidelity) are developed by faculty and content experts. The faculty use results from a needs assessment in combination with conditions highlighted in the CAATE educational standards¹² and specific course learning objectives to determine the topics for cases. Individual programs and educators should begin with a needs assessment to identify critical learning objectives associated with a course and/or gaps in student knowledge, skills, or clinical experiences.²⁹ For example, faculty have designed SBEs to assess concussion, mental health conditions, asthma, and various orthopedic injuries; to standardize experiences with certain tasks such as developing and instructing injury prevention, human performance, or rehabilitation programs; and to participate in difficult conversations with stakeholders. Additionally, faculty use SBE to assess student's knowledge and skills related to high-risk/low-frequency events (eg, activating the emergency action plan (EAP), cervical-spine injury, exertional heat-stroke).

As ATs often practice in collaboration with other health care providers,²⁷ athletic training students may benefit from shared learning experiences with other health care education students or providers. Interprofessional education in simulation (Sim-IPE) is an enhanced type of SBE that can be designed by educators to provide a chance to practice health literacy and IP communication skills in real contexts.³¹ For example, faculty from this model professional program coordinate SBEs with various professions (eg, nursing, social work, medical interpreting, pharmacy, EMS). During Sim-IPE, athletic training students focus on executing techniques and tools, such as closed-loop communication or SBAR, with feedback from peer professionals, as well as exploring their role in supporting shared decision-making and patient advocacy. Students can also hone IP communication skills through documentation in a simulated electronic medical records system and/or include a written SBAR script if no Sim-IPE is available.

Depending on the objectives of the experience, formative and/or summative assessment with the rubric criteria can be used during an SBE. Beyond traditional athletic training skills (eg, performing an evaluation, developing a differential diagnosis), SBE learning objectives emphasize application of health literacy when communicating with SPs throughout the patient encounter, and effective IP communication. This model professional athletic training program uses the health literacy rubric as both formative feedback during debriefing sessions to guide discussion about health literacy skill development as well as a summative assessment of the student's holistic clinical performance. SBEs provide an authentic opportunity to assess students' health literacy and communication skills, especially the use of plain language, checking for understanding, cultural humility, and shared decision-making. One benefit of using SPs is that they can react to the athletic training student to prompt health literacy skills. SPs are instructed to question medical jargon or terminology, abbreviations, and cultural idioms used by the student. Athletic training students demonstrate shared decision-making by explaining their examination procedures, differential diagnoses, and recommended interventions clearly, gaining continuous consent from SPs, and empowering the patient to participate in the process. Additionally, students can demon-

strate cultural humility by asking the patient about personal and cultural preferences and any barriers to care recommendations or plans. For example, the athletic training student should engage patients in decision-making and informed consent when referring the patient to a specialist, discussing the potential for surgical intervention, or transporting the patient to the hospital.

Problem- or Project-Based Learning

Active learning strategies such as problem- and project-based learning (PBL) are effective pedagogic strategies that help students critically interpret and apply their health literacy knowledge and skills to complex questions or scenarios.³² The model professional program implements PBLs in 2 ways. First, problem-based learning activities are incorporated in didactic condition-specific modules through embedded unfolding patient cases (eg, patient complaining of chest pain and shortness of breath presented in cardiovascular and respiratory content). As the case unfolds, students are posed increasingly complex and comprehensive questions or information to consider as they move through the content. Students then answer these questions and related health literacy prompts in which they are asked to identify health literacy elements within the case (or the lack thereof), describe how they believe these elements impact patient outcomes, and make suggestions for improvement of health literacy. Faculty then facilitates discussion about the case and health literacy learning objectives.

An example of a project-based assignment used by this model professional program to comprehensively apply and assess students' health literacy is a patient-education project due at the end of the semester. Athletic training students select or are assigned a patient case (eg, from an SBE, a case study from a clinical experience [following all HIPAA regulations], or developed by the instructor). They then design comprehensive patient education including an oral presentation as if they are speaking to the patient, along with accompanying written materials (eg, visual aids, web-based resources). Specifically, students are required to provide background information on the condition, make intervention recommendations, and suggest prevention strategies to address the key elements of informed consent as well as consider the patient's social determinants of health.

ADVANTAGES

Information-based instruction incorporated didactically at the beginning of the curriculum sets a strong foundation of knowledge. This knowledge can then be expounded upon as athletic training students progress through the curriculum. SBEs and PBLs are active learning strategies that more fully engage athletic training students in patient interactions. Active learning strategies are well documented in the literature as preferred learning styles among athletic training and health care students.³³

Purposeful repetition of educational techniques, such as SBEs and PBLs, and health literacy learning objectives across the curriculum provides athletic training students an opportunity for scaffolded learning with deliberate practice of health literacy strategies in different contexts and patient cases. Using consistent criteria to assess health literacy skills can

similarly provide repetition and develop successful health literacy habits for future clinical practice. While examples of rubric criteria are presented, there is flexibility for faculty to adapt the rubric based on the level of the student or learning objectives of the activity.

Anecdotally, athletic training students from this model professional athletic training program describe the lessons they learned about health literacy through informal discussions and formal debriefing sessions and assignments. The athletic training students demonstrate an understanding of the importance of plain language when speaking with patients, understanding patient backgrounds and culture, and effective and clear communication when collaborating with other health profession students. From a faculty perspective, these active learning assignments provide an opportunity for individualized and group feedback that targets and reinforces health literacy concepts for deeper learning. Additionally, faculty can both see the progress of athletic training students' skills and competence over time and across assignment submissions and identify topics that may need further instruction.

Exposure to health literacy concepts across learning encourages athletic training students to integrate these skills into their future clinical practice. By incorporating various tools and strategies during the educational program, students enter the athletic training field prepared with a full toolbox and an understanding of the importance of health literacy universal precautions. Health literacy tools may also permeate into current clinical practice as a result of a reciprocal learning effect between athletic training students and preceptors. Educators may also consider creating health literacy continuing education opportunities for preceptors or their athletic training communities, especially if they are BOC-approved providers.

CONCLUSIONS

Improving health literacy is a national health care priority.^{1,2} As health care professionals, ATs must be comfortable using these skills consistently in clinical practice as most patients will experience limited health literacy at some point. Since education often informs and evolves clinical practice, formally exposing athletic training students to health literacy and its related tools will contribute to improved patient outcomes.^{6,10} We believe it is essential that professional athletic training programs intentionally instruct health literacy throughout their curricula and develop appropriate metrics to demonstrate that athletic training students attain health literacy skills.

To achieve CAATE educational standard 57,¹³ the authors recommend that educators introduce patient education assignments to demonstrate students' ability to describe and apply important health literacy techniques, such as plain language, visual aids, and consumer health information resources. Additionally, instructing students on and providing them with opportunities to practice with tools such as the teach-back method, "Ask Me 3," and SBAR may facilitate implementation into athletic training students' future clinical practice. We also suggest that educators create or collaborate with other resources to design experiential learning activities that engage athletic training students in realistic patient interactions to practice strategies that empower cultural

humility or sensitivity and shared decision-making. Examples of the assignments and assessment strategies provided may serve as a guide for individual educators or may be integrated throughout professional athletic training curricula to assist in the development of these critical skills.

There is a lack of health literacy literature available specific to athletic training. Future research should aim to understand the current scope of health literacy knowledge and skills of ATs and athletic training students transitioning to professional practice to better inform future educational interventions. Additionally, more research is needed to determine the effectiveness of educational techniques and metrics on developing health literacy knowledge and skills in athletic training students.

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