JOURNAL OF ATHLETIC TRAINING EDUCATION AND PRACTICE

www.natajournals.org
ISSN: 3067-1833
DOI: 10.4085/1947-380X-24-046

ORIGINAL RESEARCH

Graphic Medicine Activity Impacts Cultural Awareness in Athletic Training Students

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Context: Curricular design that addresses athletic training student competencies in patient centered care and cultural humility remains a challenge. Research suggests athletic training educators feel unprepared to teach cultural competency concepts yet are required to teach them due to accreditation standards. One evidence-based approach that has potential to promote cultural humility in athletic training students is graphic medicine (GM).

Objective: To assess how GM influences cultural awareness in athletic training students and to evaluate the utility of GM within the curriculum.

Design: Cross-sectional study.

Setting: Professional and postprofessional athletic training education program classrooms.

Patients or Other Participants: Eighty-seven athletic training students, the majority professional level (81.7%), who identified as White (77.0%), and female and woman (73.6%), with a mean age of 22.03 ± 2.60, participated in this study.

Intervention(s): The intervention included 1 GM activity lasting 1 to 1.5 hours.

Main Outcome Measure(s): Participants completed a preintervention and postintervention modified Cultural Awareness Scale, which is divided into 2 subscales: General Attitudes and Clinical Experiences. Descriptive statistics, paired *t* tests, analysis of variance, and analysis of covariance were performed to analyze the data.

Results: A single GM activity was insufficient to significantly enhance athletic training students' cultural awareness. Although some improvements were noted, ongoing education is essential. Participants found the GM activity engaging and relevant to medical practice, indicating the value of embedding such practices into the curriculum for fostering inclusive patient care.

Conclusions: Graphic medicine offers a popular and meaningful method for impacting cultural awareness in athletic training students. Cultural humility is developed over time; therefore, activities fostering growth should be incorporated throughout athletic training programs.

Key Words: Bias, stereotype, diversity, equity, cultural competency

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Full Citation:
Carlson LM, Nakajima MA. Graphic medicine activity impacts cultural awareness in athletic training students. *J Athl Train Educ Pract*. 2025;21(1):43–50.

Graphic Medicine Activity Impacts Cultural Awareness in Athletic Training Students

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KEY POINTS

- A 1-time graphic medicine activity did not significantly improve cultural awareness as measured by the modified Cultural Awareness Scale.
- Athletic training students preferred graphic medicine over more traditional pedagogies like reading case studies or listening to lectures.
- Female athletic training students demonstrated a higher cultural awareness compared with male peers.
- Cultural humility should be fostered throughout athletic training curriculums.

INTRODUCTION

As athletic trainers engage with an increasingly diverse patient population, the cultivation of cultural humility is essential for effective communication, establishing trust, and addressing health disparities. Cultural awareness is 1 of 5 constructs of cultural competence according to Campinha-Bacote's model of cultural competence in health care delivery.[1] Cultural humility, defined as an ongoing commitment to self-reflection and self-critique in relation to cultural differences, has gained recognition as an essential component of providing patient-centered care in diverse societies.[2] Despite widespread recognition among health care professionals of the importance of cultural considerations in patient care,[3] a recent study reported athletic training preceptors demonstrated low awareness and behaviors relative to cultural competence.[4] Further, there exists a notable gap in preparedness among athletic training educators to teach cultural awareness, with over 50% of respondent athletic training educators admitting insufficient expertise in this area.[5]

Graphic medicine (GM), an emerging field that combines narrative and visual storytelling, has demonstrated potential in enhancing empathy, communication skills, and cultural competence among health care professionals.[6–8] By engaging with graphic narratives that depict diverse patient experiences, health care profession students can gain insights into the lived realities of individuals from different cultural backgrounds, thereby cultivating cultural humility.

Understanding students' perspectives and experiences is crucial for designing effective educational interventions. Further, student buy-in to active learning is positively associated with engagement in self-regulated learning and course performance.[9] By incorporating participants' feedback, this study aims to identify strengths and areas for improvement in the implementation of GM activities, ensuring their relevance and efficacy in health care education.

Although the utility of GM in medical and nursing schools has been established, its impact in athletic training education remains unexplored. Therefore, this study aims to fill a gap in the literature by investigating the influence of a GM-based activity and its potential to promote cultural awareness in athletic training students while also assessing participants' satisfaction with this innovative pedagogic method. We hypothesize that participants will demonstrate improved scores in cultural awareness after engagement with the activity and will exhibit a preference for GM compared with traditional learning methods.

METHODS

Study Design

We conducted a cross-sectional study in which athletic training students were surveyed before and after participating in a GM activity. The variables of interest were scores on the modified Cultural Awareness Scale (mCAS) and preference of pedagogy.[10]

Participants

A total of 87 athletic training student participants, the majority (77.0%) White, who identified as female and woman (73.6%), with a mean age of 22.03 ± 2.60 years, participated in this study. Participant demographics are presented in Table 1.

Intervention

We used the GM activity previously described by Carlson et al.[11] Before the activity, a sense of community within each cohort was considered essential to facilitating a safe and brave space for students to share their experiences and openly receive information from classmates. The topic of each GM and corresponding discussion focused on bias and stereotyping.

Instruments

The Cultural Awareness Scale (CAS) was modified to measure athletic training students' cultural awareness.[10] The CAS is a 35-item survey with 3 subscales. Subscale 1, General Attitudes, consists of 27 questions exploring "general experiences at this school," "general awareness and attitudes," and "classes/clinicals." Subscale 2, Research Attitudes, includes 4 questions; and Subscale 3, Clinical Experiences, relates to working with patients from diverse cultural groups in clinical practice and contains 4 questions. The reliability of the CAS is strong for General Attitudes and Research Attitudes ($\alpha = .80$ and .89, respectively), whereas the reliability for Clinical Experiences is .70.[10] Construct validity for the CAS supports its applicability to cultural awareness in nursing students.[10] With permission, the CAS was modified to use athletic training–specific language. In addition, questions about general experiences with the school, instructors, or research were eliminated to focus on questions relative to the in-class activity. Rather than evaluating others, students were asked to evaluate their own thinking and beliefs. Therefore, the mCAS used in this study had 2 subscales, General Attitudes, which included 8 questions, and Clinical Experiences, which included 4 questions.

The postintervention survey consisted of retaking the mCAS with additional questions regarding enjoyment, benefits, and relatedness to real-world medical practice of the activity (Figure 1) using a 100-point Likert scale, with higher points reflecting more

Table 1. Survey Participant Demographic Characteristics (N = 87)

Characteristics	No. (%)
Sex and gender identity	
Male and man	23 (26.4)
Female and woman	64 (73.6)
Race	
White and Caucasian	67 (77.0)
Black or African American	7 (8.0)
American Indian, Native American, or Alaska Native	1 (1.1)
Asian American	7 (8.0)
Native Hawaiian and other Pacific Islander	1 (1.1)
Mixed Race or Multiracial	4 (4.6)
Ethnicity	
Not Hispanic or Latinx	12 (13.9)
Hispanic or Latinx	74 (86.0)
Religion	
Christianity	57 (65.5)
Atheism and agnosticism	9 (10.3)
Hinduism	1 (1.1)
Buddhism	1 (1.1)
Judaism	1 (1.1)
Other	17 (19.5)
Missing	1 (1.1)
NATA District	
1	3 (3.4)
2	6 (6.9)
3	8 (9.2)
4	5 (5.7)
5	4 (4.6)
7	2 (2.3)
8	16 (18.4)
9	17 (19.5)
11	26 (29.9)
Taken courses on multicultural or cultural competency	
Yes	58 (66.7)
No	27 (31.0)
Missing	2 (2.3)
Attended multicultural or cultural competency workshops and/or training seminars	
Yes	43 (49.4)
No	44 (50.6)
Educational level	
Undergraduate	30 (34.5)
Master's	57 (65.5)
Major	
Professional athletic training	71 (81.7)
Postprofessional	13 (14.9)
Missing	3 (3.4)

Abbreviation: NATA, National Athletic Trainers' Association.

favorable outcomes. Preference for the activity over more traditional pedagogies and open-ended feedback were also collected. Preference for the GM activity over more traditional pedagogies was analyzed by asking participants, "If given the choice, which learning method(s) do you prefer?" Multiple options included (1) reading and discussing a graphic novel case, (2) reading and discussing a traditional case (paragraph form), (3) role-playing, (4) watching a video, (5) writing a paper, and (6) listening to a lecture.

Procedures

Athletic training professors at Commission on Accreditation of Athletic Training Education–accredited institutions were recruited to facilitate the GM activity at their respective athletic training programs. Facilitators were recruited via a sample of convenience via email and word of mouth. Before the activity, a meeting with the lead author (LMC and facilitator explained the institutional review board (IRB)–approved study protocol. A letter of support from each institution was provided to the IRB. Facilitators agreed to spend 1 to 1.5 hours completing the activity and agreed that students would not be graded or forced to participate in the activity or surveys. Facilitators chose from four 4-panel GM strips. The general theme of each graphic narrative was exploring bias and stereotyping. "More Than Meets the Eye" discussed bias and stereotyping relative to appearance, "Disability = Adaptability" (Figure 2) discussed biases relative to people with disabilities, "Flag on the Play" discussed biases surrounding sexual orientation, and "Express Yourself" discussed gender identity and expression biases. Discussion questions and take-home points were provided for each GM to help facilitate a safe and brave discussion, but each facilitator was tasked with managing the discussion.

The first 5 to 10 minutes of the activity began with students being invited to participate in the study by completing an online survey (Redcap), which included the IRB-approved informed consent form, demographic information, and the mCAS. The survey was integrated into the in-class activity, but students could opt out by not completing the online survey without penalty or affecting their grade. Names were not collected from participants; rather, self-selected codes were used to match preintervention and postintervention scores.

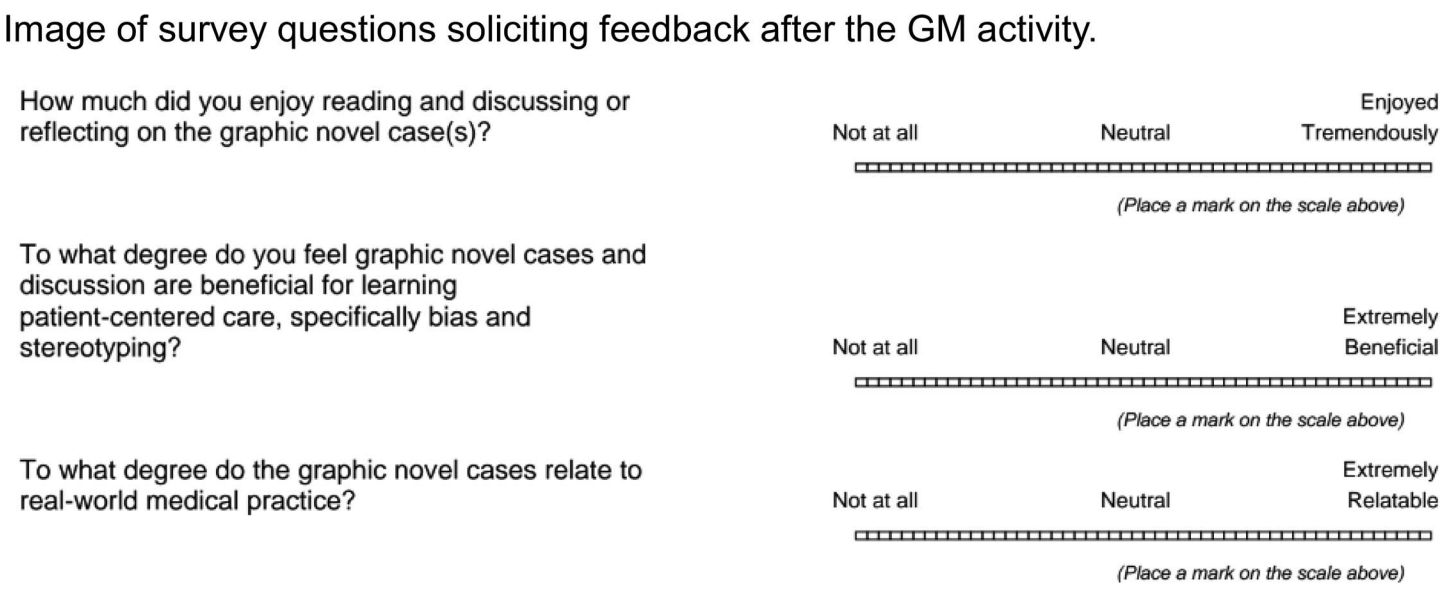
Next, the facilitator and students were asked to agree to group norms to cultivate a safe and brave environment, as described by Carlson et al.[11] After consensus on the group norms was achieved, the first narrative was projected for students to read silently. Then, facilitators spent 15 to 20 minutes leading a discussion on the interpretation of the GM, tying in how bias and stereotyping may impact patient care. Next, a second narrative was projected, and the discussion was repeated with a new storyline. Between 4 and 7 days after the GM activity, facilitators provided the postintervention survey, again inviting students to complete the survey to participate in the study without impacting student grades. The 4- to 7-day window was selected because the mCAS includes questions about clinical practice. Delaying the posttest allowed students to integrate and reflect on the lessons learned during the GM activity.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics (version 28IBM Corp). Descriptive statistics were computed for background variables and the Likert scale data. Paired-sample t tests were conducted to compare mCAS scores before and after the GM activity.

A 100-point Likert scale was used to evaluate enjoyment, benefit, and relatedness to real-world medical practice (Figure 1). To streamline the output for data analysis, the 100-point Likert scale was condensed to a 5-point scale (*strongly positive* [100–80], *positive* [79–60], *neutral* [59–40], *negative* [39–20], and *strongly negative* [19–0]).

Figure 1. Image of survey questions soliciting feedback after the graphic medicine activity.



RESULTS

There were 156 participants who completed the GM activity and filled out the initial survey. Of the 156, 87 (55.8%) completed both preintervention and postintervention surveys. Comparison of those who completed both preintervention and postintervention surveys versus only the preintervention survey showed no significant difference between the groups. Therefore, only students who completed both the preintervention and postintervention surveys were included in further analyses.

Preintervention scores for the mCAS scales differed based upon demographic characteristics including sex and gender identity, prior multicultural or cultural competency workshop attendance, prior multicultural or cultural competency course attendance, and educational level/program. The Clinical Experience subscale score was significantly higher for those who identified as women (mean = 23.98 ± 2.21) compared with men (mean = 22.57 ± 3.01, $t_{30.97} = -2.07$, $P = .047$, d = 2.45). The Clinical Experience score was also significantly higher for those who had attended multicultural or cultural competency workshop(s) in the past (mean = 24.19 ± 2.47 vs mean = 23.05 ± 2.45, $t_{85} = 2.16$, $P = .033$, d = 2.460), as well as those who had taken multicultural or cultural competency course(s) in the past (mean = 24.02 ± 2.46 vs mean = 22.78 ± 2.53; $t_{83} = 2.14$, $P = .035$, d = 2.48). Composite score was significantly lower for those in postprofessional programs compared with professional athletic training programs (mean = 65.00 ± 2.08 vs mean = 69.18 ± 5.51, $F_{82} = 3.87$, $P = .25$) although a Tukey post hoc test indicated that the difference was only marginally significant, $P = .051$. The preintervention differences between the groups disappeared after the GM activity except for sex and gender identity, in which females/women continued to score significantly higher (mean = 24.42 ± 2.20) compared with male/men (mean = 22.91 ± 2.63; $t_{85} = -2.98$, $P = .009$, d = 2.32). All other demographic characteristics showed no difference in preintervention scores.

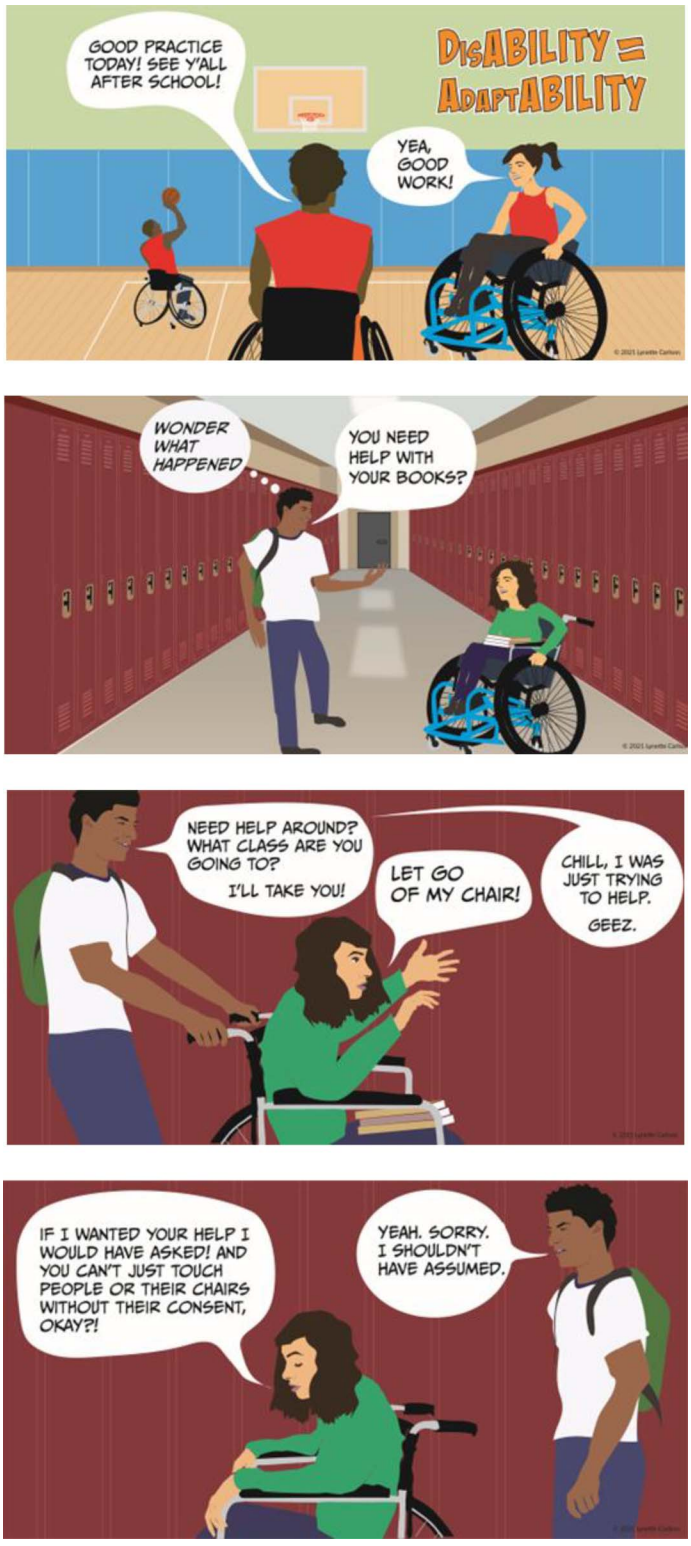
Paired-samples *t* tests for the total scale as well as the 2 subscales of the mCAS were completed (Table 2). All 3 scales showed a slight increase between preintervention and postintervention. Clinical Experience showed the most increase between preintervention and postintervention, but it was not statistically significant (preintervention: mean = 23.61 ± 2.51; postintervention: mean = 24.02 ± 2.40; $t_{86} = -1.87$, $P = .064$, d = 2.06).

Contrary to previous studies that demonstrated Cronbach α values of 0.8 and higher for the total scale and other subscales, Cronbach α value was 0.347 (low reliability) for the General Attitudes subscale of the mCAS and 0.643 (moderate reliability) for the Clinical Experience subscale in our study.[12] This may be due to the modifications we made to the CAS. Due to the low internal consistency, additional paired-samples *t* tests for individual items were conducted (Table 3).

Paired-samples *t* tests from individual items showed significant differences between preintervention and postintervention on several questions. There was an increase in score for the question "I often reflect on how culture affects beliefs, attitudes, and behaviors" (preintervention mean = 4.87 ± 1.49, postintervention mean = 5.53 ± 1.18; $t_{86} = -3.51$, $P < .001$, d = 1.35) and "If I need more information about a patient's culture, I would use resources available on site (for example, books, videos)" (preintervention mean = 5.77 ± 1.02, postintervention mean = 6.06 ± 0.87; $t_{86} = -2.72$, $P = .008$, d = 0.98). There was a decrease in score for questions "I feel comfortable working with patients of all ethnic groups" (preintervention mean = 6.53 ± 0.75, postintervention mean = 6.28 ± 0.89; $t_{86} = 2.44$, $P = .017$, d = 0.97) and "I typically feel somewhat uncomfortable when I am in the company of people from cultural or ethnic backgrounds different from my own" (preintervention mean = 5.63 ± 1.62, postintervention mean = 5.30 ± 1.73; $t_{86} = 2.22$, $P = .029$, d = 1.40). An analysis of covariance test was conducted, and no interaction effects were found between the demographic characteristics and the preintervention and postintervention mCAS individual item scores.

For the preference of activity over traditional pedagogies, the top 2 preferred pedagogies were a GM activity (74%) followed by watching a video (45%). Traditional case (23%), role-playing (13%), lecture (8%), and writing a paper (0.1%) were less-desired pedagogies.

Figure 2. "Disability = Adaptability" graphic medicine strip was developed for stereotyping and bias discussions relative to people with disabilities. A sample of discussion questions and "take-home points" has been published previously.[11]



Participants revealed favorable scores for the GM activity in enjoyment, benefit, and relatedness to real-world medical practice. Sixty-eight percent of participants reported strongly positive or positive enjoyment, 12 of 87 and 47 of 87, respectively, of the activity. Seventy-five percent of participants found strongly positive or positive benefits in completing the activity, 20 of 87 and 46 of 87, respectively. Most participants found the activity to be either strongly related to or related to real-world medical practice, 16 of 87 and 39 of 87, respectively.

DISCUSSION

Although this 1-time GM activity did not significantly increase cultural awareness according to the mCAS, improvements were identified. This is not surprising, because cultural awareness, and subsequently cultural humility, is a lifelong journey.[13,14] This trend is highlighted by our findings demonstrating the difference between participants with prior cultural competency workshops and/or cultural competency course attendance compared with those who had none disappeared after the GM activity. Surprisingly, postprofessional students had significantly lower preintervention composite scores compared with professional athletic training students. This may be due to some postprofessional students graduating from professional programs before the updated Commission on Accreditation of Athletic Training Education Diversity, Equity, and Inclusion (DEI) Standards requirements, meaning they may not have had prior formal education on the subject. Our participant numbers were also low for postprofessional students, representing only 14.9% of our sample, which could impact the findings.

Learning over time seems to be the key; however, a 1-hour GM activity has demonstrated improvements in awareness and confidence regarding patient safety. Maatman et al instructed internal medicine residents to identify safety issues in a comic book.[8] Similar to our activity, residents completed an individual component followed by a group discussion. Whereas identifying safety issues is a concrete skill, improving cultural awareness is abstract, thus highlighting the difference in study focus. Other studies have demonstrated success in using GM over time. Sutherland et al used 4 animated GM narratives over 6 sessions with medical residents and found the activity fostered an appreciation for the patient perspective.[15] Ronan and Czerwiec studied how GM impacted resident physicians' patient communication focused on empathy, compassion, and cultural competency.[7] During a 4-week curriculum, GM was read, discussed, and paired with drawing exercises. They concluded that GM is a well-received format that builds communication skills and increases empathy. A recent systematic review recommended the development of DEI and antiracism training with longitudinal design, targeted skill building, and organizational development, with behavioral and organizational change as the main outcomes of interest.[16] Therefore, along with our findings of slight improvement in cultural awareness, we recommend a continuous, integrated approach to fostering cultural humility and growth throughout athletic training curriculums.

Individual Survey Questions

When looking at individual questions of the mCAS scale, scores on 2 items significantly increased and scores on 2 items significantly decreased postintervention. The survey items with significantly increased scores were "I often reflect on how culture affects beliefs, attitudes, and behaviors" and "If I need more information about a patient's culture, I would use resources available on site." The survey items with significantly decreased scores were "I feel comfortable working with patients of all ethnic groups" and "I typically feel somewhat uncomfortable when I am in the company of people from cultural or ethnic backgrounds different from my own." There are several reasons to explain our

Table 2. Paired *t* Tests for Modified Cultural Awareness Scale

	Mean ± SD					
	Preworkshop	Postworkshop	*t*	df	*P*	Effect Size (d)
Composite score	68.01 ± 5.40	68.50 ± 5.35	−1.142	85	.257	3.96
General Attitude subscale	44.39 ± 4.57	44.47 ± 4.56	−0.198	85	.844	3.82
Clinical Experience subscale	23.61 ± 2.51	24.02 ± 2.40	−1.878	86	.064	2.06

findings. The postintervention survey was taken 4 to 7 days after the GM activity. The intent of delaying the postsurvey (versus taking the survey immediately after the activity) was to allow students to reflect on the activity and resulting discussions. However, enough time may not have passed to allow students to begin implementing action relative to our topics, therefore resulting in only a limited impact on overall cultural awareness. When evaluating the language of the survey items that improved, participants expressed an increase in reflecting on cultural beliefs, attitudes, and behaviors and seeking additional information about a patient's culture. These are promising signs that students are moving toward understanding how culture impacts patient care and how they would pursue learning more about people of a different culture than their own. When evaluating the language of the survey items for which scores decreased, participants expressed feeling uncomfortable working with patients of all ethnic groups or cultural backgrounds. After the activity, the students may be more aware of differences, making them feel uncomfortable so as not to make a mistake and offend patients of different cultural backgrounds. Also, there is a potential for unintended consequences from this activity to include making students more aware of biases and stereotyping, instead of embracing differences and encouraging gaining knowledge about cultural differences. Another possibility is that although students were not required to attend and participate in this activity, they may have felt pressure to participate, making this activity feel mandatory. When mandatory, DEI training can be accompanied by feelings of "blaming and shaming."[17,18] In addition, the second question had double-negative language that may have been confusing to the reader, causing inaccurate responses.

Impact of Sex and Gender Identity

Female participants scored significantly higher on the mCAS scales compared with male participants both before and after the GM activity. All female participants self-identified as women.

Table 3. Paired *t* Test Individual Modified Cultural Awareness Scale Items

	Mean ± SD					
	Preworkshop	Postworkshop	*t*	*df*	*P*	Effect Size (d)
General Attitude						
1. I think my beliefs and attitudes are influenced by my culture.	5.64 ± 1.08	5.69 ± 1.00	−0.54	86	.589	0.791
2. I think my behaviors are influenced by my culture.	5.52 ± 1.04	5.53 ± 1.12	−0.116	86	.908	0.921
3. I often reflect on how culture affects beliefs, attitudes, and behaviors.	4.87 ± 1.493	5.38 ± 1.18	−3.505	86	<.001[a]	1.346
4. When I have an opportunity to help someone, I offer assistance less frequently to individuals of certain cultural backgrounds.	5.83 ± 1.74	5.74 ± 1.1.51	−0.434	86	.665	1.974
5. I am less patient with individuals of certain cultural backgrounds.	6.15 ± 1.19	6.01 ± 1.02	−1.211	86	.229	0.974
6. I feel comfortable working with patients of all ethnic groups.	6.53 ± 0.75	6.28 ± 0.90	2.439	86	.017[a]	0.967
7. I believe an athletic trainer's own beliefs influence their care decisions.	4.17 ± 1.73	4.49 ± 1.61	−1.650	85	.103	1.764
8. I typically feel somewhat uncomfortable when I am in the company of people from cultural or ethnic backgrounds different from my own.	5.63 ± 1.62	5.30 ± 1.73	−2.216	86	.029[a]	1.403
Clinical Experience						
9. I respect the decisions of my patients when they are influenced by their culture, even if I disagree.	6.05 ± 0.75	5.98 ± 0.92	0.677	86	.500	0.950
10. If I need more information about a patient's culture, I would use resources available on site (for example, books, videos).	5.77 ± 1.02	6.06 ± 0.87	−2.715	85	.008[a]	0.987
11. If I need more information about a patient's culture, I would feel comfortable asking people I work with (for example, preceptors or classmates).	5.99 ± 0.90	6.09 ± 0.83	−0.943	86	.348	1.023
12. If I needed information about a patient's culture, I would feel comfortable asking the patient or a family member.	5.80 ± 1.06	5.90 ± 0.93	−0.790	86	.431	1.085

[a] Indicates difference.

Female participants demonstrated a significantly higher preintervention Clinical Experience score versus male participants. Prior research suggests that female health care providers are more likely to possess patient-centered communication styles,[19,20] which may be more conducive to cross-cultural care.[3] The mCAS Clinical Practice subscale incorporates questions regarding patient-centered communication, which may explain our findings. Educators should be aware that sex and gender cultural awareness differences may be present across a cohort, resulting in different student-centered needs.

Utility of GM

Learners in our study enjoyed and benefited from the GMs and found them to be relevant to real-world medical practice. Today's learners possess elevated expectations concerning their educational experiences, given their considerable financial cost, personal sacrifices, and time and energy investment for advancing their education. Therefore, students need to be engaged in the learning process. Graphic medicine has several advantages as an active learning strategy, as it has been demonstrated to be preferred over more traditional pedagogies, such as lecturing, which agrees with our study that found 74% of participants preferred the GM activity over more traditional pedagogies.[8,15] Maatman et al, discussed earlier, reported 90% of participants found the activity enjoyable and 98% found the activity engaging, also in agreement with our study.[8]

As undergraduate athletic training programs give way to graduate programs, our cohorts may include adult learners. Adult learning theory, which was first introduced by Malcolm Knowles in the 1970s, illustrates the unique way adults learn compared with children. Adult learners thrive in educational settings that both celebrate creative thinking and support the freedom to explore ideas independently.[21] Further, embracing creativity is vital for nurturing an ability to adapt, remain open-minded, and manage uncertainty.[22] When learners participate in a more playful and relaxing educational atmosphere, they can tackle serious subjects with less severity. This lighter approach, modeled through GM, helps alleviate some of the stress associated with the need to constantly maintain a professional atmosphere.

Participants expressed a strongly positive or positive benefit from completing the GM activity, possibly because of their perceived connection to how this information relates to their medical practice. This may be explained by the very design of graphic narratives. Graphic narratives use both sight and mental imagery to portray a story, blending elements of visuals and written words. Readers practice perspective taking by reading the expressions of characters, identifying feelings, and interpreting how the words sound as these characters speak. This process can be a means for helping learners imagine differences. Perspective taking with GM is a safe way to help evaluate how a graphic character with a radically different point of view or set of life experiences might move through the world or approach a particular set of circumstances. Additionally, participants may find this activity beneficial and relevant because critical thinking skills are used by helping the reader move the story across the white spaces between 2 panels, called the *gutter*.[6] The gutter is where human imagination takes 2 separate images and transforms them into a single idea.[23] Because our activity included self-reflection followed by group discussion, learners were given the opportunity to hear how others interpreted the gutter and discuss how a group of people can view the same images but interpret them differently.

Limitations and Future Research

One limitation of this study is that facilitators were selected via a sample of convenience, which may not represent the average ability of faculty to lead a discussion about bias and stereotypes. Intergroup dialogue suggests that facilitators should be trained for a successful learning experience for participants.[24] Our facilitators were not formally trained, which may have impacted our results. However, the goal of this activity is to make discussing difficult conversations easier. Facilitators were encouraged to only provide prompt questions and see in what direction the students took the discussion. They were also encouraged to say, "I don't know," allowing for the idea that facilitators don't have to have all the answers because everyone is learning together and from one another.

Another limitation of the study is the ability to capture growth in cultural awareness. There is a wide variety of instruments, each with its own assumptions about what constitutes cultural humility.[25] We used the mCAS, but there were issues with the reliability of the scale, making it difficult to evaluate the construct of cultural awareness. Other studies have used the Cultural Competence Assessment,[5,26,27] the Transcultural Self-Efficacy Tool,[28] or the California Brief Multicultural Competence Scale,[29] among others, but there is no consensus on the best measurement tool for athletic training students. Continued efforts should focus on developing valid and reliable ways to measure cultural growth over time in athletic training students.

Future directions include expanding the GM activity to certified athletic trainers and preceptors. We would also like to make the activity available to athletic training education programs across the nation. Also, gaining formal insight from facilitators of this activity can provide valuable information on the ease of facilitating dialogue without fear of having to "have all the answers." This activity may also expand into asking learners to create GM, as described by Green.[30]

CONCLUSIONS

The data indicate that one 1-hour GM activity does not improve athletic training students' cultural awareness according to the mCAS. However, specific items on the mCAS did significantly improve, highlighting the need for learning over time, as cultural humility is a lifelong journey. Female participants demonstrated a higher cultural awareness, whereas male athletic training students may require additional education to increase their cultural awareness. The GM activity was favored by students over more traditional pedagogies, and learners felt the activity was enjoyable, beneficial, and reflective of real-life medical practice impacting patient care. Considering the complexity of cultural awareness, athletic training educators should integrate educational modules throughout the curriculum to integrate inclusive, patient-centered care behaviors.

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