Title

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Journal

AEM Education and Training, 5(Suppl 1)

ISSN

2472-5390

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Publication Date

2021-09-01

DOI

10.1002/aet2.10667

Peer reviewed

Received: 23 February 2021 | Revised: 26 April 2021 | Accepted: 28 April 2021

DOI: 10.1002/aet2.10667

CONCEPT PAPER

Planning for diverse, equitable, inclusive research in health professions education: An integral thread in the ARMED MedEd research course

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Abstract

Racism in medicine affects patients, trainees, and practitioners and contributes to health care inequities. An effective strategy to actively oppose the structural racism ingrained in the fabric of medicine is to intentionally and systematically address diversity, equity, and inclusion (DEI) in medical education and research. As part of ARMED MedEd, a new longitudinal cohort course in advanced research methods in medical education, sponsored by the Society for Academic Emergency Medicine, the leadership team deliberately included a nested DEI curriculum. The goal of the DEI curriculum is to reduce bias in development, recruitment, and implementation of education research studies to promote equity and inclusion in medical education, research, and ultimately, patient care. A team of medical educators with expertise in DEI developed curricular elements focusing on DEI in education research. The two major components are a didactic curriculum (including implicit bias training) to teach researchers to consider equity as they design studies and a consultative service to refine research protocols to address lingering unintended bias. A dedicated focus on DEI can be incorporated into an advanced education research methodology course to raise awareness and provide tools to avoid bias in research design and implementation of interventions. Over time, the network of education researchers who are trained in DEI awareness will grow and provide equitable offerings to their learners to mitigate health inequities.

KEYWORDS
continuing education, curriculum, faculty development, health care disparities, medical education, racism, research design

INTRODUCTION

Recent world events have inspired the scientific and medical community to shine a light on structural racism in medicine and can serve as an impetus to promote resolution and lasting change.[1] Racism in medicine affects patients, trainees, and academic and clinical practitioners.[2] The very infrastructure of research and clinical medicine is fraught with centuries worth of examples of racist practices.[3,4] To

This article is endorsed by the Society for Academic Emergency Medicine's Board of Directors.

actively oppose the structural racism that is ingrained in the fabric of medicine, we must intentionally and systematically address diversity, equity, and inclusion (DEI) in every aspect of medical education and research.[5,6]

Recent commentaries highlight the role that educators, faculty developers, and education researchers can play in dismantling systemic racism[7] and call for including DEI in medical education research;[8] implementing more antiracist curricula; and increasing the diversity of our educators, researchers, and clinicians.[9] Raising awareness of implicit bias in educators and researchers[10] fosters the intentional design of inclusive and unbiased studies. In a recent article, Plews-Ogan et al.[11] noted that even if bias cannot be eliminated completely, deliberate steps should be taken to mitigate its influence by creating programs that use inclusive strategies to optimize participation from learners of diverse backgrounds. Whitla et al.[12] demonstrated that all students, even those in majority groups, benefit from programs that consider equity.[13] When these learners care for patients, the effects of the interventions may extend to improved clinical outcomes.

Despite the growing publications exploring racism and inequity in medical education and research, few describe interventions that seek to improve DEI in faculty development programs. Those that do report improved outcomes arising from their work.[14] The Society for Academic Medicine (SAEM) recently launched a faculty development opportunity that aims to provide educators with advanced training in medical education research methods, "Advanced Research Methodology, Evaluation, and Design in Medical Education (ARMED MedEd)."[15] To address bias and racism in medical education and research, we developed a nested DEI curriculum within our program that provides an inclusive and diverse learning environment whose members have deliberate knowledge of the science of bias and the support of the community to mitigate it when conducting their research. We describe the development and content of our nested DEI curriculum in the SAEM ARMED MedEd program.

INTERVENTION

Development of the ARMED MedEd course

SAEM convened a task force in 2019 to explore the need for an advanced education research course and to develop an appropriate curriculum and research network. The organization already supports the Advanced Research Methodology Evaluation and Design (ARMED) course, aimed at early career researchers in emergency care research (basic science, clinical research, translational research).[16] The new sister course, ARMED MedEd, is intended for EM faculty who wish to further develop extant research skills in the discipline of medical education research and provides access to experienced mentors and a community of practice.[15] Using a novel approach,[17] the design team applied a five-step needs assessment process to devise the course curriculum, which is provided in Appendix S1. DEI principles were identified in the needs assessment as important for medical education research and were designated as "research support" topics in our formal curriculum (Appendix S1). The longitudinal course runs for 15 months and begins with 2-day intensive, followed by monthly, live interactive webinars (online platform); two full-day sessions at existing specialty society meetings; and a research fair with graduation. In its inaugural year, 2021, the first two face-to-face sessions (the initial 2-day intensive and the spring 2021 SAEM meeting) were conducted virtually due to the COVID-19 pandemic.

Deliberate incorporation of DEI in ARMED MedEd

The course leaders recognized a unique opportunity to address racism and discrimination in medical education and research. Our conceptual framework is based on the notion that bias (conscious or unconscious) exerts an influence on education at all levels. The effects can be felt by learners who are victims of bias in the educational structure. Failure to recognize the effects of bias in education will eventually have an impact in the patient care setting. Even if a diverse group of learners achieves mastery in a biased curriculum, the application of these learning objectives to a diverse pool of patients may render the information useless. One example might be a curriculum aimed at diagnosing skin rashes using photographs of each rash, but only on patients with light-colored skin. Even unbiased learners will not be able to diagnose the same rashes in patients with darker-pigmented skin, because the rashes may have an alternate appearance.

We prospectively considered how to improve awareness of bias in education research design paired with tools to combat it. The course directors (W.C.C. and L.M.Y.) realized that to ensure meaningful inclusion of DEI into ARMED MedEd, this initiative must be represented at the highest level in the course planning and management processes. Therefore, they selected a director of DEI (T.Y.S.), who is a leader in this field, to serve on the ARMED MedEd steering committee. She assembled a team of medical educators with expertise in DEI to develop a nested curriculum to focus on DEI in research. Using an iterative process, the team considered how to weave DEI into the course. To maintain participants' awareness, the team chose to address DEI as an ongoing thread rather than as a single educational intervention. We envisioned five intertwined approaches:

1. Ensure diversity in program participants and faculty.
2. Oppose racism by teaching content that illuminates health care inequities and discriminating practices.
3. Provide implicit bias training to our cohort to reduce bias in future work of scholars.
4. Provide an expert consultation service to advise on DEI compliant research design.
5. Cultivate a community of researchers with similar foundational training who can collaborate in the ongoing conduct of equitable research.

The first point was addressed using a mindful approach. To recruit a diverse cohort, we reached out to the SAEM Academies and the Resident and Medical Student Section (RAMS) to encourage qualified members to apply. The executive committees of the Academies and RAMS each provided a scholarship for a qualified member to attend ARMED MedEd. This organizational support led to a robust, diverse applicant pool. The cohort was selected by ARMED MedEd steering committee members using a previously developed, piloted, revised, and implemented grant-style scoring rubric. A diverse faculty arose from a directive in the course development phase to suggest multiple possible faculty for each topic and to consider diversity.

The DEI curriculum consists of two major components, a didactic curriculum and a consultative service. The didactic portion educates the researchers about designing studies that consider equity and bias (points 2 and 3). Despite a willingness to create an unbiased educational study, it is possible that our participants' projects may contain unintended bias. To combat this possibility, the DEI consultation team is available to review research protocols and suggest strategies to reduce bias (point 4). In subsequent years, there will be a network of graduates with an awareness of bias in research and education (point 5).

The ARMED MedEd DEI curriculum

In structuring our DEI curriculum, we wanted to educate participants on four main topics:

1. Existing research involving DEI to serve as a framework for future work;
2. Impact of medical education research on underrepresented in medicine (UIM) learners;
3. Importance of recruiting diverse researchers and strategies to accomplish this objective;
4. Implicit bias training.

The aim of this multifactorial approach is to increase awareness, provide actionable strategies and create a supportive community to create and study educational interventions that minimize bias for all learners and are inclusive for UIM trainees. We asked participants to explore the barriers to diversity recruitment. We wanted to identify and name these barriers to address ways to overcome the challenges. As leaders in their institutions, this cohort can impact diversity recruitment in their own teams, residency programs, and research studies and foster recruitment of UIM faculty into their departments. Participants were asked to enter a single word simultaneously that describes the barriers to diversity recruitment. The resulting word cloud demonstrates insight in our cohort (Figure 1).

Using a flipped-classroom approach,[18] we split the DEI curriculum into a series of preclassroom recorded sessions and live sessions (Figure 2). Because this curricular component is foundational in nature, three sessions focused on DEI were featured during the 2-day kickoff meeting for the course. Content experts served as faculty for the

FIGURE 1 ARMED MedEd participants indicate perceived barriers to diversity recruitment

sessions. There were two 30-min prerecorded sessions assigned to the participants prior to the live course. During the course, there were two 50-min live sessions. The first focused on DEI in research. Next, the implicit bias training involved 30 min of didactics conducted by an expert in the field, including a professionally prepared engaging video, followed by a small-group experiential learning session. The interactive nature of the curriculum uses the model of andragogy[18] to create a learner-centric experience to improve knowledge and to have an impactful experience to spur practice changes in their research and education.

OUTCOME MEASURES

The main outcome measure for the ARMED MedEd course is a complete grant proposal for a project that employs education research methodology. We encourage all participants to conduct their studies, even without grant funding, and to share their results with the scientific community through presentation at a meeting and/or publication. It is possible that some of these studies will focus on DEI, because our cohort includes researchers who indicated this as their preferred research domain. However, it is most likely that most participants will choose a non-DEI research question aligned with their interest and expertise. We hope that each will be carried out with attention to inclusivity and bias reduction after the exposure to the DEI curriculum and the influence of the consultative service by the DEI expert faculty. As the course enrolls new participants and the network of similarly trained researchers in EM education grows, we anticipate that there will be a reduced need for the consultative service. Ideally, we would like to see improved outcomes in learners who are targeted as study subjects in the projects arising from our program, since all of our learners have received the information about minimizing bias in research. While we cannot measure individual changes in attitude, our cohort has raised awareness, consistent with the suggestions of Mateo and Williams.[19]

DISCUSSION

Our intervention is a deliberate action to raise awareness of DEI principles in the continuing professional development space. Our

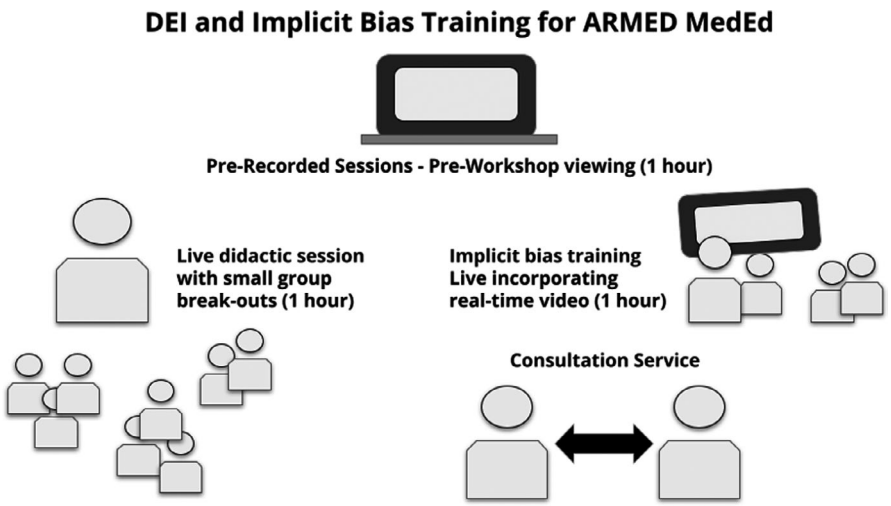

FIGURE 2 The ARMED MedEd DEI curriculum combines flipped classroom, live didactics, small-group interactions, and an ongoing consultations service to reduce bias in medical education research. DEI, diversity, equity, and inclusion

cohort consists of faculty and advanced trainees (fellows) whose career focus is education research and who can, therefore, enact change. In designing their research, we expect that all participants will consider what they have learned about DEI to reduce bias in their interventions. Rather than scheduling an add-on session to an existing course, we created ARMED MedEd with DEI as a core thread to give participants ongoing access to experts in this domain with comparable excellence in medical education and/or education research.

Externally mandated measures directed at addressing diversity have been effective. In 2009, the Liaison Committee on Medical Education (LCME) required medical school admissions committees to consider diversity when building their classes, that cultural competency and health care disparities be included in their curricula (standard 7.6), and that there exist diversity/pipeline programs and partnerships (standard 3.3).[20] Boatright et al.[9] found that, after implementing the LCME diversity standards, there was an increase in matriculation of female, Black, and Hispanic students. Coupled with prioritizing DEI into medical education research efforts, there is a long-term downstream impact of increasing the diverse workforce in medical education and research. The influence extends beyond the targeted minority students as Saha et al.[21] found in an analysis of the AAMC Graduation Questionnaire, conducted prior to the LCME DEI mandates. Caucasian students (when in the majority) who attended schools in the upper quintile with respect to diversity in student composition reported an increased preparedness to care for minority patients compared to the lowest quintile of schools with the least diverse student bodies.[13] This has resounding implications for increased cultural competence and may further dismantle bias and address health care inequities.

Our DEI curricular thread was developed for education research professional development, but its core principles and components may be applied to other professional development programs that seek to incorporate an antiracist philosophy and foster DEI. Future studies will evaluate our DEI program to explore whether focused educational initiatives result in measurable changes in outcomes essential to equity and inclusion, such as diversity in future publications, implementation of studies of interventions that are inclusive and equitable, and attention to health care inequities and DEI in scholarly products.

In accordance with our plan to include a diverse group of learners, we targeted groups whose missions include faculty development in underrepresented groups, such as the SAEM Academy for Diversity and Inclusion in EM (ADIEM), the SAEM Academy for Women in Academic Emergency Medicine (AWAEM), and the SAEM RAMS to make their members aware of, and to encourage them to apply for, ARMED MedEd. Each of the SAEM academies earmarked scholarship(s) for their members to attend the course and were responsible for selecting the recipients from the pool of accepted applicants. We decided not to include demographic information on gender identification, race, or disability status in our application because we believed that this could lead to bias in both directions.

We actively sought a diverse faculty to be involved at three levels—the planning process, the didactic sessions, and the mentorship program. Due to the multiple competing demands of academic life, some of those who were invited to participate declined. Due to the evolving nature of a complex course such as ARMED MedEd, we feel that it is premature to conduct a final analysis. At the conclusion of our inaugural cohort, however, we plan to gather and report these data, evaluate our program, and follow the career progress of the participants and details about their respective studies or grant proposals, including adherence to DEI principles and the prevalence of research that focuses on DEI topics. Despite our deliberate inclusion of a dedicated curriculum to increase the awareness of bias and to provide a structure that stresses the importance of designing education research to avoid bias, it is possible that some researchers are unable or unwilling to include these elements in their study designs.

CONCLUSION

The principles of diversity, equity, inclusion and bias can be incorporated into an advanced education research methodology course

to raise awareness and to provide tools to avoid bias and racism in research design, implementation, and application. As the trained cohort expands, we hope that research in medical education can produce unbiased education that targets all learners and contributes to the reduction of health care inequities.

ACKNOWLEDGMENTS

The authors acknowledge the Society for Academic Emergency Medicine for its support of the creation of the ARMED MedEd program and the Emergency Medicine Health Professions Education Research Consortium (EMPERC). The faculty for the DEI component of the ARMED MedEd program: Dowin Boatright, MD, MBA, MHS; Cassandra Bradby, MD; Sheryl Heron, MD, MPH; Adeola Kosoko, MD; and Bernard Lopez, MD, MS.

CONFLICT OF INTEREST

Dr. Coates serves on the Board of Directors of the Society for Academic Emergency Medicine, the organization that sponsors ARMED MedEd. She recused herself from the vote for approval. The other authors have no potential conflicts to disclose.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

How to cite this article: Coates WC, Yarris LM, Smith TY; the Emergency Medicine Health Professions Education Research Consortium (EMPERC). Planning for diverse, equitable, inclusive research in health professions education: An integral thread in the ARMED MedEd research course. *AEM Educ Train*. 2021;5(Suppl. 1):S82–S86. https://doi.org/10.1002/aet2.10667