

# Education in equitable, inclusive care for diverse patients: An updated, competency-based approach

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To train competent, compassionate future physicians who are equipped to care for diverse patients and actively work to reduce health disparities, osteopathic education values awareness and understanding of cultural and social aspects of health and medicine. This is reflected in several core competency areas.<sup>1</sup> Beyond this existing foundation, medical educators<sup>2,3</sup> and students<sup>4</sup> are increasingly calling on medical education to both reevaluate how race is portrayed in the broader curriculum, as well as to innovate specific curricular content related to diversity, equity, and inclusion (DEI).

To be effective, these efforts require distinct educational approaches compared to other curricular content in medical education. For example, DEI education that is focused on *cultural competency*, offered in a traditional lecture format, and assessed based on learning cultural profiles may have the unintended effects of perpetuating stereotypes and enhancing categorical between-group differences and ethnocentrism.<sup>5</sup>

Increasingly, DEI coursework aims to emphasize an iterative, lifelong process of *cultural humility*, intersectionality of diverse identities, and the role of a provider's own assumptions and biases. Further, consistent with increased national attention to the intersection of social factors and the field of medicine, these courses must move beyond individual-level interventions to address ways to advocate for systemic changes addressing root causes of persistent health disparities. Finally, courses must meet the distinct educational needs of diverse learners—from students from marginalized groups to those with limited personal or educational exposure to this content—in an accessible and individualized manner.

## The Present Study

We updated an existing one-credit, pass-fail, required course in our first-year pre-clinical osteopathic curriculum to address these needs. We examined student response through pre-course and post-course surveys.

The course used a cultural humility perspective, emphasizing individualized lifelong learning. It departed from a traditional knowledge-based lecture format and included small-group learning communities, experiential contact-based learning, and self-directed learning. Together, these distributed and diversified the sources of instruction and increased student autonomy in learning. Synchronous remote delivery was utilized due to the COVID-19 pandemic.

Content was organized around four overarching themes relevant across an array of intersectional patient identities (e.g., race, ethnicity, gender identity, sexual orientation, able-bodiedness, veteran status). The four themes were: 1) Identity, 2) Communication, 3) Bias, and 4) Epidemiology.

Within each theme, core learning experiences included:

- Small group discussion (faculty-led)
- Interactive dialogue with local community members from diverse sociocultural backgrounds
- Self-directed learning e-modules supporting student selection of: a) contemporary, open-source audiovisual content (e.g., podcasts and video series from the *New York Times*, *Seattle Times*, and TED talks), and b) individualized action steps for deeper learning (e.g., attending community or campus DEI events, completing online trainings, reviewing research)

Additional course components included: faculty lecture, physician guest lecture, and a communication workshop. Assignments included formative reflections, a health disparities data assignment, and a summative Equity & Inclusion Plan and Presentation documenting development and identifying remaining growth areas and action steps for ongoing learning. OMS-2 teaching assistants served as senior peer mentors, facilitating community member dialogues and providing student support.

## Participants

All OMS-1 students (N=219) were assigned pre- and post-course Qualtrics surveys as a course self-assessment. Students had the option to consent for their responses to also be used for this IRB-approved research project. Survey responses were not linked to students' identities and consent for research inclusion was not associated with course credit or incentive.

Robust research enrollment rates were obtained pre-course (90.8%, N=199) and post-course (88.0%, N=192). Average age was 24.46 years ( $SD=1.74$ , range 22-31). All identified as cisgender, with 51% male. Students predominantly identified as White/European American (56.3%), with 23.6% Asian/Asian American, 3.2% Middle Eastern/North African, 2.3% Multiracial, 1.4% Black/African American, 1.4% Hispanic/Latinx, and 1% Other/Prefer not to Answer.

## Measurement

**Pre- and post-course repeat assessments:** For each of the 19 AOA competencies targeted by the course (see list in Table 1), students rated the extent to which they felt able to conduct the activity (1=not at all able to 5=extremely able). The CMQ assessed perceived relevance of one's own attitudes, stereotypes, and beliefs to patient care.

**Post-course-only assessments:** An author-developed question rated the course's impact on arousing student's motivation to change (1=none of this feeling, 4=a great deal of this feeling). Open-ended prompts asked students for qualitative comments and identification of which course components contributed most and least to learning. Comments from university-administered course evaluations taken by a randomly selected subset of students (n=71) were also reviewed.

## Analytic Approach

**Quantitative analyses:** For repeat assessments, paired samples t-tests were utilized with a significance cutoff of  $p<0.05$ . Cohen's  $d$  effect sizes were calculated ( $d\geq 0.20$ =small,  $\geq 0.50$ =medium, and  $\geq 0.80$ =large). Descriptive statistics were calculated for demographic information and the post-course motivation to change question.

**Qualitative analyses:** Post-course open-ended question responses were analyzed for themes that recurred across survey results. We identified keywords and phrases, recorded respective occurrence counts, and noted reference in a positive or negative context. Additionally, we noted students' emotional and personal reactions included in open-ended responses and recorded trends by occurrence counts of keywords.

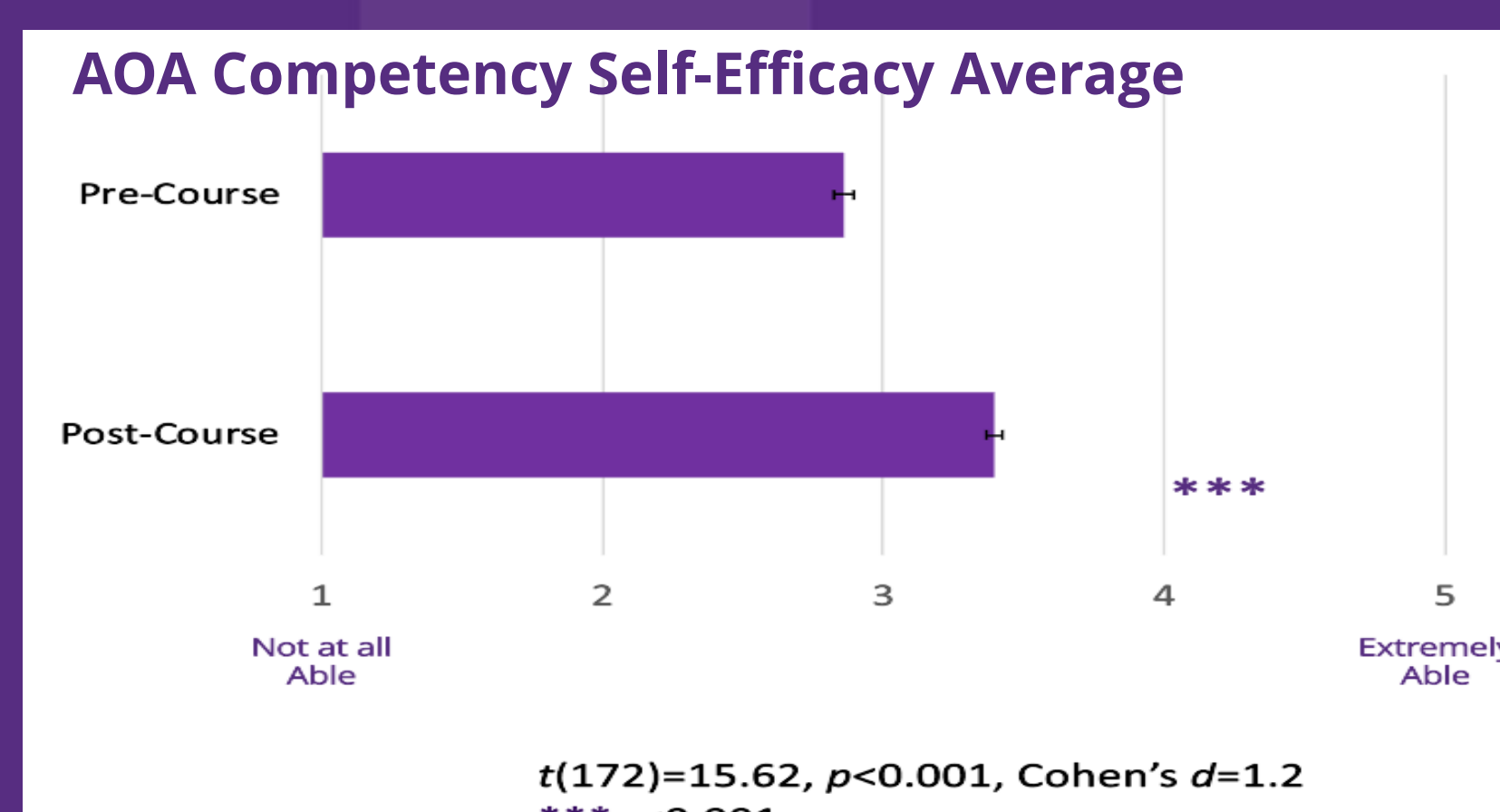
**Quantitative analyses:** There were statistically significant pre-post course improvements in self-efficacy for each of the 19 competencies targeted by the course, with consistently medium to large effects (see Table 1). Table 2 provides detailed results for the seven competencies the course impacted the most, as demonstrated by large effect sizes. Figure 1 displays the average improvement across all 19 competencies. Additional pre-post course analysis indicated significant increase in perceived relevance of one's own attitudes, beliefs, and stereotypes to patient care (CMQ scale;  $t(174)=7.52$ ,  $p<0.001$ , Cohen's  $d=0.57$ ). The course also aroused motivation to change in students, with 82.7% endorsing a moderate to great degree of this feeling after the course (Figure 2;  $M=3.26$ ,  $SD=0.79$ ).

**Qualitative analyses:** Common themes in student responses included a desire for in-person learning and positive reactions to the community member dialogues. Students often described these dialogues as providing real-world experiences and applications of course content. Personal and emotional responses evoked by the course varied greatly. As represented by the word cloud (Figure 3), both positive reactions such as "safe," "valuable," "fun," and "engaging," as well as negative reactions such as "awkward," "afraid," and "uncomfortable" were present in student responses.

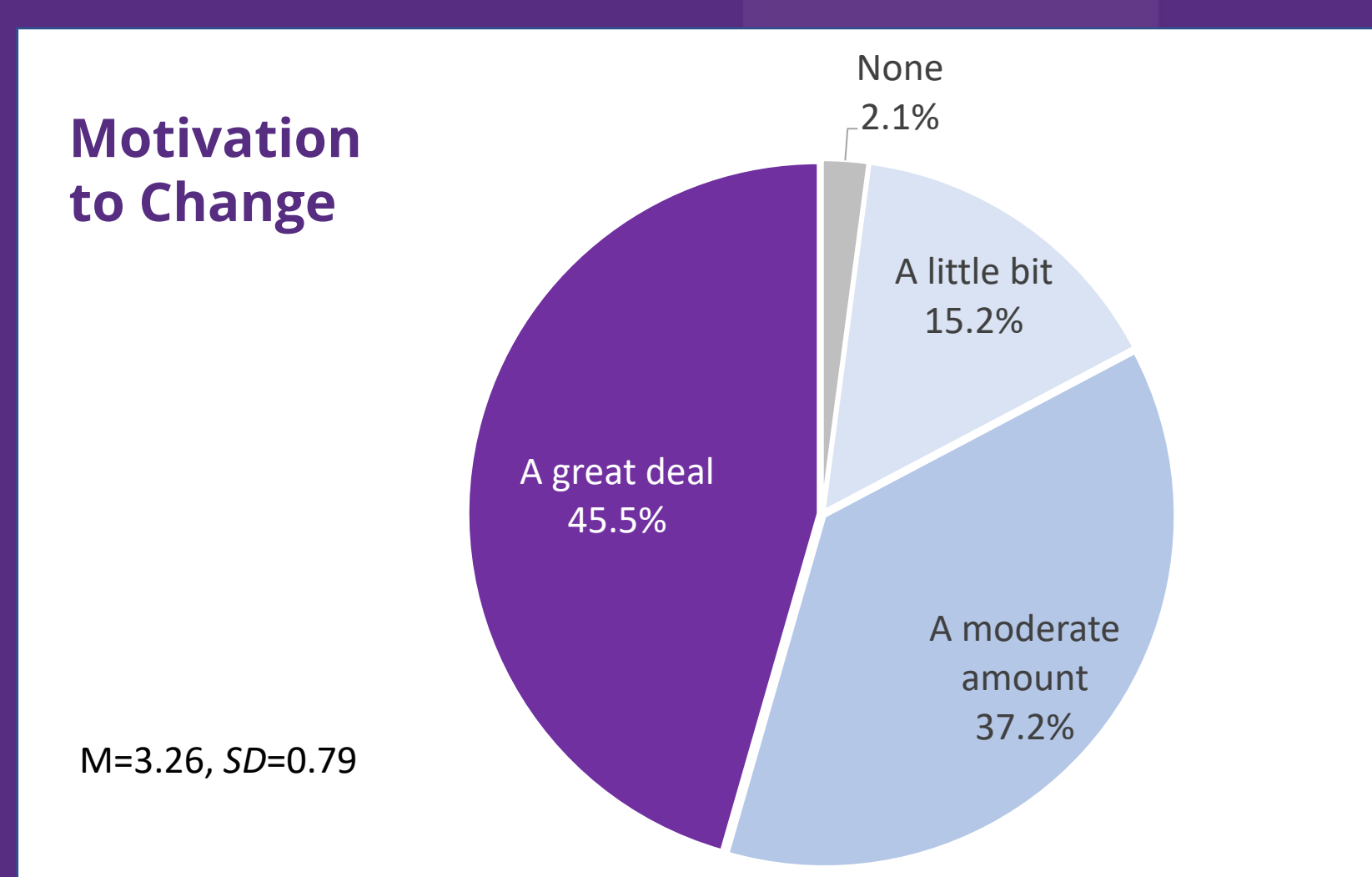
Small Effect	Medium Effect	Large Effect	AOA Competency	t-test	Cohen's $d$
V.2.a, V.7.a	I.4.h, III.5.g, V.7.b, V.7.c, V.7.d, IX.2, IX.3, IX.7, IX.8, IX.9	I.1.f, III.1.c, IX.1, IX.4, IX.5, IX.6, IX.10	Demonstrate in a patient encounter the impact of culture and world view on the presentation of somatic and/or visceral dysfunctions. (I.1.f)	$t(172)=16.48$ , $p<0.001$	1.25
			Apply appropriate knowledge to the medical interview and demonstrate the ability to identify and/or address psychosocial, cultural, religious, health maintenance, and risk factor issues. (III.1.c)	$t(172)=13.21$ , $p<0.001$	1.00
			Demonstrate an understanding of the scope of culture and the elements that form and define it (IX.1)	$t(172)=12.950$ , $p<0.001$	.99
			Demonstrate familiarity with basic religious and cultural beliefs that affect patients' understanding of the etiology of their illness and/or the efficacy of their treatment (IX.4)	$t(172)=10.873$ , $p<0.001$	.83
			Assess other health care resources and methods patients use (or used) either in addition to, or instead of their physician's recommended treatment (e.g., home remedies, traditional healers) (IX.5)	$t(172)=11.247$ , $p<0.001$	.86
			Assist the health care team in developing a mutually acceptable, culturally responsive plan for patients (IX.6)	$t(172)=11.162$ , $p<0.001$	.85
			Use the cultural profile and history in the treatment of individual patients and record them appropriately in the medical record (IX.10)	$t(172)=11.204$ , $p<0.001$	.85

**Table 1.** AOA competency evaluated, organized by Cohen's  $d$  effect size ( $d\geq 0.20$ =small,  $\geq 0.50$ =medium, and  $\geq 0.80$ =large.)

**Table 2.** Paired t-tests for AOA competencies demonstrating post-course improvement corresponding to a large effect size ( $d\geq 0.80$ )



**Figure 1.** Pre- and post-course average student self-efficacy across 19 AOA competencies. Students rated "To what extent do you feel able to conduct each of the following activities" (1=not at all able to 5=extremely able)



**Figure 2.** Post-course student rating of agreement with the statement, "The course aroused motivation to change in me" (1=none of this feeling to 4=a great deal of this feeling)



**Figure 3.** Word cloud representing students' emotional and personal responses to course content, with size of word reflecting occurrence count in student responses.

Pre-course measures indicated that the majority of students explicitly valued cultural awareness, yet generally did not report feeling well-prepared to work clinically with these cultural differences. Post-course measures demonstrated significant increases across each AOA competency area, documenting increased self-efficacy in applying course concepts to patient care. Additional measures supported our goals of increased perceived relevance of one's own attitudes, beliefs, and stereotypes to patient care, and increased motivation for further action to support lifelong DEI learning and advocacy for systemic change.

As expected, there was a wide range of emotional responses to course content, highlighting how the same content can affect learners quite distinctly. We noted the common experience of students feeling "awkward" or "uncomfortable" during some parts of the course. However, in conjunction with descriptions of "safe" and "valuable," we contend that courses such as these should not strive to be free of discomfort as long as they are safe learning spaces. These emotional responses can be part of the process of developing cultural sensitivity and discussing intentionally challenging topics.

A limitation of the assessment of AOA competencies was reliance on student self-assessment. Although it is not feasible in these OMS-1 pre-clinical students, observing behavioral outcomes would offer enhanced understanding of the course's impact on skills and future practice. For the qualitative analyses, the data came from multiple open-ended prompt sources without ability to distinguish repeat response from the same student. As such, occurrence counts of keywords may overrepresent certain students' repeat responses.

Our results may inform other osteopathic institutions of promising curricular practices for DEI education. Our course highlights the feasibility of implementing a required course in the preclinical curriculum, offering richer educational opportunities than more limited DEI workshop or elective curricular offerings can achieve.

Future directions include ongoing analysis of optimal course assessment methods and best practices for integration with cooccurring high stakes courses. We also plan iterative updates to our self-directed learning e-modules to continue to offer contemporary, relevant audiovisual content.

<sup>1</sup>AACOM (August 2012). Osteopathic Core Competencies for Medical Students.

<sup>2</sup>Yancy, CW (2020). Academic Medicine and Black Lives Matter: Time for Deep Listening. *JAMA*, 324(5):435-6.

<sup>3</sup>Amutah, C et al. (2021). Misrepresenting Race—The Role of Medical Schools in Propagating Physician Bias. *NEJM*, 384(9):872-78.

<sup>4</sup>Edwin, N et al. (2020). Changing How Race is Portrayed in Medical Education: Recommendations from Medical Students. *Academic Medicine*, 95(12):1802-06.

<sup>5</sup>Beach, MC et al. (2005). Cultural Competency: A Systematic Review of Health Care Provider Educational Interventions. *Med Care*, 43(4):356-73.

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