Evaluating cultural and structural competence: impact of the ACE curriculum and PBL group diversity

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Introduction

Implicit or "unconscious" bias creates major barriers to patient care. In a systematic review of investigations among health care professionals, Hall et al. found in 15 studies evidence of moderate bias in > 40% of professionals, and that implicit bias influenced treatment decisions adherence, and patient health outcomes.[1] A national survey by The Commonwealth Fund found that compared to Whites, Hispanics and African Americans were nearly twice as likely to report communication problems with their doctors, 14 times more likely to believe that the quality of their health care was directly related to their ethnicity, and nearly twice as likely to perceive disrespect during health care visits.[2] Bias increases during medical school when students are repeatedly exposed to biased interactions with physicians. The US Institute of Medicine report, *Unequal Treatment*, recommended that healthcare professionals at all levels should be trained about bias to reduce disparities in health care among minority populations.[3] Medical education presents an opportunity to identify and intervene with bias. A recommended, actionable framework to impact implicit bias recognition includes creation of a safe and nonthreatening learning context; acquisition of cognitive knowledge both about the science of implicit bias, i.e. how implicit bias influences behaviors and patient outcomes; and growth in personal knowledge or self-awareness about one's own existing implicit biases and how they are or might impact others.[4]

Relevance to KU SOM Curriculum: Despite strongly positive reported perceptions of KU in the 2016/2017 Climate survey, 14% (mostly members of minority groups) reported experience of exclusionary, intimidating, offensive, or hostile conduct.[5] The new ACE curriculum at KUMC has included explicit didactive and interactive content to address implicit bias. The effect of including these elements in the early medical school curriculum on student knowledge, attitudes and skills managing bias remains unknown, and requires careful evaluation. In particular, changes in the ACE curriculum provide an opportunity to compare changes in student knowledge, attitudes and skills with respect to cultural and structural competencies over time.

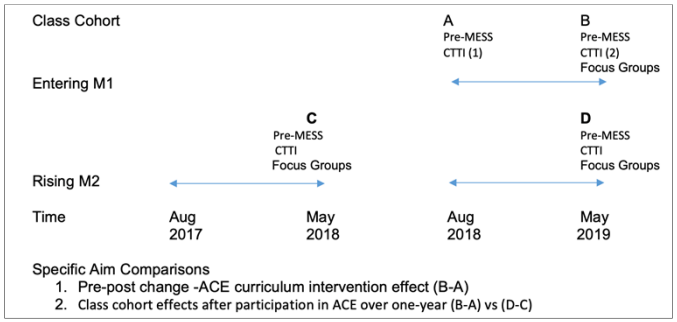
Objectives

This was a prospective, one-year longitudinal, observational, mixed methods study to determine to what degree ACE participation impacts changes in medical students' cultural competencies (knowledge K, skill S and Attitude A); and whether this varies between students participating in diverse vs non-diverse small learning groups. We examined:

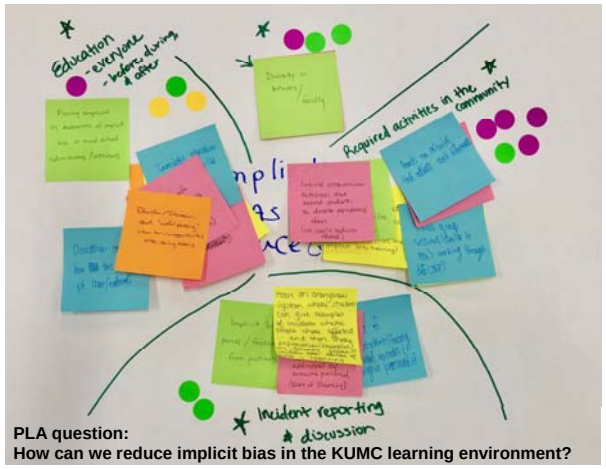
1) Change in Cultural Competence KSA post vs pre-ACE
2) Differences in KSA change between students in the inaugural (M2) vs second (M1) ACE cohort (class cohort effects, reflecting institutional learning during the implementation process), AND between diverse (more than one student from an under-represented minority in the group) vs. non-diverse PBL groups
3) Qualitative data from focus groups with students recommending ways to reduce bias in the KU SOM learning environment.

Methods

1. **Participants:** Participants included medical students from the 2018/19 ("entering M1"), and 2017/2018 ("rising M2") medical student cohorts at the Kansas City, Wichita and Salina Campuses.
2. **Outcomes:**
   - **Quantitative:** Validated measure of knowledge, attitudes and skills relevant to the AAMC Cultural Competence Domains (Pre-MESS CCTI)
   - **Qualitative:** Focus groups with students from the above cohorts, using Participatory Learning in Action method in which participants identify and prioritize qualitative themes suggesting potential interventions.
3. **Analysis:**
   - Pre-Post comparison of participants (by class cohort and diversity status of learning community)
   - Examination of pre- and post-ACE Pre-MESS CCTI KSA score distributions
   - Non-parametric comparison of Pre-vs-Post KSA scores
   - Multivariable ANOVA to determine how change scores varied between class cohorts and diversity of LC
   - Qualitative thematic identification and summarization of prioritized PLA session results.



Results



PLA question:
How can we reduce implicit bias in the KUMC learning environment?

Qualitative Themes:

1. **Implicit Bias Education for faculty and students:** small group interactive "safe-spaces" to personal narratives/experiences
2. **Small group cases** on realistic, complex social-cultural issues, including standardized patients
3. **Flipped classrooms** presenting scientific evidence on e.g. childhood trauma and modifiable social risk factors
4. **Interaction with Cross-cultural Patient Panels** including mandatory exposure to inter-cultural clinical experiences i.e. Jaydoc
5. **Avenues to report bias** anonymously, with an emphasis on growth

Quantitative

1. M2s vs M1s: More M2s (34%) vs M1s (21%) had a prior career before medical school, half of those careers were in allied health. They were not-significantly different in age at entry (mean=24), birth outside the US (5%), speak a second language (20%) or family household income
2. Pre- vs Post-ACE score distributions were not, but change scores (Post minus Pre) were normally distributed.

Pre-MESS-CCTI	Pre-ACE N=174 Median (25th, 75th pct)	Post-ACE N=116 Median, 25th, 75th pct
Knowledge	17 (19,20)	17 (19,20)
Skill	22 (20,24)	23 (21,25)*
Attitude	35.5 (33,39)	36 (33,38)

Analysis of Change: Pre-MESS-CCTI		N	Mean	Std. Deviation	Std. Error Mean
Change Know-ledge	Non-diverse	42	.17	2.316	.357
	Diverse	74	.05	3.339	.388
	M1	46	-.04	3.176	.468
	M2	70	.19	2.896	.346
Change Skill	Non-diverse	42	.81	3.046	.470
	Diverse	74	.62	4.157	.483
	M1	46	.57	3.557	.524
	M2	70	.77	3.942	.471
Change Attitude	Non-diverse*	42	.76	3.831	.591
	Diverse	74	-.66	3.489	.406
	M1	46	-.43	4.048	.597
	M2	70	.04	3.407	.407

Summary:

1) Qualitative themes suggest creation of a student group to explore these issues more fully with the Medical Education Office
2) Self-reported cultural competence skills improve as a result of ACE participation (P=0.01), but knowledge and attitude do not.
3) There were greater (but non-significant) changes in knowledge, attitude and skill in rising M2s vs entering M1s and in students in non-diverse vs diverse learning community participants, possibly reflecting different exposures over time to diverse experiences.

References

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