

Assessing Identity-Based Bias in Problem-Based Learning Curriculum Through a Community Lens

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ABSTRACT

Identity-based bias in medical education contributes to discrimination in healthcare and health inequities. Community-Students Together Against Healthcare Racism (C-STAHHR) was developed in 2010 to combat healthcare racism using community-based participatory research. The aim of this analysis was to evaluate the problem-based learning (PBL) curriculum at a US medical school for identity-based bias through a community lens.

An evaluation tool was developed from prior C-STAHHR focus group data and Sadker Foundation's Seven Forms of Bias¹. Participants evaluated PBL cases using this survey and qualitative discussions in focus groups.

Community participants were recruited via snowball sampling. Survey responses were assigned value based on ideal answer. Questions were summed and divided by total possible points to create a percentage referred to as the Bias Score. Bias Scores corresponding to a particular case were averaged. We used a multivariate mixed effects linear regression model to associate patient-character identity with Bias Score. Three evaluators (two per transcript) coded transcripts through iterative code generation and emergent themes were identified.

Six focus groups (43 participants total) were recruited. Each focus group evaluated five of 15 unique cases—each case was reviewed by two groups. The average case Bias Score was 40% (SD: 20.3%). In multivariate mixed effects models, Latinx and Transgender-Man identities resulted in the largest increase in Bias Score [9.1% (p-value=0.047) and 11.4% (p-value=0.069), respectively]. Emergent themes from community participants include discriminatory care, assumptions based on identity, and missed opportunities to address important patient needs.

Community members are valuable assets to identify identity-based bias in medical school curriculum. PBL cases included incidences of identity-based bias that may perpetuate harmful stereotypes and implicit bias of future physicians. These findings represent a larger need to evaluate and address issues around bias and representation in medical education curricula.

INTRODUCTION

- Physician identity-based bias contributes to discrimination in healthcare and health inequities¹⁻⁷
- Community-Students Together Against Healthcare Racism (C-STAHHR) was created in 2010 with the mission of using community-based participatory research to reduce racism
- Problem-Based Learning (PBL) cases were identified as a potential source of identity-based bias
- Aim:** We aimed to utilize community member perspectives to evaluate CUSOM PBL cases for identity-based bias

METHODS

- Recruitment:**
 - Snowball sampling
- Focus groups:** Participants evaluated PBL cases through quantitative survey and qualitative discussion
 - Survey developed from prior C-STAHHR focus group data and Sadker Foundation's Seven Forms of Bias.⁸
- Thematic analysis:** Three evaluators (two per transcript) coded transcripts via initial codebook developed from data and iterative code generation
 - Thematic model developed from emergent themes
- Statistical analysis:** Survey responses assigned value based on ideal answer (0=least bias, 3=most bias) to generate Bias Score out of a maximum score of 24
 - Scores for each case averaged to get percent bias score
 - Mixed effects linear regression model with random intercepts for inter-participant and inter-focus group correlation
 - Models tested for univariate case identity (race/ethnicity, gender and insurance status) correlation as well as multivariable case identity correlation (some cases included multiple identities)

QUANTITATIVE RESULTS

- Six focus groups conducted
- 41 participants, mean 6.8 per group
- Five cases per focus group and 15 unique cases reviewed
- Each case reviewed by two focus groups

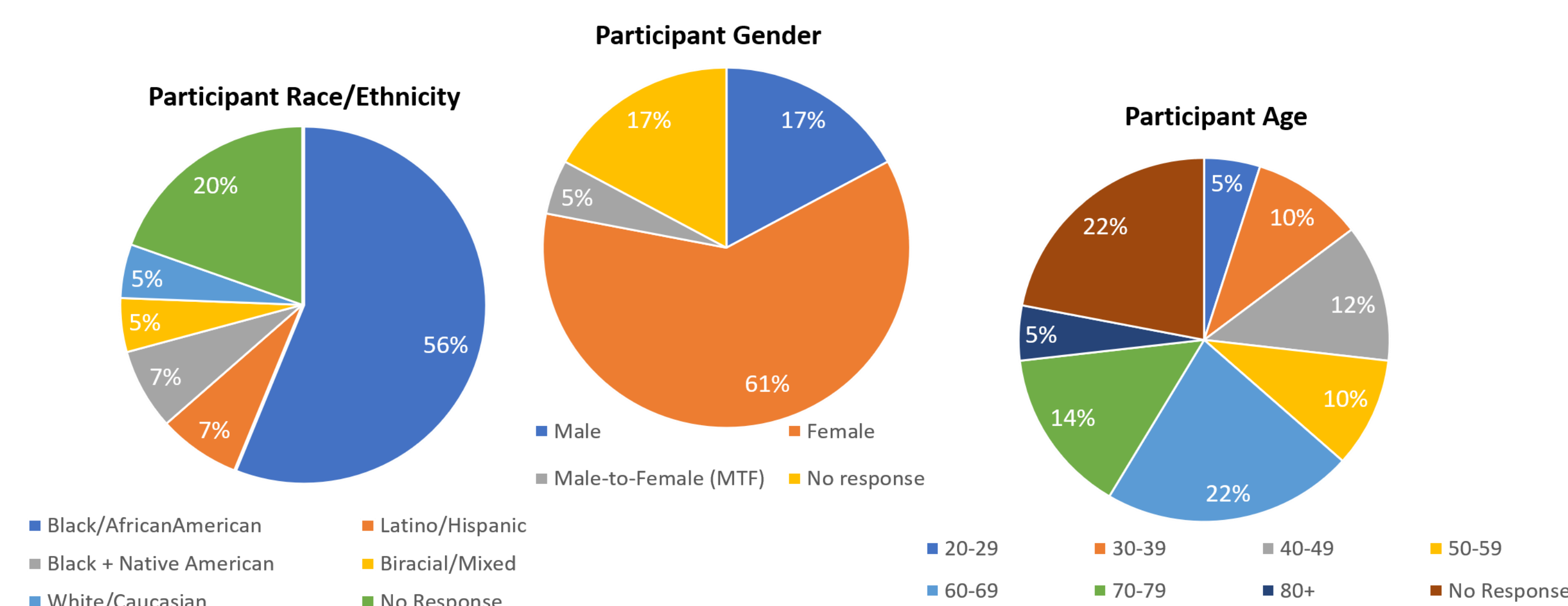


Figure 1. Participant demographics

	Crude		Multivariable	
Identity	Effect Estimate	P-value	Effect Estimate	P-value
Race				
Latinx	14.9	<.001	9.1	0.047
Unspecified	2.5	0.30	0	0.77
Gender				
Transgender-Man	4.5	0.42	11.4	0.069
Cisgender-Female	1.6	0.60	7.3	0.026
Insurance				
Uninsured	9.6	0.005	10.1	0.052
Any Minority	11.4	<.001	--	--

Figure 2. Crude and multivariable effect estimates of race, gender, insurance and any minority identity on the Bias Score.

QUALITATIVE RESULTS

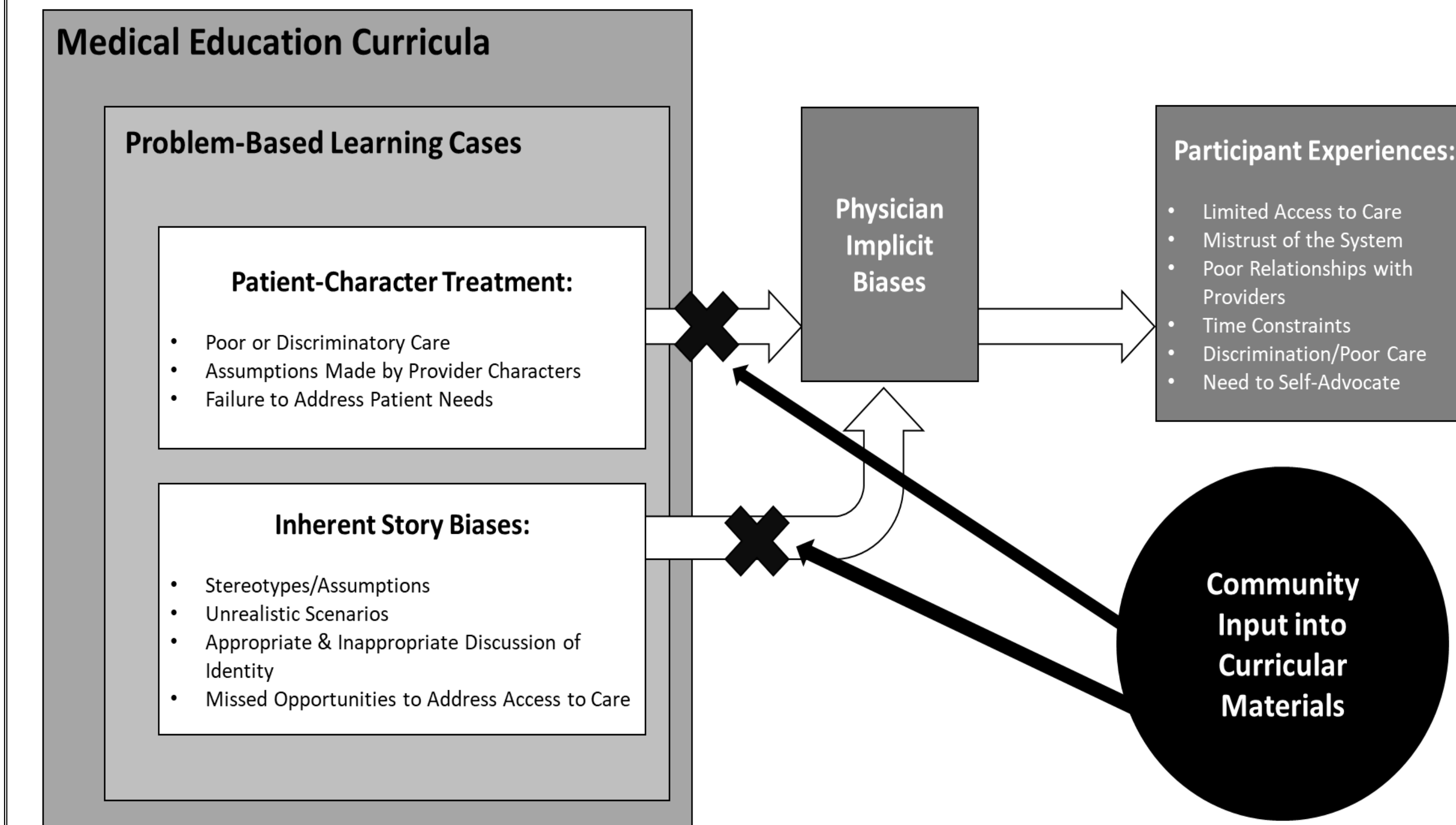


Figure 3. Conceptual framework developed from emergent themes generated in qualitative thematic analysis.

CONCLUSIONS & LIMITATIONS

- PBL cases included several incidences of identity-based bias that may perpetuate harmful stereotypes and implicit bias of future physicians
- Cases with patient-characters who were Latinx or uninsured showed significantly more bias than other cases
- Findings represent a larger need to evaluate and address issues around bias and representation in medical education curricula
- Changes were suggested to the PBL Course Director and community involvement is ongoing
- Study Limitations:**
 - Participants were English speakers only
 - Low percentage of participants were Latinx
 - Limited time for each focus group
 - Participant confusion about cases being fictional stories versus real patients

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