

EDITORIAL

Schools Matter? Contextual Factors That May Affect Bias in Clinical Decision-making

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Medical educators are at the vanguard of developing future physicians who will care for rapidly changing, complex, and diverse patient populations. Today's medical schools must prepare graduates to care for the patient populations of tomorrow. We now know that clinician bias plays a contributing role in the etiology health disparities.¹ Patients' English language proficiency, race, ethnicity, gender, and socioeconomic status all have an impact on the care delivered. Individual physician bias related to these factors is a potential contributor to health disparities through its influence on communication patterns and medical decision-making.² Little is known, however, about the impact of the learning environment on medical student bias related to race, ethnicity, gender, or socioeconomic status.

Strategies to reduce provider implicit bias have been suggested,³ and targets for curricular interventions, involving communication within the patient-provider dyad, have been identified.⁴ Specific, actionable targets for clinical decision-making, however, have remained elusive despite efforts by health professions educators and administrators to enhance the care provided to diverse patients in order to achieve health equity.

One question worth asking is: "Do medical schools and their learning environments influence race and gender bias in student clinical decision-making?" While the answer to this particular question is unknown, in this issue of JGIM, Williams and colleagues provide exciting insights regarding the contextual attributes of schools that may reduce clinical decision-making bias in their graduates.⁵ The study provides an important framework to review possible modifiable school factors that contribute to bias in student clinical decision-making.

The authors expand on their prior work which demonstrated variations in students' decision-making in clinical vignettes; the vignettes described cardiac presentations that varied only by patient gender, race, or socioeconomic status.⁶ That study focused on decisions regarding the possible work-up of the clinical presentation and factors that lead to the

recommendation of cardiac procedures. One curious finding warranted further exploration and led to the current analysis; they found meaningful differences among schools whose students demonstrated bias in clinical decision-making and those that did not. Their results illustrated a possible "school effect," where identifiable characteristics of schools influence whether students exhibit bias in clinical decision-making.⁶ To probe those findings, the authors describe a mixed-method approach exploring whether school-based factors result in senior students showing "no evidence of bias" or "evidence of bias" in their clinical decision-making.⁵ Through focus groups, individual interviews, case study, and quantitative data analysis, the authors summarized data including 32 factors thought to influence development of student biased or non-biased decision-making.⁵

In their results, Williams et al. identified three factors that contribute to increased likelihood of a school being in the "no evidence of bias" cluster: (1) external factors, (2) institutional factors, and (3) the training environment. While all schools must meet the external factor of accreditation requirements, the schools in the "no evidence of bias" decision-making cluster were more likely to highlight cultural competency as a longitudinal priority. Schools also demonstrated differences in institutional factors; schools with less focus on diversity and less commitment to a diverse student and faculty body were more likely to be in the "evidence of bias" cluster. Conversely, schools with "no evidence of bias" noted entry requirements emphasizing strategies to admit a diverse study body and create an inclusive learning environment.⁷ Analysis of the learning/training environment demonstrated that the "no evidence of bias" schools focused on the benefits of integrated small group continuity and reflection throughout the four-year curriculum. Their analysis additionally underscored the importance of the non-accusatory tone common to diversity instruction within these same schools. Informal aspects of the learning environment more common in the "no evidence of bias" schools included more approachable residents and faculty, administrations that addressed issues of bias transparently, and positive (versus resentful) attitudes toward diversity of the student body.

The authors conclude that the external, institutional, and training environment factors could provide a basis for modifiable conditions that may increase trust and lead to less

hierarchical relationships. These school-specific contextual factors could represent “modifiable elements” that lead to non-biased clinical decision-making on the part of students.

In reviewing the study’s results, many may not be familiar with the fuzzy-set qualitative comparative analysis (Fs/QCA); the name itself may turn many away. In brief, Fs/QCA is an analytic approach in the social sciences that seeks to bridge and pair case-study comparative research with quantitative data. It has been useful in the social sciences when describing possible contextual paths to various outcomes. The Fs/QCA results, similar to the standard qualitative analysis, likewise highlighted the importance of opportunities for reflection throughout the curriculum as an important pathway to have non-biased decision-making. The work of educational theorists can assist us in making sense of the authors findings as well. Jurgen Habermas noted the possibility of transformational or perspective change through reflection; and that was expanded upon by John Mezirow who found that adults can reassess their assumptions through opportunities to think, feel, and act.⁸ These are possible situational learning environments that develop within the context of the schools whose students exhibited no-bias in clinical decision-making.

The authors identified a secondary pathway to non-biased decision-making if opportunities for reflection were not available. It entails formal training and admissions processes related to diversity combined with one of either of two factors: focus on an inclusive, longitudinal learning environment, or school priorities regarding community service. In keeping with the results of the standard qualitative analysis, diversity remains an important factor. This secondary pathway comprises diversity in patient exposure, curriculum, student body, and faculty.

As we review the work presented, the lack of acknowledgment of informal training as a component of the path to inclusion in the “no evidence of bias” cluster is surprising. We would be remiss if we failed to note that there was little mention of the hidden curriculum.⁹ It was difficult to review the study’s results without an eye toward the institutional climate and hidden curriculum,⁹ several aspects of which are included within the seven factors the authors related to informal training. Evidence demonstrates the hidden curriculum’s detrimental effects on gains achieved through formal instruction (on various topics), as well as negative effects on professional identity formation¹⁰; one would hypothesize that bias would be no different. There are potential reasons why the hidden curriculum was not highlighted as an important component in the study, including but not limited to (1) the nature of the hidden curriculum is so insidious that the interview guide could not uncover participant perspectives, and (2) the hidden curriculum might be similar enough across schools that it did not distinguish between the “no evidence of bias” and “evidence of bias” clusters. The latter could especially be the case in inpatient and/or community practice settings, which may have a culture distinct from the medical school culture that values diversity. Even with these potential limitations, the study’s construct of informal training

representing the hidden curriculum, with multiple factors related to role modeling and institutional culture, achieved the highest sufficiency score when combined with opportunities for reflection, and was above their stated cutoff of 0.8 to reach sufficiency when combined with formal training. Given these findings, and the known interaction between formal and informal instruction,^{9, 10} we caution the reader against dismissing the hidden curriculum as a modifiable factor capable of encouraging non-biased clinical decision-making.

Finally, the authors did not measure actual student bias. Without a measure of implicit bias, it is impossible to determine whether students were able to recognize and manage their biases so that these biases would not influence their clinical decision-making, or if the students in the “no evidence of bias” cluster of schools had less implicit bias to begin with. Perhaps there is something about schools that value diversity in their faculty, student body, and throughout their curriculum that attracts students with lived experiences that result in less implicit bias. Alternatively, being socialized into the medical culture in such a diverse and inclusive environment may decrease pre-existing bias through positive intergroup contact,³ thereby leading to decreased bias being present to influence clinical decision-making. We know little, however, about how these factors translate to the management of patient problems.¹¹

This study prompts us to want more inquiry into the possible modifiable factors schools can review. Further work is needed on what impact the learning environment and/or institutional climate may have on clinical decision-making and graduates’ outcomes. Future research should include designing active learning exercises that enable the development and practice of skills related to recognizing the activation of bias and enabling students to manage their biases in order to mitigate any negative effects on their clinical decision-making.

We are grateful to Williams and colleagues for they have left us with a framework to consider future research in the area of school differences and the impact those difference might have on physician practice. Their findings are an important step in elucidating institutional characteristics and curricula that might influence and potentially mitigate the influence of bias on physician clinical decision-making. Additionally, the study forms an important basis for continued research in mitigating implicit biases beyond race, gender, and socioeconomic status as we strive to educate students to become physicians capable of delivering excellent, equitable care to all patients.

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