INNOVATIONS IN EDUCATION

When Best Intentions Aren't Enough: Helping Medical Students Develop Strategies for Managing Bias about Patients

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INTRODUCTION/AIMS: Implicit bias can impact physician–patient interactions, alter treatment recommendations, and perpetuate health disparities. Medical educators need methods for raising student awareness about the impact of bias on medical care.

SETTING: Seventy-two third-year medical student volunteers participated in facilitated small group discussions about bias.

PROGRAM DESCRIPTION: We tested an educational intervention to promote group-based reflection among medical students about implicit bias.

PROGRAM EVALUATION: We assessed how the reflective discussion influenced students' identification of strategies for identifying and managing their potential biases regarding patients. 67% of the students (n=48) identified alternate strategies at post-session. A chi-square analysis demonstrated that the distribution of these strategies changed significantly from pre-session to post-session ($\chi^2(11) = 27.93, p < 0.01$), including reductions in the use of *internal feedback* and *humanism* and corresponding increases in the use of *reflection*, *debriefing* and *other strategies*.

DISCUSSION: Group-based reflection sessions, with a provocative trigger to foster engagement, may be effective educational tools for fostering shifts in student reflection about bias in encounters and willingness to discuss potential biases with colleagues, with implications for reducing health disparities.

KEY WORDS: bias; physician–patient interactions; medical students.

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INTRODUCTION/AIMS

Beliefs about patients have been proposed as a mechanism through which physicians may contribute to disparities.^{1,2} Current research centers on *implicit bias*—how subconscious stereotypes about groups are activated when physicians

automatically classify a patient as a member of a group (e.g., unemployed, white) and impact patient interactions. Numerous studies link physician treatment recommendations to patient race.³ When such decision-making is linked to implicit bias⁴, it can perpetuate healthcare disparities. Although physicians need strategies to become aware of and mitigate potential implicit biases in their patient encounters, little research demonstrates how to reduce harmful effects of implicit bias among physicians.⁵

Some research suggests that when motivated individuals are made aware of their biases, they can “mentally correct” initial biases.⁶ Medical educators often rely on reflection activities to create student awareness of potential biases. Methods to provoke reflection vary^{7,8} but an appropriate trigger is critical to creating reflection that changes perspective.⁹ We tested an intervention to promote group-based reflection among medical students about implicit bias. We report the influence of the discussion on how students plan to develop awareness of and manage potential biases and describe potential implications of shifts in student planning.

DESCRIPTION

The Structure and Setting. We designed a small-group discussion session, entitled “Best Intentions,” for volunteer third-year medical students to promote reflection about implicit bias toward patients. Third-year students have clinical experiences upon which to reflect and would also have opportunity to apply the strategies identified as a result of their reflection. We offered credit in a one-year course that provides community-based clinical experiences in ambulatory care and recruited 72 volunteers (44% of the full class).

The Reflection Trigger. We utilized the Implicit Association Test (IAT) as a trigger for reflection.¹⁰ The computer-based, interactive IAT proposes to measure implicit bias by calculating how long it takes a participant to match pictures or words that correspond to a social group (e.g., race, body size) to particular characteristics (e.g., good, stubborn). The IAT operationalizes implicit bias by proposing that participants take less time to match a group word or image to a characteristic

if they already associate the group with the characteristic (i.e., a bias toward or preference for the association). Conversely, characteristics that are not associated with the group require more time to match (i.e., a bias against the association).

The contention that the IAT measures implicit bias has generated controversy¹¹, making it a provocative trigger for reflection and discussion.¹² Though publicly available¹³, it can be completed privately. Students completed two IATs prior to the session—one that assessed biases about persons with disabilities and a second IAT of their choice.

The Group-Based Session. Public programs about bias can engender negative reactions, suggesting that successful intervention requires private self-discovery about potential bias.⁵ However, interventions that enhance understanding of implicit bias and that require less cognitive burden for participants can be successful in reducing bias.¹⁴ We posited that a skillfully-facilitated, peer-group discussion about the students' experiences with the IAT and with bias in clinical settings could raise awareness about implicit bias and motivate action toward managing bias. In smaller groups, which promote comfort, students could reveal as much of their private experiences as they felt comfortable doing, while sharing the burden of reflection. To train group facilitators, we had facilitators complete the reflection trigger, participate in a group session similar to the planned student session, review the discussion guide with our team, and discuss tactics for handling group challenges.

No new content was introduced in the students' group session. Using the discussion guide, facilitators asked about students' experiences with the IAT. They then segued into the focal discussion of students' clinical experiences (providing services or observing others doing so) in which bias towards patients seemed evident. What were students' experiences? How had they (or their clinical models) identified and/or managed biases they perceived in themselves? What was the outcome of the bias? How might they or others have behaved differently to mitigate bias? The final section of the discussion affirmed that bias is universal and that physicians are not immune.

EVALUATION

Evaluation Methods. We obtained Institutional Review Board approval for the project's detailed objectives and evaluation plans.¹⁵ All participants provided written consent. One evaluation objective was to examine the influence of the group session on students' strategies for identifying and managing biases. To evaluate, we included an open-ended item in pre- and post-session student surveys, "*Identify two specific strategies that you, as a physician, plan to use to identify and manage your potential personal biases.*" Prior experience suggested students would respond more specifically if the open-ended question was limited in scope (e.g., to two strategies). We administered pre-session surveys after students completed an IAT but immediately before the group session, and post-session surveys immediately after the group.

Using a grounded theory approach to review a random subset of 20 responses (including up to two strategies each), two team

members developed a coding scheme of 12 possible strategies (defined in Table 1). After development, we posited that more effective strategies might require more cognitive resources and reflect more acceptance of potential bias in oneself.⁵ As such, the strategies were loosely ordered into those that were potentially more effective (including *reflection*, *preparation*, *humanism*, *debriefing*, and *engagement*), modestly effective (i.e., *education*, *external feedback*, *professional guidance*), or less effective (*suppression*, *internal feedback*).

Two other team members independently coded the responses. Because responses were multi-faceted (with multiple strategies), coders could assign up to three themes for each response. Coders resolved disagreements, establishing consensus for each response through discussion. No new codes emerged, though we examined responses coded as *other* for emergent strategies that appeared in more than one response.

Evaluation Results. We conducted ten sessions of 6–8 students each. Students were asked to provide two strategies, for a possible minimum of 144 answers for each of the pre-session and post-session inquiries. Only 10.4% (n=15) of the 144 pre-session answers were multi-faceted, while 16% (n=23) of the 144 post-session answers were multi-faceted. We calculated inter-rater reliability between the initial primary code assigned by each coder to each response using Cohen's kappa, which was 0.83 and 0.86 for the pre- and post-session queries respectively. Allowing multiple strategies in each response resulted in 159 coded strategies for the pre-session answers and 169 post-session. The final distribution of codes assigned to the pre- and post-session responses are in Table 1.

67% of the students (n=48) identified alternate strategies at post-session, which included either the addition of a new strategy to pre-session strategies or choosing a different strategy. The distribution of the strategies (i.e., codes) changed significantly from pre-session to post-session ($\chi^2(11) = 27.93, p < 0.01$), suggesting that the group impacted how students planned to manage bias. These changes include a reduction in the use of *internal feedback* and *humanism* (and *non-responsive* answers) and a corresponding increase in the use of *reflection*, *debriefing* and *other* strategies.

For example, prior to the session, a student intended to use "self-evaluation regularly" (*internal feedback*) but cited "self-reflection and talking with colleagues" (*reflection* and *debriefing*) post-session, a shift from relying solely on self-monitoring to seeking others' perspectives. One student planned to "figure out my initial response to patient and analyze" (*internal feedback*, *reflection*) pre-discussion. Post-discussion, the student offered a similar *internal feedback* response ("review my interaction with specific patient to judge if I was biased"), but added a desire to pursue *education* and *exposure to useful experiences* by "try[ing] to read books/ articles of physicians who reveal their bias and how to deal with it." Another student expanded from *internal feedback* only ("note which patients I connect better with") to *humanism* and *engagement in useful experiences* ("try to connect well with patients from all walks of life"), a shift from observing connections to trying to improve them. One student offered pre-session strategies of *debriefing* ("talk to someone when I have strong personal reactions to patients") and *humanism* ("imagine myself in their shoes"); post-session, this student still offered a *debriefing* strategy ("discuss with others difficult [or] off-putting patients") but

Table 1. Coding Structure and Frequency of Strategies for Managing Bias among Third-Year Medical Students at Pre-and Post-Session

Theme or Strategy	Scope: <i>This theme encompasses...</i>	Pre-session	Post-session
		Frequency (Percent)	Frequency (Percent)
1) Reflection	the word reflection, and considering or thinking back on behavior, thought, or action	29 (18.2%)	37 (21.9%)
2) Preparation for cross-cultural encounters	the concepts of awareness, consciousness, mindfulness, and surfacing assumptions, usually done in advance of an encounter	25 (15.7%)	24 (14.2%)
3) Humanism	attempts to view others as unique individuals living in unique contexts	12 (7.5%)	4 (2.4%)
4) Debriefing	talking with others after encounters regarding experiences, perceptions, attitudes, feelings, etc.	9 (5.7%)	15 (8.9%)
5) Engagement in or exposure to useful experiences	any attempt to seek experiences (such as conversing with people different from one's self, seeking role models, traveling) that the student thinks will be helpful to their development	9 (5.7%)	10 (5.9%)
6) Education	finding educational materials, etc.	7 (4.4%)	11 (6.5%)
7) External feedback	standardized tools, such as IATs, as well as feedback from outside observers	8 (5.0%)	8 (4.7%)
8) Professional guidance	attempts to standardize one's behavior based on professionally sanctioned norms. It differs from suppression in that there has not been the surfacing of an explicit bias—professional guidance assumes a preventive, rather than a reactive, stance.	9 (5.7%)	8 (4.7%)
9) Internal feedback	self-monitoring of activities, charts, or other observable data on one's actions or outcomes of one's actions	23 (14.5%)	20 (11.8%)
10) Suppression	reactive attempts at objectivity or taking a positivistic stance toward encounters, when the student is aware of a potential bias they may hold	10 (6.3%)	10 (5.9%)
11) Other	items that did not correspond to an existing theme	6 (3.8%)	15 (8.9%)
12) Non-responsive	responses that did not address the question, were blank, or were otherwise un-interpretable	12 (7.5%)	7 (4.1%)
Total		159 (100%)	169 (100%)

Legend: Highlighted strategies represent shifts in frequency from pre-to post-session

added *reflection* (“examine my feelings towards patients”), a shift that suggests wanting to understand why one might have particular reactions to or emotions about certain patients.

Finally, students’ post-session strategies coded as *other* strategies described approaches related to *action*, *change*, and *growth* (or the willingness to act in some specific way to eliminate identified biases) and *recognition* (or the willingness to be more accepting of possible bias towards patients in oneself). These kinds of strategies were not evident at pre-session.

DISCUSSION

These results suggest that group-based sessions, with a provocative trigger to foster engagement, may be valuable tools to help students consider more effective ways to identify and manage implicit biases about patients. First, *recognition* strategies, which were not offered pre-session, emerged post-session, suggesting the group cultivated acceptance of having biases about which one is unaware. Second, the group helped students identify their biases, fostering a modest but positive shift from reliance on self-evaluations (*internal feedback*) to engagement with others about challenging patient encounters (*debriefing*). Third, many students identified an alternate strategy at post-session, but those that used the same strategy offered more specificity. For example, *reflection* was the most commonly-cited strategy at pre-and post-session, but the post-session strategies were more detailed, such as including timing (e.g., considering, prior to patient encounters, patient characteristics that can provoke bias, or after an encounter, treatment recommendations). Finally, students discovered more active strategies for managing biases, as shown in the *other* strategies of *action*, *change* and *growth* that were not evident pre-session.

However, some observed shifts caused concern. The reduction in *humanism* strategies suggests that students believed

other strategies were more effective than considering a patient’s individual circumstances. It is notable that *humanism* was the only strategy to emerge that is patient-centric; all others were physician-centric (e.g., *reflection* or *preparation*). This might reflect the group session’s focus on students’ potential biases. If so, future group sessions could be improved by helping students consider patient-centric strategies (such as *humanism* or aspects of patient-centered care) alongside physician-centric ones. The persistence of *suppression* strategies was also surprising. A review of individual data revealed that many students who endorsed *suppression* strategies pre-session continued to endorse them post-session. This suggests that the group session did not help these students gain insight about the potentially insidious nature of bias.

The intervention evaluation has design limitations, including a small volunteer sample and no longitudinal assessment of actual strategy use in patient interactions. We also limited the number of strategies students could identify, which may have restricted how well we captured the domain of students’ planned strategy use and resulted in only modest shifts in the distribution of strategies. The effectiveness hierarchy we observed in the emergent themes, and upon which our interpretation of the shifts is based, is grounded only in theory; no research has tied any strategies to measures of actual efficacy in managing bias. Finally, open-ended questions required labor-intensive qualitative analyses, which might be prohibitive for practical use.

The intervention and evaluation did, however, have strengths. Because we measured planned strategies immediately before and after the group session, shifts in strategies are related to the group discussions and not to individual reflection about bias as a result of taking an IAT. This is a key concept, that small-group discussion is critical to effectively creating bias awareness and management strategies. Facilitators should be well-versed in a variety of strategies for managing bias in real-world clinical environments. When

students are unable to consider such strategies meaningfully, facilitators who can draw upon these strategies may be more effective in promoting student motivation to implement them. Though the intervention requires skilled facilitators as resources, the discussion trigger is publicly available and small-group sessions can be conducted as a part of other courses.¹⁶ Finally, with all its limitations, this remains one of the few studies that specifically examined how students think about managing bias. The emergent strategies and the students' shifts in their planned use offer new information for educators to consider when designing interventions regarding provider bias.

We believe these shifts in planned strategies are important for several reasons, including potentially more accurate assessments of bias, recognition of the universal nature of implicit bias, and the need for increased awareness about the importance of patient context. First, individuals have varied insight into their behavior; physicians are often poor self-assessors.^{17,18} Students who share the stories of their encounters with others may gain more accurate perceptions of themselves and their patients than if they rely solely on themselves.¹⁹ At the least, they gain an opportunity to validate their self-perception. Regardless, debriefing and feedback can be a tremendous aid for learning.¹⁹ Second, de-stigmatizing implicit bias among providers is critical to reducing its impact on healthcare.⁵ Students' increased willingness to recognize bias in themselves and to discuss bias with others suggests that the discussion fostered more acceptance of the universal nature of implicit bias. Whether these outcomes (more accurate assessments and increased acceptance) are associated with student strategies must still be tested. Third, patient-centered care, which contributes to reduced health disparities²⁰, requires providers to examine context—cultural, psychosocial, socioeconomic—with which patients engage the healthcare system.²¹ Students who are more willing to actively illuminate potential biases about challenging patients (with cultural, social, and economic mores that potentially differ from the provider's) may be more open to exploring these contextual issues. While the increase in *reflection* and *debriefing* strategies suggests that our students may have developed such openness, the reduction in *humanism* strategies and persistence of *suppression* strategies suggests otherwise. Future research must explore how to create sessions that foster openness to both patient context and potential physician bias about that context.

This intervention increases our understanding of engaging students regarding implicit bias. Its potential effectiveness for helping students discover concrete ways to identify and manage their bias toward patients may help mediate disparities that result from the negative impacts of unrecognized bias.

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