How Assumptions and Preferences Can Affect Patient Care: An Introduction to Implicit Bias for First-Year Medical Students

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Abstract

Introduction: Instruction in implicit bias is becoming prevalent across the spectrum of medical training. Little education exists for preclinical students, and guidance for faculty to facilitate such education is minimal. To address these gaps, we designed and delivered a single session for incoming first-year medical students and developed a facilitator training program. Methods: One faculty member delivered a 1-hour, multimedia, interactive lecture to all first-year medical students. Students subsequently met in small groups with trained facilitators. Activities included reflection, guided debriefing, and strategy identification to become aware of when they might be making an assumption causing them to jump to a conclusion about someone. The program evaluation consisted of aggregated student strategies and facilitator feedback during postsession debriefs, both analyzed through thematic analysis. Results: We delivered instruction to 1,098 students. Student strategies resulted in three themes: (1) humility, (2) reflection, and (3) partnering. The postsession debriefs uncovered opportunities to enhance the session. Lessons learned included presenting material to an entire class at once, allowing students to engage in dynamic discussion in the small groups, eliminating anonymous polling in the small groups, and highlighting management of implicit bias as essential to professional development. Discussion: Our instructional design enabled first-year medical students to identify at least one strategy to use when implicit biases are activated. The large-group session was deliverable by one faculty member, and volunteers successfully facilitated small-group sessions after only one training session, making this model a feasible innovation to reach an entire medical school class at the same time.

Keywords
Implicit Bias, Unconscious Bias, Health Care Disparities, Faculty Development, Diversity and Inclusion, Health Equity

Educational Objectives

By the end of the session, students will be able to:

1. Identify one assumption they have made about someone else.
2. Describe the impact unconscious assumptions can have on their interactions with classmates.
3. Describe the impact unconscious assumptions can have on their interactions with future patients.
4. List one strategy to recognize when they may be jumping to a conclusion about someone else.

Introduction

Implicit bias contributes to health disparities because of its influence on physician communication patterns and medical decision-making, collectively referred to as clinical practice behaviors. Differences in physician care provided to patients of different racial and ethnic backgrounds have been documented in clinical settings, such as when using standardized patients or hypothetical clinical scenarios, as well as when evaluating the quality of interpersonal care. In response, curricula related to implicit bias are becoming more prevalent in medical education.

We created a curriculum informed by our comprehensive needs assessment exploring the perspectives of patients, students, and faculty members on bias in clinical care and on participating in and delivering implicit bias instruction, respectively. Our in-depth exploration of patients’ perspectives highlighted opportunities to restore rapport within the patient-physician dyad if bias is perceived during a clinical encounter. This opportunity represented a target for curricular interventions focused on
skill development.\textsuperscript{17} Our student focus group study highlighted potential areas of learner resistance and obstacles to and opportunities for maximizing student engagement across multiple instructional sessions.\textsuperscript{18} Finally, our faculty interview study illuminated perceived threats to faculty members’ self-efficacy in facilitating instruction in implicit bias, as well as opportunities for faculty development.\textsuperscript{19}

Our instructional design was further informed by our previous experience in teaching about implicit bias as well as a framework developed by Dr. Cayla Teal and colleagues.\textsuperscript{20,22} Dr. Teal and colleagues published a conceptual framework identifying the progression of learners from absolute denial of implicit bias to skill development and practice that would lead to integration of new behaviors into their daily clinical practice.\textsuperscript{22} This session was designed to help learners progress through the early stages of the framework with the goal of getting learners to accept implicit bias within themselves and its potential influence on their future clinical practice behaviors. Finally, we designed our session following transformative learning theory.\textsuperscript{23} Transformative learning theory has four major components. Briefly, these are an experience, critical reflection, guided discourse, and behavior change.\textsuperscript{23} There are several experiences created for students that serve as a disorienting dilemma to foster critical reflection. In the small-group session, cofacilitators engage learners in guided discourse.\textsuperscript{23} There are inherent limitations to achieving behavior change in implicit bias recognition and management in the form of skills development and practice within a single session, as we and others have reported.\textsuperscript{20,24} Although skills development was not a goal of this single-session encounter, strategy identification was a goal of the session. Our purpose in including strategy identification was to provide learners with examples of tangible actions they can take after they become more aware of implicit bias. This effort served two purposes: (1) responding to students’ desires to move beyond awareness\textsuperscript{18} and (2) countering the negative consequences of increasing awareness of implicit bias as a sole strategy.\textsuperscript{25}

More curricula are emerging for preclinical students related to implicit bias, but little guidance exists for faculty to effectively facilitate such instruction.\textsuperscript{19} Instruction in implicit bias exists within a larger course\textsuperscript{26} and as an elective course for first-year medical students.\textsuperscript{27} Our curriculum focuses on increased awareness and acceptance of bias in oneself and strategy identification to manage implicit bias in interpersonal encounters (clinical and nonclinical). It adds to available curricula in MedEdPORTAL for preclinical students on racism and health,\textsuperscript{28} microaggressions and discrimination on the wards,\textsuperscript{29} caring for patients with disability,\textsuperscript{30} intersectionality,\textsuperscript{31} and the social determinants of health.\textsuperscript{22,33} Frameworks exist to guide instruction on implicit bias as well as to integrate implicit bias within compulsory health professions curricula\textsuperscript{22,34}; however, there remains a gap for faculty development in implicit bias instruction. To address this gap, we describe our faculty development efforts in the facilitator training we implemented for the small-group portion, which was also informed by our faculty development study.\textsuperscript{19} Therefore, our contribution adds to the existing body of work on implicit bias targeting faculty that is available in MedEdPORTAL.\textsuperscript{25}

Because biases are so common and affect clinical practice behaviors, we developed and delivered a 2-hour workshop at the beginning of the first year of medical education. Highlighting implicit bias as a component of the professional development of a physician enhanced student engagement with the material.\textsuperscript{36,37} We believed early instruction was therefore important, given students’ nascent professional identities upon matriculation into medical school. Our instructional design strove to safely and respectfully introduce medical students to the concept of implicit bias, its potential influence on clinical practice behaviors, and the value in recognizing and managing biases in order to optimize the outcomes of clinical encounters.

**Methods**

We developed a 2-hour session for preclinical medical students and delivered the session during the orientation week each year from 2015 through 2020. Facilitators underwent a 2.5-hour facilitator training. There was no prior knowledge required for students. Our goal was to have a second-, third-, or fourth-year medical student and a faculty member pair up to cofacilitate each small group, in response to our prior research suggesting students would be more comfortable discussing implicit bias if near-peers cofacilitated instruction.\textsuperscript{18} We offered multiple opportunities to participate in these facilitator development seminars in the weeks preceding actual delivery of the workshop during orientation. Here, we describe our methods for developing the instruction delivered to the students, followed by the process we undertook to develop and deliver facilitator trainings.

**Development of Instructional Design**

In the winter of 2015, the administration at the Albert Einstein College of Medicine approved a novel half-day workshop for incoming first-year medical students, inserting the workshop into our medical school orientation program. This decision was, in part, a response to many students’ desire to incorporate implicit bias instruction into the preclinical instruction after national events such as Student White Coat Die-Ins and the start of the Black Lives Matter movement.\textsuperscript{38,39} We began developing this
workshop for students, and our preliminary plan was approved by the senior associate and assistant deans for medical education. We fleshed the workshop out further and piloted it with a group of medical student volunteers, making substantial revisions over the summer of 2015. The first iteration of this workshop was delivered to half of the students in the morning and half in the afternoon. We used anonymous polling for the small-group sessions, in addition to the large-group lecture. In subsequent years, in response to feedback obtained through the postsession facilitator debriefing, we elected to deliver the session to all the students at once and to eliminate anonymous polling in the small groups, thereby allowing them to discuss the reflective prompts openly. Other than those two major changes, only minor alterations were made in subsequent years. For example, starting in 2018, we verbally highlighted the relevance of implicit bias recognition and management as a part of the professional development of a physician in light of evidence published that year.36,37

In 2020, due to COVID-19 and the reemergence of systemic racism into the national discourse, we converted the small-group session to an online platform (Zoom) and added information about the relationship between implicit bias and systemic racism. We also replaced the only video in the small-group session with a guided discussion on the same construct in order to minimize technical challenges for the small-group facilitators. We include this 2020 version in the appendices as it has additional facilitator tips to navigate an online platform.

One author (Cristina M. Gonzalez) delivered the large-group lecture (Appendix A). This 1-hour lecture safely introduced the concept of implicit bias, strove to normalize it and destigmatize it, made salient its ubiquitous nature in society, clarified the association between implicit bias and systemic racism, and highlighted its relevance to clinical care. Videos from nonmedical fields as well as anonymous polling were incorporated in an effort to alleviate defensiveness and maximize student engagement. Although Dr. Gonzalez’s expertise was in implicit bias research, we wrote the facilitator guide for the large-group lecture (Appendix B) so that no previous expertise would be required. Students had a 15-minute break to disperse into small-group meetings that lasted 1 hour. The small-group slides are available in Appendix C. In the small-group session, students debriefed on thoughts from the large group, practiced honest inquiry/honest reaction, explored their personal narratives, and developed strategies to become aware of when their biases might become activated, leading them to jump to a conclusion about someone else. The facilitator guide for this component of instruction (Appendix D) provided specific instructions. In an attempt to avoid potential ethnic clustering by last name and enhance diversity of perspectives in each group, we scrambled the list of student names and assigned them to rooms randomly rather than assigning them to small groups in alphabetical order. Each year, we delivered the program to all 183 incoming first-year medical students.

In addition to the slides and facilitator guides, the materials required to facilitate the in-person small-group sessions included name tents, markers, whiteboards/flip charts for recording ground rules and strategies, and honest inquiry/honest reaction cards (Appendix E). Given that the topic was potentially emotionally charged and therefore stressful so early in the students’ medical education, we opted to provide candy and other treats to them to maintain the informal and celebratory nature of orientation week. If the small groups are conducted virtually, we recommend ensuring settings allow for students to rename themselves and add in their pronouns.

Facilitator Training
We recruited second-, third-, and fourth-year students along with faculty members to cofacilitate our small groups. Given our class size of 183 students, we strove to recruit 18 cofacilitators (36 cofacilitators in total once we opted to deliver the sessions concurrently to all 183 students). We recruited from among students who had taken a health disparities elective offered at our institution,21 as well as from students who took other related selectives (tracks within existing, larger, compulsory courses) offered in the first year. Faculty were recruited who were small-group facilitators in courses with communication skills and/or content related to professionalism and from among contacts of the investigative team. Referrals were also solicited from both participating students and faculty to expand our recruitment efforts. We delivered the session in August of each year. Due to summer break, clinical rotations, and faculty vacation schedules, we were not always able to recruit all 36 cofacilitators. In those instances, we chose faculty who had participated before to facilitate on their own. We offered at least three training opportunities to accommodate facilitators’ varied schedules and a facilitator lunch on the day of the session. This allowed cofacilitators to meet up in advance of the session and permitted last-minute questions and concerns to be addressed. In 2020, we emailed the pairings out early enough to allow for email exchanges between cofacilitators. Facilitators also came to a debriefing session after the small-group session on the day of the program. We discussed aspects that went well and solicited opportunities for improvement. Facilitators
generously volunteered their time, receiving lunch prior to facilitating instruction, as well as snacks and beverages during the postsession debrief.

In 2015, we had 18 small-group cofacilitators conduct the session twice. From 2016 to 2020, we had 36, 22, 19, 24, and 36 (co)facilitators, respectively, each conduct the small group once. Facilitators included faculty members from various disciplines such as social work, bioethics, and medical specialties including internal medicine, family medicine, pediatrics, obstetrics and gynecology, and orthopedic surgery, among others, as well as second- through fourth-year medical students. Each year, we delivered the program to all 183 incoming first-year medical students, for a total of 1,098 students. Small groups were composed of 10 or 11 students each, except in 2020 due to the virtual platform, when we created smaller groups of eight students each.

The facilitator guide itself was developed initially in 2015 in consultation with select faculty volunteers. We revised it based on their initial feedback, as well as feedback obtained after the first facilitator training session. In the facilitator guide, we outlined the goals and learning objectives and the suggested timeline for each session. We provided facilitators with a detailed explanation of how to deliver the content. We included each slide, provided suggested script/talking points, and added a big-picture statement to clarify the purpose of selected slides. When necessary, we provided detailed examples of what the facilitators might share when role-modeling for students, as well as facilitator tips for portions we anticipated might be particularly challenging for students. The facilitator trainings lasted 2.5 hours.

We structured trainings to allow facilitators to experience the program just as students would, including the large-group lecture. We stopped periodically to answer any questions, reinforce suggested talking points and facilitator tips, and draw their attention to examples.

Evaluation Strategy

We reported the evaluation of the impact of our session following a modified classification of Kirkpatrick’s educational outcomes. In this classification modified by Dr. Hugh Barr and colleagues, level 1 is learner reactions. Level 2 is modified into two levels: (1) level 2a—modification of attitudes and perceptions and (2) level 2b—acquisition of knowledge/skills. To evaluate the impact of our instruction, we conducted a qualitative program evaluation using thematic analysis. We analyzed the strategies identified by students in aggregate. We analyzed responses to the prompt “Identify one strategy you can use to become aware of when you are making an assumption that may lead you to jump to a conclusion about someone else.” This prompt tied directly to our fourth Educational Objective. Strategies were recorded by facilitators for each prompt on either a whiteboard or flip chart. Facilitators took photographs of their group’s strategies and emailed them to us. We analyzed data for 2016-2019 as those years all followed the same process of critical reflection and guided discourse in an open manner, rather than through anonymous polling used in 2015. Although the small-group session was adapted for virtual delivery by substituting a video with a guided discussion, the content and strategy identification prompts did not fundamentally change. We also took notes during each facilitator debriefing and analyzed them. This analysis was deemed exempt by the Institutional Review Board of the Albert Einstein College of Medicine.

**Results**

Students demonstrated knowledge by identifying strategies in response to the prompt described in the Methods, thereby successfully achieving the fourth Educational Objective. Our analysis resulted in three themes: (1) humility, (2) reflection, and (3) partnering. We briefly describe the themes and include exemplary quotes in Table 1. For humility, students identified strategies that included being cognizant of their own knowledge limitations, remaining inquisitive during interpersonal interactions.

| Theme                                  | Quotes                                                                 | Table 1: Results of Thematic Content Analysis of Strategies Identified by Participants (2016-2019) for the Session “How Assumptions and Preferences Can Affect Patient Care: What Medical Students Need to Know” |
|----------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Humility: approaching encounters with intellectual humility. | “Ask questions, genuine curiosity, examples like, ‘Tell me more, just for my own learning...why?’” “Remember that your knowledge is limited and you are likely ignorant to the full spectrum of possibilities.” | “It is important to practice mindfulness and to ask yourself, ‘What am I feeling in this moment?’ When we do that, I believe we are better able to identify uncomfortable emotions.” |
| Reflection: taking the time to be aware of reactions and feelings that emerge during an encounter. | “Be willing to listen to new perspectives and opinions to help gain respect for different cultures and people.” “Noting when negative thoughts pop up, question what brought you to that conclusion.” | “Getting to know the patient beyond condition and symptoms.” “Think critically—look inward to understand your own upbringing and take that same care when you try and consider the person in front of you has their own unique background and circumstances.” |
| Partnering: considering the interplay of both your own and another’s perspective during an encounter. | “Be aware of body language and nonverbal cues.” “Getting to know the patient beyond condition and symptoms.” | “Think critically—look inward to understand your own upbringing and take that same care when you try and consider the person in front of you has their own unique background and circumstances.” |
and immersing themselves in new experiences as strategies to recognize when they may be making assumptions and therefore jumping to conclusions. Regarding reflection, students suggested pausing to allow for both simple reflection on their own behaviors and critical reflection to find meaning in their interactions that may be related to bias. With respect to partnering, students recognized the importance of verbal and nonverbal behaviors of the other person in the interaction as important clues to the possibility that they had jumped to a conclusion and that their own bias may have been activated. They valued learning more about the other person in the encounter as an individual and appreciated perspective taking as an option to try to honor the lived experience of the other person in their interactions.

The postsession facilitator debriefings provided indirect evidence suggesting the remainder of the learning objectives were achieved in the small groups. They also uncovered which factors enhanced or detracted from facilitators' perceived self-efficacy. Through analysis of notes taken during each debriefing, three themes emerged: (1) successes, (2) unanticipated pitfalls, and (3) future opportunities (Table 2). Successes included the choice of themes that facilitated student engagement and participation in dynamic conversations. Unanticipated pitfalls included instances in which concerns were identified by students related to their identities. Examples included feeling a disproportionate burden to answer questions because of a lived experience from a privileged socioeconomic status or because of being a member of racial or ethnic groups underrepresented in medicine; both groups felt pressure to speak as if they represented their respective social groups.

**Discussion**

We have described an innovation in the delivery of instruction on implicit bias recognition and management to medical students in the earliest phase of their medical education. Our experience and results demonstrate that it is possible to introduce the topic of implicit bias to students and guide them through early stages of the Teal framework, as well as three of the four major components necessary for transformative learning. Our innovation was feasible, allowing for a single faculty member to create experiences that potentially served as disorienting dilemmas and sparked critical reflection in the large-group lecture. The instruction in the large group, as well as the reflective prompts used in the small groups, fostered engagement in critical reflection and guided discourse in the small groups that were facilitated by faculty and students. Small-group facilitators did not require preexisting expertise in implicit bias instruction, as shown by their success in facilitating after one training session; this further enhanced our innovation's feasibility. Thematic analysis demonstrated that Educational Objectives were achieved in the small groups. Our students identified strategies that we were able to group into themes of humility, reflection, and partnering. Faculty debriefs highlighted successful components, unanticipated pitfalls, and potential future opportunities. Although our intended audience is first-year medical students at the very beginning of their education (orientation week), this workshop

| Theme                        | Instructional Design                                                                 | Facilitator Self-Efficacy                                                                 |
|------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Successes                    | Word clouds were powerful and positive.                                               | Facilitator trainings.                                                                  |
|                              | Students appreciated that research studies were presented.                           | Detailed suggested time line with critical slides noted and slides that could be skipped for time management. |
|                              | Students were very perceptive, were open, and talked a lot                            |                                                                                         |
|                              | Implicit bias recognition and management as a tool in the clinical toolbox to be even better doctors. |                                                                                         |
|                              | Adding individual reflection time to the personal narrative prompt.                   |                                                                                         |
|                              | Removal of anonymous polling in the small groups.                                    |                                                                                         |
|                              | Sharing in pairs within the small group (personal narrative exercise).                |                                                                                         |
| Unanticipated pitfalls        | Inappropriate answers using anonymous polling.                                       | It was really disheartening. Student of color who was upset with the answers in the poll (word cloud) asked, “Is this really what it is going to be like for all 4 years? (Having to endure negative perceptions of their own racial group)?” |
|                              | Prevalence of privilege.                                                             | Detailed questions from students about the research presented and the validity of tests to measure implicit bias. |
| Suggestions for the future   | Black out the screen until all responses are in for anonymous polling.                | Provide a space for students to debrief afterward if they want to with someone with specific expertise in this topic. |
|                              | If privilege becomes the focus of small-group discussions (e.g., the majority of small-group members come from relative socioeconomic privilege), consider asking students to consider the perspective of persons who are on the other side of that same privilege. | Provide facilitators with research articles discussed in large group as well as research on the Implicit Association Test (an instrument to measure implicit bias). |
|                              | Incorporate more sessions to achieve skill building. Student asked, “Is this it? This is important—are we going to keep doing this?” |                                                                                         |
would be beneficial for other learners who have not previously experienced implicit bias instruction within the formal curriculum, especially for those early in their group development who have yet to develop trust.

After 6 years of developing, delivering, and revising the instructional design and the facilitator training, we can share several lessons learned. In the first year, some students discussed the content with unexposed students during the communal lunch period. The overall energy of the students in the afternoon group was more defensive and aggressive than in the morning group. For example, some students answered prompts saying, “I’m not a racist,” even though nothing about personal bias, either explicit or implicit, had been asked. We therefore conducted future programs with all the students at once. Although this required the recruitment of more small-group facilitators, we believed the effort was worth it as students entered the session with fewer preconceptions. For those not able to recruit a large number of cofacilitators, an option would be to stagger student participation in the program, as long as efforts are made to minimize cross contamination. We also learned that students were able to openly discuss prompts in their small groups. In response, we eliminated the anonymous polling, which actually interrupted the dynamic discussion that occurred in the small groups. For the anonymous polling in the large-group lecture, when responses for the word cloud activity were displayed in real time, some inappropriate answers were submitted; others replicated these inappropriate responses thereby augmenting their size. This taught us to reveal the word cloud to the class only after all responses had been submitted. Minor changes that we found particularly useful included creating a time sheet that highlighted critical slides and slides that could be skipped if a small group was particularly talkative, thereby facilitating effective time management. Building in time for individual reflection prior to sharing during the personal narrative exercise was another useful minor change. Though facilitator trainings were appreciated by the faculty, some facilitators did not feel equipped to answer some questions that arose for which they had not been specifically prepared. This reinforces the benefit of referring student questions to an institutional member who may have more expertise in implicit bias. A final lesson we learned was how to highlight the relevance of implicit bias recognition and management to clinical care for our early-stage learners. We repeatedly emphasized to the students that the ability to recognize and manage implicit bias is an important tool to keep in their clinical skills toolbox and is a part of being a good doctor. This approach enhanced the acceptance by students in the small groups, as compared to previous years. Evidence demonstrates that framing implicit bias instruction as part of professional development for all physicians enhances student acceptance of its relevance to clinical care and contributes to diminished bias in decision-making by senior students.\textsuperscript{36,37}

Our innovation has several limitations. We were not able to directly assess the Educational Objectives; we lacked a presession assessment and therefore cannot conclude that students demonstrated knowledge acquisition. Our program evaluation was limited in that it was an indirect, rather than a direct, evaluation of the impact of the session on achieving the stated learning objectives. The large-group lecture and the facilitator trainings were delivered by a faculty member who had extensive experience conducting research in the design, implementation, and evaluation of curricular innovations related to implicit bias recognition and management. We consulted with each other as a team to highlight areas requiring more guidance to instructors who were interested in delivering this content but whose expertise may have been in other topics. Additionally, we report 6 years of our experience, but our innovation has only been implemented at one institution and only for medical students, potentially limiting generalizability.

In conclusion, we were able to achieve our goals and learning objectives as demonstrated by the engagement of students in the large-group lecture and the active participation of most students in the small-group sessions. The faculty debrief revealed that students as a group reflected on and discussed the prompts, realizing our goal and learning objectives. This session is the first of three sessions in the compulsory curriculum that focus on implicit bias. After 6 years of delivering this workshop, all students attending the Albert Einstein College of Medicine have had the opportunity to participate in this instruction. Therefore, we have revised the sessions given in the third year to build on students’ experiences in this first-year session. Our next steps are to evaluate and disseminate that revised session.

**Appendices**

A. Large-Group Slides.pptx  
B. Large-Group Facilitator Guide.docx  
C. Small-Group Slides.pptx  
D. Small-Group Facilitator Guide.docx  
E. Honest Inquiry Reaction Card.pdf

All appendices are peer reviewed as integral parts of the Original Publication.
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Ethical Approval
The Albert Einstein College of Medicine Institutional Review Board approved this study.

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