RIME Session: Addressing Implicit Bias

Paper: Predicting Medical School Enrollment Behavior: Comparing an Enrollment Management Model to Expert Human Judgement

Purpose

Medical school admissions committees are tasked with aligning the goals and values of their institutions through careful recruitment. Accurate predictions regarding enrollment behavior of admitted students is critical to intentionally formulating class composition and impacts long-term physician representation. We investigated the predictive accuracy and potential practical benefits of employing an enrollment predictive model in medical school, testing it against expert human judgment. We also piloted an automated, real-time projected class composition enrollment dashboard.

Method

Our enrollment management-based predictive model generated a predicted enrollment percentage for each admitted student in the 2016-17 application class (N=352). Concurrently, our Assistant Dean for Admissions (Expert) created a predicted enrollment percentage for each applicant while blinded to the values generated by the model. An absolute error for each applicant (difference from actual enrollment behavior vs predicted) for both approaches was calculated. T-tests were utilized to test for significant difference between approaches (Expert vs Enrollment Model).

Results

For all admitted students, the enrollment management approach was at least non-inferior to expert prediction (p<0.05). When considering sub-group analyses for categories of potential specific importance in recruiting, Underrepresented in Medicine (URiM), Female, and In-state Applicants the enrollment management predictions were statically more accurate (p<0.05).

Conclusions

Examining a single admitted class, the predictions of enrollment using the enrollment management model were generally more accurate than the expert human estimates, and in many
cases the error rates in predication were much smaller. This information can be readily exported for a real-time dashboard system to drive recruitment behaviors.
Paper: Faculty Perceptions of Challenges and Opportunities to Facilitate Implicit Bias Instruction: Implications for Curriculum Development

Introduction

Despite a four decade focus on cultural competency education, and increasing attention to ameliorating health disparities, patients globally continue to perceive bias and prejudice as they receive medical care. To address individual clinicians’ contribution to health disparities, medical educators have begun to address the role of implicit bias. Existing frameworks expect faculty to instruct students in developing knowledge, attitudes, and skills in implicit bias recognition and management, but most faculty have not received instruction in implicit bias themselves. How will they learn to teach this potentially emotionally charged content? Until we equip faculty to recognize and discuss implicit bias with students, we will not effectively address implicit bias nor ameliorate the health disparities to which it contributes.

Cultural competency curricula have increased physician knowledge, but we have not yet eliminated health disparities. Newer health disparities curricula are therefore highlighting and addressing the patient perspective of perceived bias and prejudice, including instruction based in critical consciousness, socio-cultural theory, and social justice training. Understanding and processing implicit bias may be one important contribution to ameliorating disparities. Implicit bias refers to the unconscious, unintentional assumptions people make. A focus on implicit bias recognition and management has promise as a curricular approach for several reasons. Implicit bias is ubiquitous in society, as seen in multiple workplace settings, education, and law enforcement settings, among others. Data from clinical settings demonstrates the potential impact of implicit bias on decision-making, health outcomes, doctor-patient communication, and patient perceptions of the clinical encounter.

While several curricula for medical students on implicit bias have been reported in the literature or in MedEdPORTAL, most are held within a single session; moreover, reported multi-session curricula do not include opportunities for skills development and practice. Furthermore, both formal instruction, and importantly, the hidden curriculum influence the development of their perspectives and students have resisted this instruction in some settings. The hidden curriculum encompasses the culture of an institution, the interpersonal encounters, and what the students learn outside what they are taught in the formal curriculum.

Creating an effective multi-session educational program in implicit bias requires careful curricular planning. Teal et al. have proposed a framework to move individuals from absolute denial about implicit bias to integration of skills that will decrease the effect of implicit bias in their clinical practice behaviors. Instructional designs incorporating Transformative Learning Theory may facilitate students moving through this framework. Transformative Learning Theory has four main components. The first is an experience for the learner, followed by critical reflection, guided discourse, and action (behavior change). The experience must be powerful, a “disorienting dilemma”. Critical reflection and guided discourse must be profound and deeply moving. In our previous work, students felt the facilitator could “make or break” the session (unpublished data). However, there appears to be few if any published frameworks in the
medical education literature to guide faculty members in how to deliver instruction on implicit bias recognition and management. To address this gap in the literature, we conducted this exploratory study to inform the design of a future curriculum by exploring faculty perceptions of challenges and opportunities related to facilitating instruction on racial and ethnic implicit bias recognition and management in both the formal and hidden curricula.

Methods

We conducted an in-depth interview study following a systematic qualitative research methodology using grounded theory. Grounded theory involves the discovery of theory through the analysis of data. Given that little is known about faculty perspectives on implicit bias instruction, we used a constructivist approach, which “views knowledge as actively co-created as the product of human interactions and relationships”. Under this model, we employed an iterative process for recruitment, data collection, and analysis.

Setting and Sample

Our study was conducted within a single institution, a research-intensive medical school located in a large urban setting and serving a racially and ethnically diverse population. At the time we held these interviews, one session that focused on racial and ethnic implicit bias and its relation to health disparities was part of our compulsory third year curriculum. We used typical case sampling of faculty with the Deans of Education and one course director serving as the key informants. Potential participants were contacted via email, with one follow up email sent if there was no initial response. All aspects of the study were approved by the Institutional Review Board of the Albert Einstein College of Medicine.

Interview guide development

We developed open-ended questions to create a semi-structured interview guide. Our questions were focused on racial and ethnic bias. Since our teaching to date has used the Implicit Association Test (IAT) to generate discussion about implicit bias, we included questions related to the IAT, a validated online test that assesses individual implicit bias by matching reaction time to images and value-laden words. The difference in reaction times as test-takers seek to match images and words is used as a measure of implicit bias. The final questions included participants’ perspectives of implicit bias within themselves and others, its potential role in clinical care and medical education, and preferences and concerns regarding faculty development and facilitating instruction with medical students.

As part of the interview process, participants were provided with definitions and background information about implicit bias. This was done to ‘level the playing field,’ recognizing that some faculty had more experience with material than others, and to ensure that all participants were using terms uniformly.

Data Collection

The PI (CMG) conducted individual interviews scheduled at a time and location convenient to the participant. Written, informed consent was obtained from all participants. We continued to
conduct interviews until we reached thematic saturation based on analysis of interview transcripts, i.e., no new concepts or themes emerging from subsequent interviews. Interviews were digitally recorded and professionally transcribed, with accuracy checked by investigators cross-referencing the audio recordings with the transcripts.

**Analysis**

Initial coding of interview transcripts was performed by two investigators (ARL and CMG), who independently read two transcripts and applied codes to the text. An agreed upon list of codes, and their definitions, were developed by consensus between these investigators to create the preliminary codebook, which was tested and refined by application to two additional transcripts. The remaining transcripts were coded independently by three investigators (ARL, CMG, and RG, two for each transcript). These three investigators met to perform further analysis on the coded transcript using a constant comparative method, a technique which transforms the data into larger theoretical categories. Starting with low inference codes, the team discussed their meaning and potential ways of grouping the codes to develop conceptual themes. Finally, we identified relationships between themes, reaching consensus on themes and representative quotes through discussion. We presented themes and quotes to select participants, ensuring accurate representation of their perspectives through triangulation. Interview transcripts were manually coded, with the final codes entered and attached to the text electronically in NVivo, a widely-used software for qualitative analysis.

**Results**

We conducted 19 interviews, each 45-70 minutes in length. Demographic data are listed in Table 1. We identified four themes that participants felt could potentially influence their experiences facilitating implicit bias instruction.
Paper: Striving while Accepting: Exploring How Identity Influences Implicit Bias Recognition and Management

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Introduction

Implicit biases worsen outcomes for underserved and marginalized populations. Once health professionals are made aware of their implicit biases, a process ensues where they must reconcile this information with their personal and professional identities. The authors sought to explore how identity influences the process of implicit bias recognition and management.

Methods

Utilizing constructivist grounded theory, the authors recruited 11 faculty and 10 resident participants working at an academic health science center in Canada. Interviews took place from June to October 2017. Participants took an online version of the mental illness implicit association test (IAT) which provides users with their degree of implicit dangerousness bias towards individuals with mental illness. Once they completed the IAT, participants were invited to draw a rich picture and interviewed about their picture and experience of taking their IAT. Data were analyzed using constant comparative procedures to develop focused codes and work towards the development of a deeper understanding of relationships among themes.

Results

Once implicit biases were brought into conscious awareness, participants acknowledged vulnerabilities which provoked tension between their personal and professional identities. Participants suggested that they reconcile these tensions through a process described as striving for the ideal while accepting the actual. Relationships were central to the process; however, residents and faculty viewed the role of relationships differently.

Conclusion

Striving for self-improvement while accepting individual shortcomings may provide a model for addressing implicit bias among health professional
Title: Mapping Transgender and Gender Non-Binary Experiences in Medicine: A survey of TGNB medical students and physicians

Purpose

To date, there have been no studies focused specifically on the experiences of transgender and gender non-binary (TGNB) medical students and physicians. Despite the dearth of TGNB-specific research, lesbian, gay, bisexual, and transgender (LGBT) physicians report hearing derogatory comments about LGBT people, witnessing discriminatory care, being harassed by colleagues, and being socially ostracized (Eliaison et al., 2011). As TGNB people are marginalized in unique ways, this study explores the experiences of TGNB medical students and physicians.

Approach/Methods

We conducted a mixed methods web-based survey of TGNB medical students and physicians who trained and/or currently work in the United States. Participants were eligible regardless of their status as “out” and/or completion of training. Recruitment was conducted through snowball sampling and via LGBTQ+ professional groups, list-servs, Facebook groups, and Twitter posts. Questions included validated quantitative tools, including the PHQ-9, GAD-7, and a modified Nebraska Outness Scale, and qualitative free-text questions.

Results/Outcomes

We gathered 28 responses (15 women and/or trans women; 9 men and/or trans men; and 13 agender/genderfluid/non-binary/genderqueer/a term not listed). The respondents' ages ranged from 24 to 70 years old (mean 32). Within our sample, 50% of students (14 of 28) and 58% (7 of 12) of residents did not disclose their TGNB status to their institution. Using a modified Nebraska Outness Scale, we found that 50% (14 of 28) of participants avoid discussing topics related to or otherwise indicating their TGNB status at work/school, effectively censoring themselves most or all of the time. Only 7.1% (2 of 28) respondents reported never censoring their behaviors. Our respondents reported facing barriers on the basis of their gender identity/expression when applying to medical school (32.1%; 9 of 28), residency (45.5%; 5 of 11), and/or jobs as a physician (40%; 2 of 5). Additionally, 78.6% of our respondents (22 of 28) report having been afraid to seek medical or mental health care for fear of mistreatment on the basis of their gender identity/expression.

Discussion

Overwhelmingly, our survey participants faced significant disparities compared to their cisgender counterparts, at all points in the medical education pipeline. As medical schools and residency programs may believe that they do not have any TGNB medical students or physicians, our data indicate that many TGNB medical students and physicians do not feel comfortable making their status known. It is striking that 78.6% of our respondents (22 of 28) reported having been afraid to seek medical or mental health care for fear of mistreatment on the basis of their gender identity/expression. Our qualitative responses (not reported here) indicate
this may be related to witnessing mistreatment of TGNB patients, as they themselves pursue a career as a physician.

Significance

The data presented here highlight the importance of building trust with and documenting the experiences of TGNB medical students and physicians. Responses indicate a need to shift the culture of academic medicine and medicine at large, to create supportive educational and work environments in which TGNB people feel safe and can choose to be “out” without risk to their student and/or employment status.