Commentary: Fostering Bias Mitigation and Compassionate Behavior in Dental and Other Healthcare Professional Students and Practitioners

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Unconscious bias remains a poorly managed global problem [1-5]. For example, implicit bias alters perceptions concerning tooth restorability [4]. Dentists and other healthcare professionals harbor attitudes against various categories of people and treat them unfairly. This discrimination leads to inferior care outcomes owing to poorer relationships with patients and effects on their behaviors such as adherence to treatment plans. We could, however, train all healthcare professionals to mitigate their implicit biases and display more compassionate behavior using methods we have used in a Medical Humanities course [6,7]. Virtually every prospective medical student in this course mitigated their biases and became more compassionate through regular critical reflections on team service-learning and discussions in class about their unconscious biases. This pedagogy/andragogy should improve the health, not only of those against whom we discriminate, but also of the general population. The culture of healthcare professional education needs to change, however, in order to accomplish these ends. Reflection on behavior, such as service to the community, should continue throughout providers' careers in order to help them to continuously monitor and mitigate their implicit biases and become more compassionate people.

We used implicit association tests as tools to help students mitigate biases against people experiencing discrimination for their skin color, gender, body weight, and sexual orientation. Based on experiences in their service-learning projects, prospective medical students then expanded these groups to include children, older people, homeless people, and those of lower socioeconomic status [6,7]. Thus, the circumstances of healthcare delivery help to reveal the groups of people against whom we hold prejudices and about whom we have a need to mitigate our biases. Partially for this reason, prospective medical students in our course viewed the final portion of a Gates Foundation video concerning discrimination resulting from implicit biases, and work by providers in a variety of settings around the world to mitigate the biases [7]. (The site for the video is; https://youtu.be/1SbUSj5iEgs).

We employed a pedagogy of discomfort [1,8], and our results resemble outcomes expected in the transformative learning model of Sukhera et. al. [9]. In this model, service-learning and discoveries of unconscious biases by prospective medical students served as disorienting experiences and resulted in self-examination and critical reflection. Students then labored to gain new skills and show more compassionate behavior when serving people, as outlined in Figure 1 of [9]. Sukhera and associates suggest that implementing educational strategies to combat harmful implicit biases against patients and other healthcare professions can be guided by the transformative learning theory [9].

Prospective medical students eagerly implemented their new skills, as seen in the semester following our course. Near the beginning of that semester, a three-hour evening presentation on implicit bias and diversity was organized at our institution, and the prospective medical students were required to attend. They were then offered extra credit in their immunology course for submitting written reflections on their reactions to the presentation. A central theme of those reflections was to learn what actions they could take to combat biases against patients and the low level of diversity among healthcare professionals rather than to simply talk about these problems.

To institutionalizing the andragogy needed to foster critical reflection, bias mitigation, and compassionate behavior throughout healthcare providers' careers, we suggest a "bottom-up approach" beginning when the practitioners are students. This approach should include other courses and rotations in addition to Medical Humanities. According to the faculty, administration, and, most importantly, students in our program, we established successful service-learning and bias mitigation experiences for the students. We then worked to have the faculty accept that such experiences should become part of their courses. This plan began by including the use of the Medical Humanities student teams to study and perform projects together also in Anatomy, Immunology, Pharmacology, and Physiology. In addition, theses prospective medical students were required to relate service-learning experiences; including dissonance, bias mitigation, and compassionate behavior; to those other course activities [6,7].

Eventually, however, written critical reflections on these experiences, such as service-learning and bias mitigation, need to become aspects of student development assessed by other faculty members through incorporation of these activities into their courses. This plan has already been put into practice in the Immunology course for prospective medical students at our institution. Emerging data from our Medical Humanities course, showing that service-learning and related experiences cause students to study material in all of their courses with more interest [6,7], also supports the notion that other faculty will eagerly include such activities in their courses. According to numerous studies, critical reflection on service-learning experiences enhances students' academic performance in addition to their non-cognitive development [10-13]. A mechanism also exists to institutionalize these methods for all healthcare professional trainees at least in the basic sciences at our institution. Many faculty members direct courses in most programs, so they can apply efforts used for prospective medical students to programs for other healthcare professional students.

Such a program can also be implemented and continued in clinical sciences. Medical and physician assistant students can greatly influence the educational environment at our institution and especially the quality of their rotations. Students would likely insist that they have a robust program of critical reflection on team service-learning and bias mitigation in their clinical years if they come to rely on such a program in basic sciences. They value their learning teams in basic sciences and would likely want support from their teammates to continue for written and verbal learning experiences throughout their training [6,7,14-16]. By sharing their stories with each other, students foster their ability to collaborate both within and outside their own disciplines [17].

Our results with prospective medical students in a Medical Humanities course seem, at first, difficult to generalize to pre-professional and professional training programs at other colleges and universities. We studied only about 90 students at a single university. Results for the first two cohorts of students of about 30 students each [6] were, however, replicated in a second study [7]. The highly reproducible nature of our findings increases the probability that similar results could be achieved for other healthcare professional programs.

In addition, team service-learning experiences fostered bias mitigation and compassionate behavior in about 500 medical, pharmacy, and prospective medical and dental students in Biochemistry courses at another university [14,15]. Hence, our approach could likely be implemented more broadly. We encourage others to use these methods to build trust and psychological safety from shared provocative experiences in teams of pre-professional and professional healthcare students. These shared experiences lead to frequent self-examination, bias mitigation, and compassionate behavior.

In summary, we produced dissonance among virtually all prospective medical students in our Medical Humanities course through selecting and performing team service-learning projects [6,7]. This dissonance was also fostered using provocative readings and implicit association test results in team and class discussions of unconscious biases and the difficulties in communicating with patients and other healthcare professionals. In virtually all students, dissonance caused self-examination, bias mitigation, and compassionate behavior to resolve the conflict.

Furthermore, students' cognitive empathy (a component of compassion) and reflective capacity scores grew in association with our Medical Humanities course [6,7]. Virtually all students faced the reality that implicit biases might influence some of their clinical decisions and behaviors as healthcare professionals. This realization occurred, in part, through team and class discussions of the difficulties in mitigating unconscious biases, and the effect of these biases on patient-provider communication. Finally, written reflections, that included recognition of the association between service-learning and basic sciences course content, helped students appreciate how performing service-learning caused them to study with more interest in all of their courses. The quality of students' team projects in several basic sciences courses was also clearly fostered by the psychological safety, support, and trust of each other that they built in teams.

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