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Student Body Diversity: Relationship to Medical Students' Experiences and Attitudes

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Abstract

Background

Multiple studies of undergraduate college students have demonstrated the effects of cross-cultural interaction and exposure to diverse ideas on a variety of educational outcomes. The current study was designed to extend this work into medical education, examining student body diversity and school-supported cross-cultural experiences on students' attitudes about diversity.

Method

Four-hundred forty-one rising fourth-year medical students from three schools with differing levels of student body diversity completed a 55-item questionnaire on their background, experiences, and attitudes related to cross-cultural diversity.

Results

Medical students' attitudes about culture and health and their perspectives on societal issues related to diversity were influenced by their medical school

experiences. Informal instructional interactions seem to have been most influential in shaping these beliefs.

Discussion

The opportunity for students from diverse backgrounds to interact as part of the curriculum is an important means of promoting positive attitudes toward diversity in educational and social environments.

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Efforts to address the well-documented racial and ethnic disparities in health care include "increasing the proportion of underrepresented U.S. racial and ethnic minorities among health professionals," and integrating "cross-cultural curricula . . . early into the training of future health care providers."¹ Both recommendations are thought to benefit from enrollment of a diverse student body in medical schools. Here, we ask whether experience with a diverse student body during medical school supports positive attitudes toward diversity.

Certainly at the undergraduate level, social science research provides empirical evidence of the benefits of compositional diversity at the school, class, and group levels. Multiple studies demonstrate the value of cross-racial interaction and exposure to diverse ideas and information on students' active thinking, intellectual engagement, and motivation, intellectual and social self-concept, satisfaction with college, and chances of graduating in four years.²⁻⁴ Other studies have found that classroom diversity had a small but statistically significant effect on students' reported gains in problem-solving and group-work skills⁵ and that

compositional diversity enhanced integrative complexity.⁶ A diverse student body enhances the chances that students will socialize across racial groups and discuss racial issues, which, in turn, improves students' educational experiences and outcomes.

During the past several years, several studies in medical education have reported that students' educational experiences have an influence on their attitudes toward diversity and the provision of care to underserved populations. An interview study by Whitla⁷ found that medical students at two schools strongly supported affirmative action in admissions and noted that a diverse student body enhanced their ability to provide medical services in a diverse society. Two studies reported that attitudes shifted away from similar values as students progressed through medical school.⁸⁻⁹ Three studies have demonstrated that an intention to practice in an underserved community¹⁰ and location of practice¹¹⁻¹² were positively affected by a supportive educational environment. Novak et al¹³ found that perceptions of both student body diversity and intercultural curricular content were correlated with dental students' opinions of their readiness to work with a diverse patient population.

Our purpose in the current study, which includes students from three medical schools with different levels of student body diversity, was to examine the effects of ethnic/racial diversity in the medical school student body and its interaction with school-supported diversity experiences on students' attitudes about care of patients from diverse backgrounds and the role of diversity in society at large. We also wanted to compare differences in diversity experiences before medical school and the types of diversity experiences reported by students during medical school.

Method

We developed a 55-item questionnaire based on an existing survey from the Higher Education Research Institute at University of California-Los Angeles^{3,6,14} to investigate medical students' experiences with diversity before attending medical school, their structurally supported formal and informal experiences while attending medical school, and their attitudes and beliefs about the role of diversity in the medical school environment and in society generally. The survey also asked students to describe the diversity encountered in their interactions with clinical faculty and patients. Although diversity was broadly defined in the questionnaire, this report focuses on

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ethnic/racial results only. The term *people of color* was used to describe individuals from non-European backgrounds.

We administered the questionnaire during a Clinical Performance Examination to rising fourth-year students in mid-2003 at three medical schools located in California. Schools varied in their public or private status, the number of students enrolled, and percentage of underrepresented minorities (URM) defined as African American, Mexican American, Other Hispanic, mainland Puerto Rican, and Native American. According to statistics from the Association of American Medical Colleges,¹⁵ the 2004 class in School A had 176 students with 28% URM, 34% Asian, and 35% white; School B had 163 students with 18% URM, 35% Asian, and 52% white; School C, the only private school, had a class size of 160 with 12% URM, 30% Asian, and 51% white. Human subject approval for the study was obtained from each school's IRB, with two schools receiving exemptions and the school with the largest URM enrollment requiring active consent by students. The resulting sample included 101 consenting students from School A (12 denied consent and 57 failed to return the form), 187 students in School B, and 153 students in School C for a

total sample of 441. These totals from the beginning of the senior year differ slightly from the number of actual 2004 graduates because of research and other leaves of absence.

Experience and attitude items were factor analyzed to determine whether they could be summed to represent a single construct. According to these analyses, 10 constructs were developed in three areas: diversity experiences before medical school, diversity experiences in medical school, and attitudes about diversity. Variables used in the analyses were constructed by summing the *yes* responses for activities or experiences and by summing a weighted value of Likert-type questions. For instance, the number of voluntary culturally related activities and courses in which a student participated was summed to create one variable with a maximum value of 5, as there were five culturally related activities on the Graduation Questionnaire. Likewise, seven items asked about the frequency with which students participated in informal interactions (e.g., "discussed racial issues with colleagues outside of class"), with response options ranging from *never* to *often*. *Often* carried a value of 3, so the sum of the seven items resulted in an

instructional interaction scale with a maximum value of 21.

We constructed one-way ANOVAs to determine how students' diversity experiences before attending medical school, exposure to faculty and patients from diverse backgrounds during medical school, school-sponsored instructional experiences about diversity, informal instructional and friendship interactions, and beliefs about the benefits of diversity differed in the three schools. After controlling for prior experiences, medical school experience variables were sequentially regressed on attitudes to examine the influence of formal and informal experiences on students' beliefs about the benefits of diversity.

Results

Did students' diversity-related experiences and attitudes differ by school? Table 1 provides a comparison of responses from the three schools. Before entering medical school, students at all three schools had similar amounts of interaction with groups representing a range of diversity features (i.e., people of color, people with different religious beliefs, gay/lesbian/bisexual individuals, or people with disabilities). On average,

Table 1
Descriptive Statistics by School on Selected Diversity Variables

Variable	School A	School B	School C
Prior experiences			
Neighborhood grew up (mixed or mostly people of color)	50%	30%	34.6%
College ethnic composition (1/2 or more people of color)	51.5%	46.7%	50.7%
College friendships (1/2 or more people of color)	77.8%	57.7%	56.5%
Mean interactions with whites (0 = none, 3 = substantial)	2.66	2.89	2.83
Medical school experiences			
Mean number of instructors from diverse backgrounds	10.3	9.7	9.7
Patients of diverse backgrounds	55%	49.1%	67.1%
Did <i>not</i> receive direct instruction in cultural competency	10.4%	8.25%	3.6%
Mean number of voluntary activities related to culture and health (5 maximum*)	2.83	2.65	2.64
Mean friendship interactions with diverse peers (6 maximum*)	4.60	1.88	4.36
Mean instructional interactions with diverse peers (21 maximum*)	12.18	15.43	11.88
Attitudes			
Mean benefits of diversity in medical school (12 maximum*)	9.42	9.42	8.27
Mean support affirmative action in medical school (32 maximum*)	24.45	25.87	23.12
Mean perception of social problems resulting from differences (24 maximum*)	18.53	8.07	18.15
Value conflict as part of democracy (16 maximum*)	13.13	13.79	13.12

* *Maximum* indicates the total number of points possible for each scale based on the number of activities or weighted scales.

however, students in School A had fewer interactions with whites. Students also differed significantly in the composition of the neighborhoods where they grew up and the composition of their college friends. More students in School A grew up in neighborhoods that were mixed or mostly of color than did students in Schools B and C. Students' friendships in college mirrored these differences. A larger percentage of students from School A indicated that half or more of their friends were people of color than did students from Schools B or C.

Associations with people from diverse backgrounds during medical school, the number of lecturers, clinical supervisors, or residents with whom students interacted who were people of color, did not differ significantly among schools, but the percentage of patients of color students saw did. Students in School C, which rotates students into one of the largest county hospitals in the country, served many more patients of color than did students in Schools A and B, each of which includes a greater mix of public and private medical settings.

Schools differed significantly in the amount of direct instruction on culture and health that their students reported ($\chi^2 = 9.34; P < .05$), with the greatest variation in the percentage reporting no direct instruction. No differences were found in the percentage of students who learned another language (overall average = 49.3%) or in the number of voluntary activities related to culture and health in which students participated.

A factor analysis of the nine items describing student interactions with peers around diversity during medical school resulted in two factors, *friendship* (e.g., "worked on a project with a multicultural group") and *interaction* (e.g., "discussed racial or cultural implications of patient care in a small group"). The three schools differed significantly ($P < .000$) on both factors (friendship: $F_{2/394} = 224.34$; interaction: $F_{2/343} = 62.92$). Post hoc analyses showed that students at School B indicated significantly fewer friendships with individuals from different backgrounds, but significantly more informal instructional interactions with peers from diverse backgrounds than did students at either of the other schools.

Differences between schools in students' attitudes about the benefits of diversity in

medical school, the need for affirmative action, the impact of diversity on society, and the need for conflict and coalition building in a democracy were highly significant. Students at School C were less likely than those at Schools A and B to value diversity in their medical school experience, to support affirmative action, and were less convinced that institutions needed to actively recruit and support minorities in faculty positions or as students. School B students were significantly less likely to perceive social problems resulting from diversity (e.g., "A person's racial background in this society does *not* interfere with achieving what he or she wants to achieve," reverse coded). Finally, students at School B were significantly more likely than those at Schools A or C to value conflict as a part of the democratic process. To summarize, differences existed across the three dimensions among the three schools.

What relationship exists between these differences and students' beliefs and attitudes? Four separate regression analyses were estimated to predict students' beliefs about the benefits of diversity in medical school, their support for affirmative action, their perception of the difficulties resulting from differences, and the value they placed on conflict in a democracy. Because the experience of diversity in college has been found to be important, the ethnic composition of medical students' friends in college and a summary variable of their prior experience with diverse groups were entered into the regression equation first. Then, students' medical school exposure to diverse groups (i.e., number of patients and faculty of color), formal experiences (i.e., direct and voluntary instruction), and informal interactions (i.e., instructional interactions and friendships) were entered as blocks.

Prediction of students' beliefs about the benefits of diversity in medical school was significant ($F_{8/214} = 3.272; P = .002$), as was the change in predictive value (R^2) for each block of variables entering the equation. In the final model, only the coefficients for involvement in voluntary cultural activities ($t = 2.052; P = .041$) and informal instructional interactions ($t = 3.411; P = .001$) were significant predictors of positive beliefs about the importance of a diverse student body.

In the prediction of students' attitudes toward affirmative action ($F_{8/190} = 4.616; P = .000$), change in R^2 was significant only for the blocks that included interaction variables; however, the final model resulted in significant contributions for the number of diverse faculty ($t = -2.237; P = .026$), percentage of minority patients seen ($t = 2.289; P = .023$), and informal interactions ($t = 3.973; P = .000$), with voluntary cultural activities almost reaching significance ($t = 1.844; P = .067$).

In the analysis of students' attitudes about the impact of diversity on society, the model accounted for almost 43% of the variance ($F_{8/192} = 8.649; P = .000$). Significant predictors in the final model included exposure to patients of color ($t = 4.017; P = .000$), informal instructional interactions ($t = -4.273; P = .000$), and friendships ($t = 5.996; P = .000$).

The fourth model was not significant and accounted for only 5% of the variance in students' beliefs about the value of conflict in a democracy. Only informal instructional interactions contributed significantly when all variables were entered ($t = 2.359; P = .019$).

Discussion

These results suggest that students' experiences with diversity vary across schools. Compositional differences in the student, faculty, and patient populations contribute to these differences and influence students' educational experiences and attitudes about diversity and health care. These findings are in line with previous studies examining the influence of diversity on students in professional schools—namely, that students in medical schools value diversity in their classmates and find both the academic experiences and their abilities to work with patients from differing backgrounds enhanced by this diversity. As in studies at the undergraduate college level, students from more diverse schools value diversity more than do those from less diverse schools.

During medical school, working with patients from diverse backgrounds—a variable not studied elsewhere—strongly influenced students' attitudes about both affirmative action and the societal value of diversity. Being clinically supervised by faculty of color was associated with

students' support for affirmative action. Studies at the undergraduate college level also indicate that nontraditional faculty members play a critical role in supporting diversity efforts.¹⁶ Voluntary experiences in an underserved medical setting played a role in students' views of the benefits of diversity and the need for affirmative action. It was unclear, however, whether these voluntary opportunities shaped attitudes or whether students valuing diversity were more likely to take advantage of such opportunities. Finally, informal interactions with peers from diverse backgrounds around instructional issues consistently contributed to students' beliefs in all diversity aspects measured, including the value of conflict in a democracy. The widespread educational impact of such interaction points to the importance of designing curricular and extracurricular experiences which include opportunities for medical students to engage with diverse peer groups.

In summary, these findings suggest that medical students' attitudes about culture and health and their perspectives on societal issues related to diversity are influenced by their medical school experiences. Most important is the influence that informal interactions in instructional contexts seem to have in shaping these beliefs. Structuring such interactions with diverse peer groups needs to be given more serious educational attention. Likewise, the nature of these interactions and those involving both faculty and patients of

color need further investigation, using more qualitative approaches, to better understand their influence.

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AUTHOR QUERIES

AUTHOR PLEASE ANSWER ALL QUERIES

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