ORIGINAL RESEARCH

Improving Underrepresented Minority Medical Student Recruitment with Health Disparities Curriculum

Monica B. Vela, MD, Karen E. Kim, MD, Hui Tang, MS, and Marshall H. Chin, MD, MPH

Department of Medicine, University of Chicago, Chicago, Il, USA.

BACKGROUND: Diversity improves all students' academic experiences and their abilities to work with patients from differing backgrounds. Little is known about what makes minority students select one medical school over another.

PURPOSE: To measure the impact of the existence of a health disparities course in the medical school curriculum on recruitment of underrepresented minority (URM) college students to the University of Chicago Pritzker School of Medicine.

METHODS: All medical school applicants interviewed in academic years 2007 and 2008 at the University of Chicago Pritzker School of Medicine (PSOM) attended an orientation that detailed a required health care disparities curriculum introduced in 2006. Matriculants completed a precourse survey measuring the impact of the existence of the course on their decision to attend PSOM. URM was defined by the American Association of Medical Colleges as Black, American Indian/Alaskan Native, Native Hawaiian, Mexican American, and Mainland Puerto Rican.

RESULTS: Precourse survey responses were 100% and 96% for entering classes of 2007 and 2008, respectively. Among those students reporting knowledge of the course (128/210, 61%), URM students (27/37, 73%) were more likely than non-URM students (38/91, 42%) to report that knowledge of the existence of the course influenced their decision to attend PSOM (p=0.002). Analysis of qualitative responses revealed that students felt that the curriculum gave the school a reputation for placing importance on health disparities and social justice issues. URM student enrollment at PSOM, which had remained stable from years 2005 and 2006 at 12% and 11% of the total incoming classes, respectively, increased to 22% of the total class size in 2007 (p = 0.03) and 19 percent in 2008.

CONCLUSION: The required health disparities course may have contributed to the increased enrollment of URM students at PSOM in 2007 and 2008.

KEY WORDS: health disparities; curriculum; education; medical students; underserved.
J Gen Intern Med 25(Suppl 2):82–5
DOI: 10.1007/s11606-010-1270-8

INTRODUCTION

US medical schools struggle to recruit and retain underrepresented minority (URM) medical students as defined by the American Association of Medical Colleges (AAMC) (Black, American Indian/Alaskan Native, Native Hawaiian, Mexican American, Mainland Puerto Rican).[1] Underrepresentation of minority medical students is problematic because medical students value diversity in their classmates, and diversity improves all students' academic experiences and their abilities to work with patients from differing backgrounds.[2–5] Improving the diversity of the physician workforce is crucial in addressing the health care needs of rapidly growing minority populations in the US.[6] Multiple studies have shown that URM physicians are more likely to provide care for minority, underserved and indigent populations.[7]

URM recruitment strategies vary by medical school. Recruitment strategies include minority pipeline programs, postbaccleaureate programs, recruitment at national student conferences and financial incentives. These strategies have had variable success. In 1999, Strayhorn and Demby conducted a survey of 119 Liaison Committee on Medical Education (LCME) accredited medical schools and found that pre-admission programs (pipeline programs that target undergraduate students for mentorship and exposure to health care professions) may be positively associated with enrollment of URM students at US medical schools.[8] In response to increasingly restrictive admission policies, the AAMC has created a 'Roadmap to Diversity.[6,9–11] The Roadmap helps medical schools use the admissions process to achieve the educational and health care-related benefits that come from a diverse student body, and assists them to establish and implement institution-specific diversity-related policies.[12]

Little is known about what makes minority students select one medical school over another. The AAMC conducted a survey of 2007 matriculants, identified by race and ethnicity, regarding the top ten reasons for matriculating at a specific medical school. School location ranked number one for all candidates.[13] Student diversity ranked eighth for Latino and Asian students, tenth for African American students, and was not ranked by American Indian/Alaskan Native or Caucasian students. African American students considered minority programs to be the fifth most important reason to matriculate at a specific medical school.[13] These rankings are critical because many studies show that minority students struggle with issues of isolation and bias, and that race-related issues such as racial discrimination impact their well-being throughout medical school and into their careers.[14–16]

Methods and curriculum were ranked in the top five for all groups of students. However, it is unclear exactly which

aspects of methods and curriculum were most important to minority students. Possibilities include time allotted for research, traditional didactic teaching methods versus a case based approach, early exposure to patient care, and coursework about society and medicine.[13] In 2005, Aagrad et al. found that minority applicants were more likely than whites to identify the ethnic diversity of patients and service to the medically indigent as important factors in their selection of an internal medicine residency program.[17]

A 2008 AAMC survey reported that 72% of US medical schools teach an average of only five 'sessions' regarding health disparities in required preclerkship courses.[13] In 2006, the University of Chicago created and implemented a health care disparities course at the beginning of the first year of medical school. We previously reported that it has been the highest rated course in the medical school, and that it improved students' knowledge and attitudes regarding health disparities.[18] This follow-up study aims to determine if (1) knowledge of the existence of the course influenced minority college students' decision to matriculate to the University of Chicago Pritzker School of Medicine and (2) the course was associated with an increasing percentage of under-represented minority students in the matriculating classes of 2007 and 2008.

METHODS

Course Description

All medical school applicants interviewed at the University of Chicago Pritzker School of Medicine for entering classes 2007 and 2008 attended an orientation that described the course *Health Disparities in America: Exploring Health Care in Our Community*. While the course was first introduced as an elective in 2006, it became a required course in 2007 for all first year medical students. In 2007, the course was implemented over an intense 1 week span before orientation week. In 2008 the course was spread over 8 weeks at the beginning of medical school in response to student feedback regarding the need for more time to be allotted for class discussion. The disparities course and a Human Morphology course were the only two courses that quarter. While the course took place over 8 weeks in 2008, course content and delivery did not change significantly over the 2 years.

We have previously described the course in detail.[18] In brief, the course follows the curricular aims of the Society of General Internal Medicine Disparities Task Force. The course includes didactic lectures, small group discussions and site visits to local emergency rooms, hospitals, community clinics and community health organizations. Curriculum topics included defining race and culture, an exploration of racial and ethnic biases and stereotypes, historical mistrust, health literacy, health policy, Medicare and Medicaid, language barriers and use of interpreters, and an overview of the resources and needs of the South Side Community in Chicago. Students were assigned to small groups that were required to deliver an end of course presentation on a health disparities topic.

Precourse Survey

An anonymous numbered pre-course survey asked students to rate their own ability to describe health disparities topics, assessed knowledge, and recorded the respondent's race, ethnicity, age and gender.[18] The survey also assessed students' personal awareness and experience with health disparities, and their level of experience working with patients and racially and socioeconomically diverse populations. In addition, the students were asked to answer yes or no to the following two questions: (1) Did you have knowledge of this course prior to accepting Pritzker's offer for admission? and (2) Did the existence of this course influence your decision to accept Pritzker's offer? If they answered yes to the second question, they were asked to answer "How so?" in written response format. The study was exempted by the University of Chicago Institutional Review Board.

Quantitative Data Analysis

We combined data from the 2007 and 2008 classes and performed descriptive analyses to delineate student characteristics. We also tracked the minority (as self reported on medical school applications) students matriculating each year. We compared the proportion of URM students in each class between year 2006 and year 2007 with the two-sample proportion test at a significance level of $p<0.05$. Between URM and non-URM groups, we compared students' personal experience with health care disparities and diverse populations, and the impact of the course on students with the Pearson χ^2 test at a significance level of $p<0.05$. Stata10.0 (College Station, Texas) was used for all analysis, and all the p-values are two-sided.

Qualitative Data Analysis

Qualitative analysis involved a careful review of students' written comments if they detailed how the course influenced their decision to matriculate to the Pritzker School of Medicine. Initially one researcher reviewed the responses and devised a coding scheme. Three researchers then met to revise the coding scheme. This coding scheme was then applied to all comments by the three coders. Coding was reviewed by all three coders, and if a discrepancy occurred they discussed the discrepancy until a final decision was reached by consensus. Responses could receive more than one code.

RESULTS

The precourse survey response rates were 100% (n=112) and 96% (n=99), for the classes of 2007 and 2008, respectively. Forty-five (27%) of the students were from URM groups including 27 (60%) African American students, 3 (7%) American Indian students and 15 (33%) Latino students. URM and non-URM students reported equal rates of having 'lots of experience' working with socioeconomically and racially and ethnically diverse populations prior to medical school (Table 1). URM students (15/45, 33%) and non-URM students (42/166, 25%) reported equal rates of having personally suffered or knowing someone who had suffered a health care disparity (p=0.29). URM students (23/45, 51%) were more likely than non-URM students (54/166, 33%) to report having worked with racially and ethnically diverse populations (p=0.02). URM students (24/45, 53%) were also more likely than non-URM students (50/166,

Table 1. Differences in Personal Experiences with Health Care Disparities and Diverse Populations Between Underrepresented Minorities and Non-Underrrepresented Minorities‡ (N=211)

Combined entering classes 2007 and 2008	URM (N=45)	Non-URM			P value
		Overall (N=166)	Asian (N=44)	Non-Asian (N=122)	
Report of personal experience with health care disparities* (n; %)	15 (33%)	42 (25%)	12 (27%)	30 (25%)	0.29
Report of lots of experience with racially and ethnically diverse populations† (n; %)	23(51%)	54 (33%)	18 (41%)	36 (30%)	0.02
Report of lots of experience with socioeconomically diverse populations† (n; %)	24 (53%)	50 (30%)	13 (30%)	37 (30%)	0.004

Yes or No in response to: Have you or someone you know experienced a health or health care disparity?
†On a scale of no experience, little experience, some experience or lots of experience
‡URM=Under-Represented Minority as defined by the American Association of Medical Colleges as Black, American Indian/Alaskan Native, Native Hawaiian, Mexican American, Mainland Puerto Rican

30%) to report having worked with socioeconomically diverse populations prior to medical school (p=0.004).

URM students (37/45, 82%) were more likely than non-URM (91/166, 55%) students to report having knowledge of the existence of the course prior to accepting the medical school's offer to matriculate (p=0.001). Among those students reporting knowledge of the course (n=128), URM students (27/37, 73%) were more likely than non-URM students (38/91, 42%) to report that knowledge of the existence of the course influenced their decision to attend the medical school (p=0.002; Table 2).

Sixty-eight (32%) students responded to the open-ended question regarding how the existence of this course influenced their decision to accept Pritzker's offer. Sixty-five (96%) of the responses included comments regarding one or more of the following themes: 13 (19%) noted that they felt the curriculum was important; 31 (46%) described feeling excited and interested by the curriculum; 30 (44%) felt that the existence of the curriculum gave the school a reputation for placing importance on health disparities, social justice issues or the local community. The following quotes reflect these three themes:

> "It was very important that I attended a school that really valued diversity and acknowledged disparities."

> "I was drawn to Pritzker's commitment to health care disparities and social justice."

> "Pritzker is placing an emphasis on training socially informed physicians."

URM student enrollment at the University of Chicago Pritzker School of Medicine, which had remained stable from years 2005 and 2006 at 12% and 11% of the total incoming classes, respectively, increased to 22% of the total class size in 2007 (p=0.03, when comparing 2006 and 2007) and remained stable at 19% during 2008.

DISCUSSION

A majority of the URM students matriculating to the University of Chicago Pritzker School of Medicine in 2007 and 2008 reported that knowledge of the Health Disparities Course positively influenced their decision to matriculate to the school. After implementation of the course, the percentage of the medical school class composed of URM students significantly increased in 2007 and remained stable in 2008. In a review of the literature, we were unable to find any other studies investigating the influence of disparities coursework on the matriculation of underrepresented minority students.

The disparities course has been extremely well rated by the medical students and has been shown to alter the the knowledge and attitudes of medical students regarding health disparities issues.[18] Both URM and non-URM students indicated the existence of the health disparities curriculum influenced their decision to attend our school and reported a desire to attend a medical school that invested curricular time and resources addressing health care disparities issues. However, a significantly greater number of URM students compared to non-URM students report being positively influenced by this health disparities curriculum to matriculate to PSOM.

The percentage of URMs in the entering University of Chicago Pritzker School of Medicine increased during this time period when the disparities course was offered, but the reasons for this increase in URMs is probably multifactorial. For the past several years, the University of Chicago has supported several programs and initiatives to promote the recruitment of URM

Table 2. Differences in the Report of Course Recall and Course Impact on Students Accepting Offer of Admission Between Underrepresented Minorities and Non-Underrrepresented Minorities‡ (N=211)

Combined entering classes 2007 and 2008	URM* (N=45)	Non-URM			P value URM to non-URM
		Overall (166)	Asian (N=044)	Non-Asian (N=122)	
Student recalled knowledge of course prior to accepting admission (n; %)	37 (82%)	91 (55%)	24 (55%)	67 (55%)	0.001
Course influenced student's decision to accept offer for matriculation (n; %)	27 (73%)	38 (42%)	10 (42%)	28 (42%)	0.002

**URM=Under-Represented Minority as defined by the American Association of Medical Colleges as Black, American Indian/Alaskan Native, Native Hawaiian, Mexican American, Mainland Puerto Rican*

medical students and to maintain a welcoming diversity climate. Pritzker School of Medicine is an NIH-funded site for pipeline research programs. The admissions committee as well as the Minority Affairs Office support a 'meet and greet' session at the end of the recruitment day for applicants interested in meeting Pritzker student members of the Student National Medical Association, the nation's oldest and largest student run organization focused on the concerns of medical students of color. URM enrollment to PSOM may have been affected by the increased number of URM students applying during 2007. This is unlikely, however, given that the AAMC reports that the pool of medical school applicants has steadily increased since 2002, and 2007 is the first year that PSOM has seen a significant increase in URM student matriculation.[13] The required health disparities course was one of several factors contributing to a welcoming diversity climate in 2007. It is also one of the major additions to these factors in recent years. Therefore, the health disparities course is likely to have contributed significantly to the increased enrollment of URM students at the University of Chicago Pritzker School of Medicine during the study years.

This study demonstrates that curricula that address minority health and disparities in health may be very important to URM students. However, the study has limitations. First, it is possible that faculty, administrators or students stressed the disparities curriculum more to minority candidates than other candidates. Second, it is difficult to isolate the independent impact of the course given the number of concurrent diversity initiatives at the Pritzker School of Medicine. While incorporating a strong disparities curriculum is a powerful way to improve recruitment of URM students and increase diversity, creating a comfortable working environment for URMs is essential for the success of matriculated URM students.[19] Minority students are more likely to report that their race/ethnicity has adversely affected their medical school experience and cite racial discrimination, racial prejudice, feelings of isolation and different cultural expectations as causes.[14] Minority students reporting such experiences are more likely to have burnout, depressive symptoms and low mental quality of life scores than were minority students without such experiences.[14] Once minority students matriculate, programs must continue to support students and prevent these adverse outcomes.

Our health care disparities curriculum is important because it improves knowledge and attitudes of students regarding health disparities.[18] It is also important in the current anti-affirmative action milieu that has limited URM admission practices of many medical schools.[10] This curriculum may be a powerful recruitment tool for schools that are interested in increasing or maintaining the diversity of their medical students. Introducing a substantial required disparities curriculum, enriching the diversity climate, retaining minority faculty and developing pipeline programs for minority students are important steps to improve diversity at academic institutions over the long term.

Acknowledgements: *The authors would like to acknowledge Dean Holly Humphrey and the staff at the University of Chicago Pritzker School of Medicine for their generosity and active support in accommodating this course into the medical school curriculum. We would like to acknowledge Dr. Joe G.N. Garcia, former Chairman of Medicine at the University of Chicago, for his mentorship, leadership and support in the development and implementation of this course. This course would not have been successful without the passionate and inspiring lecturers who devoted hours of their time and shared their personal histories with our students.*

Funding: *Supported by the Department of Medicine, University of Chicago, and the Office of Medical Education at the Pritzker School of Medicine, University of Chicago. Dr. Chin is supported by a Mid-Career Investigator Award in Patient-Oriented Research from the National Institute of Diabetes and Digestive and Kidney Diseases (K24 DK071933). Dr. Chin and Ms. Tang are supported by a National Institute of Diabetes and Digestive and Kidney Diseases Diabetes Research and Training Center (P60 DK20595).*

Conflict of Interest: *None disclosed.*

Corresponding Author: *Monica B. Vela, MD; Department of Medicine, University of Chicago, 5841 S. Maryland Ave., MC 3051, Chicago, Il 60637, USA (e-mail: mvela@medicine.bsd.uchicago.edu).*

REFERENCES

1. Institute of Medicine. Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare. National Academy Press, 2002.
2. **Guiton G, Chang MJ, Wilkerson L.** Student body diversity: relationship to medical students' experiences and attitudes. Acad Med. 2007;82(10): S85–S88.
3. **Saha S, Guiton G, Willers PF, Wilkerson L.** Student body racial and ethnic composition and diversity-related outcomes in US medical schools. J Am Med Assoc. 2008;300:1135–1145.
4. **Chang MJ.** Does diversity matter? The educational impact of a racially diverse undergraduate Ppopulation. J Coll Stud Dev. 1999;40(4):377–395.
5. **Whitla DK.** Educational benefits of diversity in medical school: a survey of students. Acad Med. 2003;78:460–466.
6. **Cohen JJ.** The consequences of premature abandonment of affirmative action in medical school admissions. J Am Med Assoc. 2003;289 (9):1143–1149.
7. **Smedley BD, Stith AY, Nelseon R**, **eds**. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington, DC: Institutes of Medicine, National Academices Press. 2002; 29–120.
8. **Strayhorn G, Demby K.** Do pre-admission programs make a difference in the enrollment of underrepresented-minority students at US medical schools? Acad Med. 1999;74(4):431–4.
9. **Steinecke A, Beaudreau J, Bletzinger RB, Terrell C.** Race neutral admissions approaches: challenges and opportunities for medical schools. Acad Med. 2007;82:117–126.
10. **Nickens HW, Ready TP, Petersdorf PG.** Sounding board: project 3000 by 2000—racial and ethnic diversity in US medical schools. N Engl J Med. 1994;331:472–6.
11. **Terrell C, Beaudreau J.** 3000 by 2000 and beyond: next steps for promoting diversity in the health professions. J Dent Educ. 2003;67 (9):1048–52.
12. Roadmap to diversity: key legal and educational policy foundations for medical schools: American Association of Medical Colleges. https://services.aamc.org/Publications, last accessed October 29, 2008.
13. Diversity in Medical Education: AAMC facts and figures 2008. www.aamc.org/data/facts/start.htm *last accessed* January, 2010.
14. **Dyrbye LN, Thomas MR, Eacker A, Harper W, et al.** Race, ethnicity, and medical student well-being in the United States. Arch Intern Med. 2007;167(19):2103–2109.
15. **Hung R, McClendon J, Henderson A, Evans Y, et al.** Student perspectives on diversity and the cultural climate at a US medical school. Acad Med. 2007;82(2):184–192.
16. **Betancourt JR, Reid AE.** Black physicians' experience with race: should we be surprised? Ann Intern Med. 2007;146(1):68–69.
17. **Aagaard EM, Julian K, Dedier J, Soloman I, Tillisch J, Pérez-Stable EJ.** Factors affecting medical students' selection of an internal medicine residency program. J Natl Med Assoc. 2005;97(9):1264–70.
18. **Vela M, Kim KE, Tang H, Chin MH.** Innovative health care disparities curriculum for incoming medical students. J Gen Intern Med. 2008;23 (7):1028–32.
19. **Odom KL, Roberts LM, Johnson RL, Cooper LA.** Exploring obstacles to and opportunities for professional success among ethnic minority medical students. Acad Med. 2007;82(2):146–153.