

# **Student Perceptions of Bias During the Admissions Process at Two Private Medical Schools**

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**Background:** A 2002 Institute of Medicine (IOM) report recommended increasing the number of minority physicians to combat the health gap in our country between the majority race population and minority races. However, there are a number of reasons impeding the recruitment and retention of minorities, one of which may be institutional or cultural biases inherent in admissions committees and the overall admissions process.

**Purpose:** The purpose of this study was to determine student perceptions of bias during their admissions process.

**Methods:** Over 540 students were surveyed in two private schools of medicine, one predominantly European American and the other predominantly African American. Students marked level of agreement or disagreement to survey items which were then assigned strengths to generate descriptive statistics. Item mean scores and survey summative scores were analyzed to generate descriptive statistics and to compare item results.

**Results:** Results indicated differing perceptions of each school's policies according to the majority/minority race in each institution, that is, a student's racial concordance with the school is a factor in their perception of policy. Biases were perceived to exist, institutional culture may have an affect as the majority race was more positive than the minority race, and Black students at both institutions do not favor a "color blind" admissions process.

**Conclusions:** There may be distinct differences in perceptions of bias depending upon a racial/ethnic group's status in a medical institution. For both schools in this study, the most populous demographic was decidedly more positive about their school's admissions process than the least populous group. Race/ethnicity of medical students is a component in determining their satisfaction with the admissions process while efforts to move toward even greater reliance on "color blind" admissions criteria are viewed markedly different according to race.

## Background

A 2002 Institute of Medicine (IOM) report recommended increasing the number of minority physicians as one method of combating the great disparity in health care between our country's majority race population and minority races.<sup>1,2</sup> Likewise, studies of patient-physician concordance have found that African Americans and Hispanic Americans actively sought physicians of their own race and recommended that medical school admissions and workforce planning include "strategies...to increase the number of underrepresented minority physicians."<sup>3,4</sup> To address the primary concern of the IOM report and to expand the numbers of African-American physicians, there must be a concomitant increase in the numbers of African Americans admitted to and graduated from our nation's medical schools. However, the over-reliance on quantitative measures such as the MCAT and undergraduate GPAs by admissions committees have not only inhibited admissions of underrepresented minorities, but have also resulted in a method of selection that has been deemed to be "fundamentally... flawed, ...skewed toward choosing people who do not or will not think for themselves...the healer is replaced by the technician."<sup>5</sup>

There are other reasons in addition to over-reliance on quantitative criteria for decreased admissions and retention of minority medical students, a primary one being that many medical school admissions committees contain relatively few minority members, resulting in a cultural bias or ignorance of a particular applicant's potential distinct from the quantitative data in applications.<sup>6</sup> However, an impediment to reforming admissions committees is that minorities are underrepresented on faculty rolls of predominantly White medical education institutions. As medical institution spokespersons point out, admissions committees only represent the faculty population as a whole; to be selected for the committee, one must generally be a higher ranking faculty member.<sup>7</sup> Since minorities comprise only 4.2% of medical school faculties and tend to

not be promoted at the same rate as White faculty members, this leads to the problem of the shortage of high-level minority leadership who can act as change agents of the existing institutional culture.<sup>8,9</sup>

The issue is to determine if medical students have perceived institutional bias during admissions that may impact the recruiting and retention of minorities. In this paper, the two medical schools have demographically distinct student bodies, presenting the opportunity to examine the issue from the standpoint of racial concordance, that is, the attitudes of White students attending a predominantly White medical school and of Black students attending a predominantly Black medical school, and racial discordance, that is, the attitudes of White students attending the predominantly Black medical school and Black students attending the predominantly White medical school.

### **Purpose**

The purpose of this portion of a larger study was to investigate if medical students perceived bias during the admissions process at two private schools of medicine.

### **Methods**

More than 540 students at two medical education institutions were surveyed in the spring of 2005 regarding perceptions of bias during admissions. One school's population (Institution X) was predominantly European American and the other predominantly African American (Institution Y). Institution X is an established, nationally ranked, private medical school with a robust endowment and learning tradition that has been dominated demographically by European-American males. However, in recent years the school has instituted significant efforts to diversify its student population, including the establishment of an Office for Diversity in Medical Education as well as steps to recruit more female students. Institution X had the following population demographics as demonstrated on the survey: 52% male, 48% female,

67% European/European-American, 8% African/African-descent/African-American, 17% Asian/Asian-American (including Middle Eastern), 2% Latino/Latina, and 6% other races and ethnicities (including Native American or self-identified as more than one race/ethnicity).

Institution Y is a historically Black medical school that is responsible for training a significant percentage of all African-American doctors in the United States and has a proud history and reputation with a distinguished list of nationally recognized alumni. It has established and maintained an inclusive reputation for its willingness to recruit and attract students of a variety of races and ethnicities. Due to various factors, females have traditionally comprised a significant percentage of its population. Institution Y has a surveyed demographic population that is 48% male, 52% female, 73% African/African-descent/African-American, 6% European/European-American, 7% Asian/Asian-American, 2% Latino/Latina, and 11% self-identified as other (including Native American or more than one race and ethnicity).

The subjects of this survey were the medical student populations of both institutions. Criteria for inclusion in this research study were that students be present for the survey, complete it in the presence of the researcher, and return it directly to the researcher. The researcher read a formal script that complied with Institutional Review Board (IRB) stipulations at both institutions and which detailed information concerning freedom of participation and confidentiality. Participation was strictly voluntary without consequences for non-participation and the investigator had no influence over student grades or performance indicators. A participant may have chosen to not complete the survey at any point without prejudice. Data was acquired wholly from the survey instrument except if a student wished to provide other additional information which was not incorporated into the statistical software, but simply recorded as anecdotal or expository information. There were no anticipated adverse risks to the participants. Since the survey was completely anonymous and voluntary, the IRB-granting

institutions waived the necessity of a signed consent form from each student. For the purposes of this paper, only White (European/European-descent/European American;  $n = 235$ ) and Black (African/African-descent/African-American;  $n = 177$ ) student surveys were extracted and analyzed.

The procedure for administering the survey was straightforward. The researcher read a prepared script and distributed the survey. All surveys, completed or not, were either gathered by hand or placed by students in a drop box. However, the researcher did not review any surveys until after transporting them to a neutral location. No questions were taken, nor the term “bias” formally defined prior to the survey except that students were advised during the pre-survey instructions that their perception of bias was a personal construct and to consider their understanding of the term in responding. Though gender bias was a component of the survey, the discussion below focuses upon racial and ethnic biases.

The instrument was a 30-item Likert scale survey developed specifically for this research study and subsequently copyrighted. Students marked level of agreement or disagreement to survey items which were then assigned strengths to generate descriptive statistics. Item mean scores and survey summative scores were analyzed to compare individual item results and student attitudes regarding bias. A number of descriptive statistics were compiled and the resulting data analyzed to determine whether a statistically significant difference existed between the mean scores of subjects according to institution and racial category. Items were ranked accordingly: *strongly agree* = 5, *agree* = 4, *no opinion/neutral* = 3, *disagree* = 2, and *strongly disagree* = 1. Therefore, an item score above or below a “perfect” mean of 3.00 would indicate a general level of satisfaction or dissatisfaction with the admissions process at each institution.

## **Results**

When segmented according to racial concordance of student to institution (Table 1), note that overall both groups of majority race students (that is, Institution X White students and Institution Y Black students) were positive about the admissions process in their school, reflected by the mean sums overall of 3.688 and 3.438, respectively. However, while the means indicated that White students at Institution X were slightly more positive than Black students at Institution Y, distinct perceptual differences among several of the items emerged as statistically significant differences were found for Items 1, 3, 4, 5 and 6.

Regarding Item 1, the survey item read “*Interviews and interpersonal contacts were free of apparent bias.*” Seventy-seven percent of White students at historically White Institution X agreed or strongly agreed with this statement ( $M = 3.964$ ), while 61% of Black students at historically Black Institution Y agreed or strongly agreed ( $M = 3.599$ ), with the subsequent  $p$  score of .0086 (unpaired  $t$ -test,  $\alpha = 0.05$ ). Item 3 stated: “*I understood I would be supported should I raise issues regarding bias in this institution.*” Again, majority race students at Institution X were more positive than majority race students at Institution Y as mean scores were 3.772 and 3.446, respectively, and resulting in a  $p$  score of .0098 (unpaired  $t$ -test,  $\alpha = 0.05$ ). In fact, 70% of White students at Institution X agreed or strongly agreed with this statement versus 51% of Black students at Institution Y who agreed or strongly agreed.

Survey Item 4 stated “*A ‘color blind’ admissions process works to my advantage.*” This item resulted in the largest difference in the two groups as the mean for White students was 3.987 and for Black students 2.943 (resulting in a  $p$  score of  $<.0001$ ). As with item 3 (above), 70% of White students at Institution X agreed or strongly agreed with this statement while only 33% of Black students at Institution Y agreed or strongly agreed. Likewise, a statistically significant difference occurred for Item 5, which stated “*I was admitted based solely upon my qualifications.*” Though students at both schools answered this statement positively, 70% of

Institution X White students agreed ( $M = 4.094$ ) versus only 51% of Institution Y Black students ( $M = 3.592$ ).

Item 6, “*The admissions process was free of racial/ethnic/other biases,*” resulted in an interesting finding. Though students at Institution X had ranked 4 of the 5 previous items higher (more positively) than students at Institution Y, indicating more satisfaction with the admissions process at their school, these same students ranked this one item significantly lower than their counterparts. At Institution X, only 44% of White students agreed or strongly agreed ( $M = 2.861$ ), while at Institution Y, 51% of students agreed or strongly agreed ( $M = 3.395$ ), indicating that students may have a different perception when asked more specific questions, but still have an overall different perception regarding the entire admissions process.

When examining results after segmenting students by racial discordance (that is, White students at Institution Y and Black students at Institution X), each of the two racial groups constituted the demographically least populace race at each school. These two groups of students were much less positive regarding the admissions process at their institution than the demographically most populace students. The overall item means for Black student responses in Institution Y was 3.438, but for White student responses at Institution Y the mean was only 3.125. Likewise, White students responses regarding admissions at Institution X yielded a mean score of 3.688, but the Black student mean response at Institution X was only 3.083.

While the initial discussion of racially concordant data centered upon the fact there were statistically significant differences for 4 of the 6 survey items, there was only one item, 3. “*Understanding of support from administration,*” with a statistically significant  $p$  score when race/institution was discordant. At Institution Y, only 17% of White students agreed with this item (0% had strongly agreed), while 79% of Black students at Institution X agreed (including 21% who strongly agreed). This indicates that Institution X has been more successful in

communicating support to their African/African-American students than Institution Y to their European/European-American students. The respective mean scores were 2.500 for White students and 3.850 for the Black students, with a  $p$  score of .0015.

Table 1

*Comparison of Student Attitudes (Mean Scores) Toward Admissions By Institution, Unpaired T-Test*  
( $\alpha = 0.05$ )

	Racially Concordant			Racially Discordant		
	Institution X	Institution Y	$P$ Score*	Institution Y	Institution X	$P$ Score*
	(n = 223)	(n = 157)		(n = 12)	(n = 20)	
<b>Admissions Process</b>	<b>3.688</b>	<b>3.438</b>		<b>3.125</b>	<b>3.083</b>	
1. Interviews/contacts were bias free	3.964	3.599	.0086*	3.000	3.500	.2146
2. Gender/race/ethnicity not an issue	3.502	3.650	.2634	3.083	2.550	.2662
3. Understanding of support	3.722	3.446	.0098*	2.500	3.850	.0015*
4. "Color blind" admissions	3.987	2.943	<.0001*	3.583	2.900	.0566
5. Admitted solely on qualifications	4.094	3.592	<.0001*	3.333	3.000	.4277
6. Process free of biases	2.861	3.395	<.0001*	3.000	2.950	.8969
Mean Range	1.233	0.707		1.083	1.303	

Note: An asterisk (\*) denotes a  $p$  score of <.05

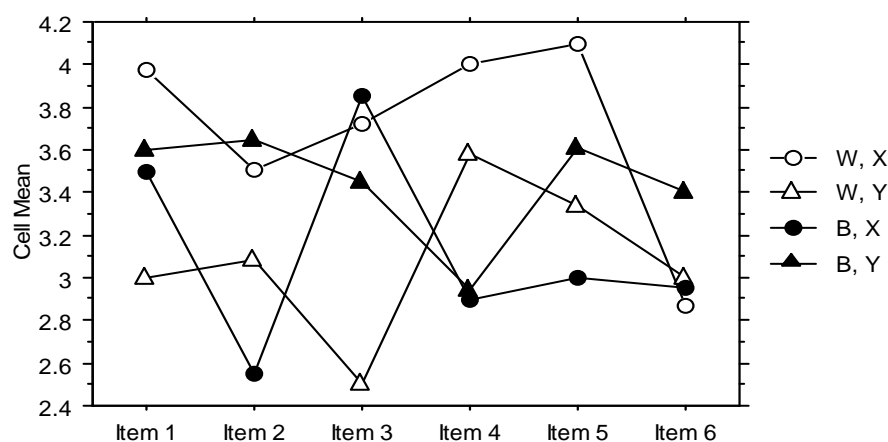
Figure 1 depicts graphically the mean scores of all items pertaining to the admissions process at each school. Note that "W" and "B" refer to European/European-descent/European American and African/African-descent/African American students, respectively, at each school. The mean scores of Institution X White students were relatively similar for items 1 - 5, but dropped dramatically for item 6, "*Process free of biases.*" Likewise the mean scores of Institution Y Black students were relatively similar except item 4, "*'Color blind' admissions.*"

Conversely, both Institution X Black student means varied much more for the first four items: 1. "*Interviews/contacts were bias free,*" 2. "*Gender/race/ethnicity not an issue,*" 3. "*Understanding of support,*" and 4. "*'Color blind' admissions.*" In the same manner, Institution

Y White student means varied as well, but for items 3, 4 and 5 (“Admitted solely on qualifications).” Overall, White students at Institution Y and Black students at Institution X were uniformly the least agreeable to items in the survey with two exceptions. On item 3, Black students at Institution X were more agreeable that support would be offered than any other group in this survey, and certainly much more than White students at Institution Y. However, on item 4, Black students at both schools agreed much less than White students that a “color blind” admissions process is preferred.

Figure 1

*Line Graph Depicting White-Black Student Attitudes Toward Admissions, Institutions X and Y*



- Item 1. Interviews and interpersonal contacts were free of apparent bias.  
 Item 2. My gender/race/ethnicity was not an issue during the admissions process.  
 Item 3. I understood I would be supported should I raise issues regarding perceived bias in this institution.  
 Item 4. A “color blind” admissions process works to my advantage.  
 Item 5. I was admitted based solely upon my qualifications.  
 Item 6. The admissions process was free of racial/ethnic/other biases.

### Conclusions

The study was segmented by student racial concordance/discordance within each medical education institution and then analyzed. It is not surprising that students in racial concordance with their institution were more positive than racially discordant students. The fact, however, that the two racially concordant student populations differed significantly on five of six survey

items was noteworthy. Somewhat peculiarly, White students at Institution X were more positive overall about the admissions process than Black students at Institution Y on four of the six items, yet for the overall satisfaction rating (item 6) Institution Y students rated their school significantly higher than Institution X students. This would imply that relying upon a single survey item to gauge student opinions or perceptions may not yield the most accurate results.

When examining differences in perceptions when students were racially discordant, only item 3 was statistically significant (the item asked student agreement regarding the issue of perceived support from administration should bias issues be raised). On four of the remaining five items, however, the White students at Institution Y were more positive than the Black students at Institution X, indicating that Institution Y's admissions process was more satisfying for its minority students than Institution X's and illustrating differences in culture between the two institutions.

Referring to Figure 1 above, Black students at both schools were in agreement on items 1 and 4, agreed about the same on items 3 and 6, and differed significantly on item 2 and to a lesser degree on item 5. Both items 2 and 5 speak to race and qualifications for admission. Black students at Institution X, not surprisingly, noted this aspect of that school's process. Conversely, White students at both schools agreed similarly on item 6 (both were less positive), differed slightly on items 2 and 4, and differed more distinctly on items 1, 3, and 5. These results again reflect the perceptions of the demographically minor races in relation to other students and highlight the value of such studies to administrators as tools that could be used to pinpoint areas requiring attention.

As reported previously, minorities are often underrepresented on medical school admissions committees. This may result in cultural or academic biases toward over-weighting quantifiable measures of what specifically comprises the most appropriate medical school

applicant. However, students of both races at both schools in this survey perceived biases existed. The demographically larger race at each institution was more positive than the minority race regarding perception of biases during admissions. The fact that Black students at the historically more diverse Institution Y perceived bias to the degree reflected in surveys are a clear indication that the institution should increase its efforts in this area. Administrators at any institution must continually solicit student input regarding their institution's environment and culture, even those schools that may be quite satisfied that they are sufficiently diverse. In this study, since the minority race students at each school had decidedly more negative perceptions of bias than the majority race, the respective institutional cultures may not have been as inclusive as school administrators would have expected or desired.

The item pertaining to "color blind" admission goes to the heart of the debate regarding efforts to roll back affirmative action and increase underrepresented minority medical student populations. Results in this study have a decidedly racial cast as African/African-American students at both schools indicated they did not favor "color-blind" admissions and White students at both schools, particularly at Institution X, indicated strong preference for color-blind admissions.\* Clearly European-American students and African-American students differ significantly on which applicant qualifications should be more emphasized during the admissions process: more traditional, quantifiable measures such as MCAT and undergraduate GPAs or other, less quantitative considerations.

Growth in the minority medical student population is a goal of our healthcare establishment and research has focused on the societal advantages of such growth. The former president of the AAMC, Jordan Cohen, noted four reasons why racial and ethnic diversity in

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\* Though not reported in this paper, Asian/Asian-American students surveyed as part of the larger study also did not favor "color blind" admissions.

medicine is so critical to society: (i) diversity is “indispensable” for quality medical education; (ii) increasing physician diversity will improve healthcare for underserved populations; (iii) increasing diversity accelerates advances in medical and public health research; and (iv) the country’s research agenda will be improved for the better.<sup>10</sup> However, these changes will not occur without continued emphasis on creating a more culturally inclusive climate for all students, no matter their race or ethnicity. Further studies of student perceptions could provide valuable information for leaders, administrators and admissions officers and serve as a tool for creating the environment required for attracting and retaining the optimal mix of races and ethnicities in our medical education institutions.

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