Analysis IN BRIEF

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Medical Students' Socioeconomic Background and Their Completion of the First Two Years of Medical School

Although only approximately 3 percent of medical students do not complete their medical degrees, a previous *Analysis in Brief* (*AIB*) showed that the likelihood of leaving medical school is higher for some racial/ethnic groups than for others.[1] How socioeconomic status (SES) is associated with medical school attrition remains unknown. Understanding the relationship of socioeconomic status to medical school completion can help schools tailor support mechanisms for students who may struggle early in their medical education and reduce the incidence of leaving medical school with debt, but without a degree. Because recent analyses have shown that medical students are increasingly skewed toward higher socioeconomic status backgrounds,[2,3] minimizing such attrition can help maintain diversity among students and the educational benefits of diversity that accrue to all. This *AIB* examines the relationship of SES to the likelihood of leaving medical school within the first two years of enrollment when accounting for a common proxy for academic achievement, the Medical College Admission Test (MCAT) score.

Table 1: Rates of Attrition for U.S. Medical School Matriculants by Socioeconomic Status and MCAT Score, 2003 to 2006*

		Matriculants		Attrition	
		N	%	N	Rate
ALL	SES – Low	9,493	15.0	201	2.1
	SES – Middle	16,942	26.7	244	1.4
	SES – High	37,003	58.3	467	1.3
	Total	**63,438**	**100.0**	**912**	**1.4**
MCAT 27 or lower	SES – Low	3,753	23.9	109	2.9
	SES – Middle	4,581	29.2	110	2.4
	SES – High	7,338	46.8	170	2.3
	Total	**15,672**	**100.0**	**389**	**2.5**
MCAT 28 or higher	SES – Low	5,623	12.1	89	1.6
	SES – Middle	12,030	26.0	124	1.0
	SES – High	28,675	61.9	276	1.0
	Total	**46,328**	**100.0**	**489**	**1.1**

*For enrollment years 2003-2006, 5,253 matriculants did not provide parental education information.

Methodology

The Association of American Medical Colleges (AAMC) tracks the reasons medical students do not complete medical school via the Student Records System (SRS).[4] For this *AIB*, we pooled four withdrawal statuses and two dismissal statuses into one population.[5] Since most (approximately 60%) withdrawals and dismissals occur during the first two years of medical school, we focus our analysis on this critical phase of medical education. Our study includes 912 withdrawals and dismissals out of a total of 63,438 medical students between the years 2003-2006.

For this *AIB*, we used three categories of parental education to describe the socioeconomic background of medical students: Low SES (no parent with a college degree); Middle SES (at least one parent with a college degree, but none with a graduate degree); and High SES (at least one parent with a graduate degree). We did not use parental education in combination with parental occupation due to a higher percentage of missing values for occupation. Because data on parental education were first added to the American Medical College Application Service (AMCAS) in 2002, we examined rates of attrition

1 Garrison, G., Mikesell, C., Matthew, D. "Medical school graduation and attrition rates." Association of American Medical Colleges, *Analysis in Brief* 2007; April 7(2).
2 Jolly, P. 2008. "Diversity of U.S. medical students by parental income." Association of American Medical Colleges, *Analysis in Brief*, January 8(1).
3 Grbic, D., Garrison, G., Jolly, P. "Diversity of U.S. medical students by parental education." Association of American Medical Colleges, *Analysis in Brief* 2010; August 9(10).
4 The AAMC's Student Records System (SRS) houses secure, centralized enrollment information on the national medical student population and tracks student progress from matriculation through graduation. The information in SRS is updated directly by medical school registrars.
5 Although SRS tracks withdrawals for "Academic," "Financial," "Health," and "Other" reasons, the N for each status reported is very small, and the accuracy of that reported data is uncertain. The two dismissal statuses are for "Academic" or "Non Academic" reasons.

in the first two years of medical school for students who applied from 2002 through 2005.

Although academic preparedness depends on many factors, we examined attrition rates by MCAT score since the MCAT is used as a common proxy for academic achievement. To incorporate the MCAT scores in our analysis, we divided matriculants into two groups: those with a score of "27 or lower" and those with a score of "28 or higher."[6] Because applicants to medical school often take the MCAT more than once, we used the most recent MCAT score.

Figure 1: Students' Rates of Attrition During the First Two Years of U.S. Medical School by Students' Socioeconomic Status, 2003 to 2006

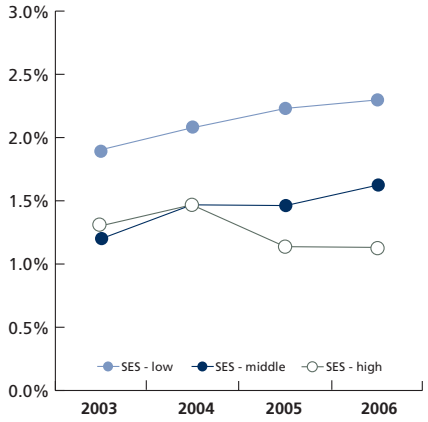
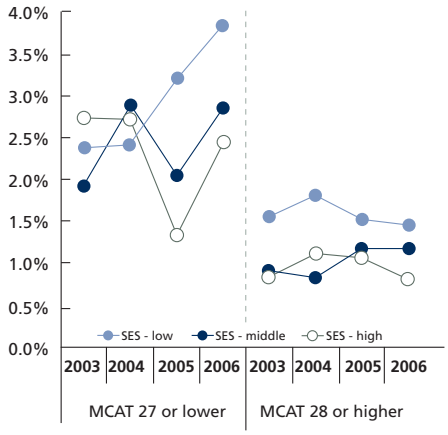


Figure 2: Students' Rates of Attrition During the First Two Years of U.S. Medical School by Students' Socioeconomic Status and MCAT Score, 2003 to 2006



Results

Medical school attrition is low (usually below 3% annually), but our findings show Low SES students are more likely to leave medical school in the first two years of enrollment, regardless of MCAT score (see Table 1). This is substantial since only 15 percent of medical students were Low SES.

Figure 1 shows the rate of attrition within the first two years of medical school by SES group from 2003 to 2006. Although the rate of attrition for all three groups is less than 2.5 percent, Low SES students are roughly 1.4 times more likely than are Middle SES students to leave medical school within the first two years. Among the 2006 matriculating cohort, Low SES students were more than twice as likely to leave medical school than were High SES students (2.3% compared with 1.1%, respectively).

Figure 2 shows the rates of attrition among the three SES groups by MCAT score. The results demonstrate that, even while accounting for differences in MCAT scores, Low SES students were more likely to leave medical school in the first two years of enrollment. From 2003 to 2006, the average rate of attrition for Low SES students with a score of "28 or higher" on the MCAT was 1.6 percent, while the Middle and High SES students both averaged only 1 percent (see Table 1). Similarly, in the "27 or lower" MCAT group, the rate of attrition for Low SES students ranged from 2.4 percent (N=24) to 3.8 percent (N=32), while the Middle and High SES students ranged from 1.9 percent (N=25) to 2.8 percent (N=35) and 1.3 percent (N=24) to 2.7 percent (N=56), respectively. Only twice did Low SES students not have the highest rate of attrition: students in the "27 or lower" MCAT group during academic years 2003-2004 and 2004-2005.

Discussion

Even though medical school attrition is low, students from Low SES backgrounds, even those with higher MCAT scores, are more likely to withdraw or be dismissed in the first two years of medical school. This can have a negative impact on a medical school's ability to maintain a diverse medical student body. Future studies should consider factors such as family structure, the need to work part-time while enrolled in medical school, and increasing levels of student debt, to explain why Low SES students are at greater risk of leaving medical school. In order to maintain a diverse student body, the findings of this study suggest that medical schools may want to provide additional resources for students of lower socioeconomic backgrounds, such as first generation college graduates.

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6 We chose the MCAT score of 28 to divide matriculants for two reasons: 1) a score of 28 is approximately the mean score for each year's applicant pool and 2) using the mean for matriculating students (30) significantly decreases the number of lower SES matriculants in the group of those with high MCAT scores.

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