

Study identifies students at risk for difficulties in medical school

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Students who enter medical school with high debt levels, low scores on the Medical College Admissions Test (MCAT) or who are non-white are more likely to face difficulties that may prevent graduation or hinder acceptance into a residency program if they do graduate, according to a nationwide study of students enrolled in MD programs.

The research, from Washington University School of Medicine in St. Louis, is reported Sept. 15 in the [Journal of the American Medical Association](#).

The study of more than 84,000 [students](#) who entered U.S. medical schools from 1994-1999 showed that by 2009, nearly 89 percent performed very well: They graduated from medical school and passed two key medical licensing exams on their first try. However, 11 percent of the students either withdrew or were dismissed from medical school, or they graduated but had not passed one or both of the licensing exams on their initial try, which can hinder placement in a residency program.

Students were more likely to experience difficulties if they had low MCAT scores, debt of at least \$50,000 before entering medical school or were non-whites, the researchers found. Non-whites included Asians and Pacific Islanders and racial/ethnic groups historically underrepresented in medicine, including African-Americans, Hispanics, American Indian and Alaska Natives.

The study's findings are particularly important as medical schools

nationwide are increasing enrollment and diversity to meet the country's growing health-care needs.

"The study sheds light on opportunities for medical schools to develop programs that maximize the likelihood that all students who enter medical school can indeed graduate and pass the medical licensing exams on the first try," says joint principal investigator Donna Jeffe, PhD, research associate professor of medicine.

The researchers analyzed de-identified test scores provided by the Association of American Medical Colleges (AAMC) and the National Board of Medical Examiners for students enrolled in U.S. medical schools accredited by the Liaison Committee on Medical Education. The test scores were linked with questionnaires completed by the students and with other data collected by the AAMC. Medical students enrolled in dual-degree programs when they entered medical school, such as MD/PhD programs, were not included in the analysis.

"It is important to note that most students of every racial/ethnic group graduated and passed their medical licensing exams on the first try, as did many students who entered medical school with high levels of premedical debt or with low MCAT scores," says joint principal investigator Dorothy Andriole, MD, associate professor of surgery.

MCAT scores are only one of many factors that may be considered in medical school admissions. These scores can be used to predict which applicants may need help to succeed in medical school after they are accepted, so that medical schools can work closely with students to support their success.

Of the 11 percent of students who faced difficulties, about 8 percent did not pass one or both of the two key licensing exams, and nearly half of these students remained in medical school for more than four years,

delaying their graduation or entry into a residency program of their choice. In addition, 3.3 percent of students in the study withdrew from medical school or were dismissed - 1.2 percent for academic reasons and 2.1 percent for other reasons.

Many medical schools require students to pass the two licensing exams before they graduate. Students who fail the exams can retake them, but doctors must ultimately pass these two exams, as well as all other exams in the medical licensing examination sequence, to become licensed, practicing physicians.

The study did not evaluate why some students have difficulties in medical school.

"More research is needed to identify and address the underlying factors that contributed to the outcomes we observed," Jeffe says.

Students who were 24 years of age or older when they entered medical school also were more likely than younger students to experience difficulties. The researchers speculate that these students may have had additional family responsibilities during medical school or needed to work to secure financing or take additional coursework before enrolling.

Debt before entering medical school, particularly at levels higher than \$50,000, was associated with students' difficulties in completing medical school. This problem has likely become a bigger issue in recent years as the cost of a college education has grown much faster than the rate of inflation, and students are taking on more debt.

On the plus side, the researchers found that students who participated in laboratory research apprenticeships as undergraduates were less likely to withdraw or be dismissed from medical school for any reason.

"Maximizing opportunities for all interested college students to participate in research apprenticeships is one strategy to reduce the risk of attrition during medical school," Andriole says.

Women, who made up 44 percent of students enrolled in MD programs in the study, were less likely than men to withdraw or be dismissed for academic reasons, the authors noted.

Next, the researchers plan to study how [medical school](#) debt, among other factors, influences the kinds of careers new doctors choose.

More information: Andriole DA, Jeffe DB. Prematriculation variables associated with suboptimal outcomes for the 1994-1999 cohort of US medical school matriculants. *Journal of the American Medical Association*. Vol. 304, No. 11, 1212-1219. Sept. 15, 2010.

Provided by Washington University School of Medicine

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