

Health Policy Newsletter

Volume 14 Number 1

March, 2001

Article 10

Predicting Students' Performance on Licensing Examinations During Medical School and Afterwards

Jon Veloski, MS*
Clara A. Callahan, MD*
Gang Xu, PhD*
Mohammadreza Hojat, PhD*
David B. Nash, MD, MBA*

*Thomas Jefferson University

Copyright ©2001 by the authors. *Health Policy Newsletter* is a quarterly publication of Thomas Jefferson University, Jefferson Health System and the Office of Health Policy and Clinical Outcomes, 1015 Walnut Street, Suite 115, Philadelphia, PA 19107.

Suggested Citation:

Veloski J, Callahan CA, Xu G, Hojat M, Nash DB. Predicting students' performance on licensing examinations during medical school and afterwards. *Health Policy Newsletter* 2001; 14(1): Article 10. Retrieved [date] from <http://jdc.jefferson.edu/hpn/vol14/iss1/10>.

Predicting Students' Performance on Licensing Examinations During Medical School and Afterwards

The selection of new medical students is one of the most important activities of medical school faculty. They face the challenge of selecting those who can perform well not only in the pre-clinical years, but also in the clinical arena of medical school, graduate medical education and beyond. To make sound, evidence-based decisions faculty members involved in the admissions process depend on empirical studies that examine the relationship of academic performance before medical school to academic performance during medical school and afterwards.

Many empirical studies have indicated that MCAT scores and undergraduate GPAs are the two most important predictors of students' pre-clinical academic performance in medical school. However, the predictive strength of MCATs and GPAs is less clear when students' race and sex have been considered,¹⁻² and when performance has been followed longitudinally beyond the pre-clinical years. The present study evaluated students' race, sex, undergraduate grades and MCAT scores as predictors of licensing examination scores. Data for 30 classes (n=6239) matriculating at Jefferson Medical College between 1968 and 1997 were analyzed using multiple linear regression to predict NBME Part I, II and III and USMLE Step 1, 2, and 3.

Several interesting findings emerged. First, MCAT science scores were much more important than MCAT verbal scores in predicting the performance on the first, preclinical examination. However, MCAT science and verbal scores were equally important in predicting clinical and postgraduate examination performance. Secondly, there were slight differences between men and women with men scoring somewhat higher in the pre-clinical examination. But, this difference disappeared on the clinical and postgraduate examinations. Thirdly, Asian students' examination performance during medical school and afterward had a lower association with their MCATs and GPA science in comparison with other racial groups.

This study, using the data collected over the past three decades, demonstrated that there is a gender and a racial difference in terms of the academic performance prior to, during, and after medical school on licensing national examinations. Using the traditional predictors of pre-medical school, such as MCATs and GPAs, might not well predict Asian-American students' performance on these measures in medical school.

References

1. Xu G, Veloski JJ, Hojat M, Gonnella JS, Bacharach B. Longitudinal comparison of the academic performances of Asian-American and white medical students. *Acad Med* 1993;68:82-86.
2. Dawson B, Iwamoto CK, Ross LP, Nungester RJ, Swanson DB, Volle RL. Performance on the National Board of Medical Examiners Part I examination by men and women of different race and ethnicity. *JAMA* 1994;272:674-679.

About the Authors

Jon Veloski, MS, is Director of Medical Education for the Center for Research in Medical Education and Health Care. Clara A. Callahan, MD, is Associate Dean for Admission, Jefferson Medical College. Gang Xu, PhD, is Project Director for the Office of Health Policy and Clinical Outcomes. Mohammadreza Hojat, PhD, is Director of Longitudinal Study for the Center for Research in Medical Education and Health Care. David B. Nash, MD, MBA, is Associate Dean and Director of the Office of Health Policy and Clinical Outcomes. All are at Thomas Jefferson University.

*The study was published as a supplement of
Academic Medicine, Vol. 75: S28-S30, October 2000.*