Thomas Jefferson University
Jefferson Digital Commons

Jefferson Longitudinal Study of Medical Education

Center for Research in Medical Education and Health Care

September 2005

Demographics

Let us know how access to this document benefits you

Follow this and additional works at: http://jdc.jefferson.edu/jlsme

Part of the Medical Education Commons

Recommended Citation
"Demographics" (2005). *Jefferson Longitudinal Study of Medical Education.* Paper 10.
http://jdc.jefferson.edu/jlsme/10

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's Center for Teaching and Learning (CTL). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Jefferson Longitudinal Study of Medical Education by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.

DEMOGRAPHICS

GENDER SEGREGATION BY SPECIALTY DURING MEDICAL SCHOOL

Ann Boulis, Jerry Jacobs, J. Jon Veloski

In this retrospective cohort study from the University of Pennsylvania, U.S.A., the authors examined how gender segregation across specialties has changed during the past 20 years and how gender segregation changes during medical school. Data from the Jefferson Longitudinal Study of Medical Education on 4,312 medical students' specialty choices before, during, and after medical school were analyzed. Women constituted 26.7% of students in the sample. Intended specialty choices were limited to: (1) anesthesiology, pathology, and radiology, referred to as hospital-based specialties; (2) emergency medicine; (3) family practice; (4) internal medicine; (5) obstetrics-gynecology; (6) ophthalmology; (7) pediatrics; (8) psychiatry; (9) surgery; (10) other; and (11) undecided. There was a significant trend toward increased gender segregation among specialties between the 1980s and 1990s, with an increased concentration of men in surgery, hospital specialties, and internal medicine, and an increased concentration of women in pediatrics, family practice, and obstetrics-gynecology. Also, there was an increase in gender based segregation during medical school that the authors attributed primarily to the large percentage of students (over one-third) who enter medical school without a specialty preference and who ultimately distribute themselves across specialties in a gender segregated way. Seventy-nine percent of female students and 75% of male students were either undecided initially or changed specialties during medical school. The authors say that for the vast majority of students the medical school experience not only had the potential to influence their choice of specialty, but that it also played a role in the gender based segregation of specialty choice amongst students.

Academic Medicine. 2001; 76(10): S65-S67.

Available online at publisher's site:
http://www.academicmedicine.org/pt/re/acmed/pdfhandler.00001888-200110001-00022.pdf

COMPARING THE ACCURACIES OF ENTIRE-GROUP AND SUBGROUP MODEL TO PREDICT NBME I SCORES FOR MEDICAL SCHOOL APPLICANTS

James B. Erdmann, Mohammadreza Hojat, J. Jon Veloski

To address the question of whether prediction models for subgroups of medical school applicants lead to more accurate predictions of performance than does one model for an entire group of applicants, the authors used data from two groups of students at Jefferson Medical College: 415 students who entered Jefferson in 1985 and 1986 and 396 who entered in 1987 and 1988. Both groups were divided into two subgroups by gender and two subgroups by age. Data from the first group were used to develop prediction models based on the entire group and on its four subgroups. The predictors were undergraduate grade-point averages and Medical College Admission Test scores; the criterion measures were scores on the National Board of Medical Examiners Part I examinations. The prediction models were then applied to data from the second group and its four subgroups; differences in the validity coefficients (.40 to .56) and residual scores (7.2 to 17.9) were not considered to be of practical importance. Hence, the authors suggest that gender and age do not contribute to a prediction bias and that an entire-group prediction model can be used without serious concern for over- or underestimating the predicted scores.

Academic Medicine. 1992; 67: 860-862.

AFRICAN AMERICAN AND WHITE PHYSICIANS: A COMPARISON OF SATISFACTION WITH MEDICAL EDUCATION, PROFESSIONAL CAREERS AND RESEARCH ACTIVITIES

John Gartland, Mohammadreza Hojat, Edward B. Christian, Clara A. Callahan, Thomas J. Nasca

Background: Given the disparity between proportions of minority in the general population and in the physician workforce and the projected increase in the minority population, it is important and timely to examine factors that contribute to satisfaction of minority physicians.

Purpose: To examine similarities and differences between African American and White physicians in their satisfaction with medical school, their medical careers, and their professional and research activities and achievements.

Methods: A questionnaire was mailed to the 148 active African American graduates of Jefferson Medical College (1960-1995). Control group was 148 active White classmates matched as to gender, year of graduation, and scores on Step 2 of the United States Medical Licensing Examination (formerly Part 2 of the National Board).

Results: Overall response rate-61% (African Americans-59%, White control group-63%). Both groups were equally satisfied with medical education, careers and professional and research activities. No differences were noted between the groups in satisfaction with medical school financial support, preparation for a medical career, with the educational experience and academic environment, with medical careers and with practice incomes. African Americans reported greater dissatisfaction than Whites with interactions with medical school faculty and administrators and with the medical school social environment. African Americans were less likely than Whites to recommend Jefferson to minority applicants and to contribute to Annual Alumni Giving. More African Americans than Whites practiced medicine in economically deprived areas and cared for poor minority patients.

Conclusions: African American respondents were comparable with White respondents as to their medical careers, professional activities and achievements as physicians. Their practice patterns reflected a greater sense of community need and involvement than their White counterparts. The sense of dissatisfaction with the social environment of medical school noted by African American respondents seems to persist during their professional careers.

Teaching and Learning in Medicine. 2003; 15(2)106-112.

Available online at publisher's site:
http://www.leaonline.com/doi/abs/10.1207/S15328015TLM1502_06

PERFORMANCE AND CAREER EXPECTATIONS OF WOMEN MEDICAL STUDENTS: A COMPARISON WITH MEN

Mary W. Herman, J. Jon Veloski

In this study, data are presented pertaining to the performance and career expectations of women entering medical school between 1966-1968. Women are compared with men, both as a point of reference for general trends and to measure changes in sex differences. The data were derived from an ongoing longitudinal study of medical students at Jefferson Medical College. No significant differences were found between the sexes in attrition or in measures of clinical competence. Significant differences between men and women in expected hours of work and years of professional activity disappear in the latter part of the study period. Women have lower income expectations, and more of them plan to work in small communities in the latter time period, but they do not differ from men in the proportions interested in primary care specialties or clinical careers. Both sexes showed, over time, increased interest in family medicine and working in small communities.

The New England Journal of Medicine. 1980; 302: 1035-36.

GENDER COMPARISONS OF MEDICAL STUDENTS' PSYCHOSOCIAL PROFILES

Mohammadreza Hojat, Karen Glaser, Gang Xu, J. Jon Veloski, Edward B. Christian

Objectives: This study was designed to compare male and female medical students on selected personality attributes that could influence their academic attainment and personal success.

Design: Participants were 1157 medical students (743 men, 414 women) who completed a set of psychosocial questionnaires measuring intensity and chronicity of loneliness, general anxiety, test anxiety, neuroticism, depression, extraversion, self-esteem, locus of control, perceptions of parents, general health and appraisals of stressful life events. Data were analyzed by employing multivariate and univariate analysis of variance and chi-square analysis.

Setting: Jefferson Medical College.

Subjects: Medical Students.

Results: Men scored significantly higher on the intensity of loneliness, and women scored higher on general anxiety, test anxiety and neuroticism scales, but the magnitudes of the effect size estimates were not large. No significant gender difference was observed on measures of chronicity of loneliness, depression, extraversion, self-esteem, external locus of control, perception of the mother and the father. Women who experienced stressful life events, such as death in the family or personal illness, appraised these events more negatively than did their male counterparts.

Conclusions: Implications of the findings for medical education and practice are discussed.

Medical Education. 1999; 33(5): 342-349.

Available online at publisher's site:
http://www.blackwell-synergy.com/doi/abs/10.1046/j.1365-2923.1999.00331.x

GENDER COMPARISONS OF INCOME EXPECTATIONS IN THE U.S.A. AT THE BEGINNING OF MEDICAL SCHOOL DURING THE PAST TWENTY-EIGHT YEARS

Mohammadreza Hojat, Joseph S. Gonnella, James B. Erdmann, Susan L. Rattner, J. Jon Veloski, Karen Glaser, Gang Xu

This study was designed to investigate gender differences in the U.S.A. in anticipated professional income. Participants were 5,314 medical students (3,880 men, 1,434 women) who entered Jefferson Medical College between 1970 and 1997. The annual peak professional income estimated at the beginning of medical school was the dependent variable and gender within selected time periods was the independent variable. Results showed significant differences between men and women on their anticipated future incomes in different time periods. Women generally expected 23% less income than men. The effect size estimates of the differences were moderately high. The gender gap in income expectations was more pronounced for those who planned to pursue surgery than their counterparts who planned to practice family medicine or pediatrics. A unique feature of this study is that its outcomes could not be confounded by active factors such as experience, working hours, age and productivity. Findings suggest that social learning may contribute to gender gap in anticipated income.

Social Science & Medicine. 2000; 50(11): 1665-1672.

Available online at publisher's site:
http://dx.doi.org/10.1016/S0277-9536(99)00407-4

GENDER COMPARISONS OF YOUNG PHYSICIANS' PERCEPTIONS OF THEIR MEDICAL EDUCATION, PROFESSIONAL LIFE, AND PRACTICE: A FOLLOW-UP STUDY OF JEFFERSON MEDICAL COLLEGE GRADUATES

Mohammadreza Hojat, Joseph S. Gonnella, Gang Xu

Purpose: To obtain information from a group of young physicians and compare men and women on their evaluations of selected areas of the medical school curriculum, their perceptions of issues related to medical practice and professional life, and their specialty choices, professional activities, and research productivity.

Method: In 1992, a questionnaire was mailed to 1,076 physicians who had graduated from Jefferson Medical College between 1982 and 1986. The responses of men and women were compared using multivariate and univariate analyses of variance, t-tests, chi-square, and median test.

Results: Completed questionnaires were returned by 667 graduates (530 men and 137 women). The curriculum areas of interpersonal skills, disease prevention, medical ethics, and economics of health care were rated by both men and women as being the most important in medical training. Conversely, research methodology and statistics received the lowest ratings. Women, in general, valued psychosocial aspects of medical care higher than did men. Among the areas of perceived problems related to practice, lack of leisure time received the highest ratings (as being the greatest problem) and interpersonal interactions received the lowest ratings (as being the least problem) from both men and women. The men were more concerned than the women about the areas of patient chart and documentation, malpractice litigation, physician oversupply, peer review, and interaction with patients. These differences remained when specialties and numbers of hours worked per week were held constant. Generally, the physicians reported satisfaction with their professional lives, but the men tended to be more satisfied than the women about their decisions to become physicians and in their perceptions of medicine as a rewarding career. The proportion of men employed full-time (99.4%) was significantly higher than that for women (84%). Women were more likely to practice general pediatrics, while men were more likely to practice surgery and surgical subspecialties. Full-time employed women worked fewer hours per week (57) than men (63), and men reported more research productivity than women.

Conclusion: The implications of the findings of numerous gender differences are discussed regarding the issues of physician workforce, types of care rendered by men and women, and possible changes in the national healthcare system.

Academic Medicine. 1995; 70: 305-312.

GENDER COMPARISONS PRIOR TO, DURING, AND AFTER MEDICAL SCHOOL USING TWO DECADES OF LONGITUDINAL DATA AT JEFFERSON MEDICAL COLLEGE

Mohammadreza Hojat, Mary R. Robeson, J. Jon Veloski, Robert S. Blacklow, Gang Xu, Joseph S. Gonnella

Similarities and differences prior to, during, and after medical school between 3,541 men and 1,121 woman graduates of Jefferson Medical College were investigated. Gender comparisons were made on examination scores, admissions interview ratings, competence ratings in residency, specialty choice, board certification, income estimates, and academic appointments. Results indicated that prior to medical school, women scored higher on verbal tests, whereas men outscored women on quantitative and science tests. During medical school, men performed better than women in the basic science examinations, but not in the clinical science examinations. Men and women had similar postgraduate competence ratings, except that women were rated higher than men in the socioeconomic aspects of patient care. Women had lower board certification rates, expected less income, and had a higher proportion of faculty appointments than did men. Gender differences in specialty choices, faculty appointments, and estimated income could have important implications for healthcare manpower.

Evaluation & The Health Professions. 1994; 17: 290-306.

CHANGE OF INTEREST IN SURGERY DURING MEDICAL SCHOOL: A COMPARISON OF MEN AND WOMEN

Karen Novielli, Mohammadreza Hojat, Pauline K. Park, Joseph S. Gonnella, J. Jon Veloski

Problem statement and background: Women are under-represented in the field of surgery. Reasons for this are incompletely understood.

Methods: Male and female graduates from a single medical school over the past three decades (n=4,676) were grouped by their interest in a surgical career at the beginning and the end of medical school. Factors associated with choice of a surgical residency were compared.

Results: Compared to men, women were less likely to enter medical school interested in surgery, more likely to lose interest, and less likely to gain interest in surgery. Ratings of clinical competence in surgery clerkship were among the factors associated with losing or gaining interest in surgery. Income expectation was associated with gender and with a surgical career choice.

Conclusions: Retention and recruitment of medical students to surgery is significantly lower for women.

Academic Medicine. 2001; 76(October Supplement): S58-S61.

Available online at publisher's site:
http://www.academicmedicine.org/pt/re/acmed/pdfhandler.00001888-200110001-00020.pdf

PREDICTION OF STUDENTS' PERFORMANCE ON LICENSING EXAMINATIONS USING AGE, RACE, SEX, UNDERGRADUATE GPAS AND MCAT SCORES

J. Jon Veloski, Clara A. Callahan, Gang Xu, Mohammadreza Hojat, David B. Nash

Purpose: To evaluate students' age, race, sex, undergraduate grades and MCAT scores as predictors of licensing examination scores.

Method: Data for 30 classes (n=6,239) matriculating at a medical school between 1968 and 1997 were analyzed using multiple linear regression to predict NBME Parts I, II and III and USMLE Steps 1, 2 and 3.

Results: The regression weight for MCAT science was two-to-three times that of MCAT verbal in predicting the first, pre-clinical examination. However, the weights for MCAT science, MCAT verbal and science GPA were equally-weighted for the clinical and postgraduate tests. There was a negative weight associated with women on Part I, but positive weights on Steps 2 and 3. Being older showed no relationships. Every model yielded a negative weight for Asian-American students.

Academic Medicine. 2000; 75(October Supplement): S28-S30.

Available online at publisher's site:
http://www.academicmedicine.org/pt/re/acmed/pdfhandler.00001888-200010001-00009.pdf

A NATIONAL STUDY OF FACTORS INFLUENCING PRIMARY CARE CAREER CHOICES AMONG UNDERREPRESENTED-MINORITY, WHITE, AND ASIAN AMERICAN PHYSICIANS

Gang Xu, Mohammadreza Hojat, J. Jon Veloski, Jack Brose

This study examined the differences between three groups of physicians—underrepresented-minority (URM), white, and Asian-American—on factors that influenced their choice of primary care specialties. The groups were also compared with regard to their family backgrounds, financial aid obligations, educational debt, current practice settings, and level of satisfaction with their career choice. The general hypothesis was that, as URMs were more likely than whites and Asians to grow up in underserved areas and to receive financial aid from the government for their medical education, their decision to choose primary care careers would be more influenced by their family background, receipt of financial aid, and obligations to serve in underserved areas. Clinical experiences with underserved patients may also have differentiated effects on different groups of physicians regarding their choice of primary care career.

Academic Medicine. 1996; (71): S10-S12.

BOARD CERTIFICATION: ASSOCIATIONS WITH PHYSICIANS' DEMOGRAPHICS AND PERFORMANCES DURING MEDICAL SCHOOL AND RESIDENCY

Gang Xu, J. Jon Veloski, Mohammadreza Hojat

Purpose: To examine the associations between board certification and both physicians' demographics and their performances during medical school and residency.

Method: Data were prospectively collected for 1,186 medical students in three major specialty areas for the Jefferson Medical College's graduating classes of 1976 through 1985.

Results: Older students and underrepresented minorities were less likely to achieve certification. Overall, physicians who achieved board certification had performed better during medical school and residency than had those without certification. The prediction of board certification using academic performance indicators is limited, particularly for older and minority groups.

Conclusions: This study demonstrated an overall positive relationship between physicians' board certification status and their past academic performances. The potential impact of the increase of both older students and minority physicians on rates of board certification needs to be considered by specialty boards and other policymakers.

Academic Medicine. 1998; 73: 1283-1289.

LONGITUDINAL COMPARISON OF THE ACADEMIC PERFORMANCES OF ASIAN-AMERICAN AND WHITE MEDICAL STUDENTS

Gang Xu, J. Jon Veloski, Mohammadreza Hojat, Joseph S. Gonnella, Benjamin Bacharach

The purpose of the study was to compare the academic performances of Asian-American medical students–before, during, and after medical school–with those of white students. A total of 140 Asian-American graduates and 2,269 white graduates from the classes of 1981-1992 at Jefferson Medical College were studied prospectively: data on academic performance, indebtedness, and delayed graduation were analyzed and compared for all the graduates. F-tests, chi-square tests, and regression models were used. The Asian-Americans had statistically significantly higher scores on the SAT (Scholastic Aptitude Test) quantitative subtest and on the MCAT (Medical College Admission Test) chemistry, physics, and science problems subtests; the whites had significantly higher scores on the MCAT reading subtest, third-year grade-point averages for required clerkships, and scores on the National Board of Medical Examiners Part I, II, and III examinations (NBME I, II, and III). No significant difference was found in the other performance measures, including ratings in the first year of residency. Regression analysis showed that the MCAT reading score was the major predictor of Asian-Americans' performances on the NBME I and II.

Because the MCAT reading score is the major predictor of later performance for Asian-American students, schools should consider employing different criteria in predicting and monitoring these students' performances.

Academic Medicine. 1993; 68: 82-86.

Reprinted (in Chinese) International Medicine. 1993; 4: 179-183.