

Blacks, Women Less Likely to be Referred for High-Tech Cardiac Tests, According to Study

By Miguel R. Kamat, MD, MPH

Closing the Gap, Putting the Right People in the Right Places • May/June 1999

A ground-breaking study in the February 25, 1999 issue of the *New England Journal of Medicine* (NEJM), titled, "The Effect of Race and Sex on Physicians' Recommendations for Cardiac Catheterization," found that Blacks and women with identical complaints of chest pain are less likely than Whites and men respectively to be referred by doctors for sophisticated cardiac tests. Since the study tightly controlled for confounding factors such as insurance and occupation, symptoms, patient presentation styles and physician perceptions of the probability of underlying coronary artery disease, the authors concluded that the different referral rates may reflect the presence of race and sex bias on the part of physicians.

"This study deals with a very serious problem," said U.S. Surgeon General David Satcher, MD. "It shows that the same problems that affect relationships in other segments of society affect the doctor-patient relationship."

While there is a growing body of medical literature documenting race- and gender-based disparities in health care, this is the first large-scale study to focus on whether such differences specifically reflect bias in physician clinical decision-making. For instance, a recent review of studies reporting racial differences in health care access and use among similarly insured populations by the Office of Minority Health found that racial disparities have been reported in a variety of areas, including consideration for diagnostic and treatment procedures, patient use of health services, treatment options, and survival rates. These disparities have been most thoroughly researched in the use of certain cardiovascular diagnostic and treatment procedures.

"Blacks are 40 percent more likely to die from heart disease than Whites," said Dr. Satcher, commenting on the NEJM study. "And this could be one factor."

Previous studies have shown that Blacks within the Medicare and Veterans Administration insured populations have lower rates of certain cardiovascular diagnostic and treatment procedures, even after controlling for coexisting conditions, age, supplemental insurance, access to hospitals equipped to provide invasive procedures, previous diagnostic procedures, and disease severity. Explanations offered for these discrepancies included unmeasured clinical or socioeconomic factors, willingness of patients to accept referral for surgery, and physician bias. The importance of the NEJM study is that it screened out these other variables, leaving only race and gender as the perceived differences among patients, which in turn permitted the study to exclusively investigate the effect of race/gender bias on the resulting physician treatment recommendations.

In the NEJM study, 720 physicians in full-time clinical practice who were attending either of two major national medical meetings volunteered to participate in a computerized survey in which they were presented with a video recorded interview and other data about a hypothetical patient, following which they made recommendations for the patient's management. Six experimental factors, race (Black or White), sex, age (55 or 70 years), level of coronary risk (low or high),

type of chest pain and results of an exercise stress test with thalium were utilized to create hypothetical patient presentations, which were simulated by eight ac-

tors. In an attempt to control for inter-patient variation in patient appearance, style and personality, the actors wore identical hospital gowns, used identical styles of presentation of clinical symptoms, and even adopted the same angle to the camera during the interviews. Simulated patients were given the same insurance and occupations. Finally, differences in physician perceptions of the prevalence of clinically significant coronary artery disease based on patient race and sex were controlled for by having the physicians estimate in advance the probability of the presence of significant disease.

The study found that the odds of being referred for cardiac catheterization were 60 percent less for Blacks than for Whites, 60 percent less for females than for males, and 40 percent less for Black females than for White males. Cardiac catheterization is a test in which radio-opaque dye is injected into the coronary arteries supplying blood to the heart, in order to make them visible on X-ray images. By looking at these images, heart specialists can estimate the degree of coronary artery disease, determine whether it presents a danger of heart attack, and decide whether to perform preemptive cardiac bypass surgery. Since the effects of other variables had been controlled, these findings suggest that physician bias affects patient treatment recommendations. However, the study could not assess the form of bias present (i.e., whether the prejudice was overt or subconscious). Overt bias results from deliberate actions or thoughts, whereas subconscious bias results from a cultural stereotype that relates to a patient's membership in a target group, regardless of the level of prejudice the physician may have.

The authors acknowledged two limitations. The physician samples may have been nonrepresentative, since physicians attending professional meetings may be better informed than their colleagues, and volunteers may have had a greater interest in coronary heart disease than non-volunteering clinicians. Secondly, assessments based on video recordings may not reflect actual clinical settings as accurately as case vignettes.

Still, the study is a first of its kind in that it demonstrates that physician bias is a factor responsible for underreferral rates of Blacks and women for high-tech cardiac tests in the U.S. Documentation of this provider bias should facilitate curriculum review at medical schools and residency training programs in order to teach doctors-in-training how to explore their own subconscious attitudes toward race and sex. Furthermore, the findings of the study may strengthen efforts by Congress and the Federal Government to address this issue.

"I think professional societies, medical schools and educators of health professionals at all levels should be involved in helping to sensitize and educate physicians and other health professionals about this problem," Dr. Satcher said.

Indeed, it is timely to focus the spotlight on the existence of provider bias as a factor responsible for inequitable access to health care in the U.S. and to surmount this obstacle, if all people in the Nation are to receive equitable, quality health care.

Dr. Kamat was a staff fellow (Medical Officer) with the Office of Minority Health, U.S. Department of Health and Human Services. ❖

