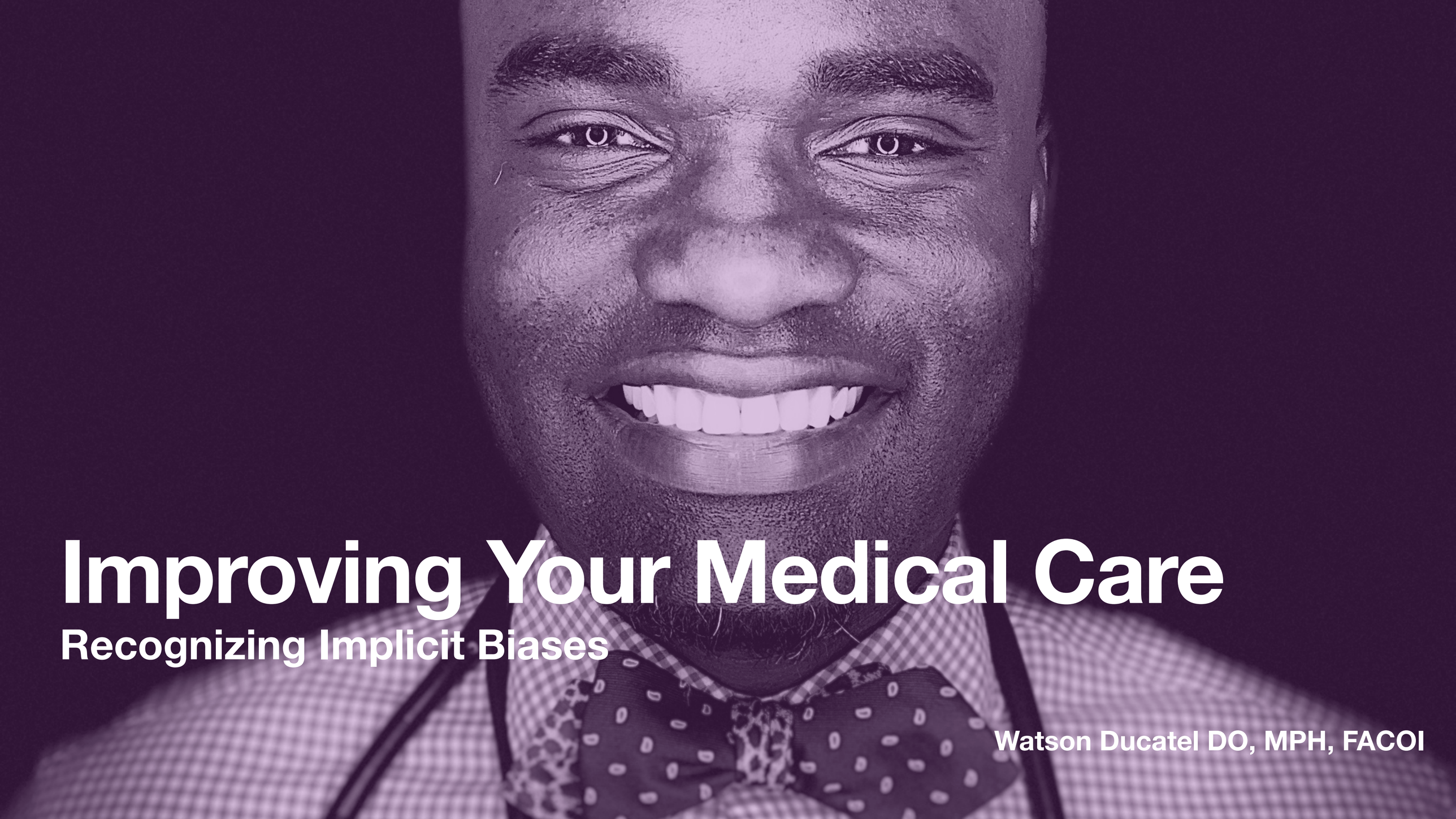

Improving Your Medical Care

Recognizing Implicit Biases

Watson Ducatel DO, MPH, FACOI

Disclosures:

No disclosures to report

unconscious associations and judgments

unconscious evaluations

Implicit Basis

prejudice(s) being used outside our conscious awareness

attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious way.

Mahzarin Banaji P.H.D.

Psychological Review
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Implicit Social Cognition: Attitudes, Self-Esteem, and Stereotypes

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Social behavior is ordinarily treated as being under conscious (if not always thoughtful) control. However, considerable evidence now supports the view that social behavior often operates in an implicit or unconscious fashion. The identifying feature of implicit cognition is that past experience influences judgment in a fashion not introspectively known by the actor. The present conclusion—that attitudes, self-esteem, and stereotypes have important implicit modes of operation—extends both the construct validity and predictive usefulness of these major theoretical constructs of social psychology. Methodologically, this review calls for increased use of indirect measures—which are imperative in studies of implicit cognition. The theorized ordinariness of implicit stereotyping is consistent with recent findings of discrimination by people who explicitly disavow prejudice. The finding that implicit cognitive effects are often reduced by focusing judges' attention on their judgment task provides a basis for evaluating applications (such as affirmative action) aimed at reducing such unintended discrimination.

Long before they became central to other areas of psychological theory, concepts of cognitive mediation dominated the analysis of social behavior. The constructs on which this article focuses achieved early prominence in social psychological theory with formulations that were partly (attitude) or entirely (stereotype) cognitive. By the 1930s, Allport (1935) had declared attitude to be social psychology's "most distinctive and indispensable concept" (p. 798), Thurstone (1931; Thurstone & Chave, 1929) had developed quantitatively sophisticated methods for attitude measurement, and Katz and Braly (1933, 1935) had introduced a method that is still in use to investigate stereotypes. Self-esteem, an attitudinal construct to which this article gives separate treatment because of its prominence in recent research, also has a long-established history (e.g., James, 1890; see overview in Wylie, 1974, 1979).

Through much of the period since the 1930s, most social psychologists have assumed that attitudes, and to a lesser extent stereotypes, operate in a conscious mode. This widespread assumption of conscious operation is most evident in the near-universal practice of operationalizing attitudes (including self-esteem) and stereotypes with direct (instructed self-report) measures. The pervasiveness of direct measurement for attitudes and stereotypes was documented by Greenwald (1990) and by Banaji and Greenwald (1994) and is further reviewed below. In contrast, this article describes an indirect, unconscious, or implicit mode of operation for attitudes and stereotypes.[1]

Implicit Social Cognition: Introduction and Overview

Implicit social cognition is offered as a broad theoretical category that integrates and reinterprets established research findings, guides searches for new empirical phenomena, prompts attention to presently underdeveloped research methods, and suggests applications in various practical settings. This section summarizes the goals of the review, starting from a definition of implicit social cognition.

Definition

The signature of implicit cognition is that traces of past experience affect some performance, even though the influential

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This article is dedicated to the memory of Tom Ostrom, a dear colleague who continues to have a profound influence on both of the authors.

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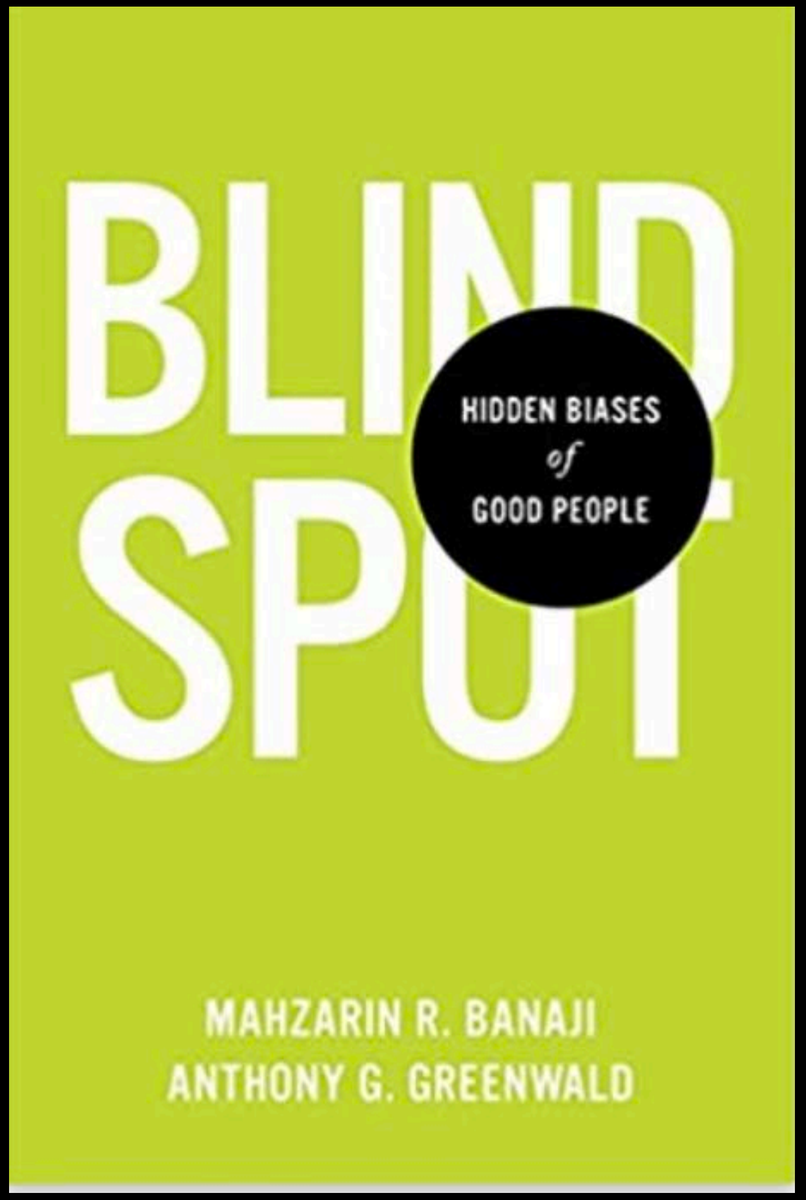
[1] The terms *implicit–explicit* capture a set of overlapping distinctions that are sometimes labeled as *unaware–aware, unconscious–conscious, intuitive–analytic, direct–indirect, procedural–declarative,* and *automatic–controlled.* These dichotomies vary in the amount and nature of implied theoretical interpretation. This article uses the *implicit–explicit* pair because of that dichotomy's prominence in recent memory research, coupled with the present intention to connect research on attitudes, self-esteem, and stereotypes to memory research.

Anthony Greenwald P.H.D.

Mahzarin Banaji P.H.D.



Anthony Greenwald P.H.D.

Special Article

THE EFFECT OF RACE AND SEX ON PHYSICIANS' RECOMMENDATIONS FOR CARDIAC CATHETERIZATION

KEVIN A. SCHULMAN, M.D., JESSE A. BERLIN, SC.D., WILLIAM HARLESS, PH.D., JON F. KERNER, PH.D., SHYRL SISTRUNK, M.D., BERNARD J. GERSH, M.B., CH.B., D.PHIL., ROSS DUBÉ, CHRISTOPHER K. TALEGHANI, M.D., JENNIFER E. BURKE, M.A., M.S., SANKEY WILLIAMS, M.D., JOHN M. EISENBERG, M.D., AND JOSÉ J. ESCARCE, M.D., PH.D.

ABSTRACT

Background Epidemiologic studies have reported differences in the use of cardiovascular procedures according to the race and sex of the patient. Whether the differences stem from differences in the recommendations of physicians remains uncertain.

Methods We developed a computerized survey instrument to assess physicians' recommendations for managing chest pain. Actors portrayed patients with particular characteristics in scripted interviews about their symptoms. A total of 720 physicians at two national meetings of organizations of primary care physicians participated in the survey. Each physician viewed a recorded interview and was given other data about a hypothetical patient. He or she then made recommendations about that patient's care. We used multivariate logistic-regression analysis to assess the effects of the race and sex of the patients on treatment recommendations, while controlling for the physicians' assessment of the probability of coronary artery disease as well as for the age of the patient, the level of coronary risk, the type of chest pain, and the results of an exercise stress test.

Results The physicians' mean (±SD) estimates of the probability of coronary artery disease were lower for women (probability, 64.1±19.3 percent, vs. 69.2±18.2 percent for men; P<0.001), younger patients (63.8±19.5 percent for patients who were 55 years old, vs. 69.5±17.9 percent for patients who were 70 years old; P<0.001), and patients with nonanginal pain (58.3±19.0 percent, vs. 64.4±18.3 percent for patients with possible angina and 77.1±14.0 percent for those with definite angina; P<0.001). Logistic-regression analysis indicated that women (odds ratio, 0.60; 95 percent confidence interval, 0.4 to 0.9; P=0.02) and blacks (odds ratio, 0.60; 95 percent confidence interval, 0.4 to 0.9; P=0.02) were less likely to be referred for cardiac catheterization than men and whites, respectively. Analysis of race–sex interactions showed that black women were significantly less likely to be referred for catheterization than white men (odds ratio, 0.4; 95 percent confidence interval, 0.2 to 0.7; P=0.004).

Conclusions Our findings suggest that the race and sex of a patient independently influence how physicians manage chest pain. (N Engl J Med 1999; 340:618-26.)

EPIDEMIOLOGIC studies have identified differences according to race and sex in the treatment of patients with cardiovascular disease in the United States.[1-18] Some studies have found that blacks and women are less likely than whites and men, respectively, to undergo cardiac catheterization or coronary-artery bypass graft surgery when they are admitted to the hospital for treatment of chest pain or myocardial infarction.[1-5,7,8,10,11,13,14] In contrast, other studies were unable to confirm that invasive procedures are underused in women.[15,16]

Racial differences in the treatment of cardiovascular disease may be explained by financial and organizational barriers,[13] clinical differences among patients,[17] preferences of the patients,[7,8,10,12] and the amount of contact the patients have with the health care system or hospitals that offer invasive cardiovascular services.[18] Most studies that have controlled for the insurance status of patients[1,5,7,9-13] or have assessed patients already within the health care system[1-3,5,7-14] still found significant effects of race. However, one study has reported that there were no effects of race among patients with private insurance.[13]

Sex differences in the treatment of cardiovascular disease are less well established. Sex differences persist despite the poorer prognosis for women after myocardial infarction[19,20] and the higher likelihood that they will have had greater functional disability due to angina before myocardial infarction.[4] Differences in treatment may be related to a lack of research on cardiovascular disease in women,[21] differ-

From the Clinical Economics Research Unit (K.A.S., C.K.T.), the Lombardi Cancer Center (J.F.K.), the Division of General Internal Medicine (S.S.), the Division of Cardiology (B.J.G.), and the Department of Medicine (J.M.E.), Georgetown University Medical Center, Washington, D.C.; the Center for Clinical Epidemiology and Biostatistics and the Department of Biostatistics and Epidemiology (J.A.B.), and the Division of General Internal Medicine (S.W.), University of Pennsylvania School of Medicine, Philadelphia; Interactive Drama, Bethesda, Md. (W.H., R.D.); and the RAND Health Program, Santa Monica, Calif. (J.E.B., J.J.E.). Address reprint requests to Dr. Schulman at the Clinical Economics Research Unit, Georgetown University Medical Center, 2233 Wisconsin Ave., NW, Suite 440, Washington, DC 20007.

William Ayers, M.D., Georgetown University Medical Center, Washington, D.C., was also an author.

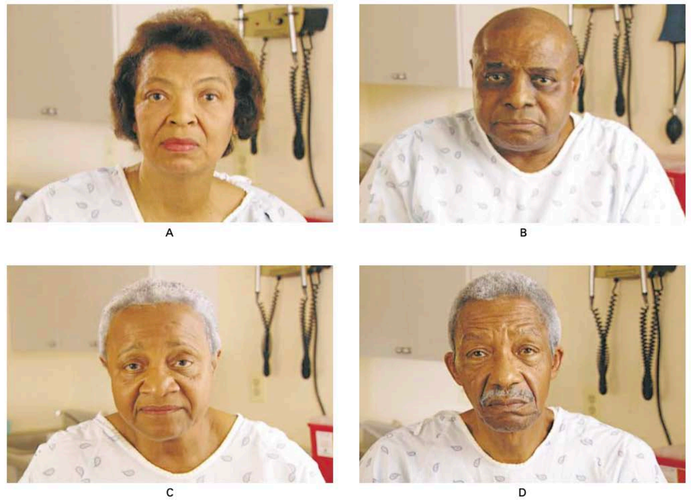
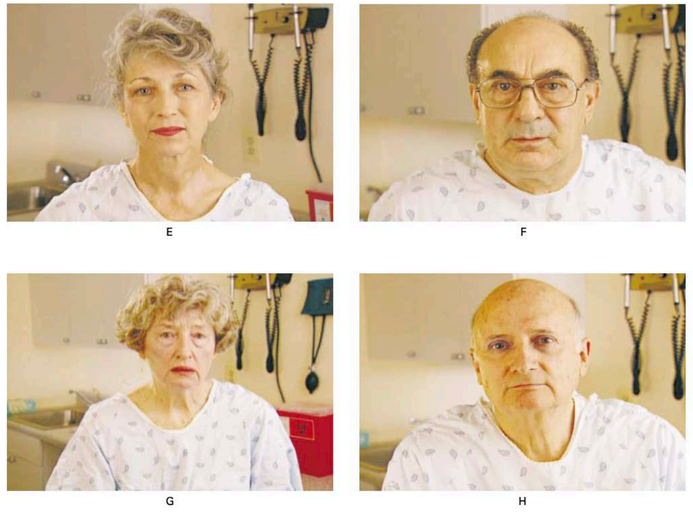
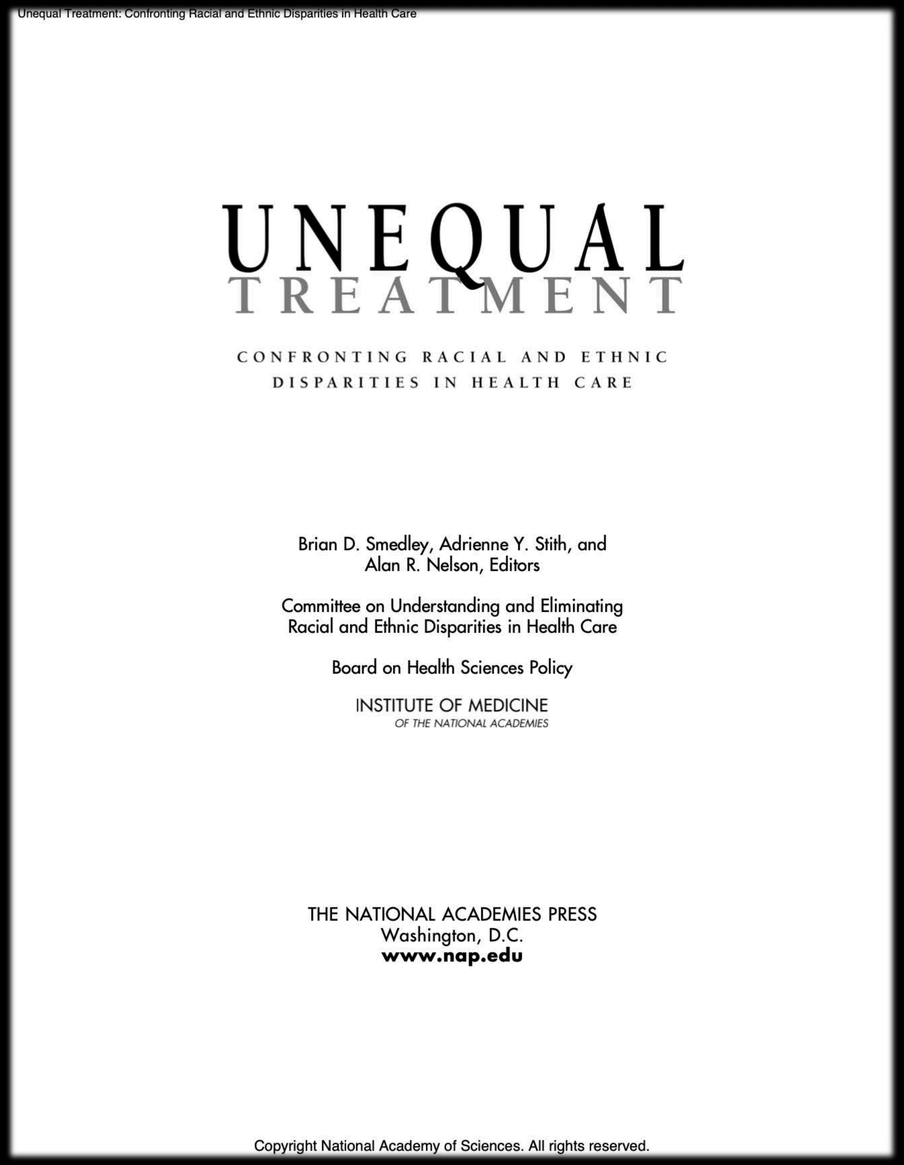


Figure 1. Patients as Portrayed by Actors in the Video Component of the Survey.
Panel A shows a 55-year-old black woman, Panel B a 55-year-old black man, Panel C a 70-year-old black woman, Panel D a 70-year-old black man, Panel E a 55-year-old white woman, Panel F a 55-year-old white man, Panel G a 70-year-old white woman, and Panel H a 70-year-old white man.

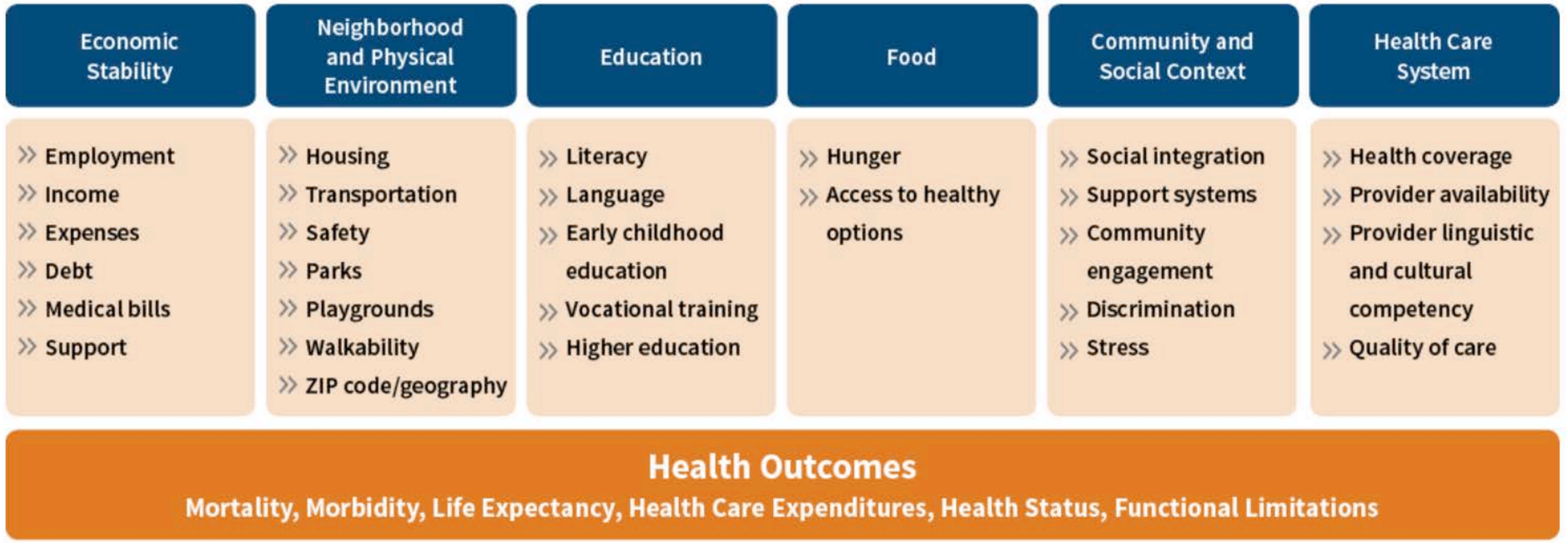




Disparities In Health & Clinical Outcomes Are Thriving

Figure 2: Social Determinants of Health

Click Image to Enlarge



Source: Artiga, Samantha, and Elizabeth Hinton. 2018. "Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity." The Henry J. Kaiser Family Foundation. May 10. (accessed July 20, 2018).

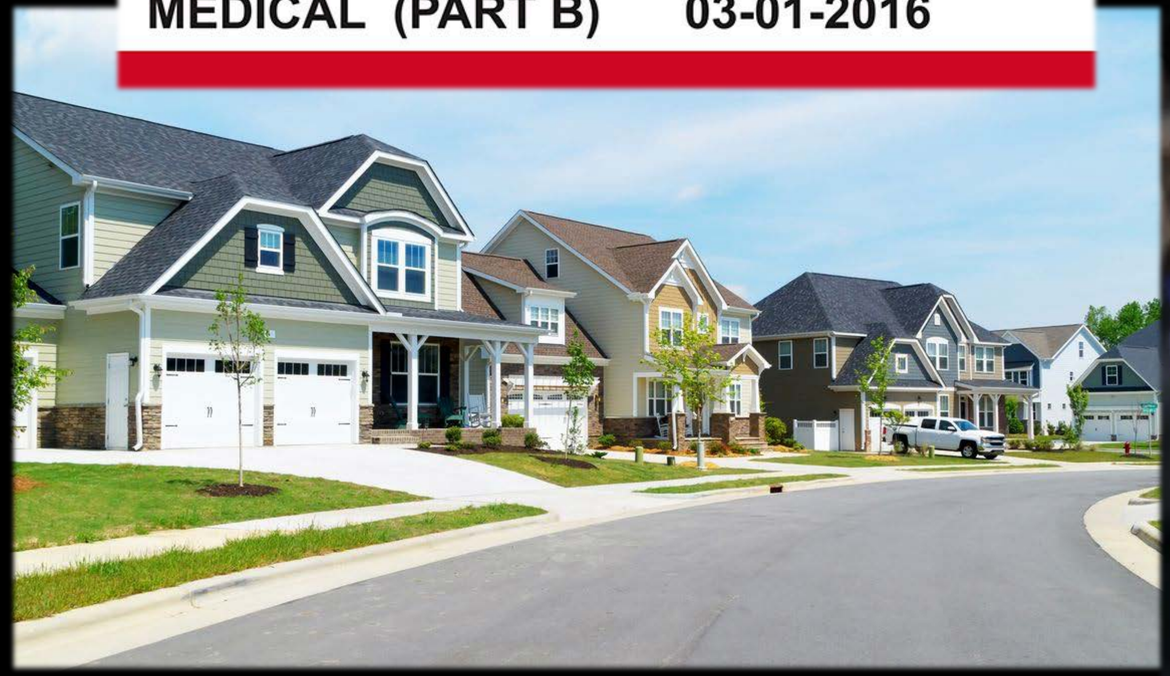
MEDICARE HEALTH INSURANCE

SAMPLE

Name/Nombre
JOHN L SMITH

Medicare Number/Número de Medicare
1EG4-TE5-MK72

Entitled to/Con derecho a	Coverage starts/Cobertura empieza
HOSPITAL (PART A)	03-01-2016
MEDICAL (PART B)	03-01-2016



Conclusions Included That Biases are plausibly a significant Causes for the Disparities

Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites

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Black Americans are systematically undertreated for pain relative to white Americans. We examine whether this racial bias is related to false beliefs about biological differences between blacks and whites (e.g., "black people's skin is thicker than white people's skin"). Study 1 documented these beliefs among white laypersons and revealed that participants who more strongly endorsed false beliefs about biological differences reported lower pain ratings for a black (vs. white) target. Study 2 extended these findings to the medical context and found that half of a sample of white medical students and residents endorsed these beliefs. Moreover, participants who endorsed these beliefs rated the black (vs. white) patient's pain as lower and made less accurate treatment recommendations. Participants who did not endorse these beliefs rated the black (vs. white) patient's pain as higher, but showed no bias in treatment recommendations. These findings suggest that individuals with at least some medical training hold and may use false beliefs about biological differences between blacks and whites to inform medical judgments, which may contribute to racial disparities in pain assessment and treatment.

racial bias | pain perception | health care disparities | pain treatment

A young man goes to the doctor complaining of severe pain in his back. He expects and trusts that a medical expert, his physician, will assess his pain and prescribe the appropriate treatment to reduce his suffering. After all, a primary goal of health care is to reduce pain and suffering. Whether he receives the standard of care that he expects, however, is likely contingent on his race/ethnicity. Prior research suggests that if he is black, then his pain will likely be underestimated and undertreated compared with if he is white (1–10). The present work investigates one potential factor associated with this racial bias. Specifically, in the present research, we provide evidence that white laypeople and medical students and residents believe that the black body is biologically different—and in many cases, stronger—than the white body. Moreover, we provide evidence that these beliefs are associated with racial bias in perceptions of others' pain, which in turn predict accuracy in pain treatment recommendations. The current work, then, addresses an important social factor that may contribute to racial bias in health and health care.

Extant research has shown that, relative to white patients, black patients are less likely to be given pain medications and, if given pain medications, they receive lower quantities (1–10). For example, in a retrospective study, Todd et al. (10) found that black patients were significantly less likely than white patients to receive analgesics for extremity fractures in the emergency room (57% vs. 74%), despite having similar self-reports of pain. This disparity in pain treatment is true even among young children. For instance, a study of nearly one million children diagnosed with appendicitis revealed that, relative to white patients, black patients were less likely to receive any pain medication for moderate pain and were less likely to receive opioids—the appropriate treatment—for severe pain (6).

These disparities in pain treatment could reflect an overprescription of medications for white patients, underprescription of medications for black patients, or, more likely, both. Indeed, there is evidence that overprescription is an issue, but there is also clear evidence that the underprescription of pain medications for black patients is a real, documented phenomenon (1, 4). For example, a study examining pain management among patients with metastatic or recurrent cancer found that only 35% of racial minority patients received the appropriate prescriptions—as established by the World Health Organization guidelines—compared with 50% of nonminority patients (4).

Broadly speaking, there are two potential ways by which racial disparities in pain management could arise. The first possibility is that physicians recognize black patients' pain, but do not to treat it, perhaps due to concerns about noncompliance or access to health care (7, 8). The second possibility is that physicians do not recognize black patients' pain in the first place, and thus cannot treat it. In fact, recent work suggests that racial bias in pain treatment may stem, in part, from racial bias in perceptions of others' pain. This research has shown that people assume a priori that blacks feel less pain than do whites (11–17). In a study by Staton et al. (14), for instance, patients were asked to report how much pain they were experiencing, and physicians were asked to rate how much pain they thought the patients were experiencing. Physicians were more likely to underestimate the pain of black patients (47%) relative to nonblack patients (33.5%). Of note,

Significance

The present work examines beliefs associated with racial bias in pain management, a critical health care domain with well-documented racial disparities. Specifically, this work reveals that a substantial number of white laypeople and medical students and residents hold false beliefs about biological differences between blacks and whites and demonstrates that these beliefs predict racial bias in pain perception and treatment recommendation accuracy. It also provides the first evidence that racial bias in pain perception is associated with racial bias in pain treatment recommendations. Taken together, this work provides evidence that false beliefs about biological differences between blacks and whites continue to shape the way we perceive and treat black people—they are associated with racial disparities in pain assessment and treatment recommendations.

Author contributions: K.M.H., S.T., J.R.A., and M.N.O. designed research; K.M.H. and M.N.O. performed research; K.M.H. and S.T. analyzed data; and K.M.H., S.T., J.R.A., and M.N.O. wrote the paper.

The authors declare no conflict of interest.

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Table 1. Percentage of white participants endorsing beliefs about biological differences between blacks and whites

Item	Study 1: Online sample (n = 92)	Study 2			
		First years (n = 63)	Second years (n = 72)	Third years (n = 59)	Residents (n = 28)
Blacks age more slowly than whites	23	21	28	12	14
Blacks' nerve endings are less sensitive than whites'	20	8	14	0	4
Black people's blood coagulates more quickly than whites'	39	29	17	3	4
Whites have larger brains than blacks	12	2	1	0	0
Whites are less susceptible to heart disease than blacks*	43	63	83	66	50
Blacks are less likely to contract spinal cord diseases*	42	46	67	56	57
Whites have a better sense of hearing compared with blacks	10	3	7	0	0
Blacks' skin is thicker than whites'	58	40	42	22	25
Blacks have denser, stronger bones than whites*	39	25	78	41	29
Blacks have a more sensitive sense of smell than whites	20	10	18	3	7
Whites have a more efficient respiratory system than blacks	16	8	3	2	4
Black couples are significantly more fertile than white couples	17	10	15	2	7
Whites are less likely to have a stroke than blacks*	29	49	63	44	46
Blacks are better at detecting movement than whites	18	14	15	5	11
Blacks have stronger immune systems than whites	14	21	15	3	4
False beliefs composite (11 items), mean (SD)	22.43 (22.93)	14.86 (19.48)	15.91 (19.34)	4.78 (9.89)	7.14 (14.50)
Range	0–100	0–81.82	0–90.91	0–54.55	0–63.64
Combined mean (SD) (medical sample only)			11.55 (17.38)		

For ease of presentation, we shortened the items; see *SI Text* for full items and additional information. For ease of interpretation and ease of presentation, we collapsed the scale and coded responses marked as possibly, probably, or definitely untrue as 0 and possibly, probably, or definitely true, as 1, resulting in percentages of individuals who endorsed each item. Bold entries represent the items included in the false beliefs about biological differences between blacks and whites composite.
*Items that are factual or true.

rated the pain of the black target lower and the pain of the white target higher than did participants low in false beliefs. In other words, relative to participants low in false beliefs, they seemed to assume that the black body is stronger and that the white body is weaker.

Study 1 thus demonstrates that white adults without medical training endorse at least some beliefs about biological differences between blacks and whites, many of which are false and fantastical in nature (e.g., black people's blood coagulates more quickly than white people's blood). Study 1 also demonstrates that these beliefs are related to racial bias in pain perception among a sample of white adults without medical training. Given the well-documented, pervasive racial disparities in pain management, understanding who might contribute to this racial bias and why is of paramount importance. Thus, we next examined whether people with some degree of medical training also endorse these beliefs, and if so, whether these beliefs are associated with racial bias in pain perception and pain treatment recommendations. Study 2 extends the findings of study 1 in at least three important ways: (*i*) it examines racial bias in a relevant context—medicine—using medical cases similar to those used in medical training; (*ii*) it extends our investigation to a sample with at least some medical training—medical students and residents; and (*iii*) it considers a critical downstream outcome—racial bias in pain treatment recommendations.

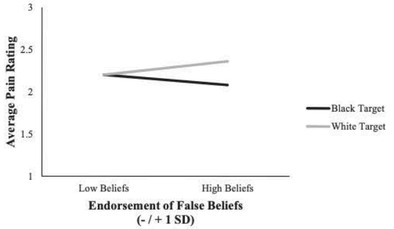

Fig. 1. Nonmedical sample estimated mean pain ratings for black and white targets as a function of false belief endorsement (scale: 1–6; plotted 1 SD below and above the mean). Pain rating scale: 1 = not painful, 2 = somewhat painful, 3 = moderately painful, 4 = extremely painful.

Study 2

We collected data from a total of 418 medical students and residents. Two hundred twenty-two met the same a priori criteria as in study 1 and completed the study (first years, n = 63; second years, n = 72; third years, n = 59; residents, n = 28). Participants gave informed consent in accordance with policies of the IRB of the University of Virginia. After consenting, participants read two mock medical cases about a black and a white patient and made pain ratings (scale: 0 = no pain to 10 = worst possible pain) and medication recommendations (dummy coded for accuracy: 1 = accurate, 0 = inaccurate) for each.[†] They also completed the same measure of beliefs about biological differences between blacks and whites as in study 1. We again averaged the 11 items that captured our variable of interest (α = 0.92) (see Table 1 and Table S1 for descriptive information; analyses for the composite with all items can be found in Table S4). On average, participants endorsed 11.55% (SD = 17.38) of the false beliefs. About 50% reported that at least one of the false belief items was possibly, probably, or definitely true (Table 1). These percentages are noticeably lower compared with those in study 1 (50% vs. 73%); however, given this sample (medical students and residents), the percentages for false beliefs are surprisingly high.

[†]We counterbalanced the order of target race (black, white) and medical case (kidney stone, ankle fracture) across participants. Preliminary analyses revealed that the order of target race and medical case did not moderate the effects, and we thus exclude them from our models for parsimony. Including them does not change the pattern of results.

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*Items that are factual or true.

ORIGINAL RESEARCH

Implicit Gender Bias and the Use of Cardiovascular Tests Among Cardiologists

Stacie L. Daugherty, MD, MSPH; Irene V. Blair, PhD; Edward P. Havranek, MD; Anna Furniss, MS; L. Miriam Dickinson, PhD; Elhum Karimkhani, RN, MSPH; Deborah S. Main, PhD; Frederick A. Masoudi, MD, MSPH

Background—Physicians' gender bias may contribute to gender disparities in cardiovascular testing. We used the Implicit Association Test to examine the association of implicit gender biases with decisions to use cardiovascular tests.

Methods and Results—In 2014, cardiologists completed Implicit Association Tests and a clinical vignette with patient gender randomly assigned. The Implicit Association Tests measured implicit gender bias for the characteristics of strength and risk taking. The vignette represented an intermediate likelihood of coronary artery disease regardless of patient gender: chest pain (part 1) followed by an abnormal exercise treadmill test (part 2). Cardiologists rated the likelihood of coronary artery disease and the usefulness of stress testing and angiography for the assigned patient. Of the 503 respondents (9.3% of eligible; 87% male, median age of 45 years, 58% in private practice), the majority associated strength or risk taking implicitly with male more than female patients. The estimated likelihood of coronary artery disease for both parts of the vignette was similar by patient gender. The utility of secondary stress testing after an abnormal exercise treadmill test was rated as "high" more often for female than male patients (32.8% versus 24.3%, P=0.04); this difference did not vary with implicit bias. Angiography was more consistently rated as having "high" utility for male versus female patients (part 1: 19.7% versus 9.8%; part 2: 73.7% versus 64.3%; P<0.05 for both); this difference was larger for cardiologists with higher implicit gender bias on risk taking (P=0.01).

Conclusions—Cardiologists have varying degrees of implicit gender bias. This bias explained some, but not all, of the gender variability in simulated clinical decision-making for suspected coronary artery disease. **(*J Am Heart Assoc.* 2017;6:e006872. DOI: 10.1161/JAHA.117.006872.)**

Key Words: angiography • gender disparities • implicit bias • stress testing

Gender differences in the use of cardiac tests in patients with suspected or confirmed coronary artery disease (CAD) have been known for decades.[1–8] After an abnormal cardiac stress test, women are less likely to undergo any subsequent diagnostic testing, including secondary stress testing or angiography.[6–8] These gender differences persist even after considering patient factors that may explain variation in care such as differences in comorbidities, presentation, appropriateness of treatment, and patient preferences—suggesting that these differences represent *disparities*, as defined by the Institute of Medicine.[7–12] Despite studies documenting gender disparities in the use of cardiovascular tests, few have examined the underlying reasons for these disparities in management.

A potential reason for gender disparities in cardiovascular testing is providers' gender stereotyping and bias.[11,13–16]

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Accompanying Tables S1 through S3 are available at http://jaha.ahajournals.org/content/6/12/e006872/DC1/embed/inline-supplementary-material-1.pdf

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Physicians' Implicit and Explicit Attitudes About Race by MD Race, Ethnicity, and Gender

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Abstract

Recent reports suggest that providers' implicit attitudes about race contribute to racial and ethnic health care disparities. However, little is known about physicians' implicit racial attitudes. This study measured implicit and explicit attitudes about race using the Race Attitude Implicit Association Test (IAT) for a large sample of test takers (N = 404,277), including a sub-sample of medical doctors (MDs) (n = 2,535). Medical doctors, like the entire sample, showed an implicit preference for White Americans relative to Black Americans. We examined these effects among White, African American, Hispanic, and Asian MDs and by physician gender. Strength of implicit bias exceeded self-report among all test takers except African American MDs. African American MDs, on average, did not show an implicit preference for either Blacks or Whites, and women showed less implicit bias than men. Future research should explore whether, and under what conditions, MDs' implicit attitudes about race affect the quality of medical care.

Keywords

Racial and ethnic health care disparities; implicit and explicit attitudes about race; physician racial bias; physicians; gender; race; ethnicity

Racial and ethnic health care disparities are well documented and persistent.[1–15] These disparities manifest themselves across a wide range of clinical services, even in systems where access is universal (such as the Veteran's Affairs system).[16] The Institute of Medicine (IOM) report on racial and ethnic health disparities, *Unequal Treatment*, found evidence of poorer quality of care for minority patients in studies of cancer treatment, treatment of cardiovascular disease, rates of referral for clinical tests, access to a kidney transplant wait list, Black children's receipt of medication, mental health assessment and services, diabetes management, pain management, and other areas of care.[1] Racial and ethnic disparities exist in physician communication behaviors and in physician perceptions of patients.[17–21] For example, Johnson and colleagues documented physician behavior during real-world clinical interactions and found that physicians spent less time with African American patients, were

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Gender Bias in Collaborative Medical Decision Making: Emergent Evidence

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Abstract

This initial, exploratory study on gender bias in collaborative medical decision making examined the degree to which physicians' reliance on a team member's patient care advice differs as a function of the gender of the advice giver. In 2018, 283 anesthesiologists read a brief, online clinical vignette and were randomly assigned to receive treatment advice from 1 of 8 possible sources (physician or nurse, man or woman, experienced or inexperienced). They then indicated their treatment decision, as well as the degree to which they relied upon the advice given.

The results revealed 2 patterns consistent with gender bias in participants' advice taking. First, when treatment advice was delivered by an inexperienced physician, participants reported replying significantly more on the advice of a man versus a woman, $F(1,61) = 4.24$, $P = .04$. Second, participants' reliance on the advice of the woman physician was a function of her experience, $F(1,62) = 6.96$, $P = .01$, whereas reliance on the advice of the man physician was not, $F(1,60) = 0.21$, $P = .65$.

These findings suggest women physicians, relative to men, may encounter additional hurdles to performing their jobs, especially at early stages in their careers. These hurdles are rooted in psychological biases of others, rather than objective features of cases or treatment settings. Cultural stereotypes may shape physicians' information use and decision-making processes (and hinder collaboration), even in contexts that appear to have little to do with social category membership. The authors recommend institutions adopt policies and practices encouraging equal attention to advice, regardless of the source, to help ensure advice taking is a function of information quality rather than the attributes of the advice giver. Such policies and practices may help surface and implement diverse expert perspectives in collaborative medical decision making, promoting better and more effective patient care.

Medical decision making is becoming increasingly collaborative and team based. Although patient care decisions focus on specialized knowledge and evidence, to reach decisions providers must assimilate information from multiple sources, including the opinions and observations of other care team members.[1] In medicine, as in other professional contexts, the inherently social nature of collaborative decision making can invite unwanted influences, such as the activation of stereotypes and cultural biases that affect decision makers' interpretation of and reliance upon information provided by other team members on the basis of irrelevant characteristics like gender.

In this article, we share the results of an initial, exploratory study we conducted with anesthesiologists to examine whether reliance on a team member's patient care advice differs as a function of the gender of the advice giver. Based on our results, which indicate the presence of gender bias, we provide insights into organizational practices that can mitigate pernicious decision-making biases in the workplace, with suggestions about how these insights could be applied in the context of collaborative medical decision making.

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Background: Cultural Stereotypes and Gender Bias in the Workplace

In decision environments where time is limited, the task is complex, and multiple inputs compete for attention, decision makers often rely upon intuitive, "gut-based" decision making.[2] Such decision making depends on pattern recognition, that is, quickly fitting new information to existing knowledge structures that have been developed through experience and inherited through culture.[2,3] For example, through professional experience and trial and error, medical experts develop cognitive templates that facilitate rapid identification of various medical conditions.[2] Concurrently, they inherit cultural stereotypes (i.e., beliefs about a person's capabilities or attributes based on their social category membership) that are engrained and reinforced across multiple contexts over the course of a lifetime.[4] The challenge is that decision makers—even content experts—do not choose which knowledge structures are brought to bear on their intuitive assessments. Although they know the products of their intuitive processing, they generally have limited awareness and control over the processes that shape their use of information and their ultimate decisions.[3]

Cultural stereotypes operate in a largely automatic fashion, distorting people's interpretation and use of new information based upon arbitrary characteristics of the source, such as race or gender.[4] Stereotypes can be powerful impediments to collaborative work since they are irrelevant to the task at hand and resistant to updating. A host of studies, including psychological experiments using random assignment, have shown the detrimental effects of gender stereotypes on collaborative work. For

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Estimating Implicit and Explicit Gender Bias Among Health Care Professionals and Surgeons

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Abstract

IMPORTANCE The Implicit Association Test (IAT) is a validated tool used to measure implicit biases, which are mental associations shaped by one's environment that influence interactions with others. Direct evidence of implicit gender biases about women in medicine has yet not been reported, but existing evidence is suggestive of subtle or hidden biases that affect women in medicine.

OBJECTIVES To use data from IATs to assess (1) how health care professionals associate men and women with career and family and (2) how surgeons associate men and women with surgery and family medicine.

DESIGN, SETTING, AND PARTICIPANTS This data review and cross-sectional study collected data from January 1, 2006, through December 31, 2017, from self-identified health care professionals taking the Gender-Career IAT hosted by Project Implicit to explore bias among self-identified health care professionals. A novel Gender-Specialty IAT was also tested at a national surgical meeting in October 2017. All health care professionals who completed the Gender-Career IAT were eligible for the first analysis. Surgeons of any age, gender, title, and country of origin at the meeting were eligible to participate in the second analysis. Data were analyzed from January 1, 2018, through March 31, 2019.

MAIN OUTCOMES AND MEASURES Measure of implicit bias derived from reaction times on the IATs and a measure of explicit bias asked directly to participants.

RESULTS Almost 1 million IAT records from Project Implicit were reviewed, and 131 surgeons (64.9% men; mean [SD] age, 42.3 [11.5] years) were recruited to complete the Gender-Specialty IAT. Healthcare professionals (n = 42 991; 82.0% women; mean [SD] age, 32.7 [11.8] years) held implicit (mean [SD] *D* score, 0.41 [0.36]; Cohen *d* = 1.14) and explicit (mean [SD], 1.43 [1.85]; Cohen *d* = 0.77) biases associating men with career and women with family. Similarly, surgeons implicitly (mean [SD] *D* score, 0.28 [0.37]; Cohen *d* = 0.76) and explicitly (men: mean [SD], 1.27 [0.39]; Cohen *d* = 0.93; women: mean [SD], 0.73 [0.35]; Cohen *d* = 0.53) associated men with surgery and women with family medicine. There was broad evidence of consensus across social groups in implicit and explicit biases with one exception. Women in healthcare (mean [SD], 1.43 [1.86]; Cohen *d* = 0.77) and surgery (mean [SD], 0.73 [0.35]; Cohen *d* = 0.53) were less likely than men to explicitly associate men with career (*B* coefficient, −0.10; 95% CI, −0.15 to −0.04; *P* < .001) and surgery (*B* coefficient, −0.67; 95% CI, −1.21 to −0.13; *P* = .001) and women with family and family medicine.

CONCLUSIONS AND RELEVANCE The main contribution of this work is an estimate of the extent of implicit gender bias within surgery. On both the Gender-Career IAT and the novel Gender-Specialty IAT, respondents had a tendency to associate men with career and surgery and women with family

(continued)

Key Points

Question Do surgeons and health care professionals hold implicit or explicit biases regarding gender and career roles?

Findings A review of 42 991 Implicit Association Test records and a cross-sectional study of 131 surgeons provided evidence of implicit and explicit gender bias. Data suggest that health care professionals and surgeons hold implicit and explicit biases associating men with careers and surgery and women with family and family medicine.

Meaning This work contributes an estimate of the extent of implicit gender bias within medicine; awareness of bias, such as through an Implicit Association Test, is an important first step toward minimizing its potential effect.

+ Invited Commentary

+ Supplemental content

Author affiliations and article information are listed at the end of this article.

ORIGINAL RESEARCH

Do Physicians' Implicit Views of African Americans Affect Clinical Decision Making?

M. Norman Oliver, MD, MA, Kristen M. Wells, MPH, PhD, Jennifer A. Joy-Gaba, PhD, Carlee Beth Hawkins, MA, and Brian A. Nosek, PhD

Background: **Total knee replacement (TKR) is a cost-effective treatment option for severe osteoarthritis (OA). While prevalence of OA is higher among blacks than whites, TKR rates are lower among blacks. Physicians' implicit preferences might explain racial differences in TKR recommendation. The objective of this study was to evaluate whether the magnitude of implicit racial bias predicts physician recommendation of TKR for black and white patients with OA and to assess the effectiveness of a web-based instrument as an intervention to decrease the effect of implicit racial bias on physician recommendation of TKR.**

Methods: **In this web-based study, 543 family and internal medicine physicians were given a scenario describing either a black or white patient with severe OA refractory to medical treatment. Questionnaires evaluating the likelihood of recommending TKR, perceived medical cooperativeness, and measures of implicit racial bias were administered. The main outcome measures included TKR recommendation, implicit racial preference, and medical cooperativeness stereotypes measured with implicit association tests.**

Results: **Subjects displayed a strong implicit preference for whites over blacks ($P < .0001$) and associated "medically cooperative" with whites over blacks ($P < .0001$). Physicians reported significantly greater liking for whites over blacks ($P < .0001$) and reported believing whites were more medically cooperative than blacks ($P < .0001$). Participants reported providing similar care for white and black patients ($P = .10$) but agreed that subconscious biases could influence their treatment decisions ($P < .0001$). There was no significant difference in the rate of recommendation for TKR when the patient was black (47%) versus white (38%) ($P = .439$), and neither implicit nor explicit racial biases predicted differential treatment recommendations by race (all $P > .06$). Although participants were more likely to recommend TKR when completing the implicit association test before the decision, patient race was not significant in the association ($P = .960$).**

Conclusions: **Physicians possessed explicit and implicit racial biases, but those biases did not predict treatment recommendations. Clinicians' biases about the medical cooperativeness of blacks versus whites, however, may have influenced treatment decisions. (J Am Board Fam Med 2014;27:177–188.)**

Keywords: **African Americans, Health Care Disparities, Minority Health, Race, Racial Bias**

Osteoarthritis (OA) is a leading cause of physical disability among older adults in the United States, often leading to significant pain, swelling, and reduced motion at the joint. Total knee replacement (TKR) is a cost-effective treatment option for moderate to severe knee OA,[1–3] relieving pain and improving quality of life. Despite these benefits, marked disparities in TKR utilization in patients with OA exist by age, sex, geographic location, and racial category. While the rate of diagnosed OA is generally higher among African Americans than whites,[4,5] African Americans receive TKR less than half as often as whites.[6–11] These racial and ethnic

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Conflict of interest: The senior author (BAN) is an officer of Project Implicit Inc., a nonprofit organization that includes in its mission "To develop and deliver methods for investigating and applying phenomena of implicit social cognition, including especially phenomena of implicit bias based on age, race, gender or other factors."
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Implicit Stereotyping and Medical Decisions: Unconscious Stereotype Activation in Practitioners' Thoughts About African Americans

Gordon B. Moskowitz, PhD, Jeff Stone, PhD, and Amanda Childs, MA

Objectives. We investigated whether stereotypes unconsciously influence the thinking and behavior of physicians, as they have been shown to do in other professional settings, such as among law enforcement personnel and teachers.

Methods. We conducted 2 studies to examine whether stereotypes are implicitly activated in physicians. Study 1 assessed what diseases and treatments doctors associate with African Americans. Study 2 presented these (and control terms) to doctors as part of a computerized task. Subliminal images of African American and White men appeared prior to each word, and reaction times to words were recorded.

Results. When primed with an African American face, doctors reacted more quickly for stereotypical diseases, indicating an implicit association of certain diseases with African Americans. These comprised not only diseases African Americans are genetically predisposed to, but also conditions and social behaviors with no biological association (e.g., obesity, drug abuse).

Conclusions. We found implicit stereotyping among physicians; faces they never consciously saw altered performance. This suggests that diagnoses and treatment of African American patients may be biased, even in the absence of the practitioner's intent or awareness. (*Am J Public Health.* 2012;102:996–1001. doi: 10.2105/AJPH.2011.300591)

Health care professionals learn that some diseases may be associated with various population groups. Doctors and nurses, for example, need to know if some categories of people are more likely than others to manifest specific symptoms and diseases. Ashkenazi Jews have a higher prevalence of Tay-Sachs disease than other groups. Hypertension is more prevalent among African Americans and Native Americans than White Americans. Such facts are essential to medical training and depict an accurate stereotype of these social groups. (Stereotype is defined as the knowledge we possess about, and associate with, a particular human social group.[1]) Thus, health care workers are taught to categorize individuals according to social groups so that patients may be accurately stereotyped along health-relevant domains.

Research in psychology has revealed that stereotypes, when factual, are an aid to information processing and facilitate accurate judgment and smooth social interaction.[2] However, such research has also revealed that, unbeknownst to the perceiver, when the stereotype is invoked it also typically triggers inaccurate beliefs about the social group that ascribe predominantly negative qualities to the group and its members.[3] For many social groups, the negative components of the stereotype are the more dominant association to the group, causing a person's overall reaction to a member of the group to be infused—unintentionally—with negative qualities. This is not the only unintended effect of categorizing people into social groups. These triggered negative components of the stereotype (which if they rose to conscious thought would be denounced and rejected) exert a well-established influence on perception, judgment, evaluation, and behavior.[4,5] The effect is a dissociation between a person's conscious experience of being unbiased and a person's actual response, which is often guided by unconscious negative stereotypes. The influence of such unconsciously triggered negative and inaccurate components of a stereotype has been shown to bias judges' sentencing decisions,[6] employers' hiring decisions,[7] teachers' evaluations of students,[8] police officers' decisions to respond with shows of force,[9,10] and people's judgments about one another's personality during everyday encounters.[11]

Like all other members of society, medical professionals know the social stereotypes of groups and thus are presumably subject to having stereotypes similarly unconsciously triggered. These implicit stereotypes could affect their diagnoses, treatment recommendations, expectations about whether a patient will follow a prescribed treatment, and both verbal and nonverbal behavior toward patients during professional interactions, despite their intention to avoid such biases in conduct. We therefore sought to illustrate that all aspects of stereotypes, not just the factually correct information, are triggered in the minds of medical doctors without their awareness.

A second unintended effect of categorizing a person as a group member is that the correct aspects of the stereotype can influence people at an undesired moment and lead to exaggerated and inaccurate judgments. It has been shown, for example, that expectations about a person unknowingly affect how a relevant behavior is identified: if we expect a person to be sad, we not only identify their tears as tears of sadness (as opposed to joy), but also infer an extreme amount of sadness (more than if no expectation had existed).[12] We consciously experience our inference that the person is sad, but do not realize (1) the role our expectations play in producing that experience, (2) the role expectations play in delivering an inaccurate assessment of the degree to which the person is sad, and (3) the possibility that the expectation has led us to the wrong conclusion because the person may be shedding tears for another

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BMC Medical Education

RESEARCH ARTICLE Open Access

Implicit gender bias among US resident physicians

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Abstract

Background: The purpose of this study was to characterize implicit gender bias among residents in US Emergency Medicine and OB/GYN residencies.

Methods: We conducted a survey of all allopathic Emergency Medicine and OB/GYN residency programs including questions about leadership as well as an implicit association test (IAT) for unconscious gender bias. We used descriptive statistics to analyze the Likert-type survey responses and used standard IAT analysis methods. We conducted univariate and multivariate analyses to identify factors that were associated with implicit bias. We conducted a subgroup analysis of study sites involved in a multi-site intervention study to determine if responses were different in this group.

Results: Overall, 74% of the programs had at least one respondent. Out of 14,234 eligible, 1634 respondents completed the survey (11.5%). Of the five sites enrolled in the intervention study, 244 of 359 eligible residents completed the survey (68%). Male residents had a mean IAT score of 0.31 (SD 0.23) and females 0.14 (SD 0.24), both favoring males in leadership roles and the difference was statistically significant ($p < 0.01$). IAT scores did not differ by postgraduate year (PGY). Multivariable analysis of IAT score and participant demographics confirmed a significant association between female gender and lower IAT score. Explicit bias favoring males in leadership roles was associated with increased implicit bias favoring males in leadership roles ($r = 0.1$ $p < 0.001$).

Conclusions: We found that gender bias is present among US residents favoring men in leadership positions, this bias differs between male and female residents, and is associated with discipline. Implicit bias did not differ across training years, and is associated with explicit bias.

Keywords: Implicit bias, Gender bias, Medical education, Graduate medical education, Leadership

Background

The US healthcare system is widely reported to suffer from high rates of patient safety problems. Several studies have identified team leadership as an important factor in many patient safety problems, and the Joint Commission has reported that inadequate leadership is associated with half of serious injuries or unanticipated deaths in the healthcare system [1]. Implicit or unconscious biases are, by definition, not overtly perceived by individuals and affect behavior on an unconscious level and therefore may be challenging to change. Implicit gender-based biases are important to recognize since they may hinder an individual's ability to perform tasks effectively and to lead others, which may increase risk of patient safety problems and suboptimal care to patients.

The Implicit Association Test (IAT) is commonly used to measure implicit bias and has been used in several domains including race, gender, weight, and age [2–5]. Previous studies have found implicit racial bias among US physicians, though there has been limited investigation of implicit gender bias among physicians [6–9].

In academic medicine, men are implicitly viewed as leaders more than women [10]. In a study of internal medicine residents, most felt that gender was among the top 3 disadvantages in directing a care team [11]. Female residents have described feeling stress when violating gender behavioral norms when leading a cardiac resuscitation [12]. Residents from a broad range of specialties have noted gender differences in how their communication is perceived. Female residents reported their decisions were

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ORIGINAL CONTRIBUTION

Association of Unconscious Race and Social Class Bias With Vignette-Based Clinical Assessments by Medical Students

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Context Studies involving physicians suggest that unconscious bias may be related to clinical decision making and may predict poor patient-physician interaction. The presence of unconscious race and social class bias and its association with clinical assessments or decision making among medical students is unknown.

Objective To estimate unconscious race and social class bias among first-year medical students and investigate its relationship with assessments made during clinical vignettes.

Design, Setting, and Participants A secure Web-based survey was administered to 211 medical students entering classes at Johns Hopkins School of Medicine, Baltimore, Maryland, in August 2009 and August 2010. The survey included the Implicit Association Test (IAT) to assess unconscious preferences, direct questions regarding students' explicit race and social class preferences, and 8 clinical assessment vignettes focused on pain assessment, informed consent, patient reliability, and patient trust. Adjusting for student demographics, multiple logistic regression was used to determine whether responses to the vignettes were associated with unconscious race or social class preferences.

Main Outcome Measures Association of scores on an established IAT for race and a novel IAT for social class with vignette responses.

Results Among the 202 students who completed the survey, IAT responses were consistent with an implicit preference toward white persons among 140 students (69%, 95% CI, 61%-75%). Responses were consistent with a preference toward those in the upper class among 174 students (86%, 95% CI, 80%-90%). Assessments generally did not vary by patient race or occupation, and multivariable analyses for all vignettes found no significant relationship between implicit biases and clinical assessments. Regression coefficient for the association between pain assessment and race IAT scores was –0.49 (95% CI, –1.00 to 0.03) and for social class, the coefficient was –0.04 (95% CI, –0.50 to 0.41). Adjusted odds ratios for other vignettes ranged from 0.69 to 3.03 per unit change in IAT score, but none were statistically significant. Analysis stratified by vignette patient race or class status yielded similarly negative results. Tests for interactions between patient race or class status and student IAT D scores in predicting clinical assessments were not statistically significant.

Conclusions The majority of first-year medical students at a single school had IAT scores consistent with implicit preference for white persons and possibly for those in the upper class. However, overall vignette-based clinical assessments were not associated with patient race or occupation, and no association existed between implicit preferences and the assessments.

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RACE AND SOCIOECONOMIC STATUS are predictors of worse health outcomes in the United States.[1] Even among trauma patients, insurance status and race are independently associated with higher mortality.[2-4] Although race-based disparities have been extensively documented, the underlying mechanisms that lead to these inequalities are still not fully understood, creating a barrier to the design of effective solutions.

Disparities may be related to where patients seek care, available resources, and the types of training physicians receive. Unconscious or implicit bias among physicians has recently been suggested as another important factor contributing to racial disparities in health care.[5] Implicit bias is defined as a preference for a social

For editorial comment see p 995.

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Implicit Racial Bias in Medical School Admissions

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Abstract

Problem
Implicit white race preference has been associated with discrimination in the education, criminal justice, and health care systems and could impede the entry of African Americans into the medical profession, where they and other minorities remain underrepresented. Little is known about implicit racial bias in medical school admissions committees.

Approach
To measure implicit racial bias, all 140 members of the Ohio State University College of Medicine (OSUCOM) admissions committee took the black–white implicit association test (IAT) prior to the 2012–2013 cycle. Results were collated by gender and student versus faculty status. To record their impressions of the impact of the IAT on the admissions process, members took a survey at the end of the cycle, which 100 (71%) completed.

Outcomes
All groups (men, women, students, faculty) displayed significant levels of implicit white preference; men (d = 0.697) and faculty (d = 0.820) had the largest bias measures ($P < .001$). Most survey respondents (67%) thought the IAT might be helpful in reducing bias, 48% were conscious of their individual results when interviewing candidates in the next cycle, and 21% reported knowledge of their IAT results impacted their admissions decisions in the subsequent cycle. The class that matriculated following the IAT exercise was the most diverse in OSUCOM's history at that time.

Next Steps
Future directions include preceding and following the IAT with more robust reflection and education on unconscious bias. The authors join others in calling for an examination of bias at all levels of academic medicine.

Problem

African Americans and other minorities remain underrepresented in medicine (URM), which is thought to exacerbate current racial health care disparities.[1] Few studies have examined the possibility of unconscious or implicit racial bias in admissions as a contributor to the relative lack of diversity in medical school. The implicit association test (IAT) is widely used to determine biases outside of an individual's conscious control.[2] A result revealing a bias in favor of white people over black people on the black–white IAT is referred to as implicit white preference and indicates that the subject associates images of white people with positive words and images of black people with negative words. A report by Nosek and colleagues[3] suggests that implicit white preference may be pervasive in modern society; between July 2000 and May 2006, approximately 70% of the more than two million visitors to a publicly available Web site providing the IAT demonstrated implicit white preference. Although this bias is unconscious, its presence has been associated with discrimination in the education,[4] criminal justice,[5] and health care systems.[6] Indeed, a meta-analysis of 122 research studies found that IAT results more accurately predict discriminatory behavior than self-reported attitudes about race.[7]

A recent report showed that the majority of a large sample of physicians demonstrate implicit white preference,[8] and several studies have linked physicians' implicit white preference with clinical decisions that are detrimental to black patients.[6] Little is known about unconscious bias in medical school admissions committees, which have strong physician representation but may also include nonphysician members. Implicit white preference in medical school admissions committees could disadvantage African American candidates and contribute to the paucity of URMs. As the gatekeepers to their institutions, medical school admissions committees wield a powerful influence over the health care of the nation and so have an ethical obligation to minimize their biases to the fullest extent possible. We sought to determine the presence and extent of unconscious racial bias on our admissions committee by having all members take the IAT. Later, we surveyed the members to determine their impressions of their individual results and the utility of the exercise. Finally, we sought to determine whether having our admissions committee take the IAT would have any impact on URM diversity in our next incoming class.

Approach

Study population

There were 140 members of the Ohio State University College of Medicine (OSUCOM) admissions committee in spring 2012. Of these, 43 (31%) were faculty (MDs and PhDs) and 97 (69%) were medical students. Sixty-seven (48%) members were women (50 students and 17 faculty), and 73 (52%) were men (47 students and 26 faculty). Twenty-one (15%) committee members were self-reported URMs. All admissions committee members participate in one-on-one interviews with and vote on candidates, but faculty members constitute the majority present during voting sessions.

In spring 2012 (after the 2011–2012 admissions cycle but before the 2012–2013 cycle), we contracted with Project Implicit to set up a password-protected, temporary Web site to collate the anonymous IAT results for

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doi: 10.1097/ACM.0000000000001388

Figure 18. Percentage of all active physicians by race/ethnicity, 2018

Figure 18 shows the percentage of active physicians by race/ethnicity. Among active physicians, 56.2% identified as White, 17.1% identified as Asian, 5.8% identified as Hispanic, and 5.0% identified as Black or African American. Note that the race for 13.7% of active physicians is Unknown, making that the largest subgroup after White and Asian.

Figure 18. Percentage of all active physicians by race/ethnicity, 2018.

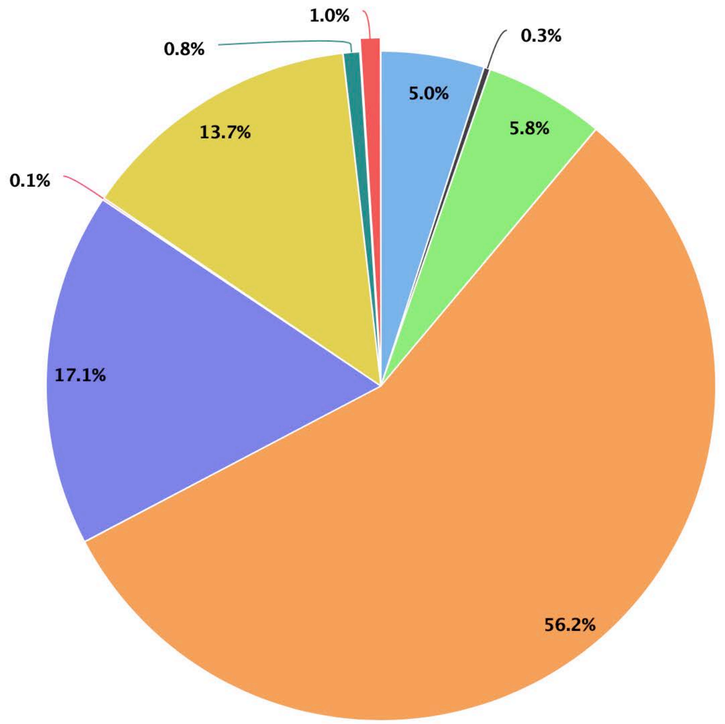

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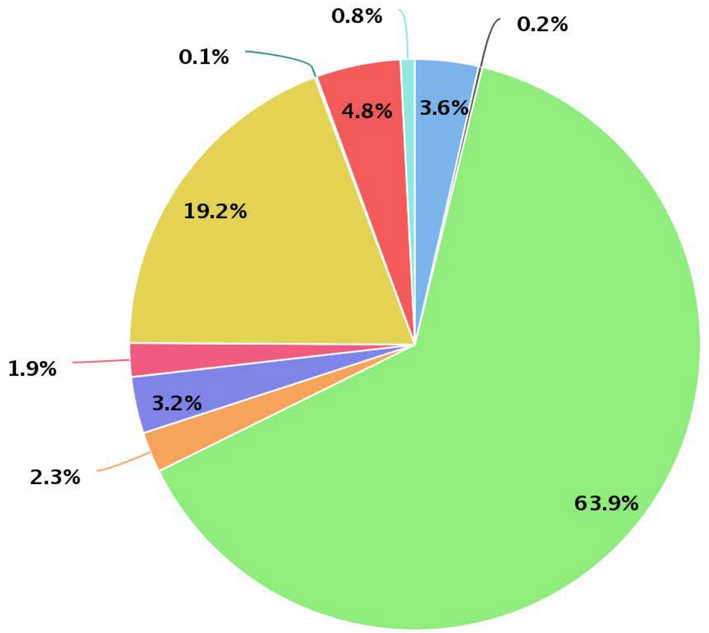
Figure 15. Percentage of full-time U.S. medical school faculty by race/ethnicity, 2018.



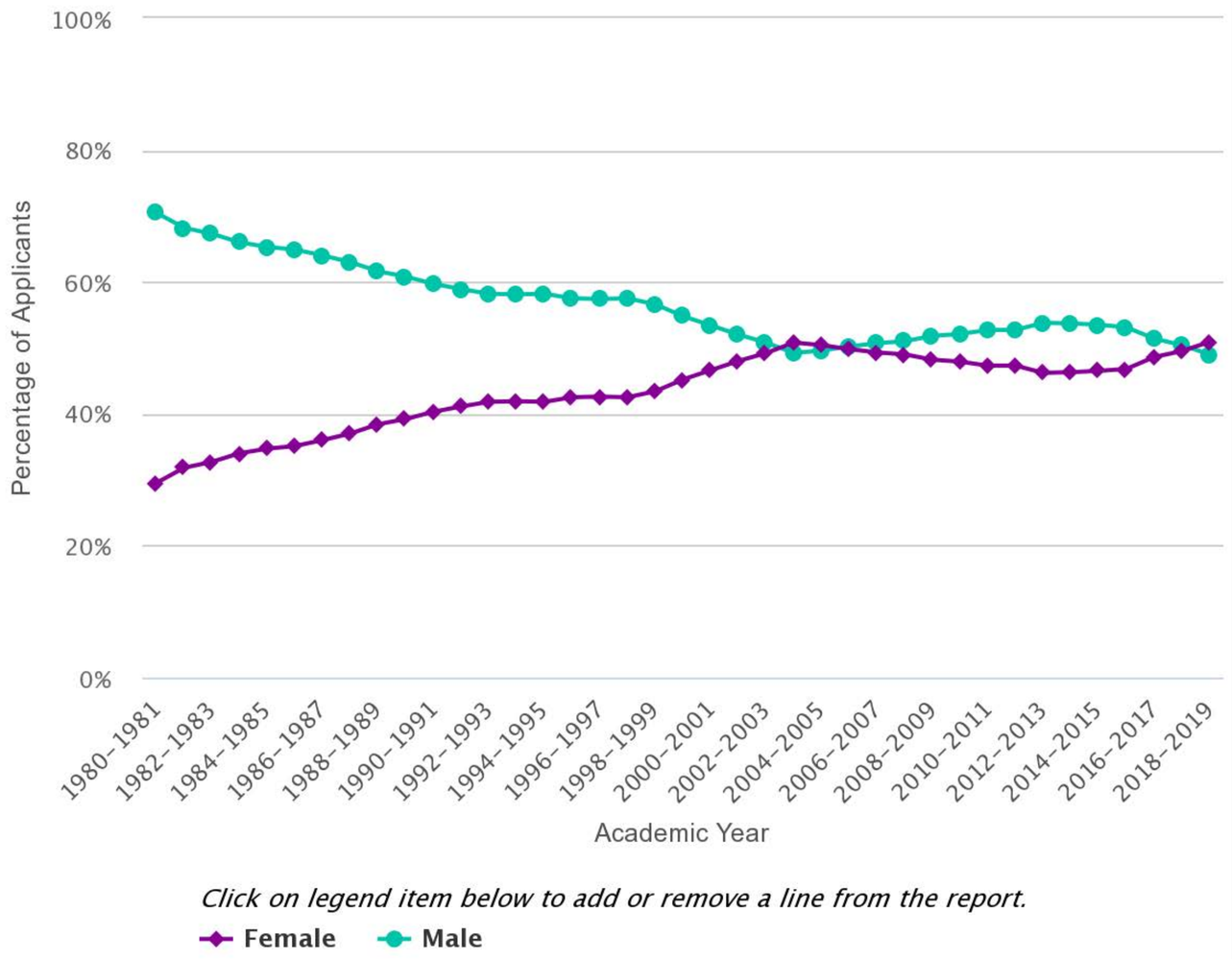
Click on legend item below to add or remove a section from the report.

- American Indian or Alaska Native (274)
- Asian (34,015)
- Black or African American (6,288)
- Hispanic, Latino, or of Spanish Origin (5,734)
- Multiple Race – Hispanic (3,978)
- Multiple Race – Non-Hispanic (3,441)
- Native Hawaiian or Other Pacific Islander (141)
- Other (1,456)
- White (112,894)
- Unknown (8,511)

Note: To allow for unduplicated counts of faculty, "Multiple Race – Hispanic" includes all faculty who were reported as Hispanic and at least one other race/ethnicity. "Multiple Race – Non-Hispanic" includes all faculty who were reported as more than one race/ethnicity but who were not reported as Hispanic.

Source: AAMC Faculty Roster as of Dec. 31, 2018.

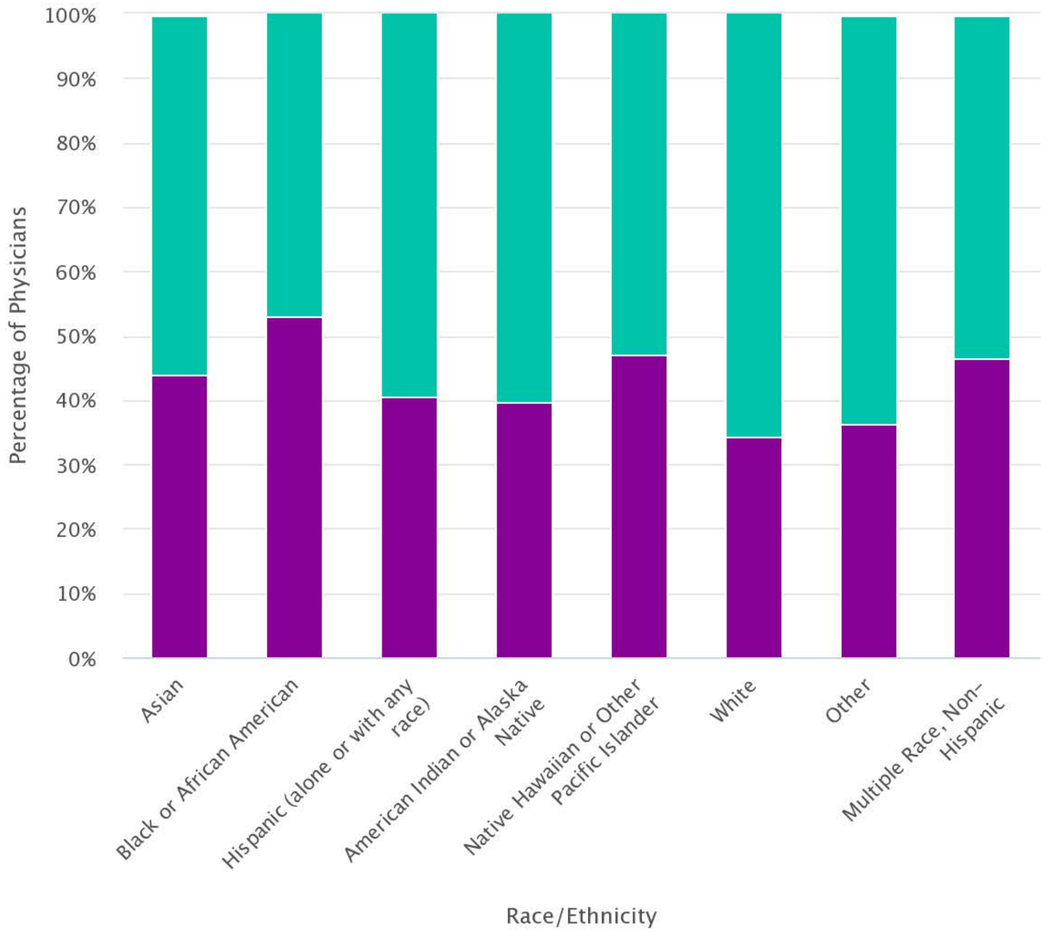
Figure 1. Percentage of applicants to U.S. medical schools by sex, academic years 1980–1981 through 2018–2019.



Note: Figure excludes applicants who did not report sex.

Source: AAMC Applicant Matriculant Data File as of March 21, 2019.

Figure 20. Percentage of physicians by sex and race/ethnicity, 2018.



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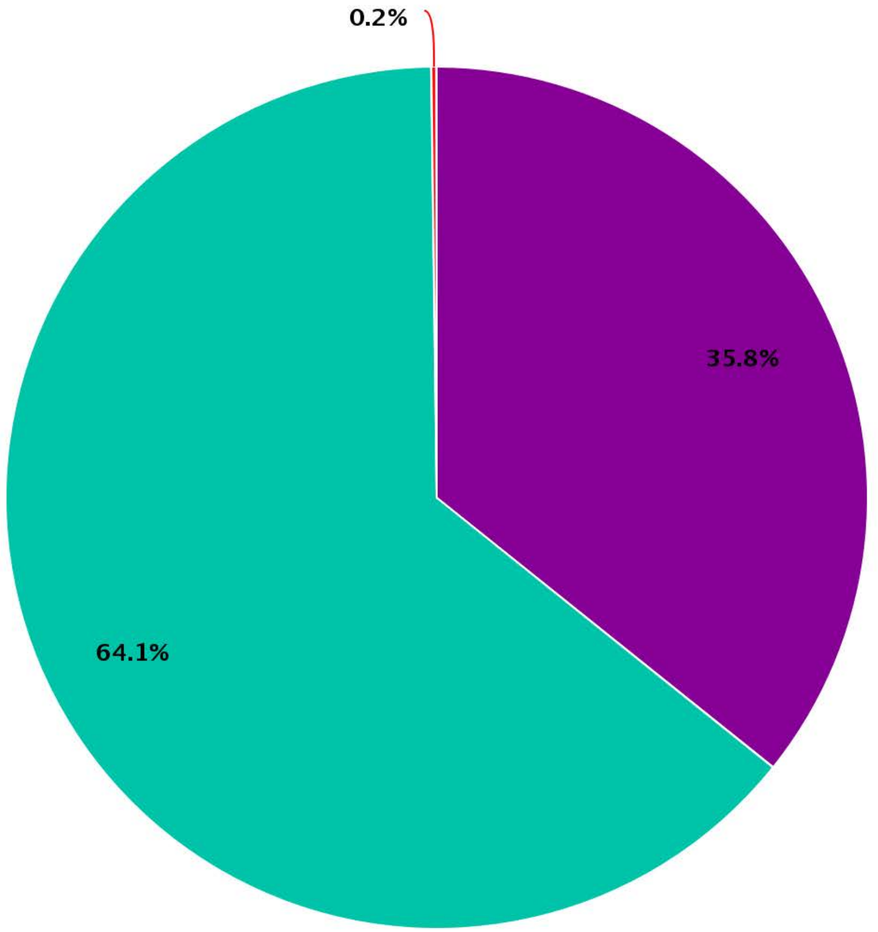
Female **Male**

Source: Physician characteristics (sex) are from the AMA Physician Masterfile, Dec. 31, 2018. Race and ethnicity data are from a variety of sources including DBS, ERAS, APP, MCAT, SMDEP, GQ, MSQ, PMQ, FACULTY, GME, STUDENT with priority given to the most recent self-reported source.

Figure 19. Percentage of physicians by sex, 2018.

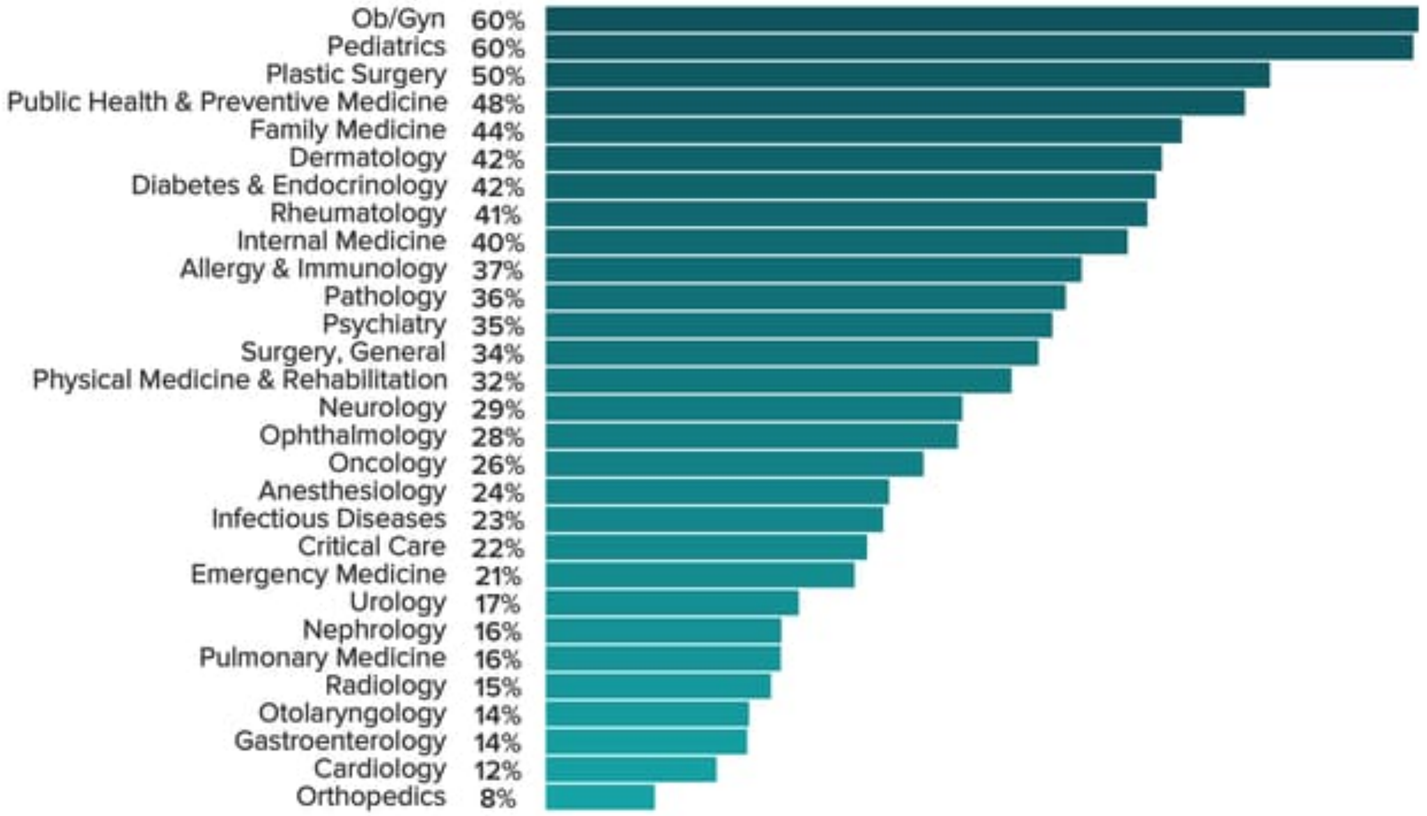


Click on legend item below to add or remove a section from the report.

- Female (328,463)
- Male (588,649)
- Unknown (1,435)

Source: Physician characteristics (sex) are from the AMA Physician Masterfile, Dec. 31, 2018.

Percentage of Women in Specialties and Primary Care



Sample Size:

- **20,329 respondents** across 29+ specialties met the screening criteria and completed the survey; results were weighted to the American Medical Association's physician distribution by specialty, state and gender.
- Screening Requirements: **Respondents were required** to be currently practicing physicians in the United States.
- Data Collection: **Via online** survey collection site
- Recruitment Period: **November 21, 2017 to February 21, 2018**

Sample Error:

- The sampling error is ± 0.69% at a **95% confidence level** using a point estimate of 50%.

Medscape.com

Racial and Gender Factors in Compensation

Sample Size:

- **20,329 respondents** across 29+ specialties met the screening criteria and completed the survey; results were weighted to the American Medical Association's physician distribution by specialty, state and gender.
- Screening Requirements: **Respondents were required** to be currently practicing physicians in the United States.
- Data Collection: **Via online** survey collection site
- Recruitment Period: **November 21, 2017 to February 21, 2018**

Sample Error:

- The sampling error is ± 0.69% at a **95% confidence level** using a point estimate of 50%.

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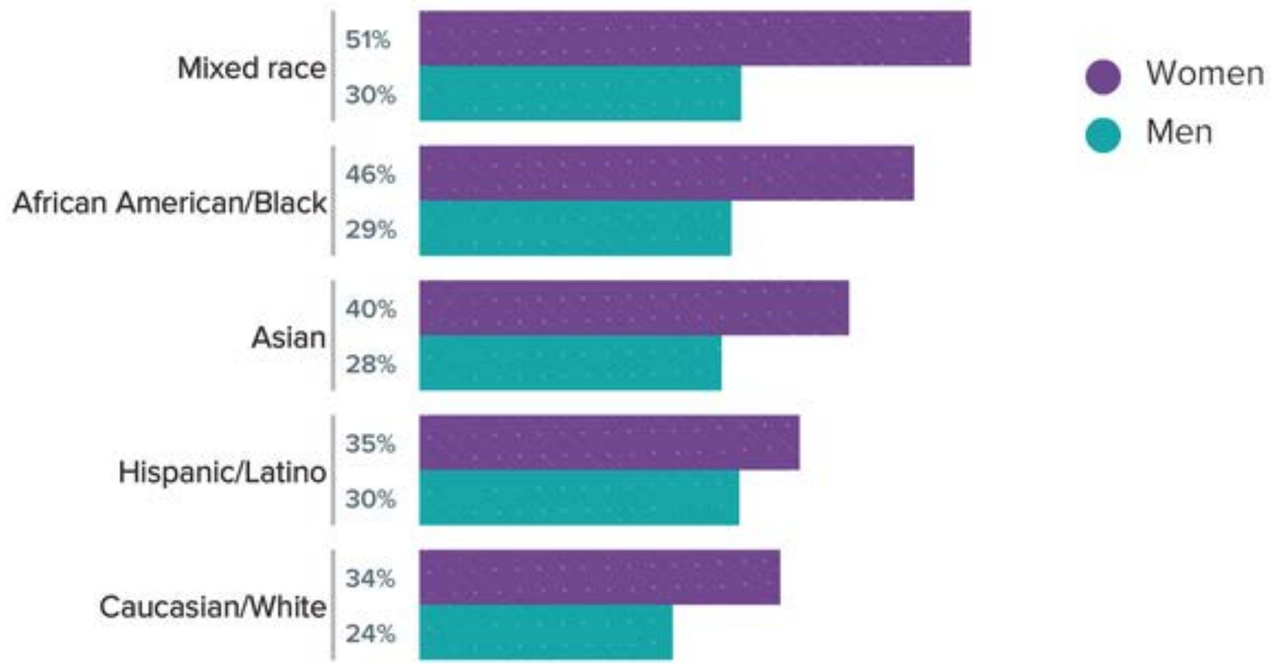
Who Chooses Primary Care?



Sample Size:

- **20,329 respondents** across 29+ specialties met the screening criteria and completed the survey; results were weighted to the American Medical Association's physician distribution by specialty, state and gender.
- Screening Requirements: **Respondents were required** to be currently practicing physicians in the United States.
- Data Collection: **Via online** survey collection site
- Recruitment Period: **November 21, 2017 to February 21, 2018**

Sample Error:

- The sampling error is ± 0.69% at a **95% confidence level** using a point estimate of 50%.

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Number of Minutes That Physicians Spend With Each Patient

Sample Size:

- **20,329 respondents** across 29+ specialties met the screening criteria and completed the survey; results were weighted to the American Medical Association's physician distribution by specialty, state and gender.
- Screening Requirements: **Respondents were required** to be currently practicing physicians in the United States.
- Data Collection: **Via online** survey collection site
- Recruitment Period: **November 21, 2017 to February 21, 2018**

Sample Error:

- The sampling error is ± 0.69% at a **95% confidence level** using a point estimate of 50%.

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Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites

Kelly M. Hoffman[a,1], Sophie Trawalter[a], Jordan R. Axt[a], and M. Norman Oliver[b,c]

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Edited by Susan T. Fiske, Princeton University, Princeton, NJ, and approved March 1, 2016 (received for review August 18, 2015)

Black Americans are systematically undertreated for pain relative to white Americans. We examine whether this racial bias is related to false beliefs about biological differences between blacks and whites (e.g., "black people's skin is thicker than white people's skin"). Study 1 documented these beliefs among white laypersons and revealed that participants who more strongly endorsed false beliefs about biological differences reported lower pain ratings for a black (vs. white) target. Study 2 extended these findings to the medical context and found that half of a sample of white medical students and residents endorsed these beliefs. Moreover, participants who endorsed these beliefs rated the black (vs. white) patient's pain as lower and made less accurate treatment recommendations. Participants who did not endorse these beliefs rated the black (vs. white) patient's pain as higher, but showed no bias in treatment recommendations. These findings suggest that individuals with at least some medical training hold and may use false beliefs about biological differences between blacks and whites to inform medical judgments, which may contribute to racial disparities in pain assessment and treatment.

racial bias | pain perception | health care disparities | pain treatment

A young man goes to the doctor complaining of severe pain in his back. He expects and trusts that a medical expert, his physician, will assess his pain and prescribe the appropriate treatment to reduce his suffering. After all, a primary goal of health care is to reduce pain and suffering. Whether he receives the standard of care that he expects, however, is likely contingent on his race/ethnicity. Prior research suggests that if he is black, then his pain will likely be underestimated and undertreated compared with if he is white (1–10). The present work investigates one potential factor associated with this racial bias. Specifically, in the present research, we provide evidence that white laypeople and medical students and residents believe that the black body is biologically different—and in many cases, stronger—than the white body. Moreover, we provide evidence that these beliefs are associated with racial bias in perceptions of others' pain, which in turn predict accuracy in pain treatment recommendations. The current work, then, addresses an important social factor that may contribute to racial bias in health and health care.

Extant research has shown that, relative to white patients, black patients are less likely to be given pain medications and, if given pain medications, they receive lower quantities (1–10). For example, in a retrospective study, Todd et al. (10) found that black patients were significantly less likely than white patients to receive analgesics for extremity fractures in the emergency room (57% vs. 74%), despite having similar self-reports of pain. This disparity in pain treatment is true even among young children. For instance, a study of nearly one million children diagnosed with appendicitis revealed that, relative to white patients, black patients were less likely to receive any pain medication for moderate pain and were less likely to receive opioids—the appropriate treatment—for severe pain (6).

These disparities in pain treatment could reflect an overprescription of medications for white patients, underprescription of medications for black patients, or, more likely, both. Indeed, there is evidence that overprescription is an issue, but there is also clear evidence that the underprescription of pain medications for black patients is a real, documented phenomenon (1, 4). For example, a study examining pain management among patients with metastatic or recurrent cancer found that only 35% of racial minority patients received the appropriate prescriptions—as established by the World Health Organization guidelines—compared with 50% of nonminority patients (4).

Broadly speaking, there are two potential ways by which racial disparities in pain management could arise. The first possibility is that physicians recognize black patients' pain, but do not to treat it, perhaps due to concerns about noncompliance or access to health care (7, 8). The second possibility is that physicians do not recognize black patients' pain in the first place, and thus cannot treat it. In fact, recent work suggests that racial bias in pain treatment may stem, in part, from racial bias in perceptions of others' pain. This research has shown that people assume a priori that blacks feel less pain than do whites (11–17). In a study by Staton et al. (14), for instance, patients were asked to report how much pain they were experiencing, and physicians were asked to rate how much pain they thought the patients were experiencing. Physicians were more likely to underestimate the pain of black patients (47%) relative to nonblack patients (33.5%). Of note,

Significance

The present work examines beliefs associated with racial bias in pain management, a critical health care domain with well-documented racial disparities. Specifically, this work reveals that a substantial number of white laypeople and medical students and residents hold false beliefs about biological differences between blacks and whites and demonstrates that these beliefs predict racial bias in pain perception and treatment recommendation accuracy. It also provides the first evidence that racial bias in pain perception is associated with racial bias in pain treatment recommendations. Taken together, this work provides evidence that false beliefs about biological differences between blacks and whites continue to shape the way we perceive and treat black people—they are associated with racial disparities in pain assessment and treatment recommendations.

Author contributions: K.M.H., S.T., J.R.A., and M.N.O. designed research; K.M.H. and M.N.O. performed research; K.M.H. and S.T. analyzed data; and K.M.H., S.T., J.R.A., and M.N.O. wrote the paper.

The authors declare no conflict of interest.

This article is a PNAS Direct Submission.

Data deposition: Data and materials are available through the Open Science Framework, https://osf.io/crxwa/.

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This article contains supporting information online at www.pnas.org/lookup/suppl/doi:10.1073/pnas.1516047113/-/DCSupplemental.

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Table 1. Percentage of white participants endorsing beliefs about biological differences between blacks and whites

Item	Study 1: Online sample (n = 92)	Study 2			
		First years (n = 63)	Second years (n = 72)	Third years (n = 59)	Residents (n = 28)
Blacks age more slowly than whites	23	21	28	12	14
Blacks' nerve endings are less sensitive than whites'	20	8	14	0	4
Black people's blood coagulates more quickly than whites'	39	29	17	3	4
Whites have larger brains than blacks	12	2	1	0	0
Whites are less susceptible to heart disease than blacks*	43	63	83	66	50
Blacks are less likely to contract spinal cord diseases*	42	46	67	56	57
Whites have a better sense of hearing compared with blacks	10	3	7	0	0
Blacks' skin is thicker than whites'	58	40	42	22	25
Blacks have denser, stronger bones than whites*	39	25	78	41	29
Blacks have a more sensitive sense of smell than whites	20	10	18	3	7
Whites have a more efficient respiratory system than blacks	16	8	3	2	4
Black couples are significantly more fertile than white couples	17	10	15	2	7
Whites are less likely to have a stroke than blacks*	29	49	63	44	46
Blacks are better at detecting movement than whites	18	14	15	5	11
Blacks have stronger immune systems than whites	14	21	15	3	4
False beliefs composite (11 items), mean (SD)	22.43 (22.93)	14.86 (19.48)	15.91 (19.34)	4.78 (9.89)	7.14 (14.50)
Range	0–100	0–81.82	0–90.91	0–54.55	0–63.64
Combined mean (SD) (medical sample only)			11.55 (17.38)		

For ease of presentation, we shortened the items; see *SI Text* for full items and additional information. For ease of interpretation and ease of presentation, we collapsed the scale and coded responses marked as possibly, probably, or definitely untrue as 0 and possibly, probably, or definitely true, as 1, resulting in percentages of individuals who endorsed each item. Bold entries represent the items included in the false beliefs about biological differences between blacks and whites composite.
*Items that are factual or true.

rated the pain of the black target lower and the pain of the white target higher than did participants low in false beliefs. In other words, relative to participants low in false beliefs, they seemed to assume that the black body is stronger and that the white body is weaker.

Study 1 thus demonstrates that white adults without medical training endorse at least some beliefs about biological differences between blacks and whites, many of which are false and fantastical in nature (e.g., black people's blood coagulates more quickly than white people's blood). Study 1 also demonstrates that these beliefs are related to racial bias in pain perception among a sample of white adults without medical training. Given the well-documented, pervasive racial disparities in pain management, understanding who might contribute to this racial bias and why is of paramount importance. Thus, we next examined whether people with some degree of medical training also endorse these beliefs, and if so, whether these beliefs are associated with racial bias in pain perception and pain treatment recommendations. Study 2 extends the findings of study 1 in at least three important ways: (*i*) it examines racial bias in a relevant context—medicine—using medical cases similar to those used in medical training; (*ii*) it extends our investigation to a sample with at least some medical training—medical students and residents; and (*iii*) it considers a critical downstream outcome—racial bias in pain treatment recommendations.

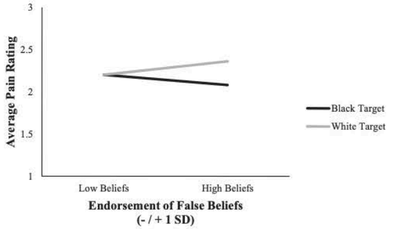


Fig. 1. Nonmedical sample estimated mean pain ratings for black and white targets as a function of false belief endorsement (scale: 1–6; plotted 1 SD below and above the mean). Pain rating scale: 1 = not painful, 2 = somewhat painful, 3 = moderately painful, 4 = extremely painful.

Study 2

We collected data from a total of 418 medical students and residents. Two hundred twenty-two met the same a priori criteria as in study 1 and completed the study (first years, n = 63; second years, n = 72; third years, n = 59; residents, n = 28). Participants gave informed consent in accordance with policies of the IRB of the University of Virginia. After consenting, participants read two mock medical cases about a black and a white patient and made pain ratings (scale: 0 = no pain to 10 = worst possible pain) and medication recommendations (dummy coded for accuracy: 1 = accurate, 0 = inaccurate) for each.[†] They also completed the same measure of beliefs about biological differences between blacks and whites as in study 1. We again averaged the 11 items that captured our variable of interest (α = 0.92) (see Table 1 and Table S1 for descriptive information; analyses for the composite with all items can be found in Table S4). On average, participants endorsed 11.55% (SD = 17.38) of the false beliefs. About 50% reported that at least one of the false belief items was possibly, probably, or definitely true (Table 1). These percentages are noticeably lower compared with those in study 1 (50% vs. 73%); however, given this sample (medical students and residents), the percentages for false beliefs are surprisingly high.

[†]We counterbalanced the order of target race (black, white) and medical case (kidney stone, ankle fracture) across participants. Preliminary analyses revealed that the order of target race and medical case did not moderate the effects, and we thus exclude them from our models for parsimony. Including them does not change the pattern of results.


CAPITAL PLAZA
UP
GOOD MORNING AMERICA

“This is how Black people get killed, when you send them home and they don’t know how to fight for themselves,” Dr. Moore said.

Susan Moore M.D.

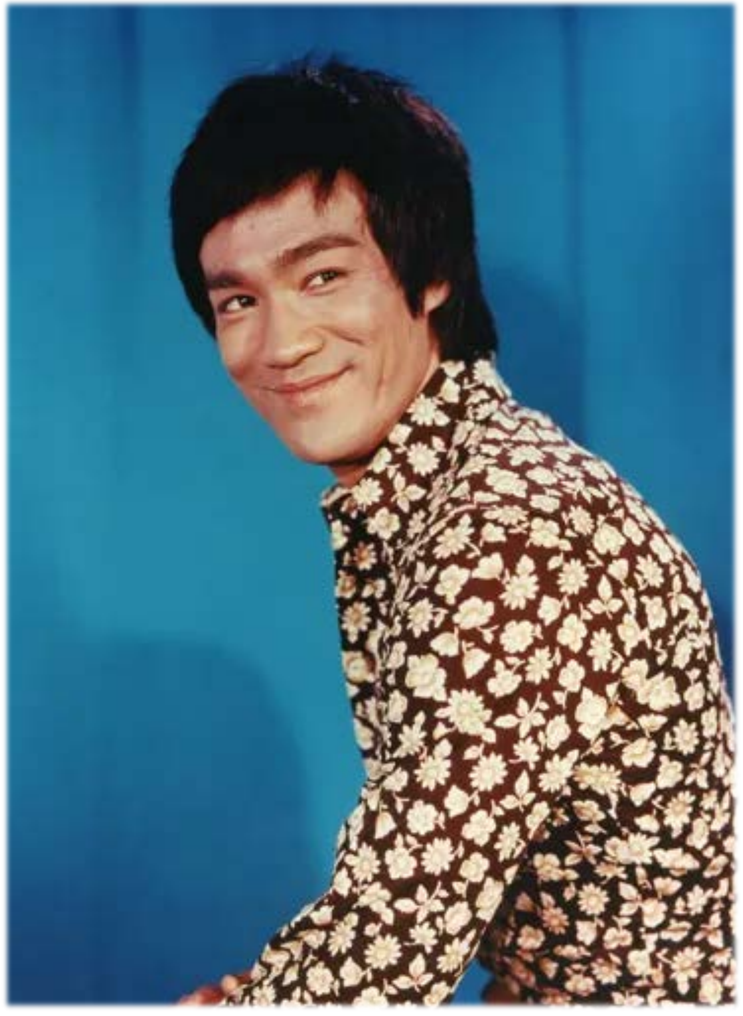

SSVET

Stereotype

Water Lippmann

By Harris & Ewing, photographer - Library of CongressCatalog: https://lccn.loc.gov/2016862741Image download: https://cdn.loc.gov/service/pnp/hec/21600/21696v.jpgOriginal url: https://www.loc.gov/pictures/item/2016862741/, Public Domain, https://commons.wikimedia.org/w/index.php?curid=94173957

any thought widely adopted about specific types of individuals or certain ways of behaving intended to represent the entire group of those individuals or behaviors as a whole.



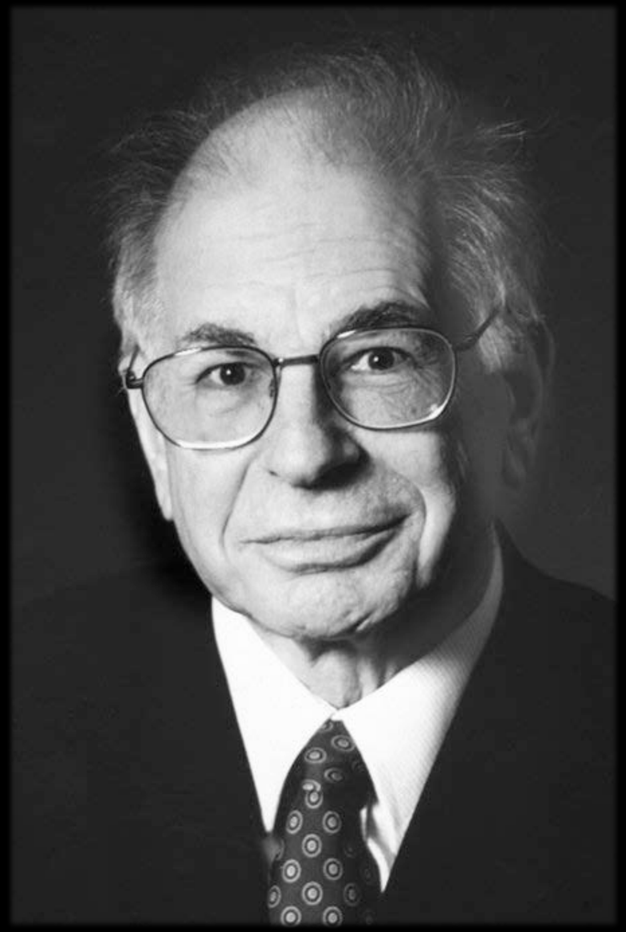


Photo from the Nobel Foundation archive.

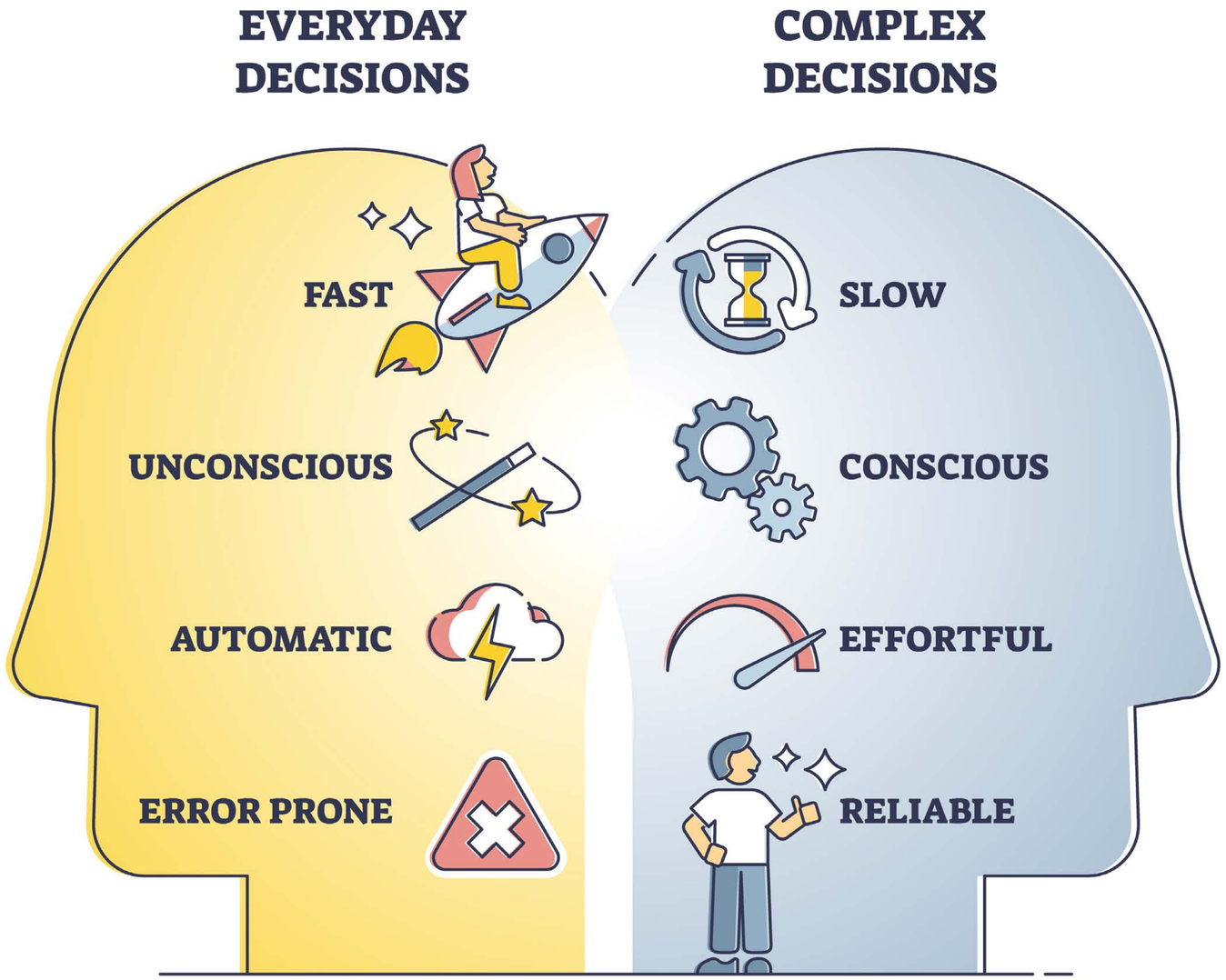
Daniel Kahneman

https://en.wikipedia.org/wiki/Amos_Tversky

Amos Tversky

Heuristics

HEURISTICS


EVERYDAY DECISIONS
COMPLEX DECISIONS
FAST
SLOW
UNCONSCIOUS
CONSCIOUS
AUTOMATIC
EFFORTFUL
ERROR PRONE
RELIABLE

Availability Heuristic

Don’t Allow Skin Color Based Treatment

Stop DNA Blaming!


Nurse
Transporter
Surgeon Resident
Phlebotomist

Anchoring Heuristic

A 47 year old African American female presents with……

Confirmation Bais

16 March 1999 Volume 130 Number 6

Annals of Internal Medicine

A More Accurate Method To Estimate Glomerular Filtration Rate from Serum Creatinine: A New Prediction Equation

Andrew S. Levey, MD; Juan P. Bosch, MD; Julia Breyer Lewis, MD; Tom Greene, PhD; Nancy Rogers, MS; and David Roth, MD, for the Modification of Diet in Renal Disease Study Group*

Background: Serum creatinine concentration is widely used as an index of renal function, but this concentration is affected by factors other than glomerular filtration rate (GFR).

Objective: To develop an equation to predict GFR from serum creatinine concentration and other factors.

Design: Cross-sectional study of GFR, creatinine clearance, serum creatinine concentration, and demographic and clinical characteristics in patients with chronic renal disease.

Patients: 1628 patients enrolled in the baseline period of the Modification of Diet in Renal Disease (MDRD) Study, of whom 1070 were randomly selected as the training sample; the remaining 558 patients constituted the validation sample.

Methods: The prediction equation was developed by stepwise regression applied to the training sample. The equation was then tested and compared with other prediction equations in the validation sample.

Results: To simplify prediction of GFR, the equation included only demographic and serum variables. Independent factors associated with a lower GFR included a higher serum creatinine concentration, older age, female sex, nonblack ethnicity, higher serum urea nitrogen levels, and lower serum albumin levels ($P < 0.001$ for all factors). The multiple regression model explained 90.3% of the variance in the logarithm of GFR in the validation sample. Measured creatinine clearance overestimated GFR by 19%, and creatinine clearance predicted by the Cockcroft–Gault formula overestimated GFR by 16%. After adjustment for this overestimation, the percentage of variance of the logarithm of GFR predicted by measured creatinine clearance or the Cockcroft–Gault formula was 86.6% and 84.2%, respectively.

Conclusion: The equation developed from the MDRD Study provided a more accurate estimate of GFR in our study group than measured creatinine clearance or other commonly used equations.

This paper is also available at http://www.acponline.org.

Ann Intern Med. 1999;130:461-470.

* For members of the Modification of Diet in Renal Disease Study Group, see N Engl J Med. 1994;330:877-84.

The glomerular filtration rate (GFR) is traditionally considered the best overall index of renal function in health and disease (1). Because GFR is difficult to measure in clinical practice, most clinicians estimate the GFR from the serum creatinine concentration. However, the accuracy of this estimate is limited because the serum creatinine concentration is affected by factors other than creatinine filtration (2, 3). To circumvent these limitations, several formulas have been developed to estimate creatinine clearance from serum creatinine concentration, age, sex, and body size (4–12). Despite more recent studies that have related serum creatinine concentration to GFR (13–24), no formula is more widely used to predict creatinine clearance than that proposed by Cockcroft and Gault (4). This formula is used to detect the onset of renal insufficiency, to adjust the dose of drugs excreted by the kidney, and to evaluate the effectiveness of therapy for progressive renal disease. More recently, it has been used to document eligibility for reimbursement from the Medicare End Stage Renal Disease Program (25) and for accrual of points for patients on the waiting list for cadaveric renal transplantation (26). Major clinical decisions in general medicine, geriatrics, and oncology (as well as nephrology) are made by using the Cockcroft–Gault formula and other formulas to predict the level of renal function. Therefore, these formulas must predict GFR as accurately as possible.

The Modification of Diet in Renal Disease (MDRD) Study, a multicenter, controlled trial, evaluated the effect of dietary protein restriction and strict blood pressure control on the progression of renal disease (27–30). During the baseline period, GFR, serum creatinine, and several variables that affect the relation between them were measured in patients with chronic renal disease. The purpose of our study was to develop an equation from MDRD Study data that could improve the prediction of GFR from serum creatinine concentration.

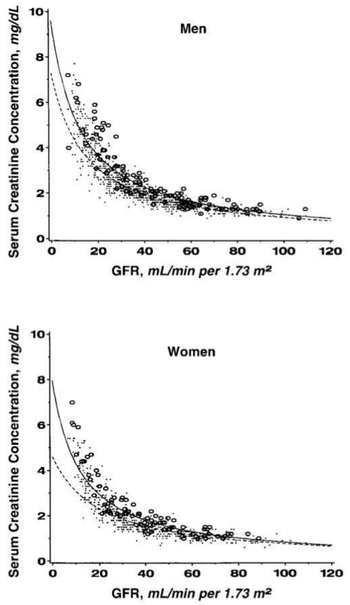


Figure 1. Relation of serum creatinine concentration to measured glomerular filtration rate (GFR). Each point represents the baseline measurement for one patient during the MDRD Study. Glomerular filtration rate was measured as the renal clearance of ^{125}I-iothalamate. Serum creatinine concentration (P_{cr}) was measured by using a kinetic alkaline picrate assay. Values are shown separately for men ($n = 915$) and women ($n = 586$) by ethnicity (white persons [*dashed lines and dots*] and black persons [*solid lines and circles*]). Regression lines were computed from the relation $1/P_{cr}$ compared with GFR. Black men ($n = 113$) have higher serum creatinine values than white men ($n = 802$) ($P < 0.001$); black women ($n = 84$) have higher serum creatinine values than white women ($n = 502$) ($P < 0.001$). To convert mL/min per 1.73 m^2 to $mL \cdot s^{-2} \cdot m^{-2}$, multiply by 0.00963. To convert mg/dL to μmol/L, multiply by 88.4.

tion to GFR for subgroups based on sex and ethnicity. At any given GFR, the serum creatinine concentration is significantly higher in men than in women and in black persons than in white persons ($P < 0.001$).

Relation among Clearance Measurements and Prediction of Glomerular Filtration Rate from Transformations of Serum Creatinine Concentration

The relations of GFR to creatinine and urea clearances are shown in **Figure 2**. Creatinine clearance usually exceeds GFR because of tubular secretion, whereas urea clearance is usually lower than GFR because of tubular reabsorption. The mean of creatinine and urea clearances provides a more accurate estimate of GFR. The relations of GFR to the reciprocal of serum creatinine (P_{cr}) × 100 ($100/P_{cr}$) and creatinine clearance predicted by the Cockcroft–Gault equation are also shown in **Figure 2**. As did measured creatinine clearance, the Cockcroft–Gault equation yielded values that were higher than the actual values for GFR.

Prediction of Glomerular Filtration Rate from Multiple Regression Models Derived from the Modification of Diet in Renal Disease Study

We developed equations to predict log GFR using stepwise regression applied to a randomly selected training sample of 1070 patients. We then validated the equations in the remaining 558 patients. Only variables with a P value less than 0.001 were included in the final models. In this section, we describe the final models on the basis of data from all 1628 patients. **Table 2** shows the variables in the final models. The prediction equations (equations 6 and 7) are shown in **Table 3**. As expected, predicted GFR does not systematically deviate from measured GFR (**Figure 3**), although a few values for measured GFR are below predicted values when GFR is normal or high.

As in the Cockcroft–Gault equation, the reciprocal of serum creatinine concentration is included in both models. The reciprocal of serum urea nitrogen concentration was also an independent predictor of GFR; this probably reflects the relation between GFR and urea clearance. Both urea and creatinine undergo glomerular filtration but are handled differently by the renal tubules; thus, it is not surprising that the serum levels of urea nitrogen and creatinine, although both are related to the level of GFR, would vary independently.

Older age and female sex were independent predictors of lower GFR, presumably reflecting the well-known relations of age and sex to muscle mass (40). Lower muscle mass, as observed in older persons and in women, causes lower urine creatinine excretion and, therefore, lower serum creatinine concentration at any GFR. Body size is also associated with urine creatinine excretion. However, because equations from the MDRD Study predict GFR adjusted for body surface area, neither height nor weight was an independent predictor of adjusted GFR. Black ethnicity was an independent predictor of higher GFR. Previous studies have shown that on average, black persons have greater muscle mass than white persons (41–43). In other analyses, we found that black ethnicity was an independent predictor of higher urine creatinine excretion (data not shown).

Micro-Aggressions

Dr. Chester M. Pierce 1927-2016
Professor of Psychiatry,
Harvard University

Dr. Derald W. Sue
Professor Psychology
Columbia University

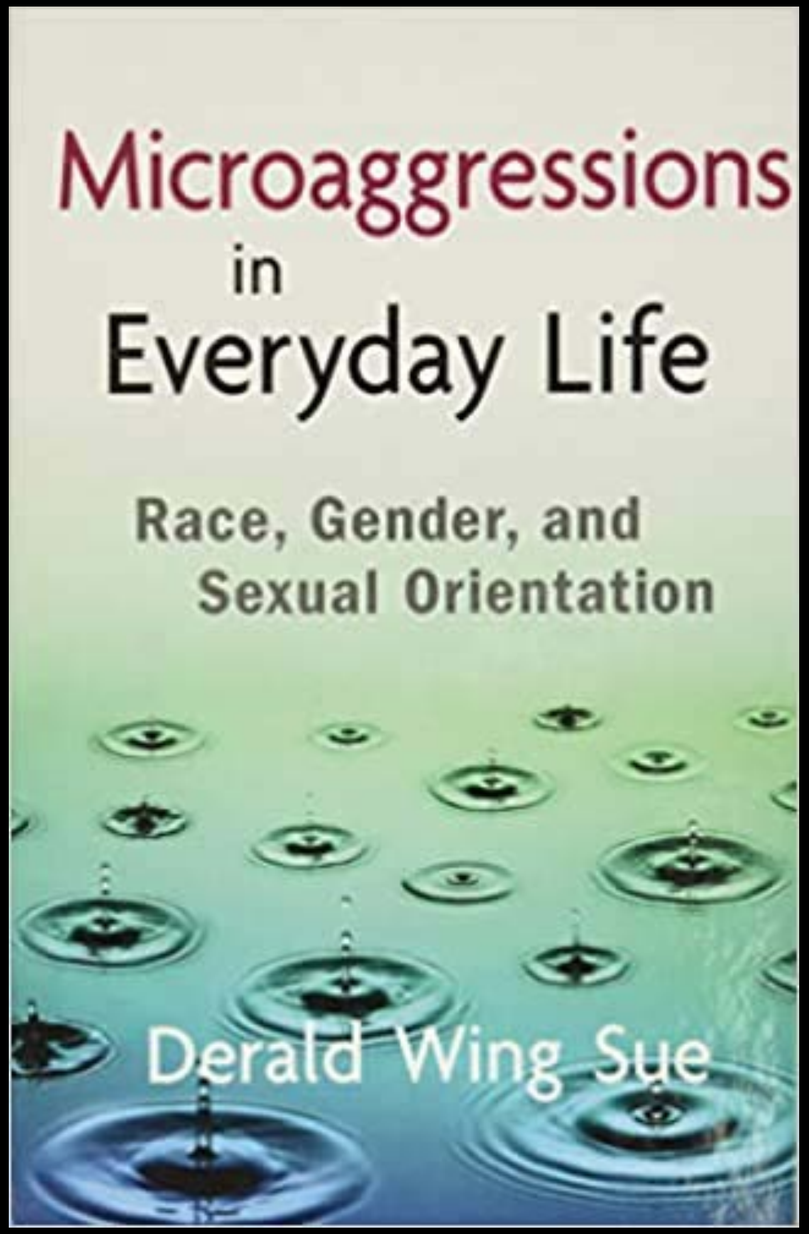
Every day verbal and or behavioral assults, insults, invalidations experienced by people with darker skin

Subtle assaults

Subtle-insaults

Subtle- invalidations.

Chronic Humiliation



Dr. Derald W. Sue
Professor Psychology
Columbia University

Every day verbal and or behavioral assaults, insults, invalidations experienced by sex, sexual preference & ethnicity,

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Original Investigation | Medical Education

Minority Resident Physicians' Views on the Role of Race/Ethnicity in Their Training Experiences in the Workplace

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OBJECTIVE To characterize how black, Hispanic, and Native American resident physicians experience race/ethnicity in the workplace.

MAIN OUTCOMES AND MEASURES The workplace experiences of black, Hispanic, and Native American resident physicians in graduate medical education.

RESULTS Among 27 participants, races/ethnicities were 19 (70%) black, 3 (11%) Hispanic, 1 (4%) Native American, and 4 (15%) mixed race/ethnicity; 15 (56%) were female. Participants described the following 3 major themes in their training experiences in the workplace: a daily barrage of microaggressions and bias, minority residents tasked as race/ethnicity ambassadors, and challenges negotiating professional and personal identity while seen as "other."

CONCLUSIONS AND RELEVANCE Graduate medical education is an emotionally and physically demanding period for all physicians. Black, Hispanic, and Native American residents experience additional burdens secondary to race/ethnicity. Addressing these unique challenges related to race/ethnicity is crucial to creating a diverse and inclusive work environment.


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Factors That Increase Implicit Biases

- Timed tasks
- Fatigue and lack of sleep
- Lack of relationships with diverse groups of people
- Dependence on recalling
- Performing in front of an audience


What can we do?

Non-conscious bias in medical decision making: what can be done to reduce it?

Jeff Stone[1] & Gordon B Moskowitz[2]

CONTEXT Non-conscious stereotyping and prejudice contribute to racial and ethnic disparities in health care. Contemporary training in cultural competence is insufficient to reduce these problems because even educated, culturally sensitive, egalitarian individuals can activate and use their biases without being aware they are doing so. However, these problems can be reduced by workshops and learning modules that focus on the psychology of non-conscious bias.

THE PSYCHOLOGY OF NON-CONSCIOUS BIAS Research in social psychology shows that over time stereotypes and prejudices become invisible to those who rely on them. Automatic categorisation of an individual as a member of a social group can unconsciously trigger the thoughts (stereotypes) and feelings (prejudices) associated with that group, even if these reactions are explicitly denied and rejected. This implies that, when activated, implicit negative attitudes and stereotypes shape how medical professionals evaluate and interact with minority group patients. This creates differential diagnosis and treatment, makes minority group patients uncomfortable and discourages them from seeking or complying with treatment.

PITFALLS IN CULTURAL COMPETENCE TRAINING Cultural competence training involves teaching students to use race and ethnicity to diagnose and treat minority group patients, but to avoid stereotyping them by over-generalising cultural knowledge to individuals. However, the Culturally and Linguistically Appropriate Services (CLAS) standards do not specify how these goals should be accomplished and psychological research shows that common approaches like stereotype suppression are ineffective for reducing non-conscious bias. To effectively address bias in health care, training in cultural competence should incorporate research on the psychology of non-conscious stereotyping and prejudice.

TRAINING IN IMPLICIT BIAS ENHANCES CULTURAL COMPETENCE Workshops or other learning modules that help medical professionals learn about non-conscious processes can provide them with skills that reduce bias when they interact with minority group patients. Examples of such skills in action include automatically activating egalitarian goals, looking for common identities and counter-stereotypical information, and taking the perspective of the minority group patient.

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INTRODUCTION

Racial and ethnic disparities in the diagnosis, treatment, survival and prevention of disease are widely documented.[1–6] The causes of such disparities are linked to three broad factors: genetic or biological antecedents; socio-economic predictors, and psychological processes that contribute to intergroup bias. Prominent among the psychological biases that contribute to racial and ethnic disparities in health outcomes are prejudices and stereotypes transmitted by a culture and learned by the members of that culture, including professionals who work within the medical community. Hundreds of experiments have revealed that stereotypes and prejudices influence the judgement and behaviour of even egalitarian lay people without their knowledge[7] and several studies now reveal that prejudice and stereotyping impacts on how medical professionals diagnose and treat minority group patients.[8,9] Thus, it is important to develop new approaches to reducing the use of negative attitudes and beliefs by medical professionals when they provide health care services to individual members of traditionally stigmatised groups.

Training health care providers in cultural competence will play an important role in reducing the acts of insensitivity that discourage minority group patients from using health services and in decreasing the unintentional acts of discrimination that prevent minority group patients from obtaining the care they need and deserve.[10–12] However, even when health care providers are well educated about cultural differences and about the psychological biases like stereotypes that can influence their interactions with minority group patients, research indicates that there are times when they can be expected to rely on stereotypes as they provide care. This is also the case even with low-prejudiced, well-intentioned individuals stereotype ethnic and racial minority individuals when they are tired, cognitively overwhelmed or required to make quick decisions with little information.[13,14] Nevertheless, emerging research also reveals several strategies for reducing the activation and use of negative stereotypes and attitudes in judgement and interaction.[15–17] This suggests that training in cultural competence that includes instruction in the social psychology of stereotyping and prejudice can help to circumvent the non-conscious biases that contribute to unintended forms of discrimination in health care.

The purpose of this paper is two-fold. It intends, firstly, to briefly discuss how stereotyping unintentionally leaks into the way medical professionals form impressions of and treat minority group patients and, secondly, to discuss innovative approaches to training health care providers in cultural competency that can reduce the problems created by unintended bias.

THE PSYCHOLOGY OF NON-CONSCIOUS STEREOTYPING AND RACIAL BIAS

A stereotype is a mental representation, 'a cognitive structure that contains the perceiver's knowledge, beliefs, and expectations about a human group'.[18] People acquire stereotypes to help them satisfy the goal of processing and storing information in a manner that is efficient and economical in terms of the mental energy and time they have available. Almost a century's worth of empirical investigation on stereotypes has led to the consensus that the repeated use of stereotypes creates a psychological system in which both the goals that promote stereotyping and the act of stereotyping itself recede from consciousness so that stereotyping becomes implicit (invisible to those who rely on it). Research shows that this is true even when an individual has no conscious negative feelings toward the group, is educated in cultural diversity, and consciously attempts to suppress his or her use of stereotypes.[19]

The process of stereotyping occurs through two phases with dissociable and distinct sets of cognitive processes: phase 1 comprises cognitive processes that determine stereotype activation, and phase 2 comprises cognitive processes that determine whether stereotypes are used in evaluation, judgement and action toward others.[13,20] In the first phase, activation of a stereotype occurs when people categorise an individual as a member of a social group. Once that individual has been categorised, people bring to mind their beliefs about what members of that group are like: their stereotypes. Over time, categorisation can activate stereotypes without effort, awareness or intent. In the second phase of the process, people use activated beliefs as they form an impression of and interact with the target individual. As with activation, using a stereotype as a guide in how we collect information and process it does not require conscious effort or attention. However, both of these phases can be controlled if people are properly motivated and have the ability to regulate their responses.

Research indicates that health care providers automatically activate negative stereotypes about minority group members during phase 1 of the process described above. For example, we recently reported

Helping medical learners recognise and manage unconscious bias toward certain patient groups

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CONTEXT For the last 30 years, developments in cognitive sciences have demonstrated that human behaviour, beliefs and attitudes are shaped by automatic and unconscious cognitive processes. Only recently has much attention been paid to how unconscious biases based on certain patient characteristics may: (i) result in behaviour that is preferential toward or against specific patients; (ii) influence treatment decisions, and (iii) adversely influence the patient–doctor relationship. Partly in response to accreditation requirements, medical educators are now exploring how they might help students and residents to develop awareness of their own potential biases and strategies to mitigate them.

METHODS In this paper, we briefly review key cognition concepts and describe the limited published literature about educational strategies for addressing unconscious bias.

DISCUSSION We propose a developmental model to illustrate how individuals might move from absolute denial of unconscious bias to the integration of strategies to mitigate its influence on their interactions with patients and offer recommendations to educators and education researchers.

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Factors That Decrease Implicit bias

- Intentional awareness of self biases
- Intentionally seeking diverse perspectives and decisions
- Increased sleep
- Consistently employing processes that increase diversity
- Increased time to make decisions

Blinding

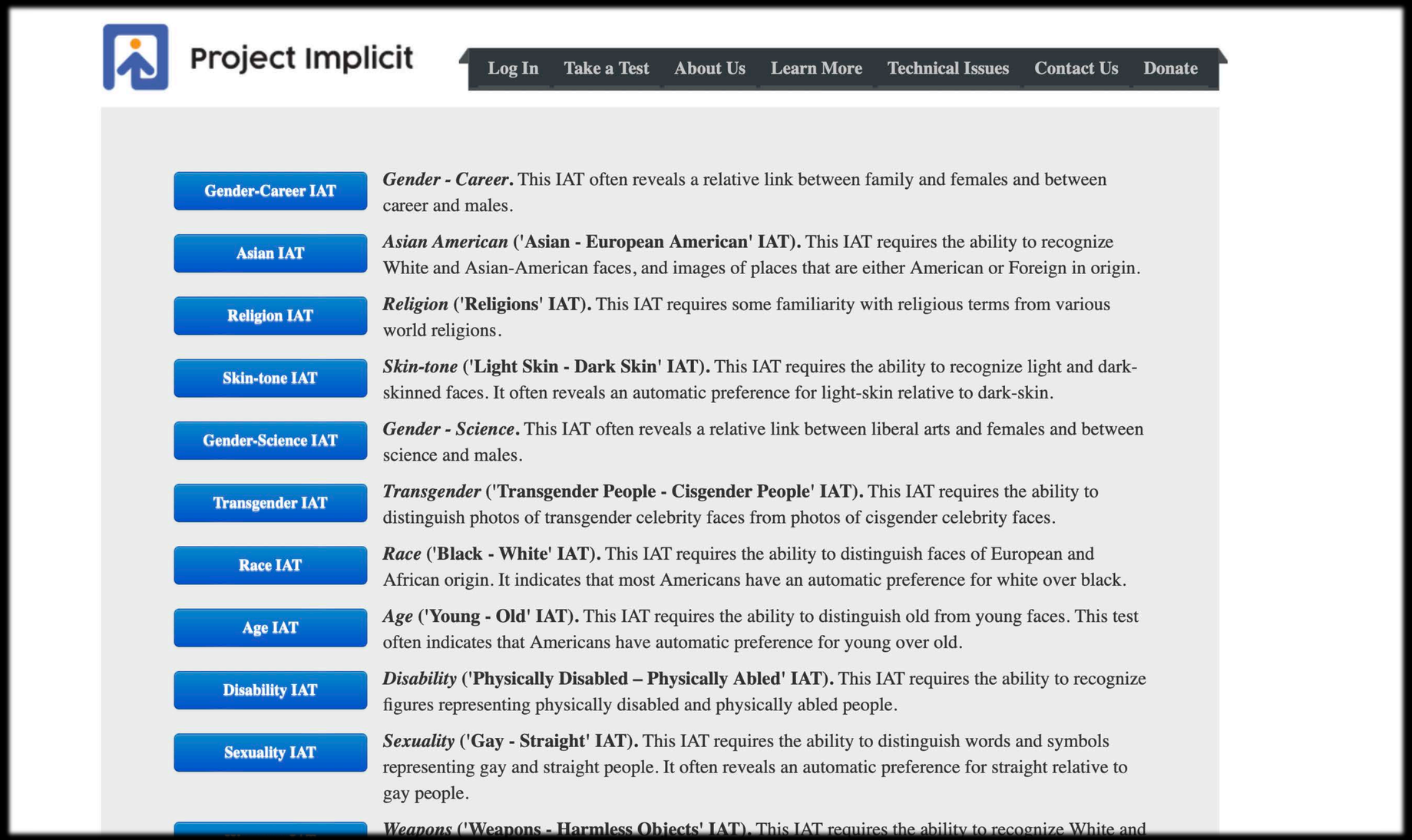
Affirmative Action

Consciousness Raising

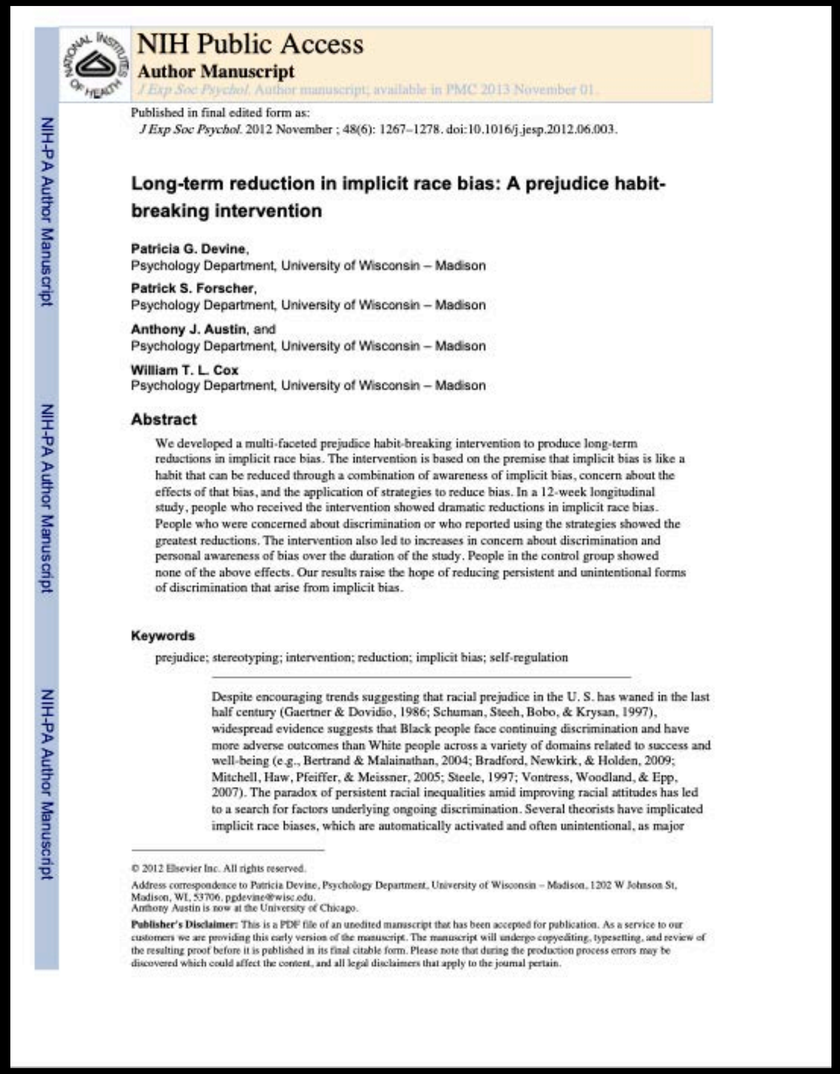
Consciousness Raising

Implicit Association Test

Anthony Greenwald P.H.D.



https://implicit.harvard.edu/implicit/selectatest.html



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Long-term reduction in implicit race bias: A prejudice habit-breaking intervention

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Abstract

We developed a multi-faceted prejudice habit-breaking intervention to produce long-term reductions in implicit race bias. The intervention is based on the premise that implicit bias is like a habit that can be reduced through a combination of awareness of implicit bias, concern about the effects of that bias, and the application of strategies to reduce bias. In a 12-week longitudinal study, people who received the intervention showed dramatic reductions in implicit race bias. People who were concerned about discrimination or who reported using the strategies showed the greatest reductions. The intervention also led to increases in concern about discrimination and personal awareness of bias over the duration of the study. People in the control group showed none of the above effects. Our results raise the hope of reducing persistent and unintentional forms of discrimination that arise from implicit bias.

Keywords

prejudice; stereotyping; intervention; reduction; implicit bias; self-regulation

Despite encouraging trends suggesting that racial prejudice in the U. S. has waned in the last half century (Gaertner & Dovidio, 1986; Schuman, Steeh, Bobo, & Krysan, 1997), widespread evidence suggests that Black people face continuing discrimination and have more adverse outcomes than White people across a variety of domains related to success and well-being (e.g., Bertrand & Malainathan, 2004; Bradford, Newkirk, & Holden, 2009; Mitchell, Haw, Pfeiffer, & Meissner, 2005; Steele, 1997; Vontress, Woodland, & Epp, 2007). The paradox of persistent racial inequalities amid improving racial attitudes has led to a search for factors underlying ongoing discrimination. Several theorists have implicated implicit race biases, which are automatically activated and often unintentional, as major

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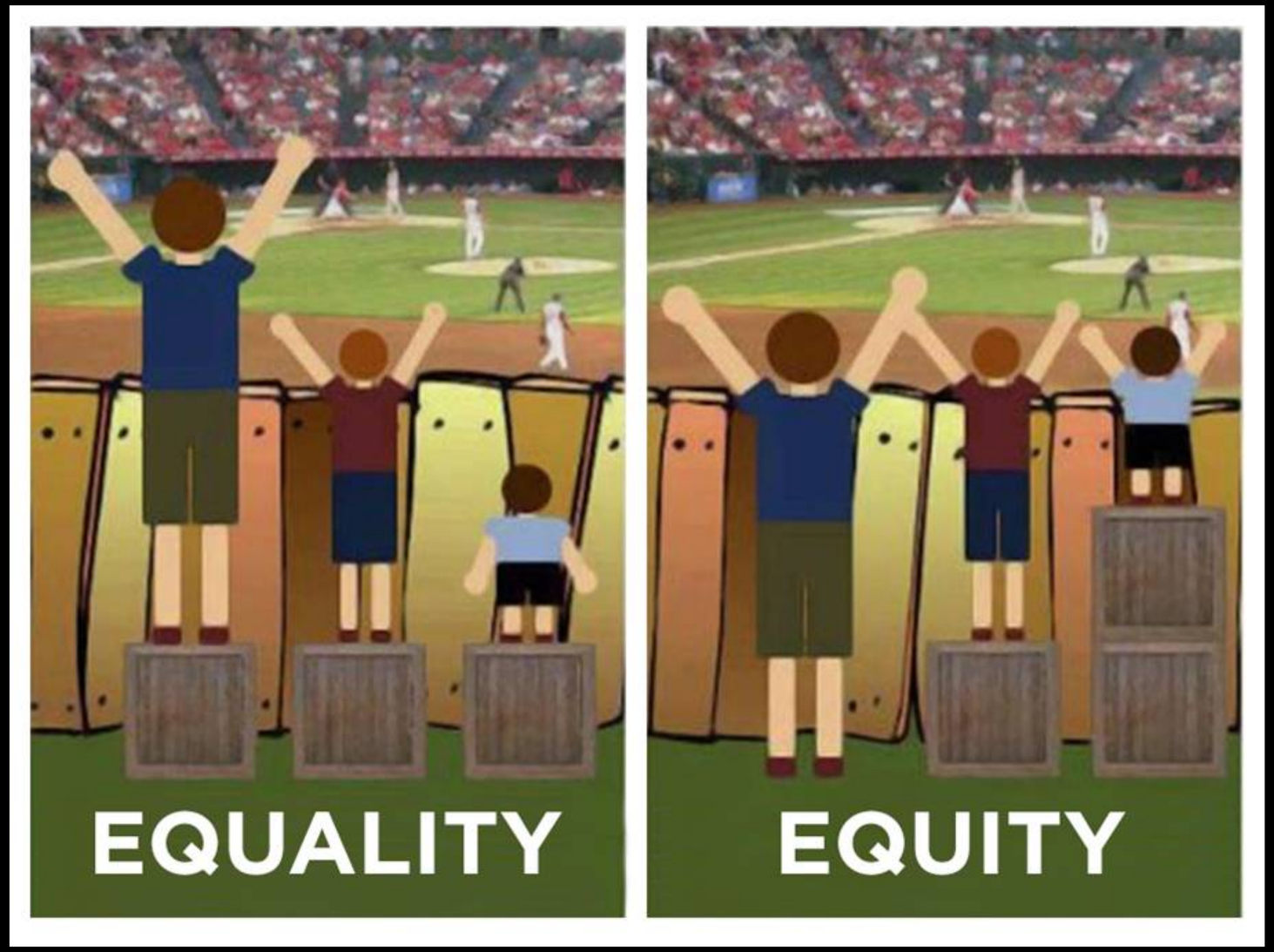
- Replace stereotypes with non-stereotype responses
- Visualize Images counter to the stereotypical image.
- Evaluate individuals of a group by their own attributes in leui of the stereotypical group attributes.
- Take the perspective of a person of a stereotyped group.
- Engage with people outside the groups of people you're familiar with.

Take Home Points To Improve Your Practice



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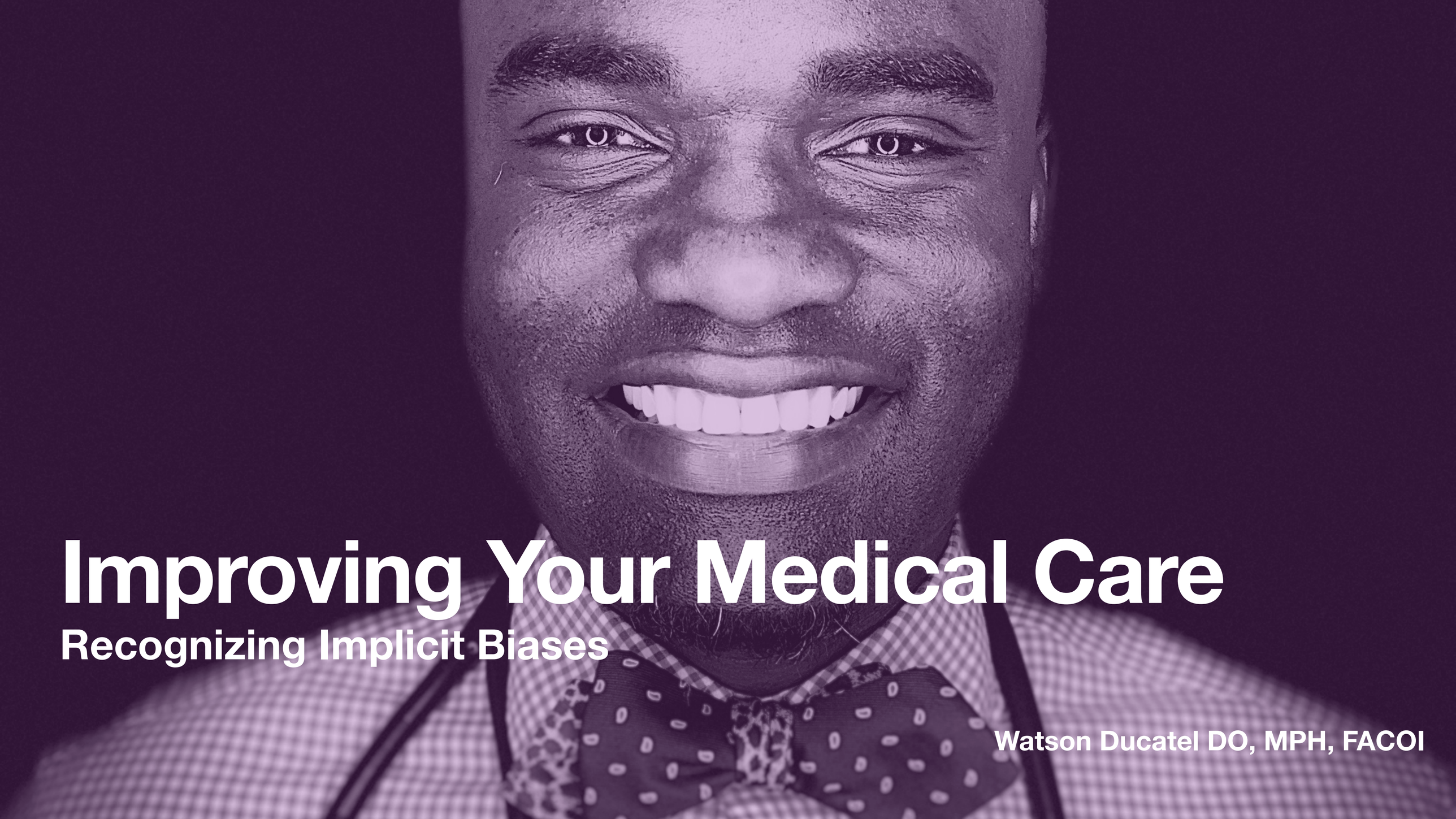
Together We Make A More Equitable Society


Thank You



Improving Your Medical Care

Recognizing Implicit Biases

Watson Ducatel DO, MPH, FACOI