Exploring the Association of Healthcare Worker Race and Occupation with Implicit and Explicit Racial Bias

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Abstract: Background: Racial bias is associated with suboptimal healthcare treatment for minorities. Research focuses on bias among physicians rather than non-physician healthcare staff (e.g., receptionists). Patients spend considerable amounts of time with non-physician staff. Therefore, we investigate differences in implicit and explicit racial bias by healthcare staff race and occupation using the Implicit Association Test and Modern Racism Scale, respectively.

Methods: Staff (n = 107) were recruited using the Alabama based Primary Care Research Coalition. Occupation was categorized into "medical doctors/registered nurses" (MD/RN) and "non-MD/RN" (e.g., receptionists).

Results: Implicit bias scores were higher among whites compared with blacks (0.62, −0.04, respectively; $p < 0.01$). Among whites, non-MD/RNs demonstrated more pro-white implicit bias compared with MD/RNs (0.67, 0.44, respectively; $p < 0.01$). Whites had higher explicit bias scores than blacks (17.7, 12.3, respectively; $p < 0.01$).

Conclusion: Non-MD/RNs should not be overlooked for cultural competency training, and efforts are needed to reduce racial bias among healthcare workers identified as having higher levels of bias.

Keywords: Perceived discrimination ■ Disparities ■ Healthcare staff ■ Implicit bias ■ Explicit bias

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INTRODUCTION

Health services researchers have consistently found evidence that minority patients experience worse health outcomes compared to non-minority white patients.[1–5] One contributing factor to this difference is lower quality of care for minority patients.[6,7] Lower quality of care is associated with a number of chronic conditions and adverse health outcomes, including obesity, hypertension, diabetes, coronary heart disease, and stroke, and disproportionate exposure to low quality care negatively influences outcomes for minorities.[1,4,5] While the National Academies of the Sciences - Health and Medicine Division recognized disparities in quality of care and identified differences in equitable care as one of six key areas for healthcare quality improvement in the 2001 publication, Crossing the Quality Chasm, subsequent studies have found that improvements in equitable care have been limited and that disparities in quality of care still persist despite efforts to reduce them.[1,3,4,8]

Several explanations for the disparities in quality of care received by minority patients have been hypothesized including limited access to high performing hospitals, less access to health insurance, and racial discordance between physicians and minority patients due in part to the underrepresentation of minorities in the health professions.[6,7,9,10] In addition to these issues, perceived discrimination in the healthcare encounter has been presented as a factor related to lower quality of care experienced by minorities.[11–14] Perceived discrimination has been linked with negative mental and physical health outcomes such as depression and anxiety as well as greater symptom burden, and in patients with diabetes, worse physical functioning.[11–14] Discrimination in the healthcare setting has also been linked to lower patient satisfaction,[15,16] and is significant since higher satisfaction is associated with improvements in symptoms, treatment plan adherence, and better overall health outcomes.[17–19]

Previous studies have assessed discrimination in the healthcare encounter by measuring provider implicit racial bias, defined as attitudes and beliefs people hold unconsciously, using the race-based Implicit Association Test (IAT).[20–23] Implicit pro-white bias among healthcare providers has been shown to influence treatment decision-making for minority patients.[21–23] For instance, Green et al., 2007 find as pro-white implicit bias increased, the likelihood of a physician treating blacks with thrombolysis for myocardial infarction decreased.[21] While the association between implicit forms of bias and differential treatment of black patients has been documented among physicians,[21–23] less is known about implicit bias among

non-physician staff (e.g. receptionists, medical assistants, and licensed practical nurses). This is concerning because patients spend a considerable amount of time interacting with non-physician staff. While previous research suggests that this group is an overlooked source of perceived discrimination for patients, to date, only qualitative studies of patient perceptions of discrimination, rather than quantitative assessments of non-physician staff bias, have been conducted.[24] Therefore, the purpose of this study is to investigate differences in implicit racial bias among healthcare workers by race and occupation using the IAT. We also explore differences in explicit bias by race and occupation using the Modern Racism Scale (MRS),[25] and determine the correlation between implicit and explicit racial bias which is important because if correlations between explicit and implicit bias differ based on race or occupation, this could provide additional information on how to best tailor future interventions for different members of the healthcare delivery team.

METHODS

We conducted an online assessment of implicit and explicit racial bias among healthcare staff using the IAT and the MRS, respectively. Study participants answered a brief demographic questionnaire that included information such as age, race, gender, education, and occupation before completing the IAT and MRS. The order of the IAT and MRS was randomly assigned to account for and explore possible implicit bias priming effects as previous literature has reported that exposure to racially sensitive imagery or stimulus prior to participants taking the IAT can influence the results.[26,27]

Study population

Partnering with the Primary Care Research Coalition, an Alabama based primary care research network, we recruited healthcare staff from outpatient practices throughout the state of Alabama. Recruitment materials were distributed electronically as well as through traditional mail postal service. Participants received a $20 Visa gift card for their involvement. We categorized participants into two groups: medical doctor/registered nurse (MD/RN) and non-MD/RN staff. The latter group included receptionists, medical assistants, phlebotomists, and licensed practical nurses. Categories were determined by a panel of practicing physicians and health services researchers and were grouped based on the premise that medical and nursing school students increasingly have exposure to information concerning health disparities and cultural competency during their training while non-MD/RN staff may not have contact with this type of training.[28]

Data collection

We utilized Project Implicit, a web based service (www.implicit.harvard.edu), to collect participant demographic information, administer the web-based IAT and MRS, and maintain participant confidentiality. All data were collected online and maintained by Project Implicit. Informed consent was obtained for all participants and the study was approved by the University of Alabama at Birmingham Institutional Review Board.

Measure of implicit racial bias

The IAT is designed to measure unconscious biases by assessing differences in reaction times between different associations. The test demonstrates high end acceptable to borderline good internal consistency (Chronbach's $\alpha = 0.78$).[29] In the race-based IAT, a participant will be asked to pair words with either a positive or negative connotation, i.e. "pleasant" or "evil," with images of white or black faces. The difference between the time it takes participants on average to associate white faces with positive words and black faces with positive words provides a "d-score."[20] The d-score is then categorized into levels of bias with scores between -0.15 and 0.15 denoting no white or black bias, d-scores less than -0.15 suggesting implicit pro-black bias, and d-scores greater than 0.15 suggesting implicit pro-white bias (Fig. 1).[20]

Measure of explicit racial bias

As opposed to assessing older racist viewpoints such as biological inferiority and support of segregation, the MRS is a six-item questionnaire designed to assess modern explicit racism domains such as racial resentment, subtle prejudice, racial ambivalence, and attitudes on whether respondents believe racism is a current problem (Supplemental Figure).[25] The MRS demonstrates good internal consistency (Chronbach's $\alpha = 0.82$).[30] Participants are asked whether they agree or disagree on a scale of 1 (strong disagreement) to 5 (strong agreement) with questions such as, "blacks are getting too demanding in their push for equal rights." Participant responses to the MRS questions were aggregated to create a composite score ranging from 6 to 30 for each participant. Lower cumulative scores on the MRS signify lower levels of explicit bias against blacks and higher scores signify higher explicit bias.

Data analysis

We calculated the statistical significance of differences across demographic groups using t-tests for continuous variables and chi-square tests for categorical variables. We estimated ordinary least square regression models for the association of race, occupation, and other sociodemographic characteristics